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Oracle Application Express Workshop I

Activity Guide – Volume I
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Course Practice Environment: Security Credentials

For OS usernames and passwords, see the following:

- If you are attending a classroom-based or live virtual class, ask your instructor or LVC producer for OS credential information.
- If you are using a self-study format, refer to the communication that you received from Oracle University for this course.

For product-specific credentials used in this course, see the following table:

Product-Specific Credentials		
Product/Application	Username	Password
Workspace Administrator User	apex_admin	<u>Initial login:</u> apex <u>Changed To:</u> welcome (will be using this all through the course)
Workspace Developer User	apex_dev	apex
Workspace Developer User	brad.knight	apex
Workspace Administrator User	susie.parker	apex
Workspace End User	john.bell	apex

Note: The credentials mentioned above are for the users of the **APEX** Workspace. The first user (that is, `apex_admin`) is already created. You will be creating all the other users during the practices.

Practices for Lesson 1: Course Overview

Practices for Lesson 1: Overview

Overview

- There are no practices for Lesson 1.
- The OEHR schema is preinstalled in your workspace.
- The files used in the practices are available in the `/home/oracle/labs/labs` directory.
- The solution files for the practices are available in the `/home/oracle/labs/solutions` directory.
- Practice 3-2 is an optional practice and does not have a solution script.

**Practices for Lesson 2:
Oracle Application Express:
Introduction**

Practices for Lesson 2: Overview

Overview

There are three practices for this lesson. In these practices, you sign in and use Oracle Application Express as a Workspace Administrator and then as a Developer.

Practice 2-1: Using Oracle Application Express as a Workspace Administrator

Overview

As a new user, you are given access to Oracle APEX as a Workspace Administrator. To develop GlobalMart Management Tool (GMT), you need a Developer user. Therefore, you sign in to Oracle APEX as a Workspace Administrator and create a new user, Developer.

Assumptions

None

Tasks

1. Sign in to Oracle Application Express with the following details:
 - Workspace: APEX
 - Username: apex_admin
 - Password: **<mentioned in the password document>**
2. Create a developer user with the following details:
 - Username: apex_dev
 - Password: **<mentioned in the password document>**
 - Email: apexdev@oracle.com

Practice 2-2: Using Oracle Application Express as a Developer

Overview

By now, you have created the `apex` user as a developer. Before getting into developing the GMT application, you should familiarize yourself with using Oracle APEX as a developer. To achieve this, in this practice, you:

- Sign in to Oracle Application Express as a developer user
- Run the sample database application
- Install a packaged application and use it
- Remove the packaged application from the workspace

Assumptions

You have completed Practice 2-1.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Sign in to Oracle Application Express with the following details:
 - Workspace: `APEX`
 - Username: `apex_dev`
 - Password: *<mentioned in the password document>*
2. Install and Run the **Sample Database Application**, which is already available in your workspace.
3. Install and use a packaged application. You install and use **Customer Tracker** available under packaged applications in your workspace.
4. Remove the **Customer Tracker** packaged application from your workspace.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon to create the `apex` user.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

Practice 2-3: Installing a Sample Dataset

Overview

Oracle Application Express includes four sample datasets. Each dataset includes sufficient data to enable you to build applications with pages containing different types of components.

With a few clicks of the mouse you can install, refresh, replace, or remove sample datasets in one of the schemas associated with your workspace.

Assumptions

You have completed Practice 2-1.

Tasks

1. Sign in to Oracle Application Express with the following credentials:
 - Workspace: `APEX`
 - Username: `apex_dev`
 - Password: **<mentioned in the password document>**
2. Install the sample dataset `HR Data` from SQL Workshop Utilities in the `OEHR` schema.

Catch up

If you haven't completed **Practice 2-2**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon to create the `apex_dev` user.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

Solution 2-1: Using Oracle Application Express as a Workspace Administrator

Overview

In this practice solution, steps are provided to create a new developer user by logging in as a Workspace Administrator.

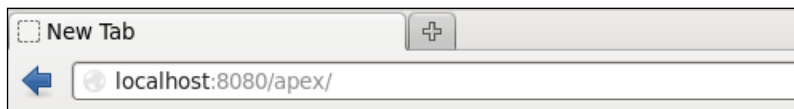
Steps

1. Sign in to Oracle Application Express with the following details:

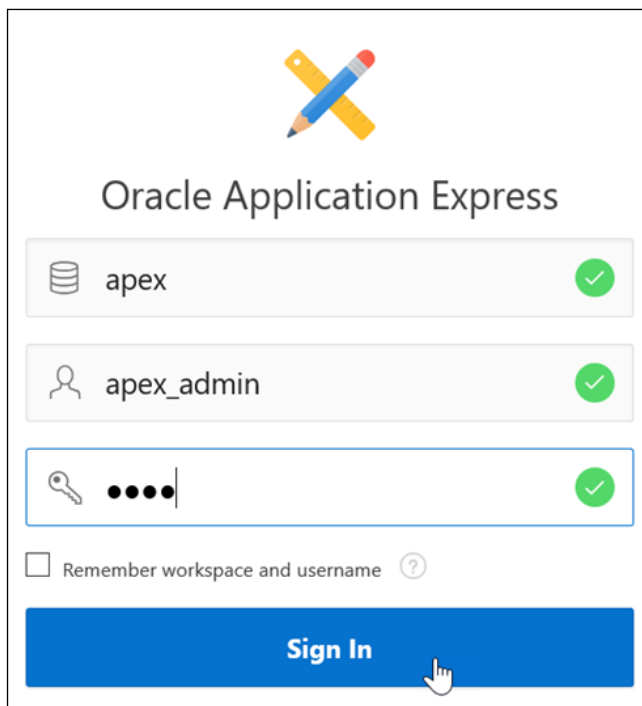
- Workspace: Enter `apex`
- Username: Enter `apex_admin`
- Password: <mentioned in the password document>

a. Open a browser and enter the following URL in the address bar:

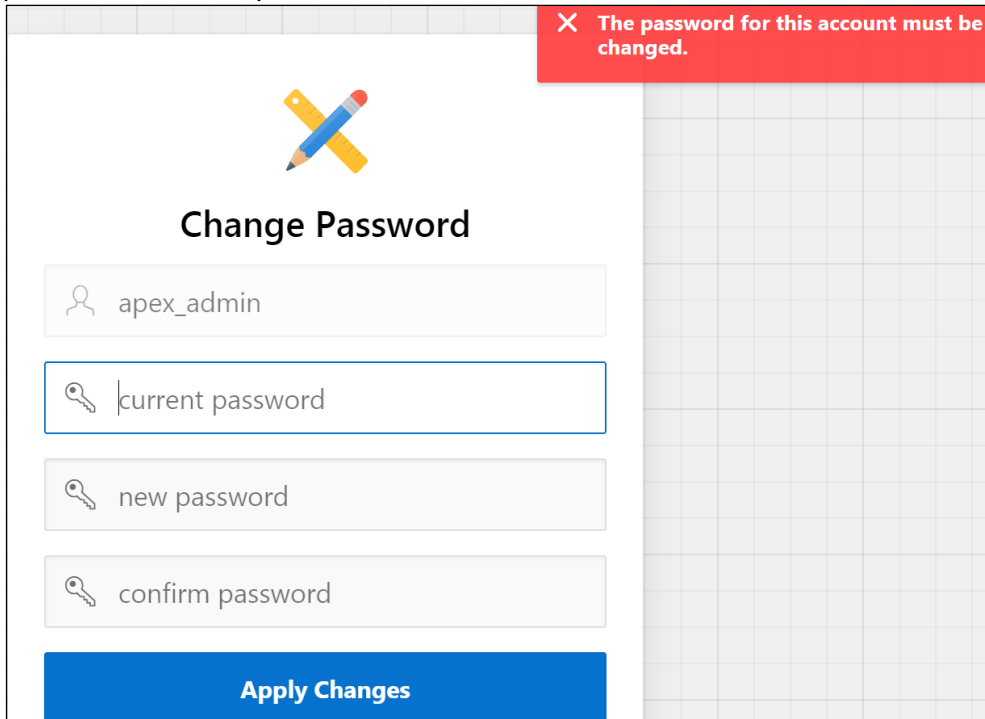
`http://localhost:8080/apex/`



b. On the Sign in page, enter `apex` for **Workspace**, `apex_admin` for **Username**, and the password (as mentioned in the password document). Click **Sign In**.

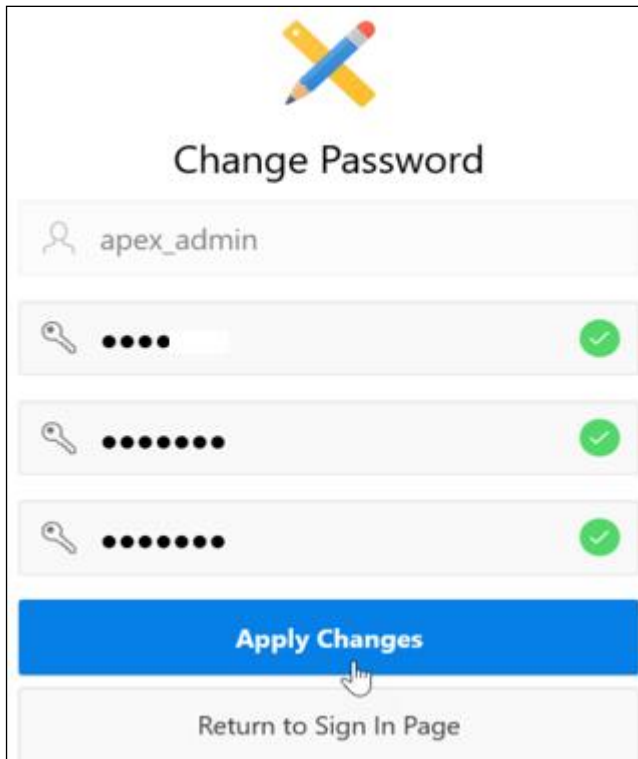


- c. On your first login, you will be prompted to change your password. Enter the current password and new password.



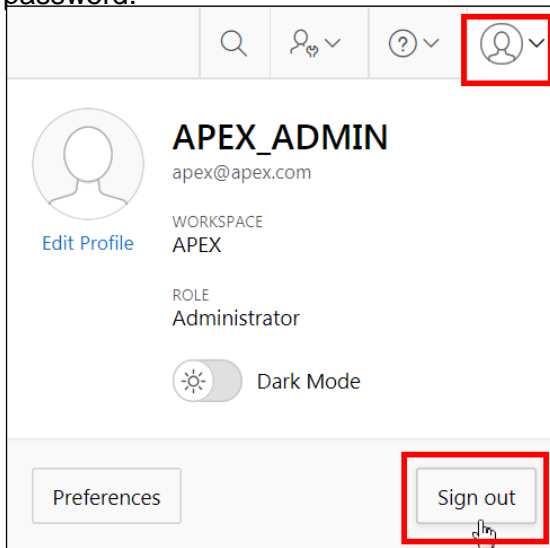
The screenshot shows a 'Change Password' form. At the top right, a red error message reads: 'X The password for this account must be changed.' The form includes a pencil icon, the title 'Change Password', and four input fields: 'apex_admin' (with a person icon), 'current password', 'new password', and 'confirm password' (each with a key icon). A blue 'Apply Changes' button is at the bottom.

- d. Click **Apply Changes**.

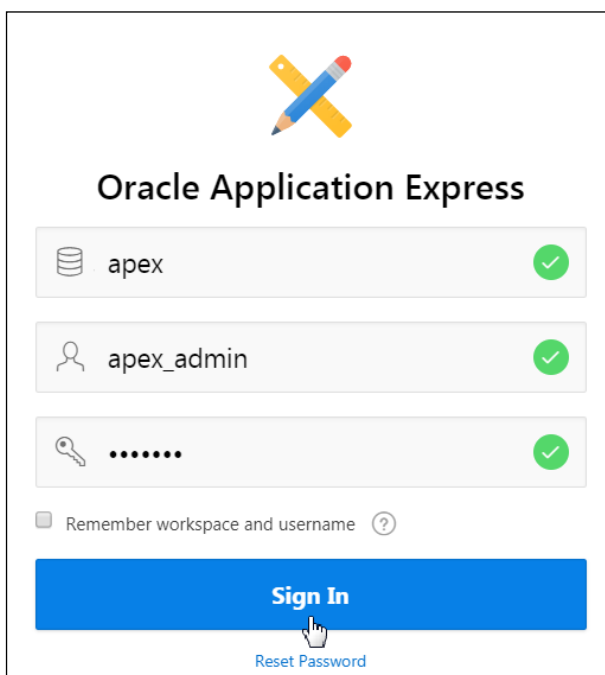
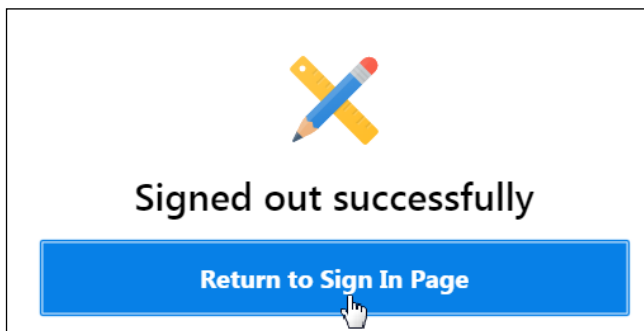


The screenshot shows the 'Change Password' form after the password fields have been filled. The 'current password', 'new password', and 'confirm password' fields now contain masked text (dots) and each has a green checkmark on the right. A hand cursor is positioned over the blue 'Apply Changes' button. Below the button is a link that says 'Return to Sign In Page'.

- e. You have successfully logged in to the Oracle Application Express workspace as a workspace administrator. You can sign out of the workspace and sign in with your new password.




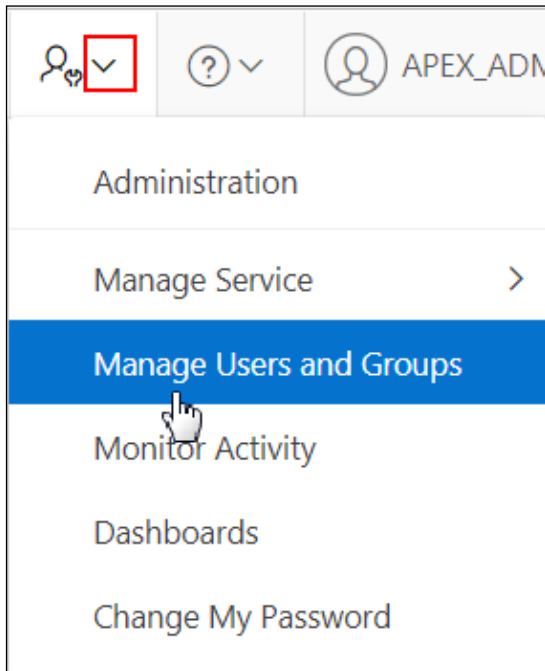
Click the **Return to Sign In Page** button and sign in again.



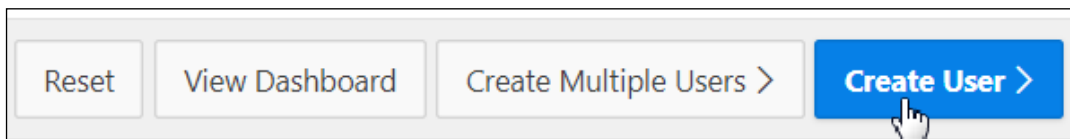
2. Create a developer user with the following details:

- Username: Enter `apex_dev`
- Password: **<mentioned in the password document>**
- Email: Enter `apexdev@oracle.com`

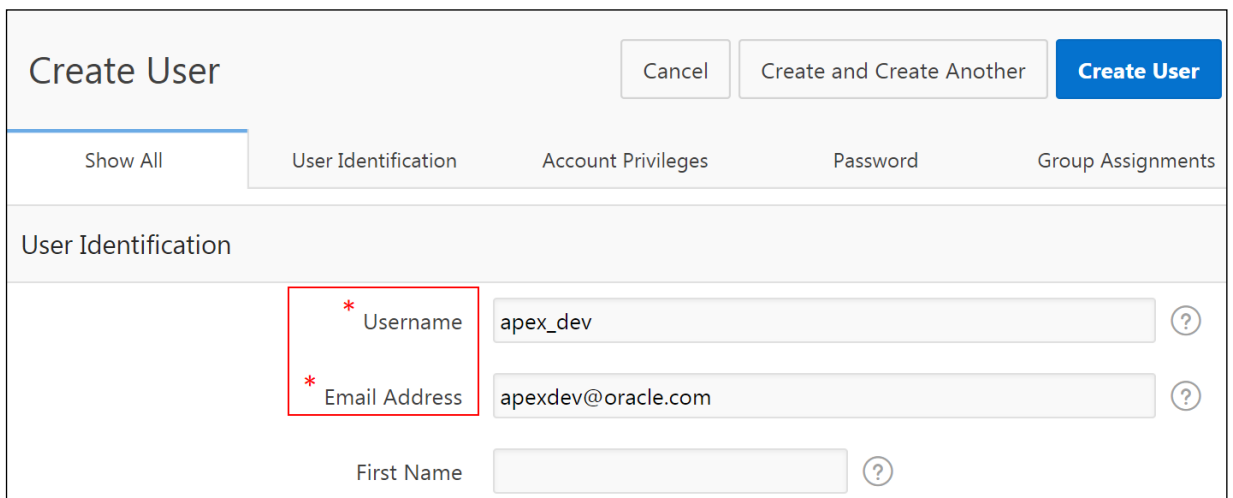
a. Click the **Administration** icon  present in the top-right corner of the page and select **Manage Users and Groups** from the drop-down menu.



b. Click **Create User >**.



c. Enter `apex_dev` in the **Username** field and enter `apexdev@oracle.com` in the **Email Address** field.

A screenshot of the 'Create User' form. At the top, there are three buttons: 'Cancel', 'Create and Create Another', and 'Create User'. Below the buttons are five tabs: 'Show All', 'User Identification', 'Account Privileges', 'Password', and 'Group Assignments'. The 'User Identification' tab is selected. The form contains three input fields: 'Username' (with a red box around the label and an asterisk), 'Email Address' (with a red box around the label and an asterisk), and 'First Name'. The 'Username' field contains the text 'apex_dev' and the 'Email Address' field contains 'apexdev@oracle.com'. Each field has a question mark icon to its right.

- d. Scroll down and set the **Default Schema** to OEHR. Remove text from the **Accessible Schemas** field to make it null. Ensure that **User is a workspace administrator** is set to **No** and **User is a developer** is set to **Yes**.

Account Privileges

Default Schema: OEHR

Accessible Schemas (null for all):

User is a workspace administrator: Yes No

User is a developer: Yes No

- e. In the Password section, set the password in the **Password** field. Enter the same password in the **Confirm Password** field. In **Require Change of Password on First Use**, select **No**.

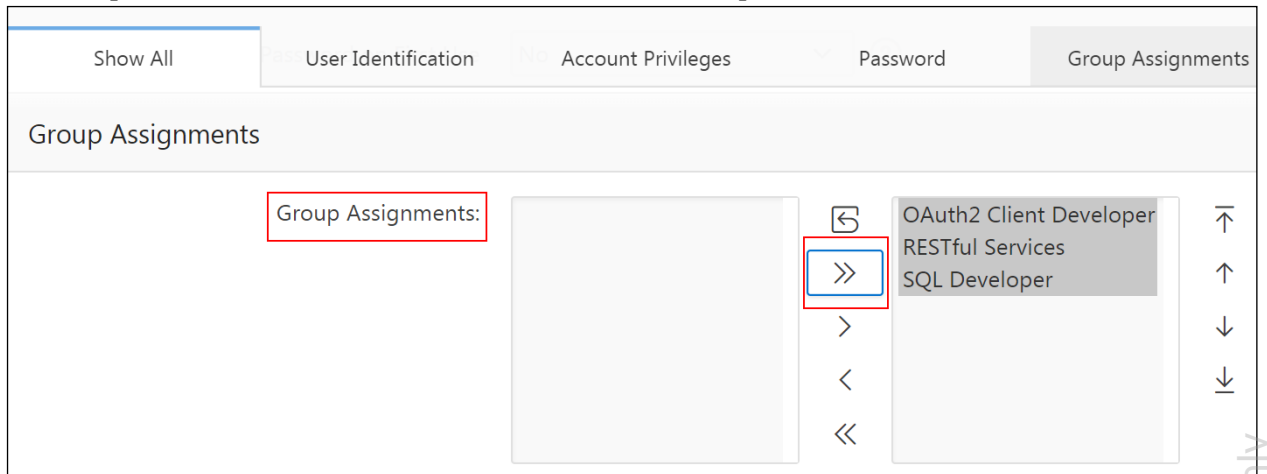
Password

* Password:

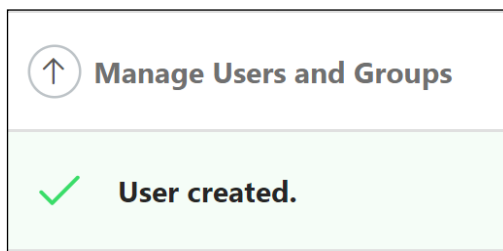
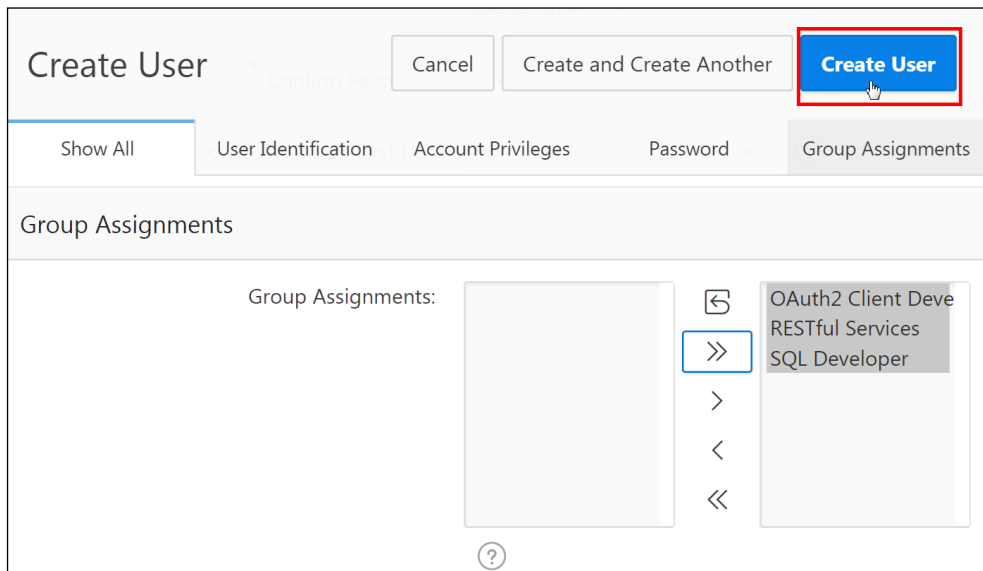
* Confirm Password:


Require Change of Password on First Use: No

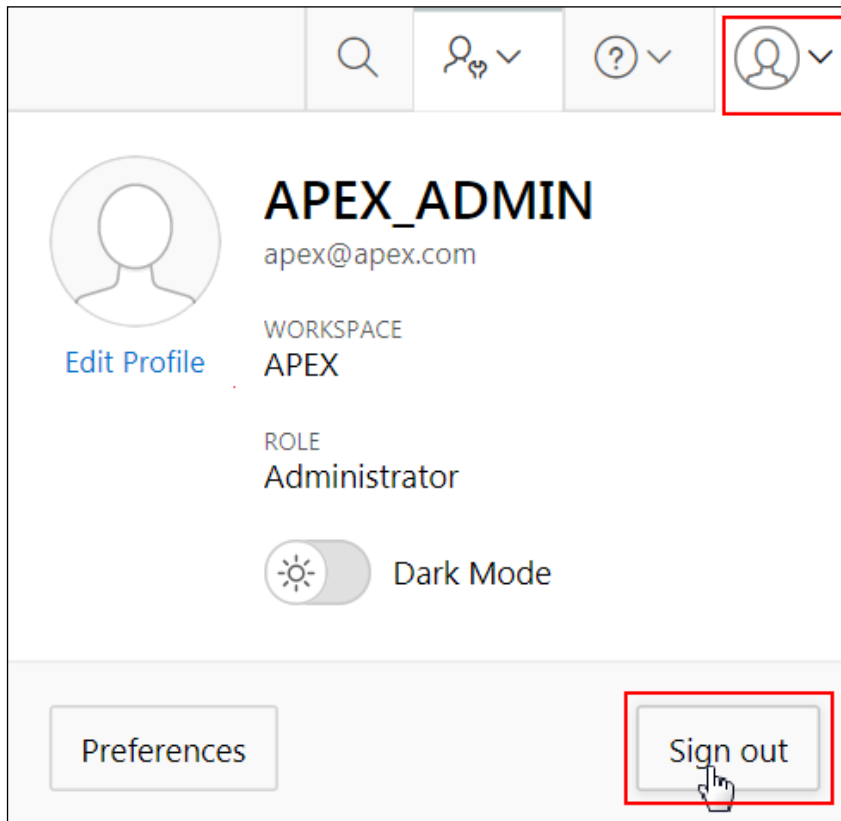
- f. In the Group Assignments section, click >> to assign the OAuth2 Client Developer, RESTful Services, and SQL Developer roles to the user.



- g. Go to the top of the page and click **Create User**. After the user is created, the message *User created* appears.



- h. Click the **Account Menu** icon  present in the top-right corner of the page and click **Sign out**.



You have successfully created a developer user by signing in to the Oracle Application Express workspace as a workspace administrator.

Solution 2-2: Using Oracle Application Express as a Developer

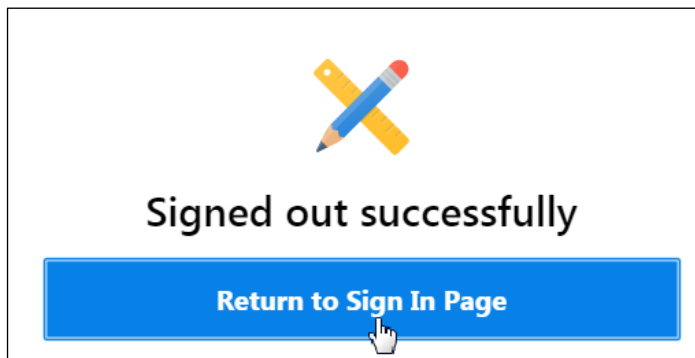
Overview

In this practice solution, steps are provided to:

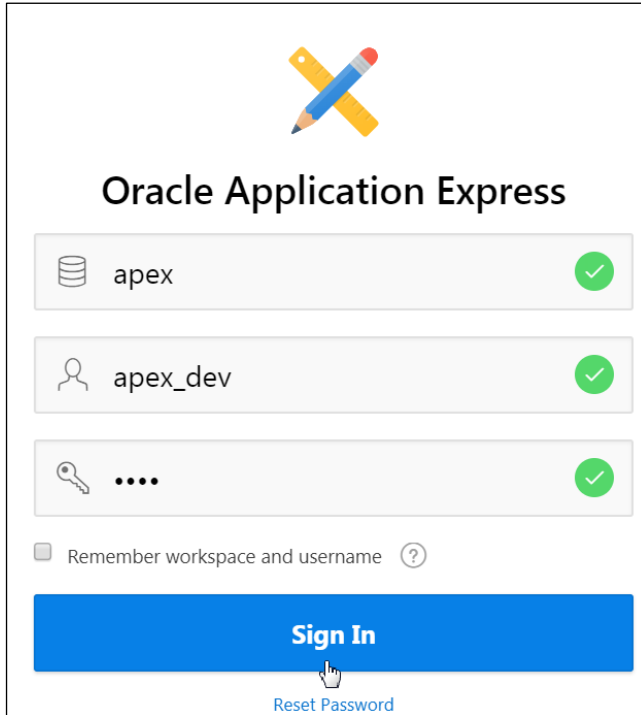
- Sign in to Oracle Application Express as a developer user
- Run the sample database application
- Install a packaged application and use it
- Remove the packaged application from the workspace

Steps

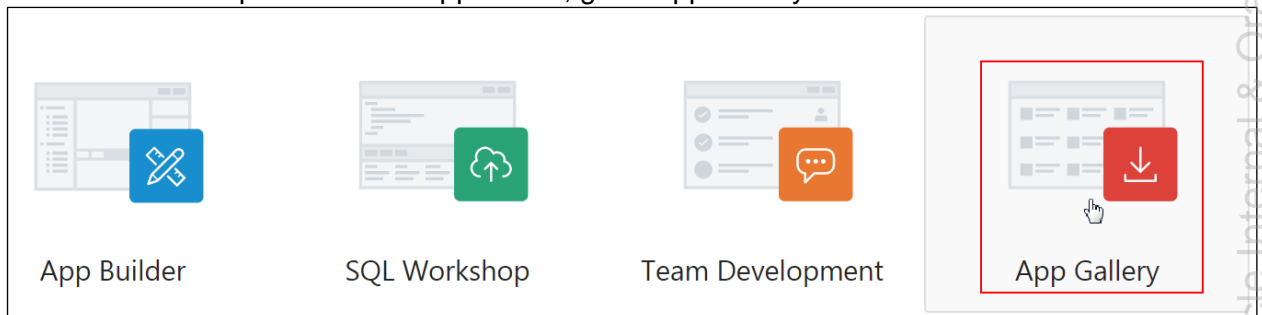
1. Sign in to Oracle Application Express with the following details:
 - **Workspace:** Enter `APEX`
 - **Username:** Enter `apex_dev`
 - **Password:** *<mentioned in the password document>*
- a. Click the **Return to Sign In Page** button.



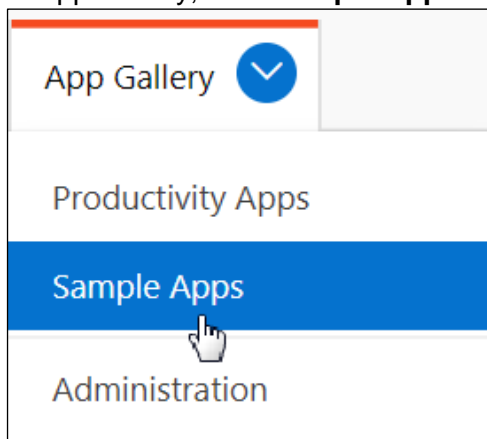
- b. Enter `apex` for **Workspace** and enter the `apex_dev` user credentials. Click **Sign In**.



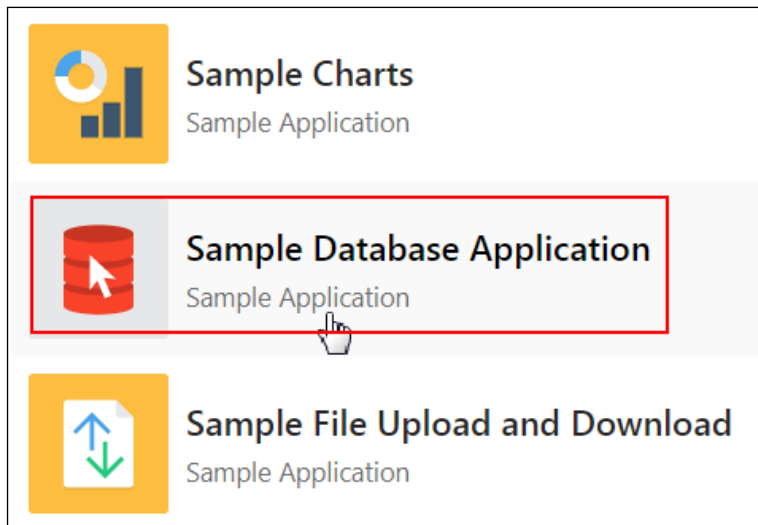
2. **Install and Run the Sample Database Application**, which is already available in your workspace.
- a. To install the Sample Database Application, go to App Gallery.



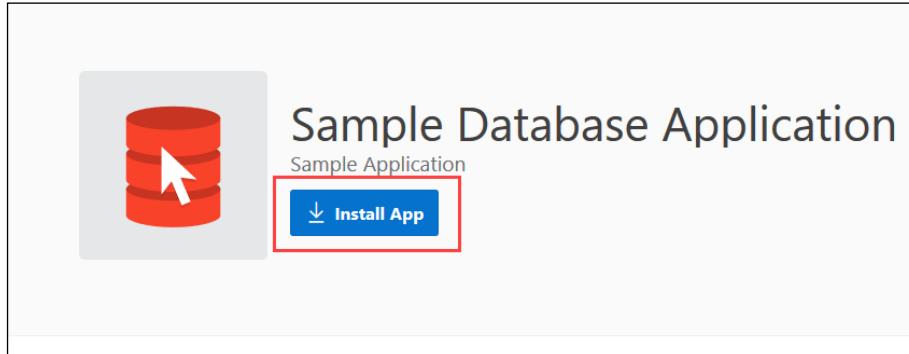
- b. In App Gallery, click **Sample Apps**.



- c. Under Sample, click **Sample Database Application**.



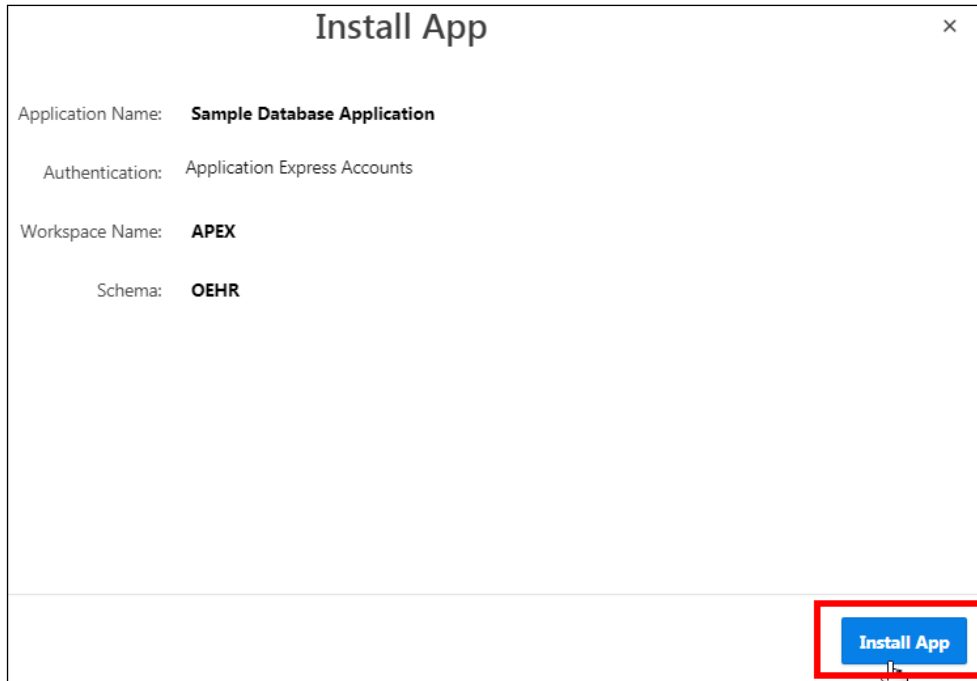
- d. Click **Install App**.



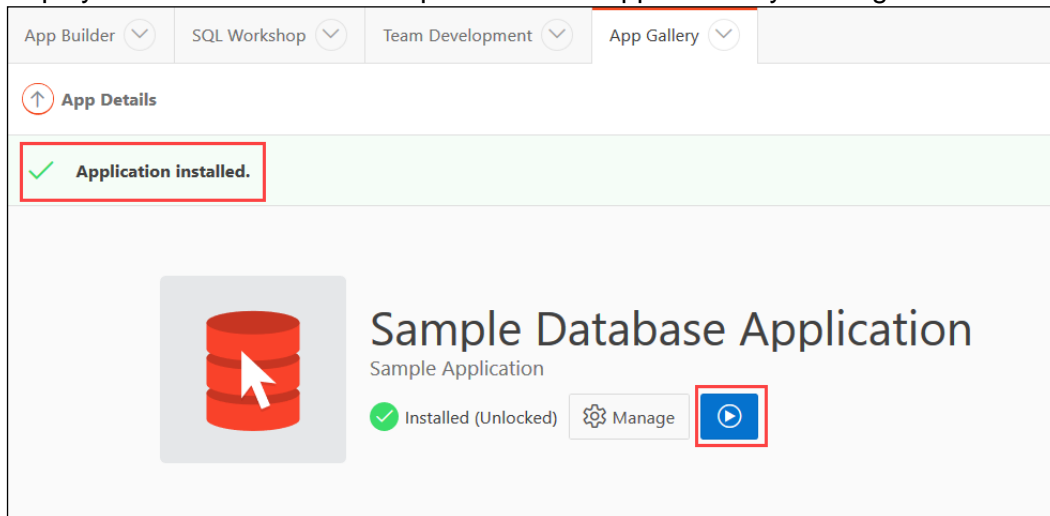
- e. In the Install App Wizard, ensure that, under **Authentication**, **Application Express Account** is selected. Click **Next >**.

The screenshot shows the 'Install App' wizard configuration screen. The title is 'Install App'. The 'Application Name' is 'Sample Database Application'. The 'Authentication' dropdown menu is highlighted with a red box and shows 'Application Express Accounts' selected. The 'Workspace Name' is 'APEX' and the 'Schema' is 'OEHR'.

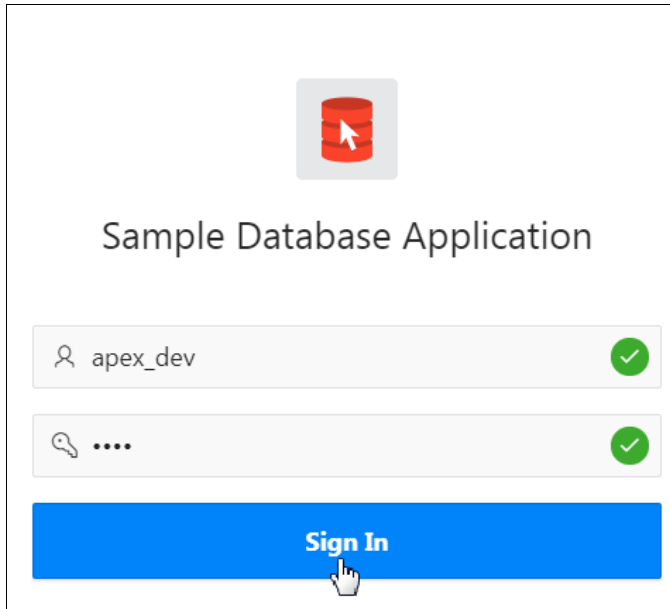
- f. Click **Install App**. The installation process begins.



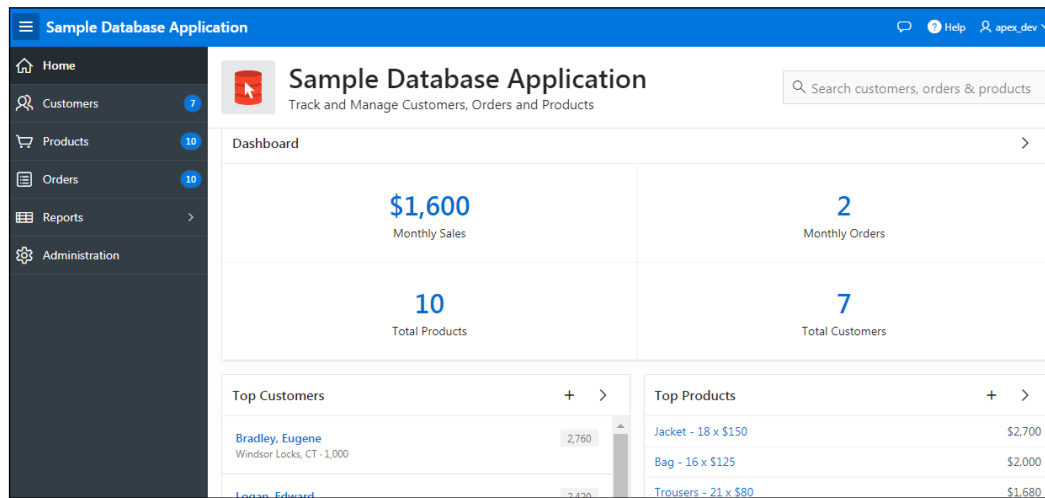
- g. After the installation is complete, the following message "Application installed" is displayed. You can run the Sample Database Application by clicking the Run icon.



- h. You are prompted to enter your login credentials to sign in to the application. Enter your Application Express Developer Username and Password and click **Sign In**.

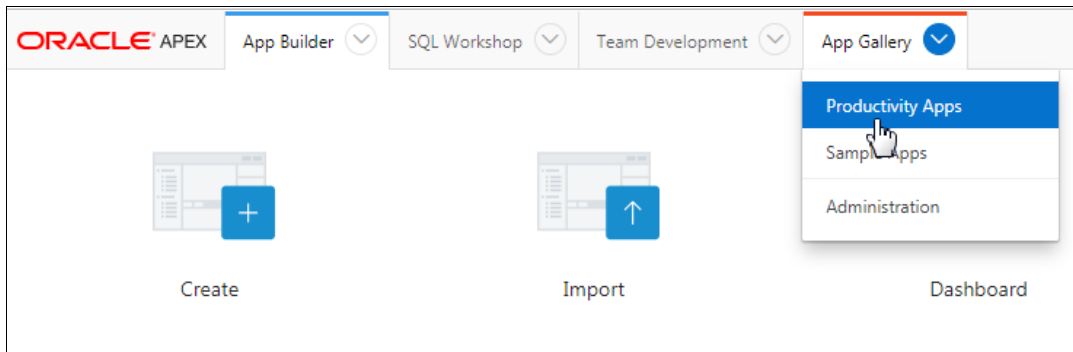


- i. The Sample Database Application opens. Click the various tabs and understand what the application does.

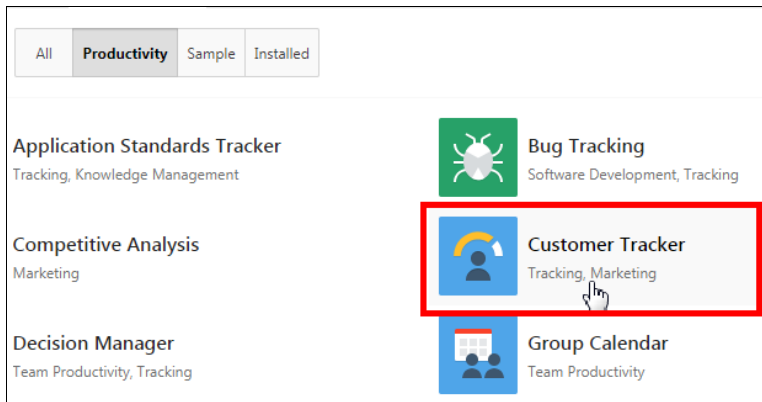


After you have explored the application, close the browser. You have successfully run the sample database application.

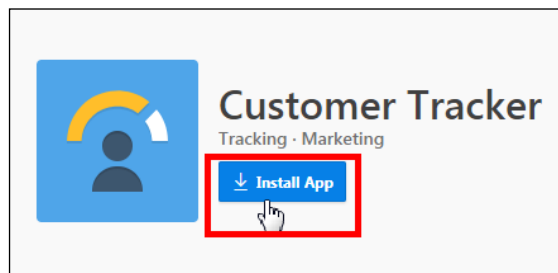
3. Install and use a packaged application. You install and use **Customer Tracker** available under packaged applications in your workspace.
- a. Click the arrow next to **App Gallery** in the navigation bar and select **Productivity Apps**.



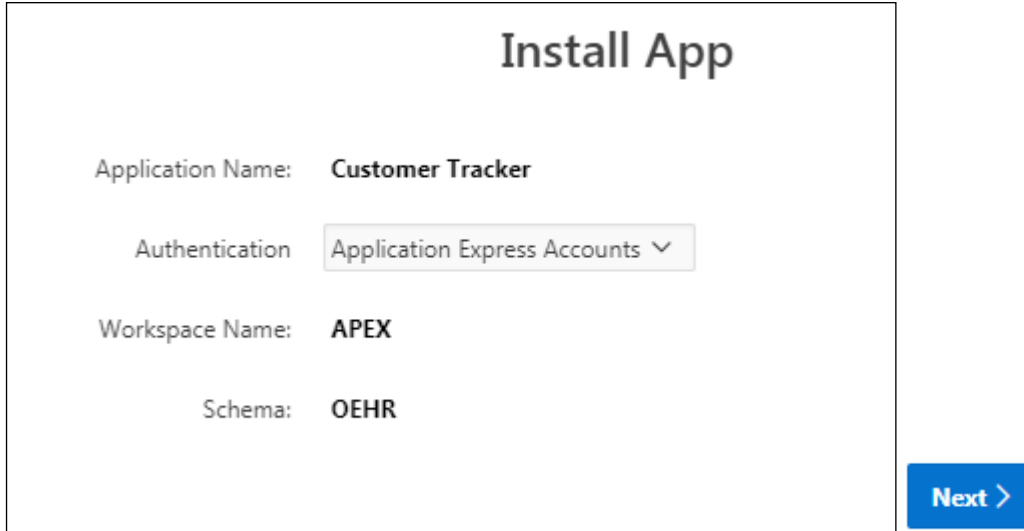
- b. You find a set of packaged applications that are available for you to install. In this activity, you install the Customer Tracker application. Click **Customer Tracker**.



- c. A description about the application is available. Read the description and **click Install Application**.



- d. Retain the default authentication and click **Next >**.



Install App

Application Name: **Customer Tracker**

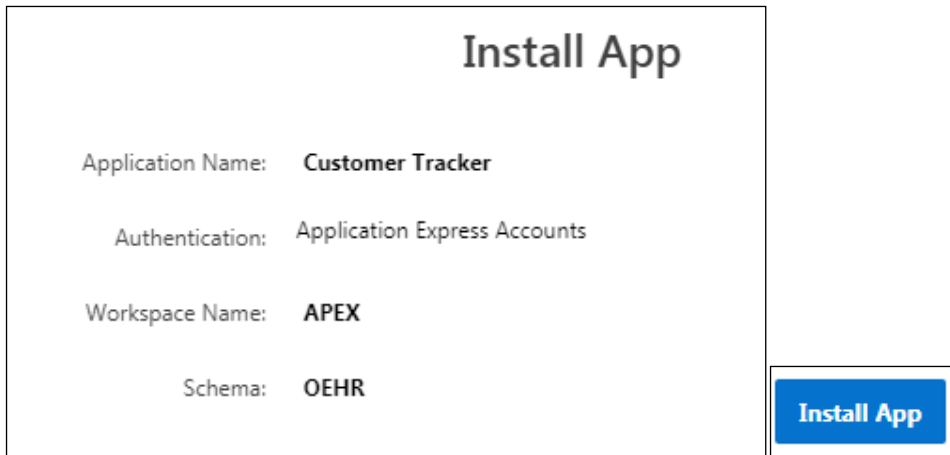
Authentication: Application Express Accounts ▾

Workspace Name: **APEX**

Schema: **OEHR**

Next >

- e. Click **Install App**.



Install App


Application Name: **Customer Tracker**

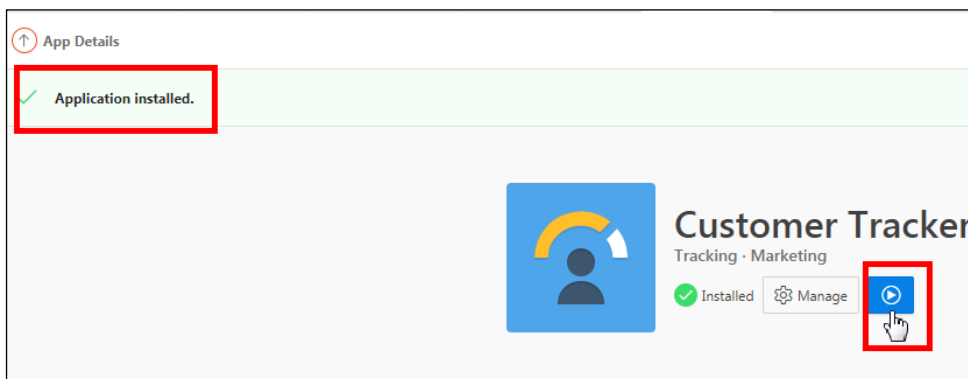
Authentication: Application Express Accounts

Workspace Name: **APEX**

Schema: **OEHR**


Install App



- f. After the application is installed successfully, click the **Run** icon .



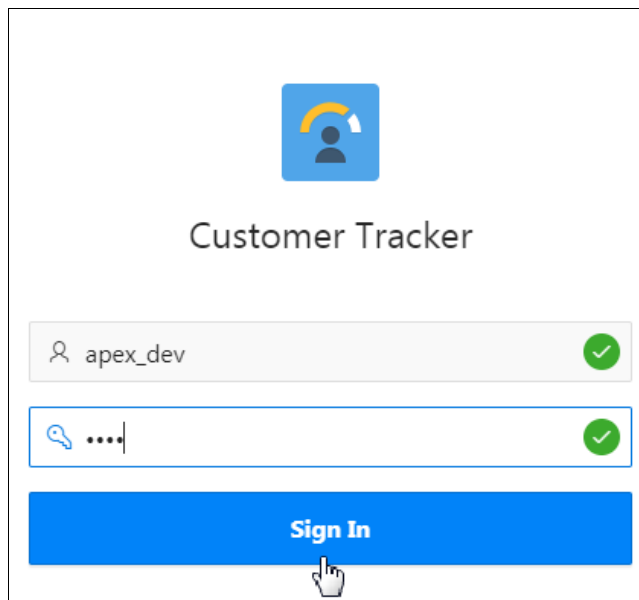
App Details

Application installed.

 **Customer Tracker**
Tracking · Marketing

Installed  Manage 

- g. Enter your login credentials to sign in to the application (if prompted) and click **Sign In**.



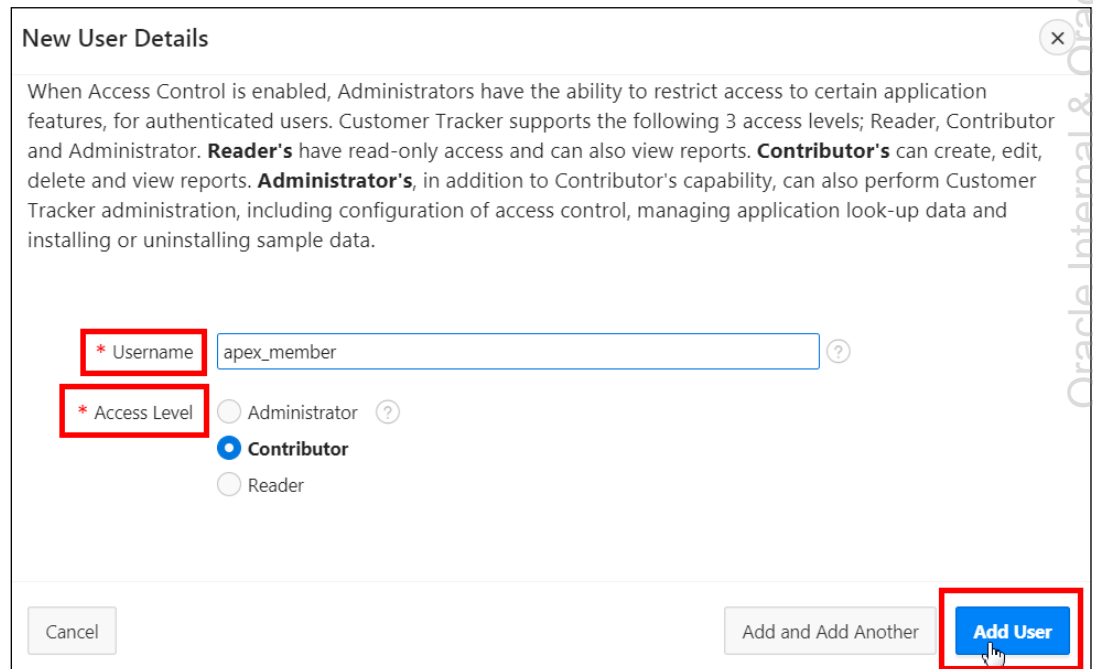
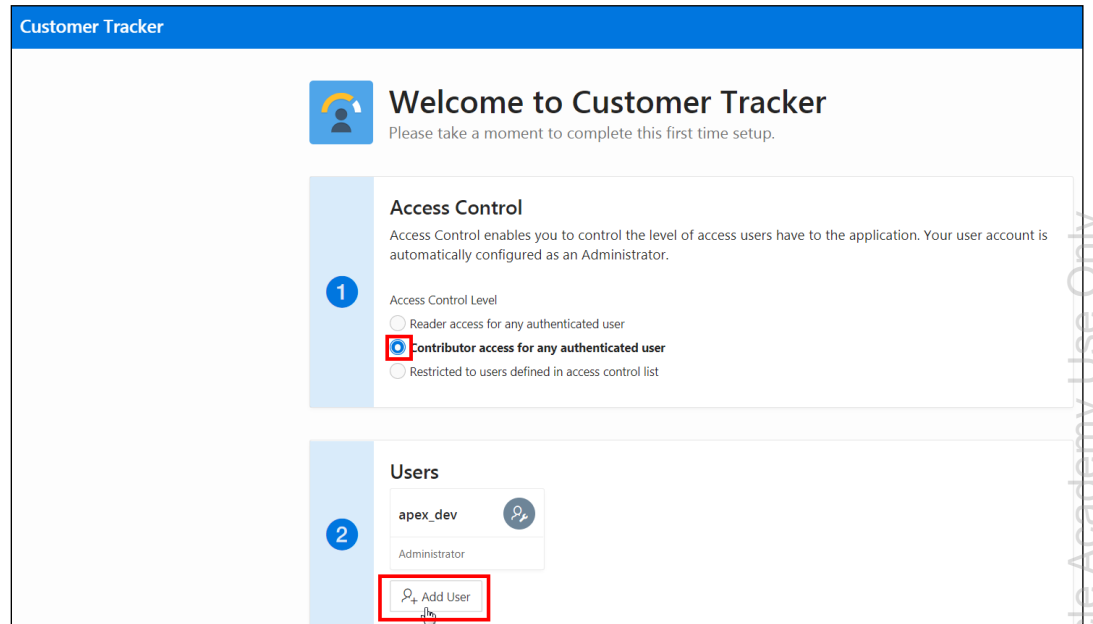
Customer Tracker

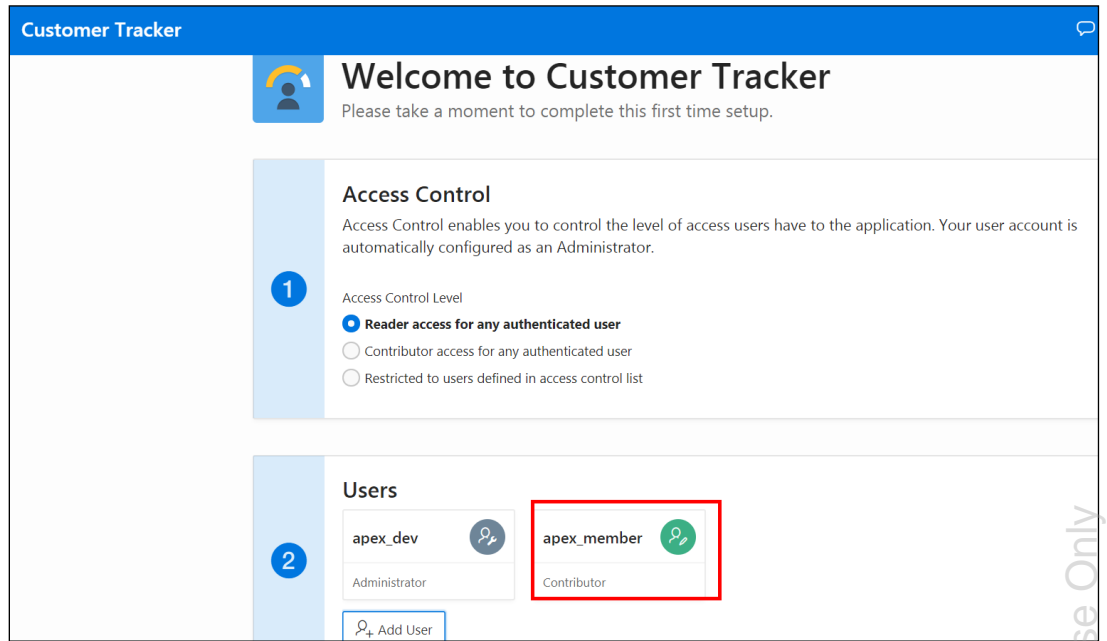
apex_dev ✓

... ✓

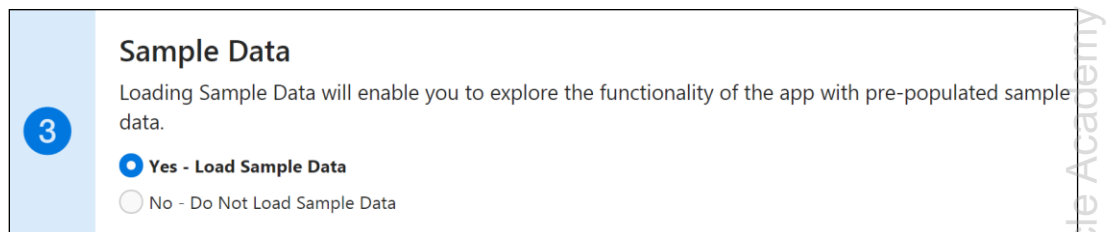
Sign In

- h. You are taken to the Welcome page of the application. You must do the first-time setup:
- i. Under Access Control, click **Contributor access for any authenticated user**.
 - ii. Under Users, click **Add User** to add a new user for Customer Tracker. In the screenshot below, you can see that apex_dev is added as an Administrator. In this practice, apex_member is added as a Contributor. To add more users, click **Add User**.

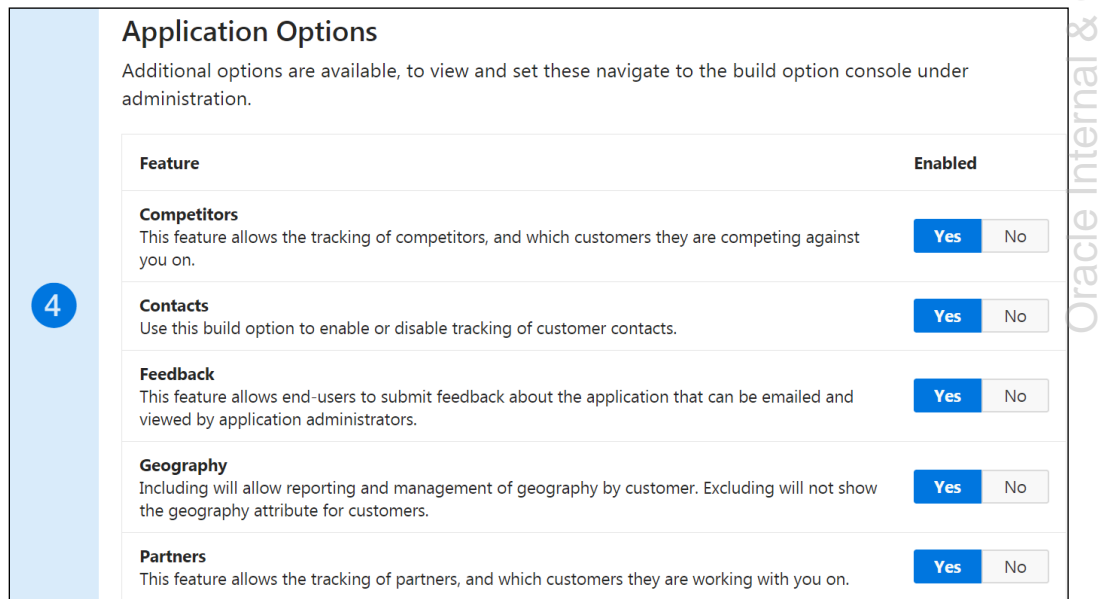




- iii. Under Sample Data, click **Yes – Load Sample Data**.



- iv. Under Application Options, select Yes to enable the following options: Competitors, Contacts, Feedback, Geography, and Partners.

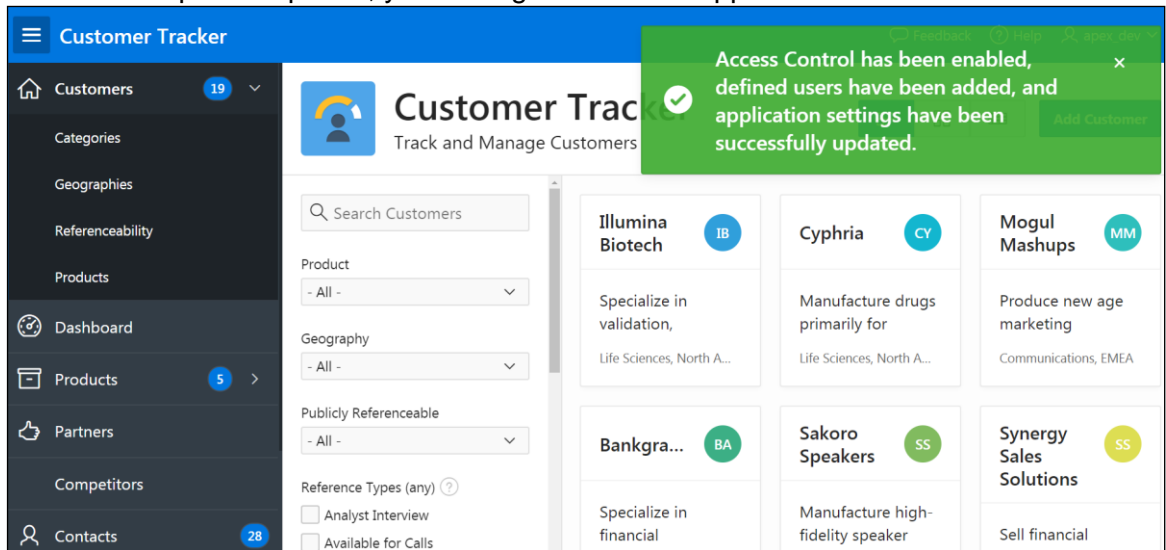





v. Click **Complete Set Up**.

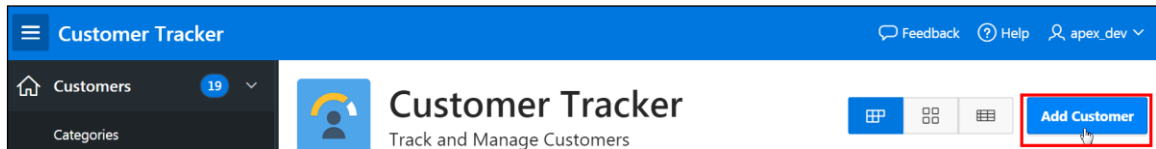
4	Competitors This feature allows the tracking of competitors, and which customers they are competing against you on.	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Contacts Use this build option to enable or disable tracking of customer contacts.	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Feedback This feature allows end-users to submit feedback about the application that can be emailed and viewed by application administrators.	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Geography Including will allow reporting and management of geography by customer. Excluding will not show the geography attribute for customers.	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Partners This feature allows the tracking of partners, and which customers they are working with you on.	<input type="checkbox"/> Yes <input type="checkbox"/> No

Complete Set Up ✓

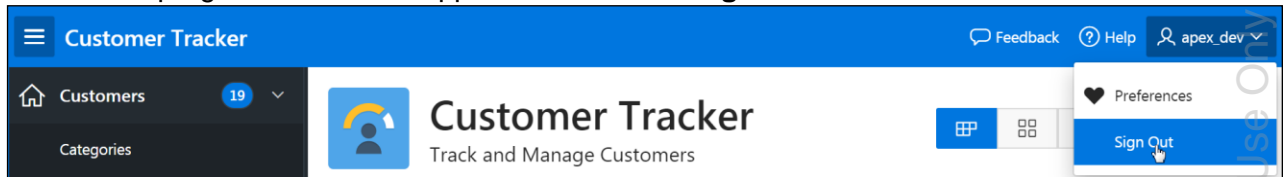
i. After the setup is completed, you are signed in to the application.



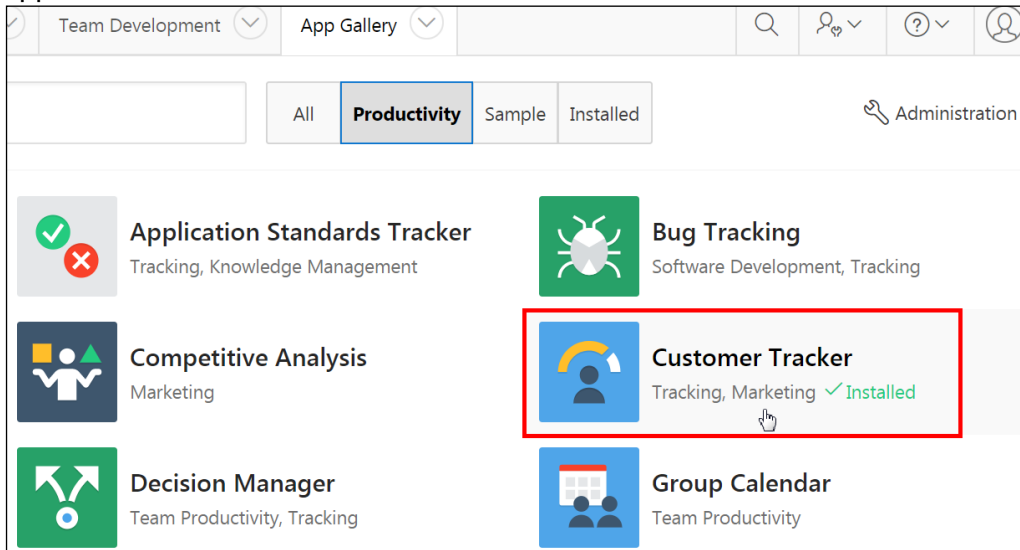
- j. Explore the Customer Tracker application. You can do the following:
- Click **Add Customer** to add new customers.
 - Click  to view the page in Card view.
 - Click  to view the page in Logo view.
 - Click  to view the page in Report view.



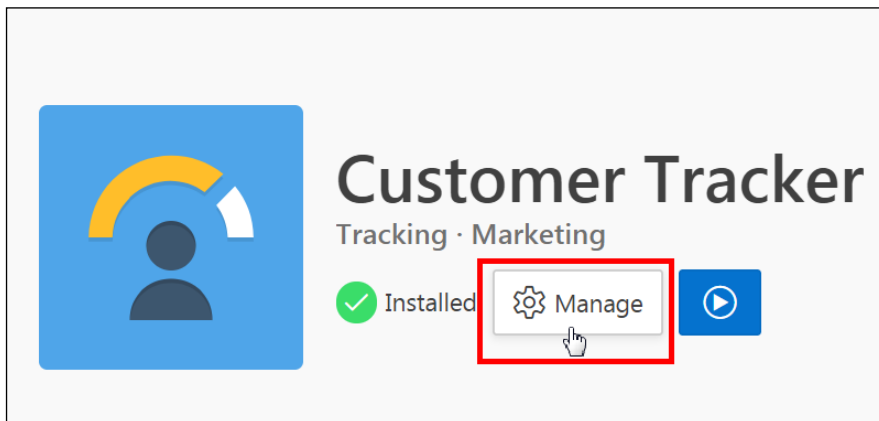
- k. Go to the top-right corner of the application and click **Sign Out**. Close the browser.



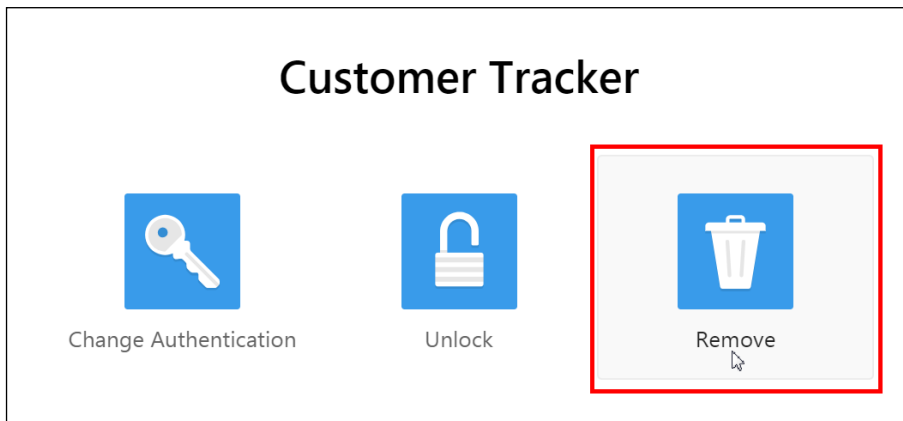
4. To remove the **Customer Tracker** packaged application from your workspace:
 - a. Go to App Gallery and then click **Productivity**. Click the **Customer Tracker** application.



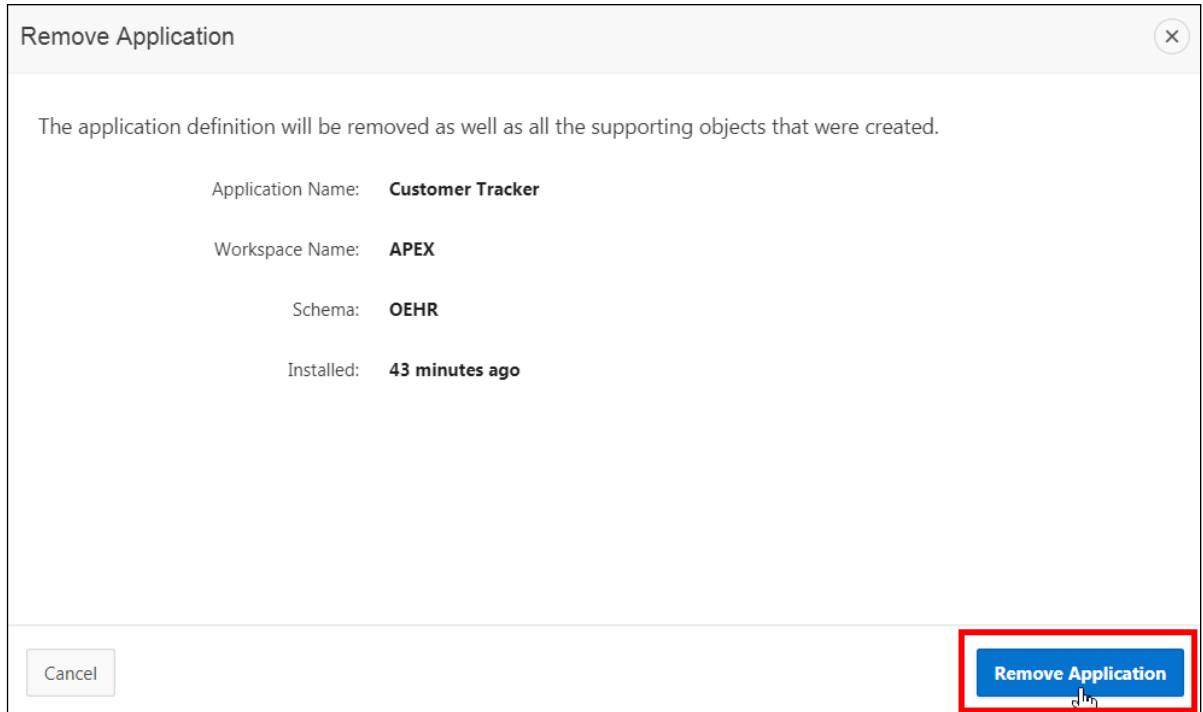
- b. On the Customer Tracker page, click **Manage**.



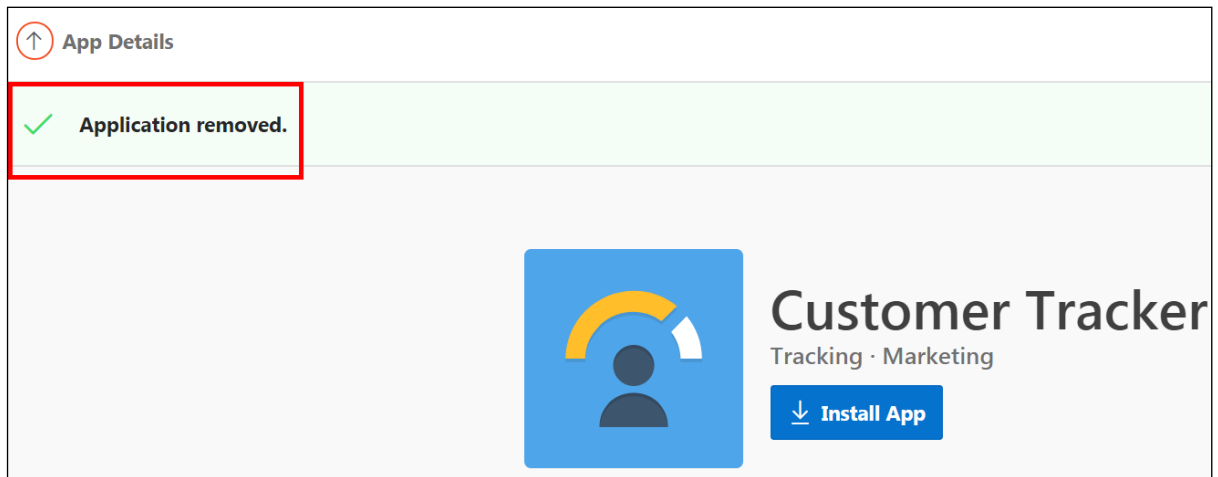
- c. Click **Remove**.



- d. Click **Remove Application** to confirm.



Wait until the application is removed completely. After the application is removed, the message "Application removed" is displayed.



Solution 2-3: Installing a Sample Dataset

Overview

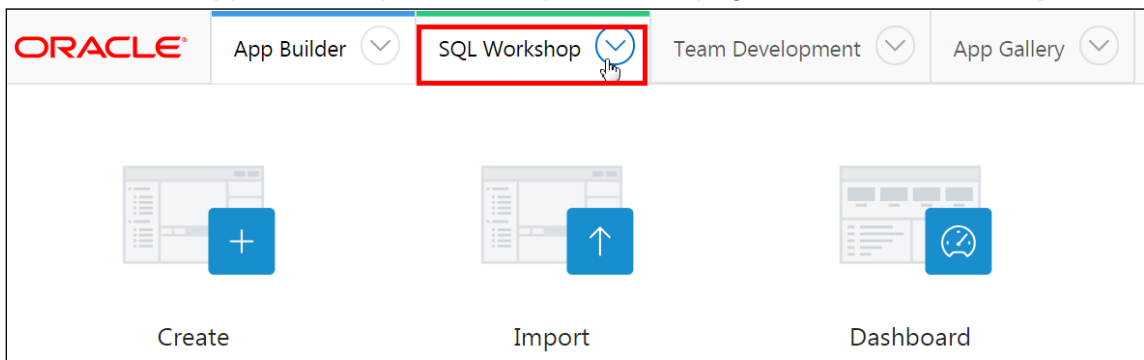
In this practice solution, steps are provided to:

- Sign in to Oracle Application Express as a developer user.
- Install the sample dataset `HR Data` in the `OEHR` schema.

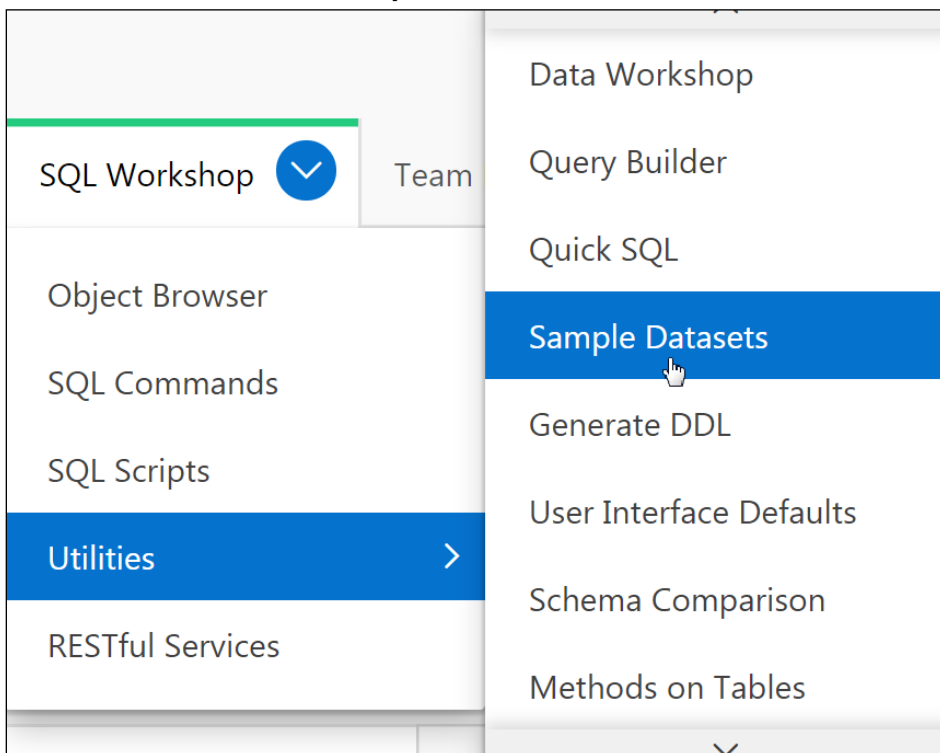
Steps

To install the sample dataset:

1. On the Oracle Application Express Workspace home page, click **SQL Workshop**.



2. Select **Utilities** and click **Sample Datasets**.



3. On the Sample Datasets page, find the dataset **HR Data** and click **Install**. If the sample dataset is already installed, click **Update**.

Sample Datasets			
Action	Name	Languages	Description
<input type="button" value="Install"/>	Project Data	English	A collection of projects, milestones, tasks, and more. This dataset includes master-detail-detail relationships and a useful view for charting.
<input type="button" value="Install"/>	EMP / DEPT	English, Chinese, Czech, French, German, Japanese, Korean, Polish, Russian, Spanish	The generic EMP and DEPT tables.
<input type="button" value="Install"/>	HR Data	English	The generic HR tables commonly used by Oracle Education.
<input type="button" value="Install"/>	Tasks Spreadsheet	English	A single table with unnormalized data containing tasks, dates, status, assigned to, cost, and budget.

4. On the Manage Sample Datasets page, select options for for:
 - a. **Language:** Select `English`
Schema: Select your schema `OEHR`.
 - b. Click **Next**. The Load Sample Dataset page opens, displaying the database object that will be installed.

Manage Sample Dataset ✕

Dataset **SAMPLE_DS.OEHR**

Description **SAMPLE_DS.OEHR.DESC**

Change History **Installed during Application Express installation.**

Dataset Last Updated **08-APR-2019**

Table Prefix **OEHR**

Install Dataset

Language English

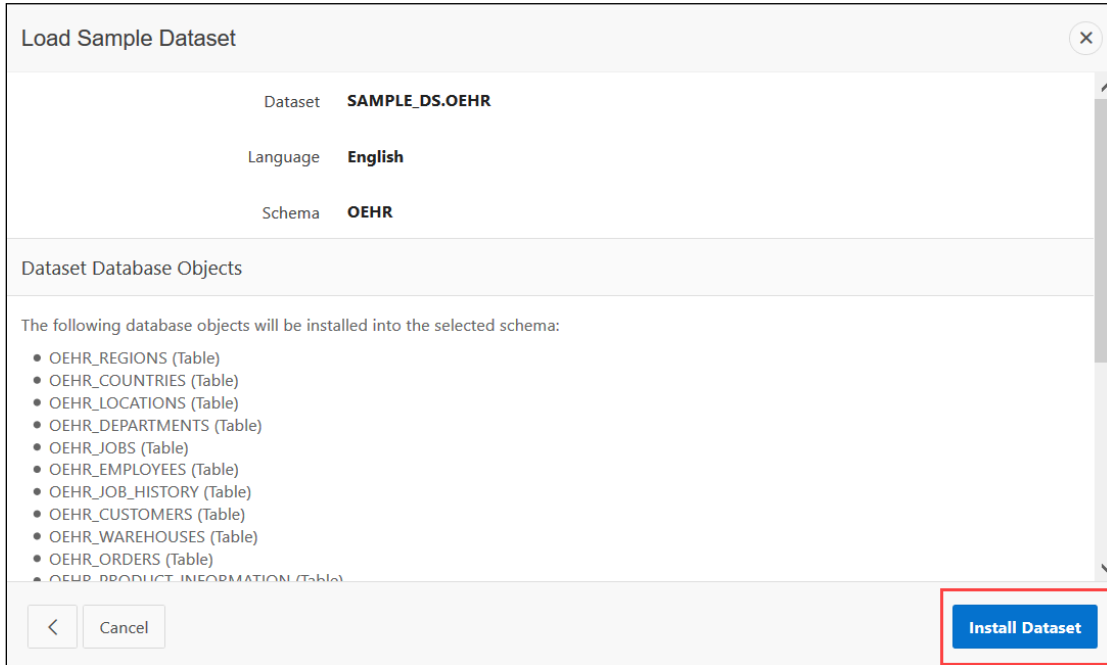
Schema OEHR

APEX

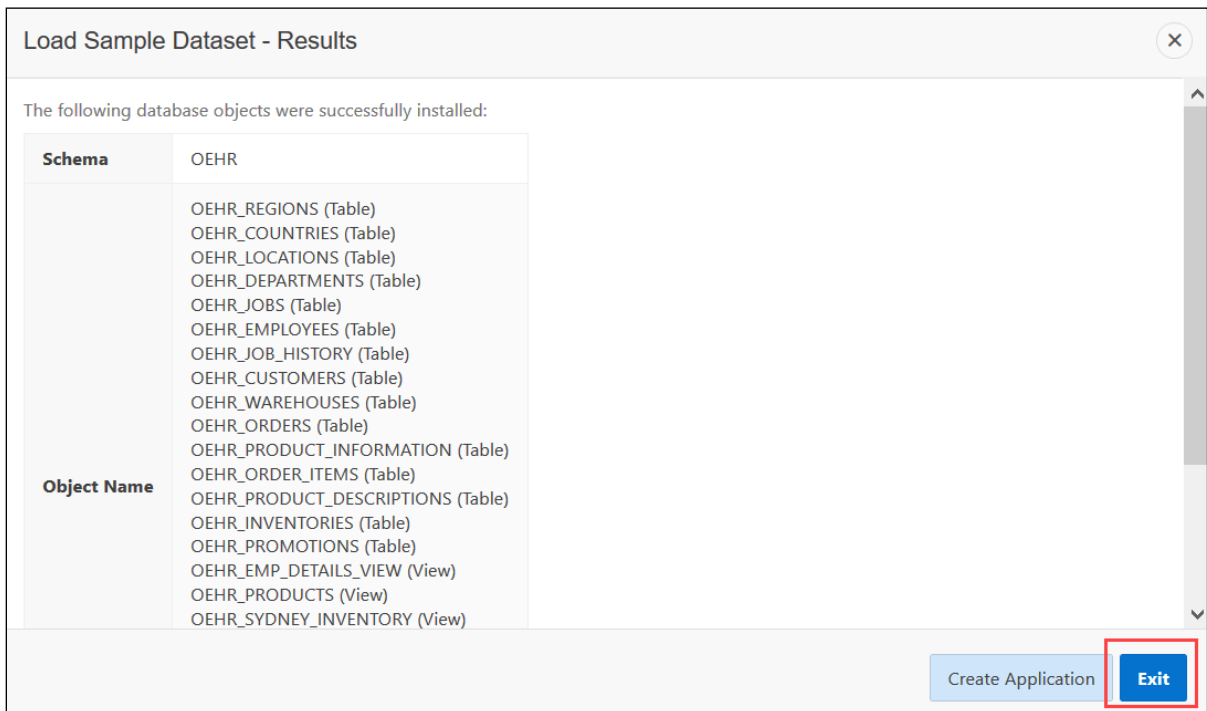
OEHR

PTS

5. Click **Install Dataset**.



6. The Load Sample Dataset - Results page appears. At this point, you can create an application or exit. Click **Exit**.



The Sample Dataset page displays again. This completes the task of loading Project Data sample dataset.

Note: The Action column now displays Update instead of Install.

Tip: You can click **Update** to refresh a sample dataset or remove it.

**Practices for Lesson 3:
Creating a Database
Application**

Practices for Lesson 3: Overview

Overview

In these practices, you create a database application. You also create a database application by using a spreadsheet.

Practice 3-1: Creating Database Applications

Overview

In this practice, you create GlobalMart Management Tool (GMT).

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Create a database application named **GlobalMart Management Tool**. The **Application ID** entered here is **111**; In the rest of the practices in this course, you will enhance and complete this application by creating pages, regions, processes, and so on.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_admin** user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the **apex_dev** user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 3-1**.

Practice 3-2: Creating a Database Application from a File

Overview

In this practice, you create a database application from a file.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Create a database application from a file. You create an application named **Tasks** based on the `tasks.txt` file available in the `/home/oracle/labs/labs/` folder. The file has tab-delimited information, and the first row contains the column names. Name the table, where the data from the file is uploaded, **Tasks**.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 3-2**.

If you haven't completed **Practice 3-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_03_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

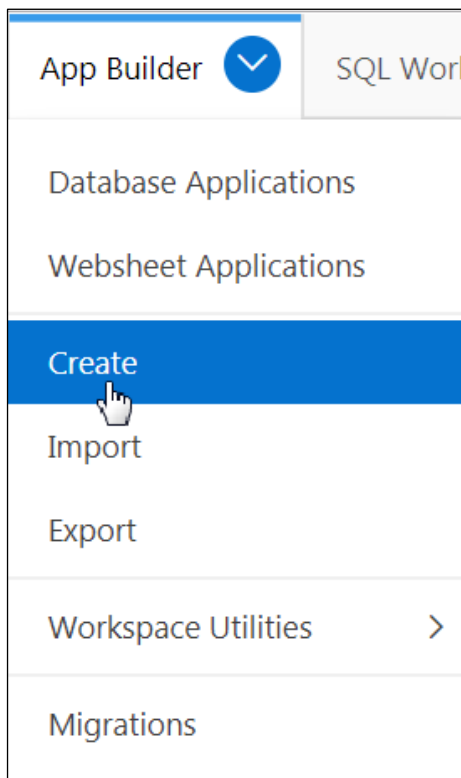
Solution 3-1: Creating Database Applications

Overview

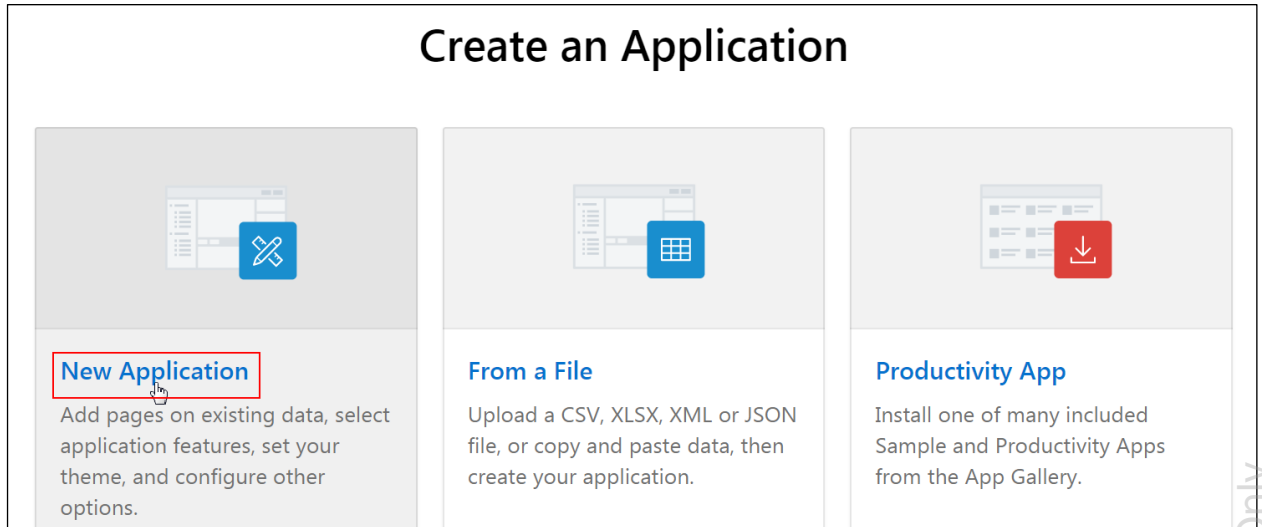
In this practice solution, steps are provided for creating the GlobalMart Management Tool application.

Steps


1. Create a database application named **GlobalMart Management Tool**. In the rest of the practices in this course, you will enhance and complete this application by creating pages, regions, processes, and so on.
 - a. Select the **App Builder** pull-down menu and click **Create**.

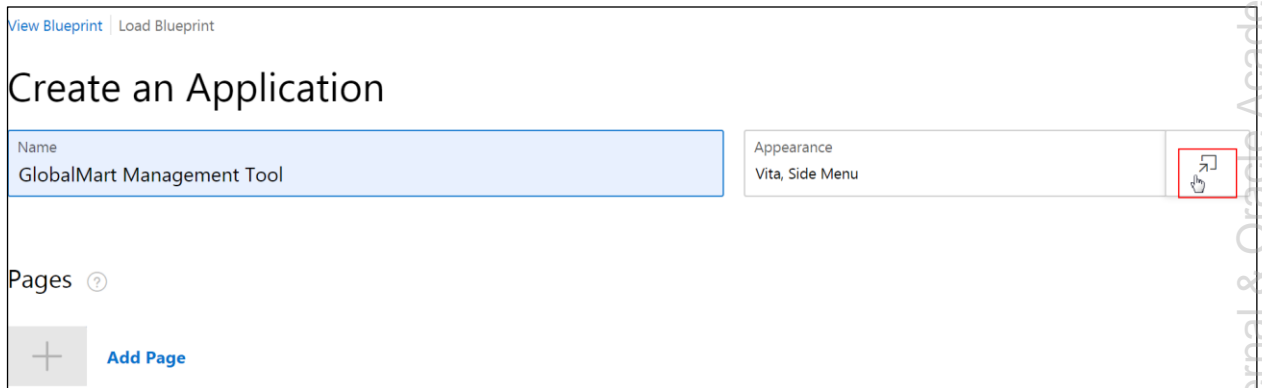


- b. In the Create Application Wizard, click **New Application**.



- c. In the *Create an Application* Wizard, enter the following:

- **Name:** Enter GlobalMart Management Tool.
- Click **Set Appearance**  to customize the appearance of the application.



- d. Scroll down the Create App Wizard page and enter the following under **Settings**:

- In the **Application ID** field, enter 111.
- In the **Schema** field, select OEHR.
 - **Note:** Throughout the course, the application ID remains 111.

- Click **Create Application**.

Settings ?

Application ID: 111

Schema: OEHR

Authentication: Application Express Accounts

Language: English (en)

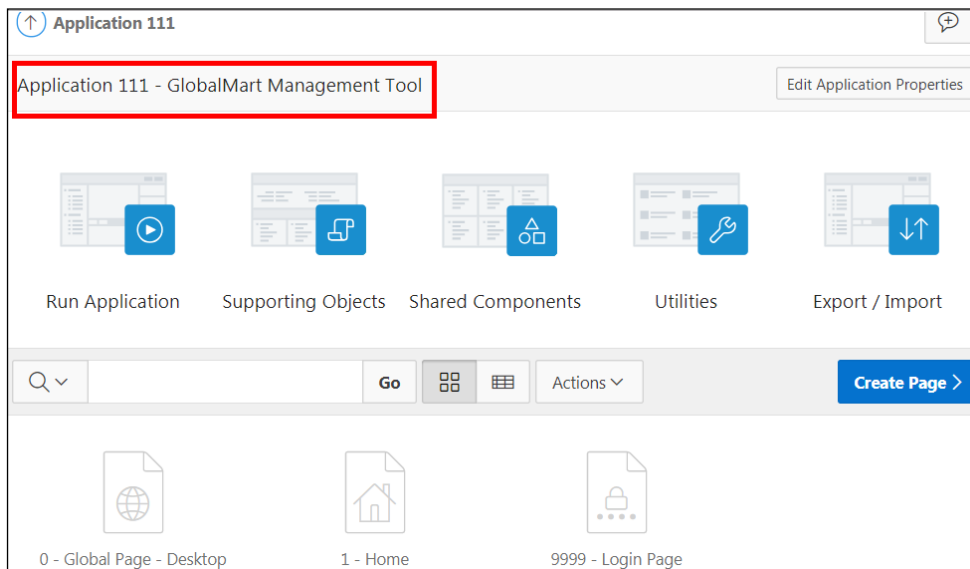
Advanced Settings

User Interface Defaults

Cancel

Create Application

- e. The *GlobalMart Management Tool* application is created. By default, the following three pages are created:
- Global Page – 0 – Global Page – Desktop
 - Home page – 1 - Home
 - Login page – 9999 – Login page



Solution 3-2: Creating a Database Application from a File

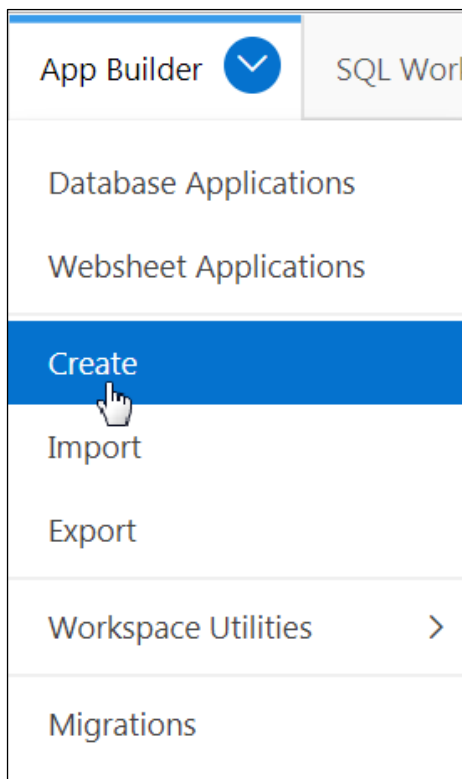
Overview

In this practice solution, steps are provided for creating a database application from a file.

Note: Practice 3-2 is an optional practice and does not have a solution script.




Steps

1. Create a database application from a file. You create an application named **Tasks** based on the `tasks.txt` file available in the `/home/oracle/labs/labs/` folder. The file has tab-delimited information and the first row contains the column names. Name the table, where the data from the file is uploaded, **Tasks**.
 - a. Select the **App Builder** pull-down menu and click **Create**.

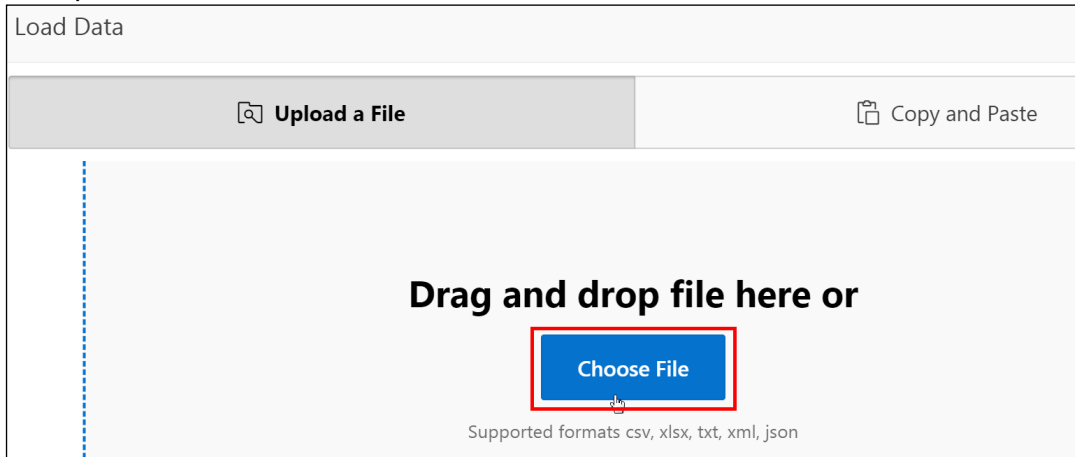


- b. In the Create Application Wizard, click **From a File**.

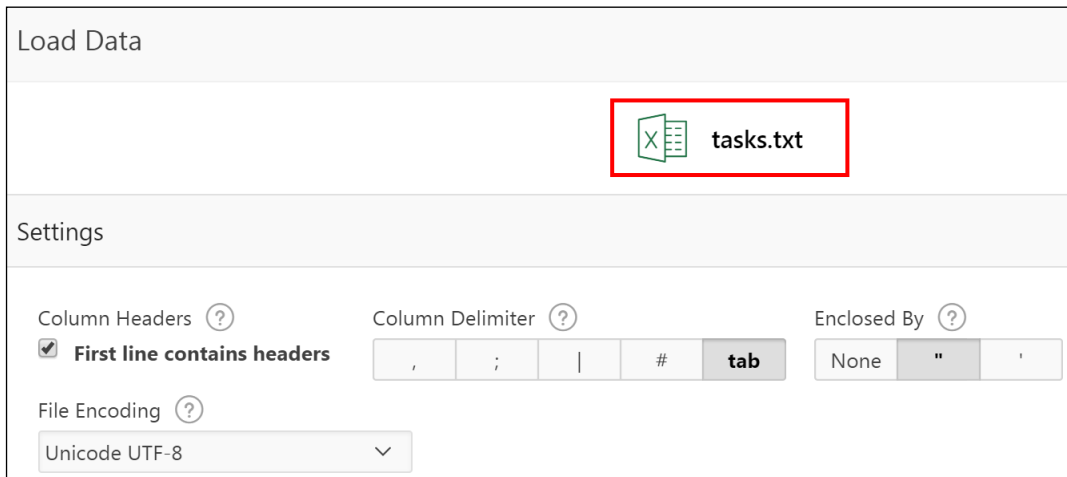
Create an Application

		
<p>New Application</p> <p>Add pages on existing data, select application features, set your theme, and configure other options.</p>	<p>From a File</p> <p>Upload a CSV, XLSX, XML or JSON file, or copy and paste data, then create your application.</p>	<p>Productivity App</p> <p>Install one of many included Sample and Productivity Apps from the App Gallery.</p>

- c. The Load Data page opens. You can either upload a file or copy and paste a file. Here we select **Upload a File** tab. You can either drag and drop file or select the Choose File option. Here we click **Choose File**.



- d. Select **tasks.txt** file from the `/home/oracle/labs/labs/` folder. The Load Data page opens with a preview. Click **Load Data**.



The Load Data page opens with a preview of rows and columns.

Preview

Info Parsed first 81 rows to sample the column types. The preview below only displays the first 8 columns and 5 rows. To view the full preview, configure data load settings, and set which columns to load, please click **Configure** button. [Configure](#)

1	PROJECT	TASK_NAME	START_DATE	END_DATE	STATUS	ASSIGNED_TO	COST	BUDGET
2	Maintain Support Systems	HR software upgrades	1-Jan-10	27-Feb-10	Closed	Pam King	8000	7000
3	Maintain Support Systems	Apply Billing System updates	1-Jan-10	28-Feb-10	closed	Russ Sanders	5000	7000

e. Enter the following details under Load to Table and click **Load Data**:

- Table Owner: Select OEHR
- In the **Table Name** field, enter DEMO_ORDER_TYPE .
- The **Error Table Name** field gets populated by default as DEMO_ORDER_TYPE_ERR\$.

The screenshot shows the 'Load to Table' dialog box. The title bar is 'Load to Table'. The fields are: Table Owner (OEHR), Table Name (DEMO_ORDER_TYPE), Error Table Name (DEMO_ORDER_TYPE_ERR\$), Primary Keys (SYS_GUID, Identity Column), and Use Column Data Types (checked). The 'Load Data' button is highlighted with a red box.

You get the message DEMO_ORDER_TYPE created with 80 rows. Click **Continue to Create Application Wizard**.

The screenshot shows a success message dialog box. It features a large green checkmark at the top. Below it, the text reads 'Table DEMO_ORDER_TYPE created with 80 rows!'. At the bottom, there are two buttons: 'View Table' and 'Continue to Create Application Wizard', with the latter highlighted by a red box.

- The Create Application page appears. You can now start creating your application. In the Create App Wizard, ensure that Application Name is **TASKS**.

View Blueprint | Load Blueprint

Create an Application

Name
Tasks

Appearance
Vita, Side Menu

Pages ?

+ Add Page

- Click **Create Application**.

Settings ?

Application ID
109

Schema
OEHR

Authentication
Application Express Accounts

Language
English (en)

Advanced Settings

User Interface Defaults

Cancel

Create Application

- To view the application, click **Run Application**.

Application 109 - Tasks

Edit Application Properties

Run Application

Supporting Objects

Shared Components

Utilities

Export / Import

0 - Global Page - Desktop

1 - Home

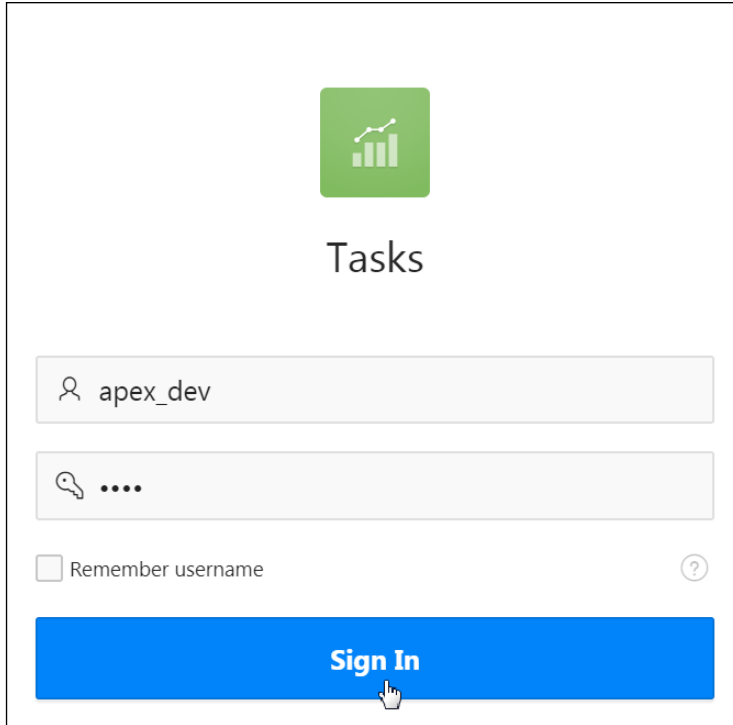
2 - Order Type

3 - Order Type

4 - Dashboard

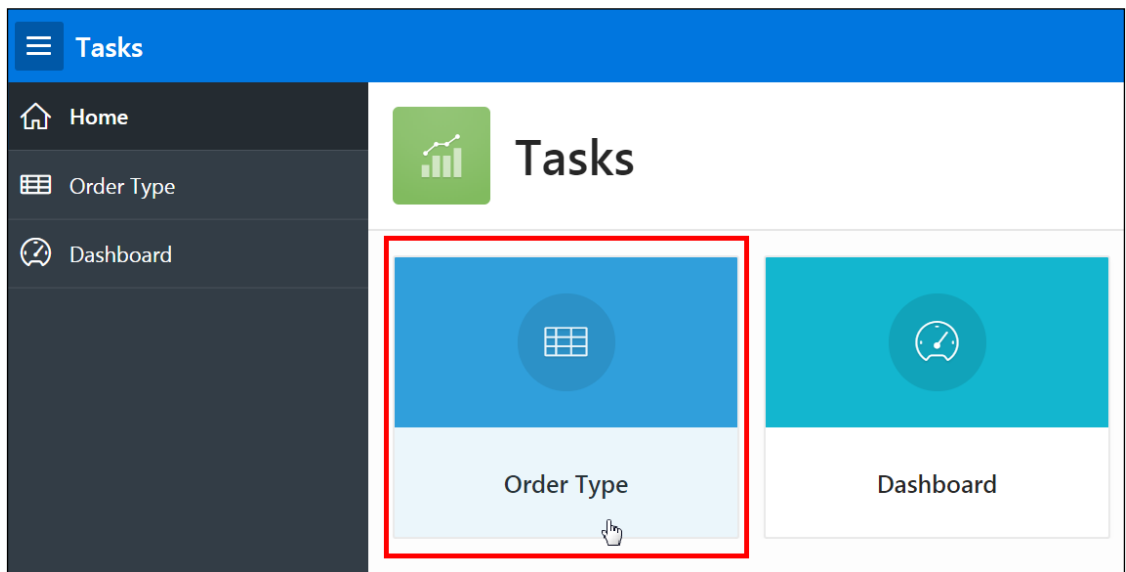
9999 - Login Page

- a. Enter the developer user credentials and click **Sign in**.



The screenshot shows the login page for the 'Tasks' application. At the top center is a green square icon with a white bar chart. Below the icon is the word 'Tasks' in a large, dark font. There are two input fields: the first contains the username 'apex_dev' and has a person icon on the left; the second contains masked characters '....' and has a key icon on the left. Below the second field is a checkbox labeled 'Remember username' and a question mark icon. At the bottom is a large blue button with the text 'Sign In' in white. A mouse cursor is pointing at the 'Sign In' button.

- b. The home page of the **TASKS** application is displayed. Click the **Order Type**. It displays an interactive report by using the data from the file (*tasks.txt*). Click **Home** on the Developer toolbar to return to the development environment.



Tasks apex_dev

Home
Order Type
Dashboard

Order Type

	Project ↑	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget
	1000	-	-	-	-	-	-	-
	APEX Environment Configuration	Run installation	28-FEB-10	01-MAR-10	Pending	John Watson	100	100
	APEX Environment Configuration	Integrate authentication schemes	01-MAR-10	05-MAR-10	Pending	Scott Spencer	250	500

Oracle Internal & Oracle Academy Use Only

Practices for Lesson 4: Working with Reports

Practices for Lesson 4: Overview

Overview

In these practices, you create Classic reports and two reports optimized for Smartphones, a Column Toggle report and a List View report.

Practice 4-1: Creating Classic Reports

Overview

In this practice, you create a:

- Classic report for GMT application (called Top Tier Salary) by using a SQL query
- Classic report (called Customer Address List) for GMT application by selecting a table

Assumptions

You have completed the previous practices.

Note: If you have not completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On a new page in the GMT application, create a Classic report by using a SQL query. Name the new page and the report **Top Tier Salary**. The report should display the last name, email, and salary of employees who earn between \$5000 and \$12000 from the `OEHR_EMPLOYEES` table.
2. On a new page in the GMT application, create a Classic report by using the source type as Table. Name the page and the report **Customer Address List**. The report should display the address information of the customers, such as the first and last names, address, city, and state from the `OEHR_CUSTOMERS` table.
3. Modify the Customer Address List report with the following requirements:
 - Rename the report region Customer Address List. Then change the report headings for `CUST_FIRST_NAME` and `CUST_LAST_NAME` to `First Name` and `Last Name`, respectively.
 - Change the Pagination to **Row Ranges X to Y of Z (with pagination)**.
 - Review the query definition and add the `COUNTRIES.COUNTRY_NAME` column to the report.

Hint: You will need to create a join.

Catch Up

If you have not completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 4-1**.

If you have not completed **Practice 3-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **App Builder** and select **Import**.
- c. For Import File, click the button and browse to the `sol_03_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- d. Click **Next**.
- e. For Install As Application, select **Reuse Application ID 111 From Export File** and click **Install Application**.
- f. Click **Replace Application** (if prompted).
- g. Wait for the application to successfully install.

Practice 4-2: Creating a Column Toggle Report

Overview

In this practice, you create a new page containing a Column Toggle report for the GMT application. Column Toggle reports feature a responsive report optimized for mobile applications and Smartphones. You will deselect a few columns to hide them in the report. Then you will select those columns again to show them in the report.

Assumptions

You have completed the previous practices.

Note: If you have not completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On a new page in the GMT application, create a **Column Toggle Report**. Enter `Product Information` as the Page Name. Change the Page Number to 202. The report should select all the columns from the `OEHR_PRODUCT_INFORMATION` table.
 - After the page is created, run the page to view the Product Information report with all the columns from `OEHR_PRODUCT_INFORMATION` displayed. Check out the responsive nature of the report.
 - Using the Columns option in the report, hide the columns Product Description, Category ID, and Supplier ID from the report.

Catch Up

If you have not completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 4-2**.

If you have not completed **Practice 4-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **App Builder** and select **Import**.
- c. For Import File, click the button and browse to the `sol_04_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- d. Click **Next**.
- e. For Install As Application, select **Reuse Application ID 111 From Export File** and click **Install Application**.
- f. Click **Replace Application** (if prompted).
- g. Wait for the application to successfully install.

Practice 4-3: Adding and Modifying a List View Report

Overview

In this practice, you create a list of employees by creating a List View report. List View reports feature a responsive design to display data and provide easy navigation on Smartphones.

Assumptions

You have completed the previous practices.

Note: If you have not completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On a new page in the GMT application, create a **List View report**. Enter `Employee List` as the Page Name. Change the Page Number to **201**. The list view should select all the columns from the `OEHR_EMPLOYEES` table and should display the last names as the text column. The list view should also be enabled to search the last name column with the Search Type **Like & Ignore Case**.

Catch Up

If you have not completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 4-3**.

If you have not completed **Practice 4-2**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **App Builder** and select **Import**.
- c. For Import File, click the button and browse to the `sol_04_02.sql` file in the `/home/oracle/labs/solutions` directory and then click **Next**.
- d. Click **Next**.
- e. For Install As Application, select **Reuse Application ID 111 From Export File** and click **Install Application**.
- f. Click **Replace Application** (if prompted).

- g. Wait for the application to successfully install.

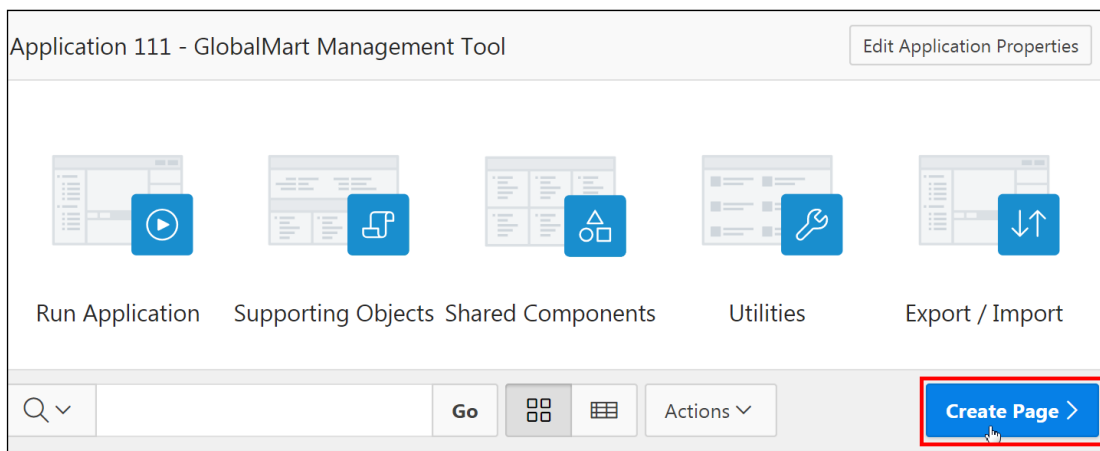
Solution 4-1: Creating Classic Reports

Overview

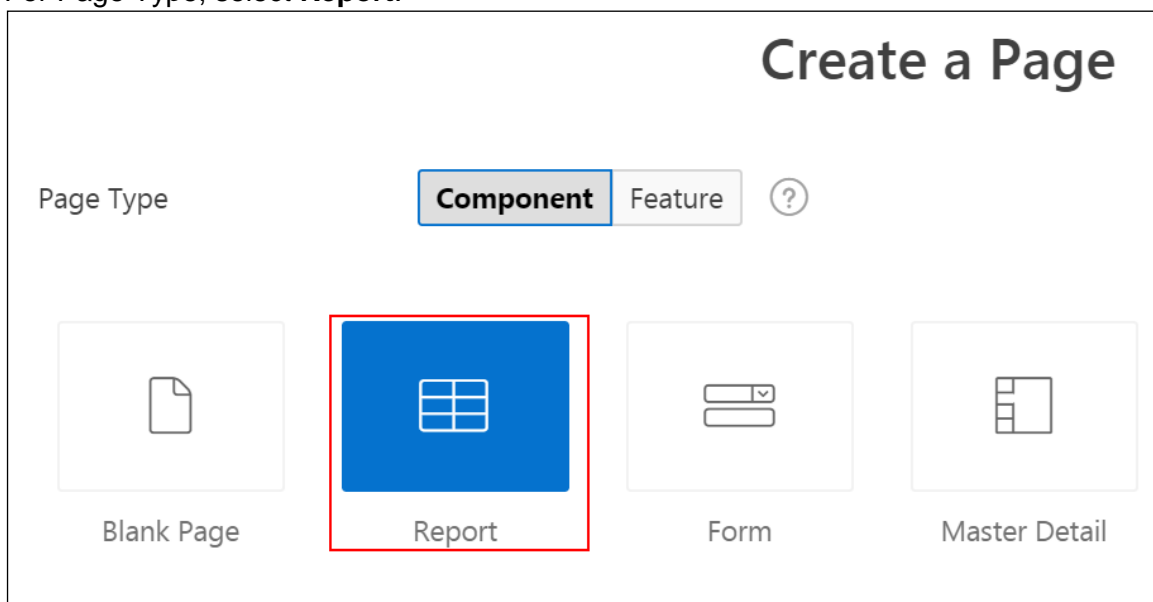
In this practice solution, you create Classic reports for the GlobalMart Management Tool (GMT) application.

Steps

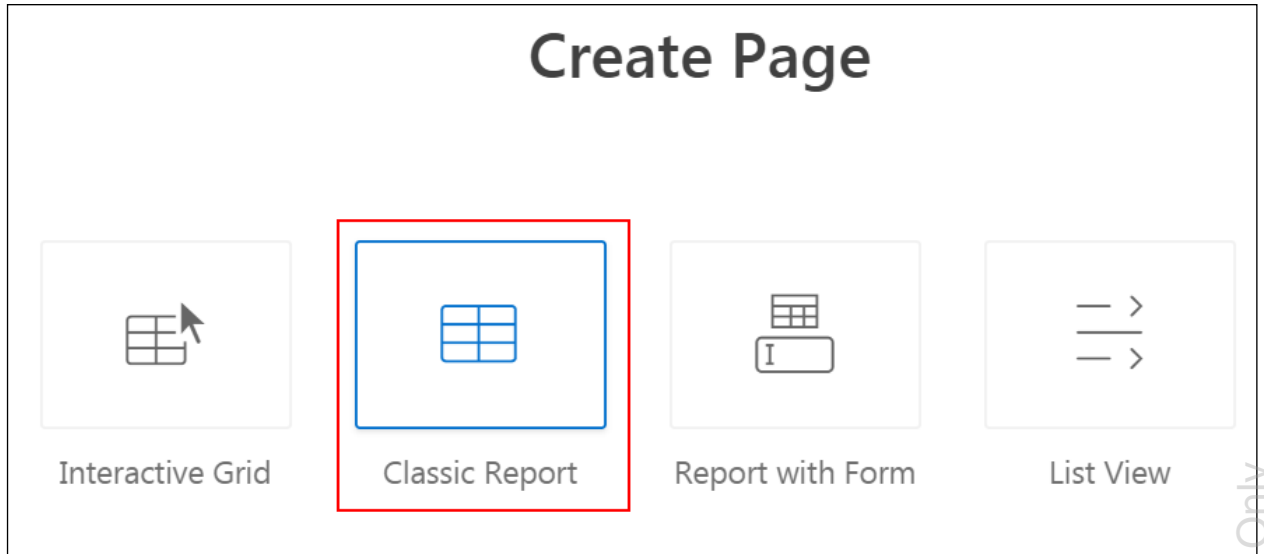
1. On a new page in the GMT application, create a Classic report by using a SQL query. Name the new page and the report **Top Tier Salary**. The report should display the last name, email, and salary of employees who earn between \$5000 and \$12000 from the `OEHR_EMPLOYEES` table.
 - a. On the Workspace home page, click **App Builder**, select the **GlobalMart Management Tool** application, and click **Create Page**.



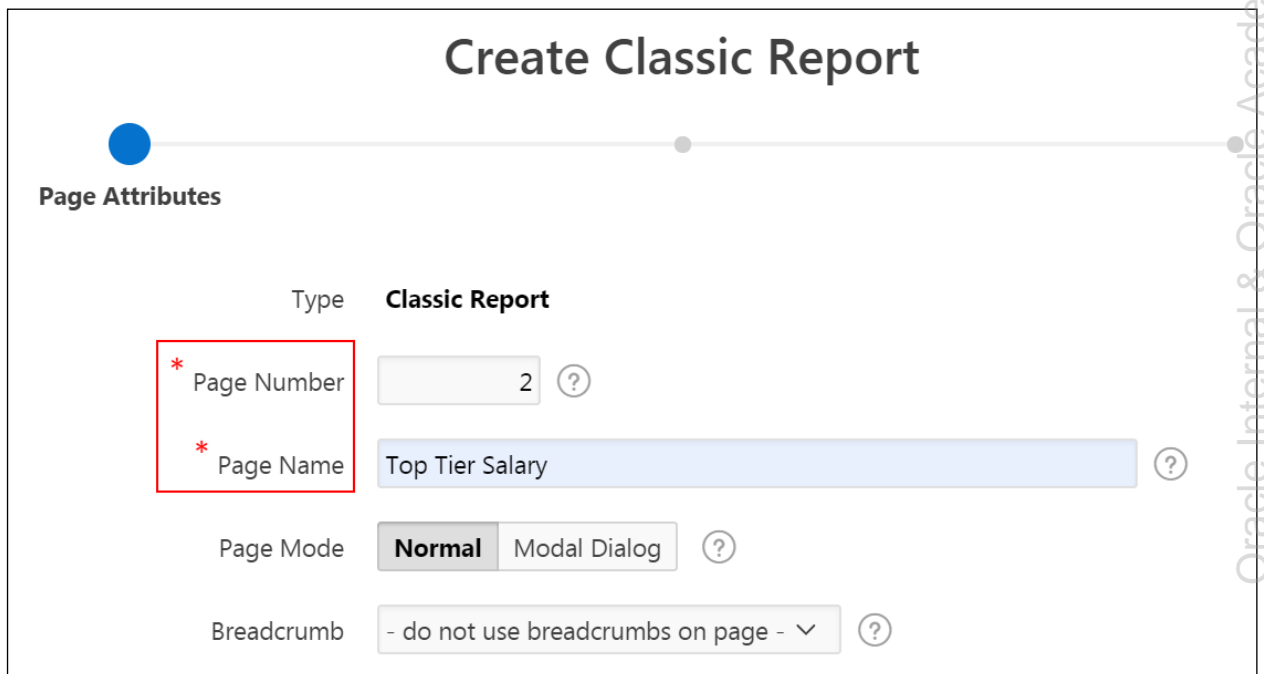
- b. For Page Type, select **Report**.



- c. Select **Classic Report**.

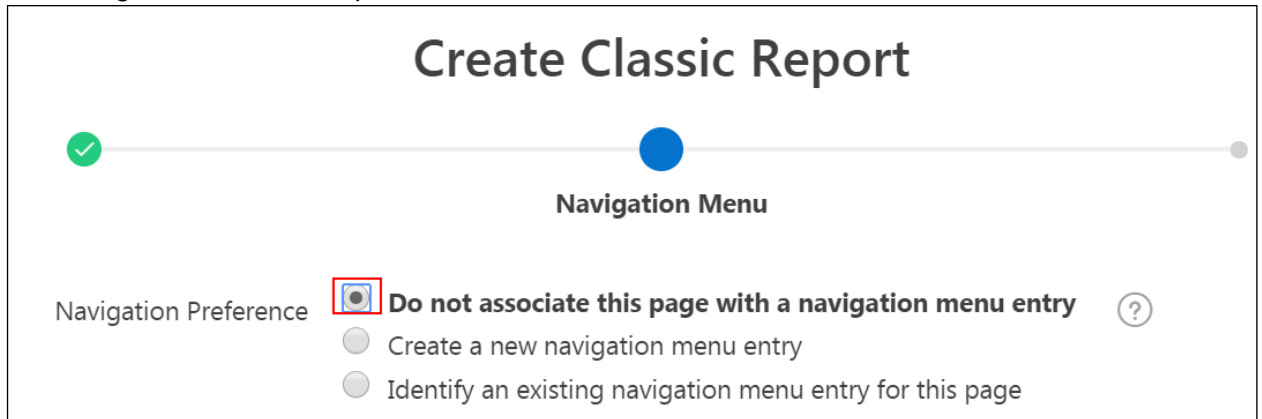


- d. Update the following Page Attributes:
- **Page Number:** Enter 2.
 - **Page Name:** Enter Top Tier Salary.



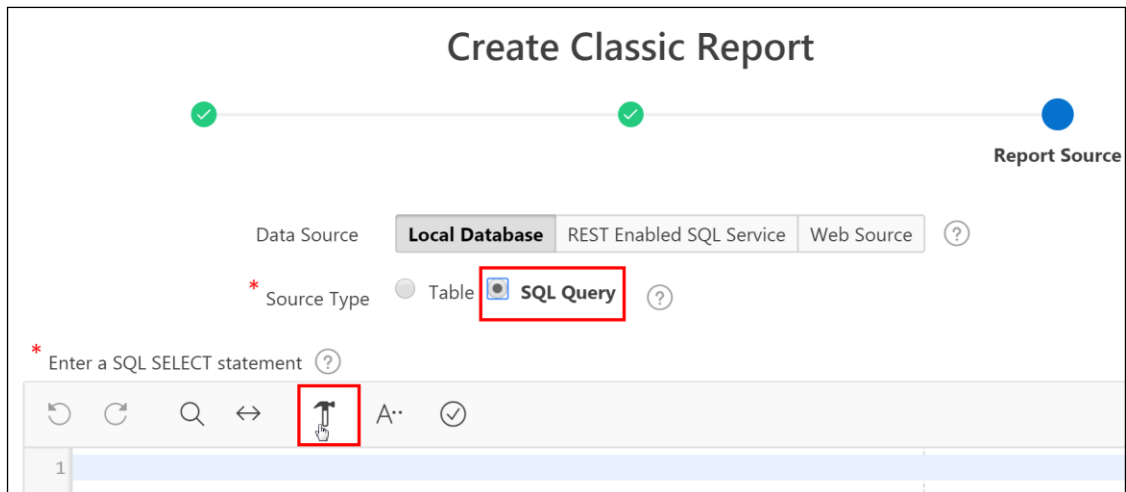
- e. Click **Next >**.

- f. For Navigation Menu, accept the default and click **Next**.

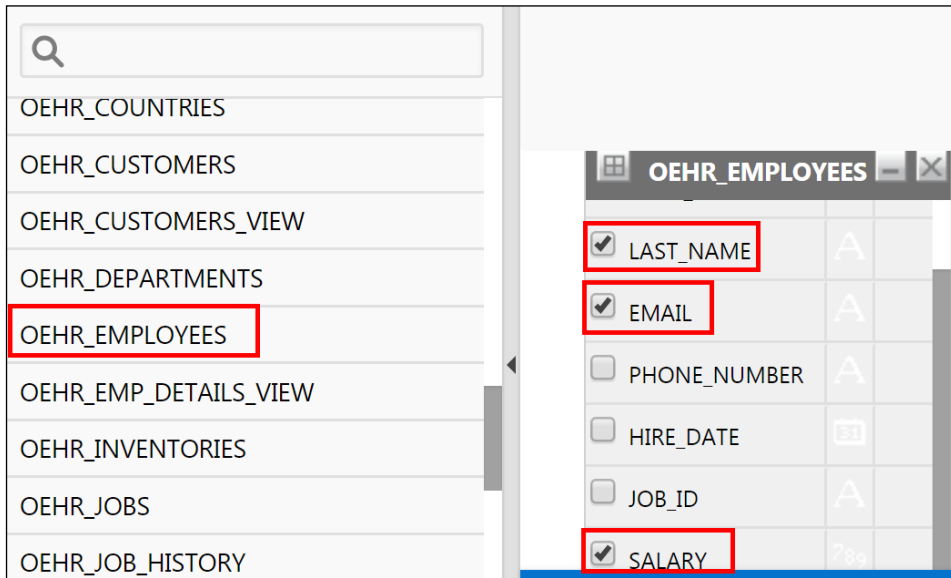


- g. For **Source Type**, select **SQL Query**.

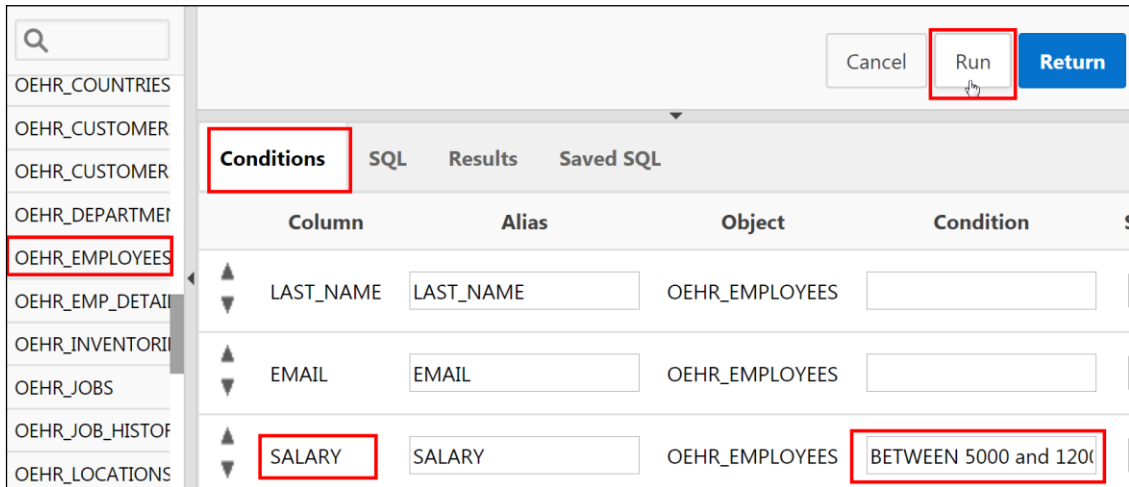
- h. Create the query using Query Builder. Click the **Query Builder** icon .



- i. In the Object Selection pane (left pane), select `OEHR_EMPLOYEES`.
- j. Select the check boxes to select the following columns:
- `LAST_NAME`
 - `EMAIL`
 - `SALARY`

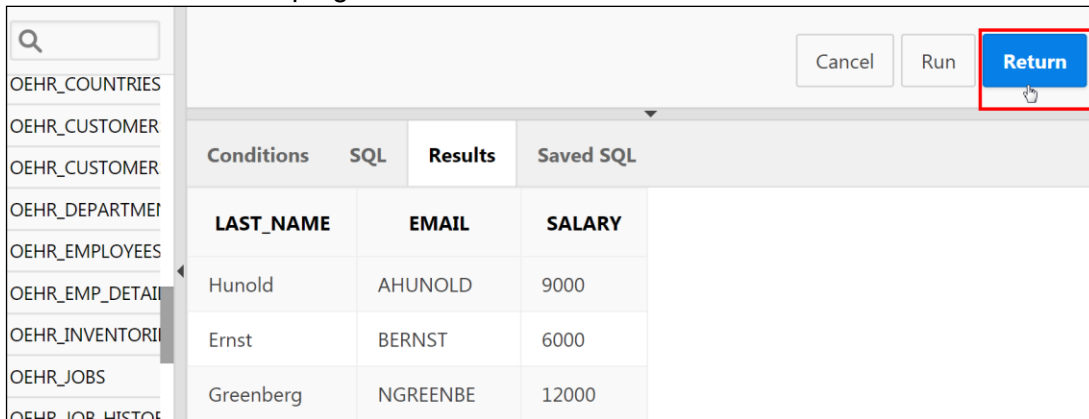


On the Conditions tab, for the SALARY > Condition, enter BETWEEN 5000 and 12000 and click **Run** in the top-right corner.



The results of the query are displayed on the Results tab at the bottom of the screen.

- k. Click **Return** on the top right of the screen.



- I. The query appears in the **Enter a SQL SELECT** statement field. Click **Create**.

Create Classic Report

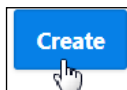
Report Source

Data Source: Local Database REST Enabled SQL Service Web Source

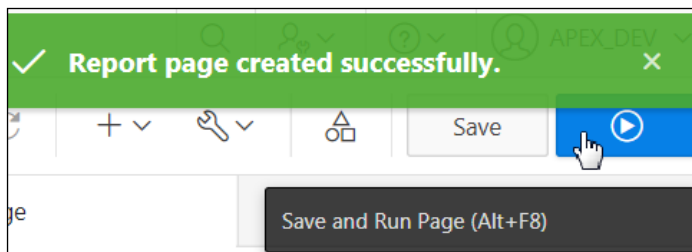
* Source Type: Table SQL Query

* Enter a SQL SELECT statement

```
1 select OEHR_EMPLOYEES.LAST_NAME as LAST_NAME,
2   OEHR_EMPLOYEES.EMAIL as EMAIL,
3   OEHR_EMPLOYEES.SALARY as SALARY
4 from OEHR_EMPLOYEES OEHR_EMPLOYEES
5 where OEHR_EMPLOYEES.SALARY BETWEEN 5000 and 12000
```



- m. Page Designer appears, displaying the new page. Click the **Save and Run Page**.



If prompted, enter your developer credentials.

GlobalMart Management Tool

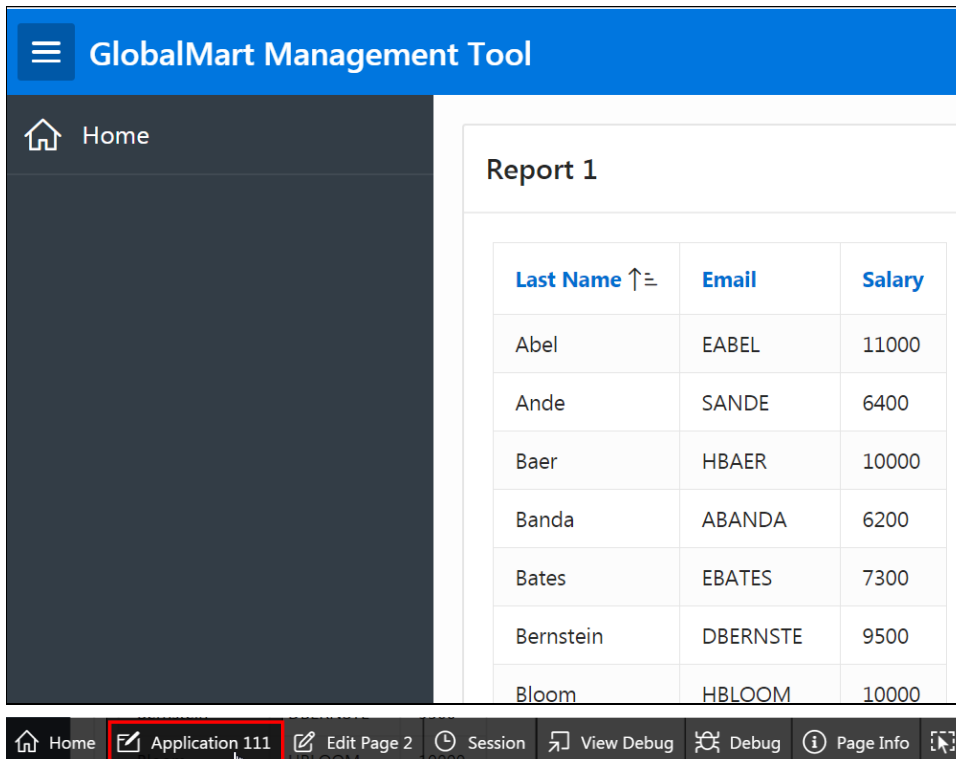
apex_dev

...

Remember username

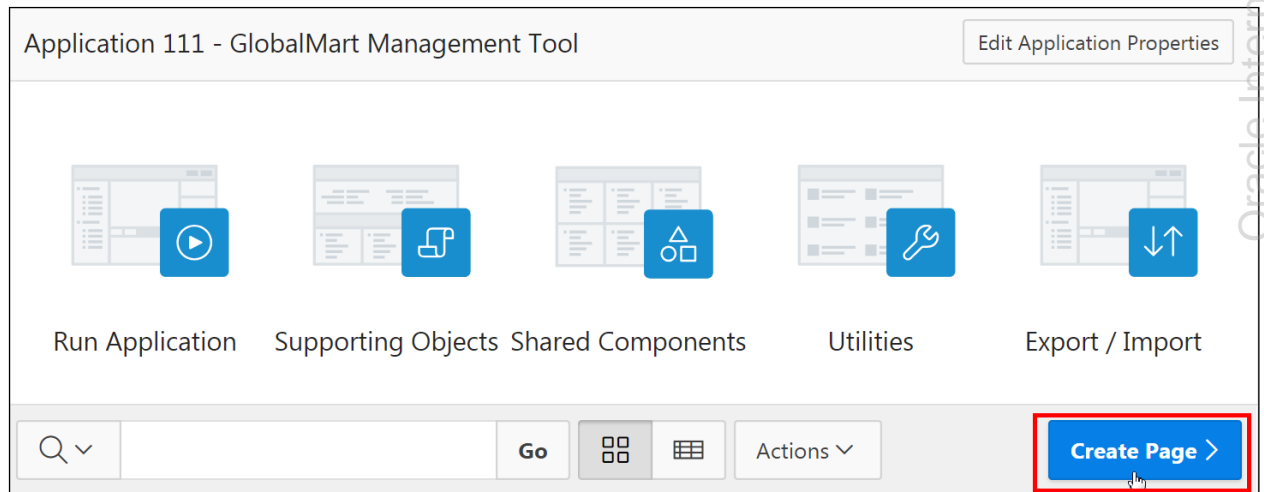
Sign In

- n. Review the report. When finished, click **Application 111** on the Runtime Developer toolbar (at the bottom of the page) to return to your application home page.

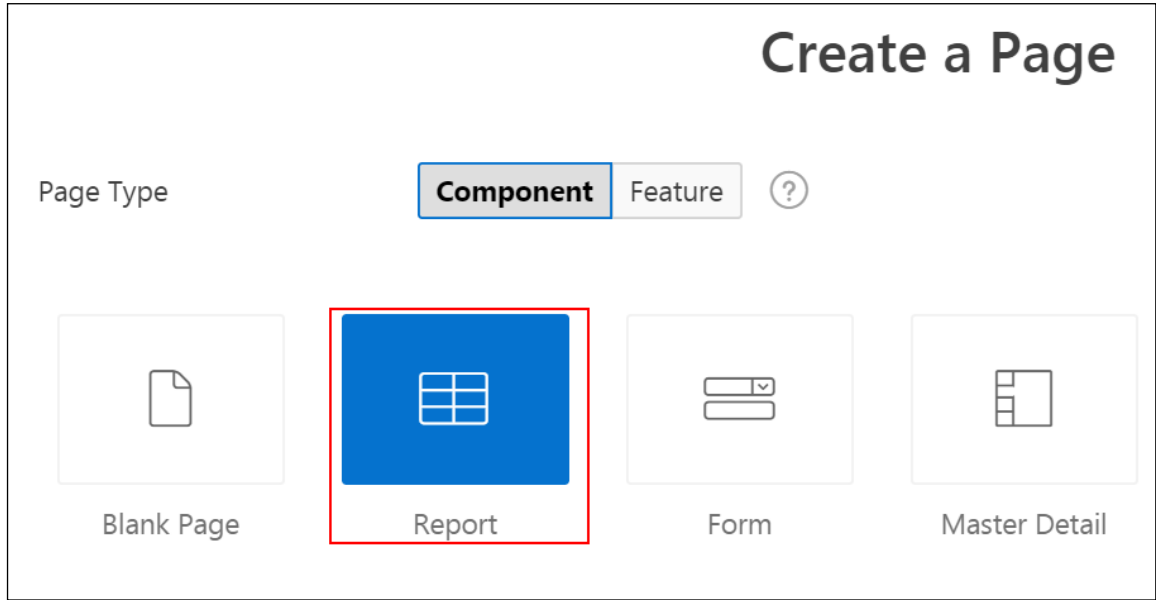


2. Create another classic report on a new page, but this time select the source type, Table. Name the page and the report Customer Address List. The report should display the address information of the customers, such as the first and last names, address, city, and state from the OEHR_CUSTOMERS table.

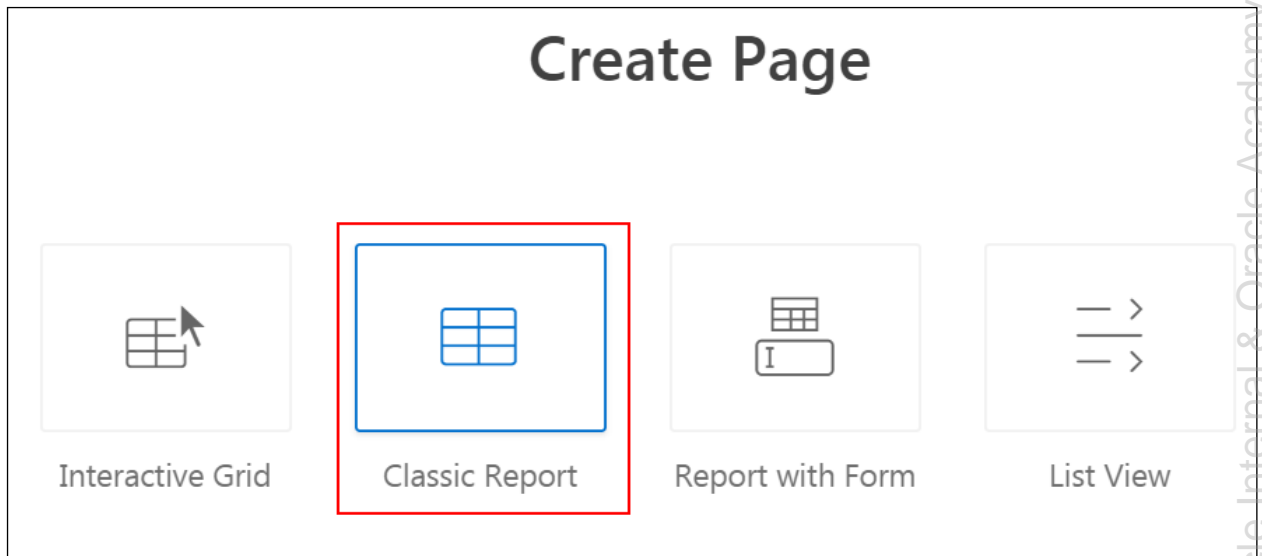
- a. On the Application home page, click **Create Page**.



b. Select **Report**.



c. Select **Classic Report**.



d. Update the following attributes:

- **Page Number:** Enter 3.
- **Page Name:** Enter `Customer Address List`.
- Click **Next >**.

Create Classic Report

Page Attributes

Type **Classic Report**

* Page Number ?

* Page Name ?

Page Mode **Normal** Modal Dialog ?

Breadcrumb - do not use breadcrumbs on page - v ?

- e. For Navigation Menu, accept the default and click **Next**.

Create Classic Report

Navigation Menu

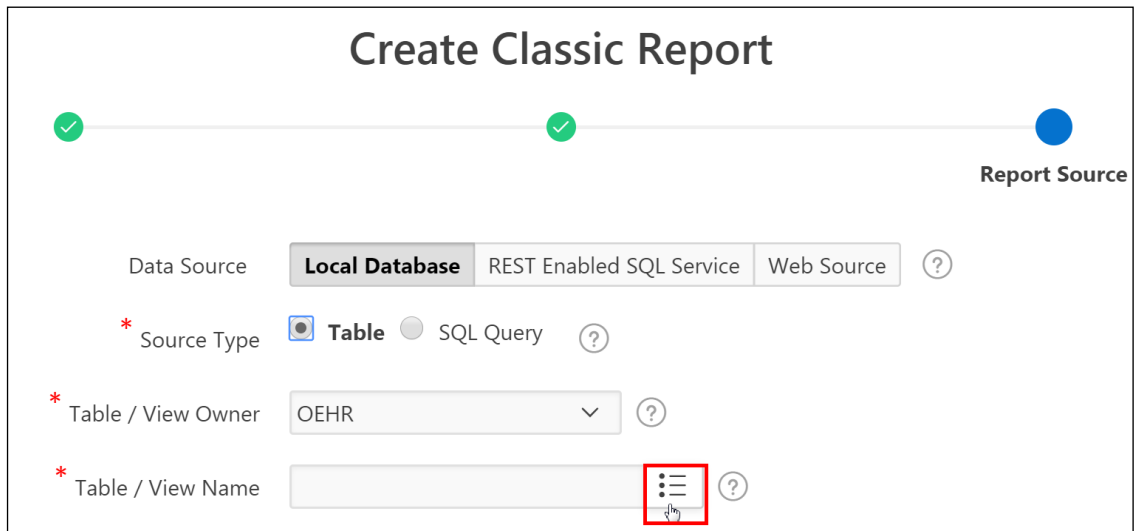
Navigation Preference **Do not associate this page with a navigation menu entry** ?

Create a new navigation menu entry

Identify an existing navigation menu entry for this page

- f. For Source Type, select **Table**.

- g. For Table / View Name, click the icon  to open a Search dialog box.



Create Classic Report

Progress: 1/3 steps (Report Source is the current step)

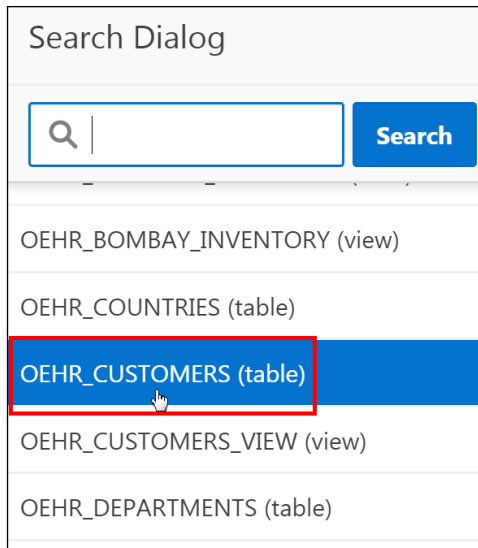
Data Source: **Local Database** | REST Enabled SQL Service | Web Source

Source Type: **Table** | SQL Query

Table / View Owner: OEHR

Table / View Name: ☰

- h. Select OEHR_CUSTOMERS (table).



Search Dialog

Search: Search

- OEHR_BOMBAY_INVENTORY (view)
- OEHR_COUNTRIES (table)
- OEHR_CUSTOMERS (table)**
- OEHR_CUSTOMERS_VIEW (view)
- OEHR_DEPARTMENTS (table)

- i. Click the **Columns** region to expand it.

Create Classic Report

Progress: [Green Check] [Green Check] [Blue Circle] **Report Source**

Data Source: **Local Database** REST Enabled SQL Service Web Source (?)

* Source Type: **Table** SQL Query (?)

* Table / View Owner: OEHR (?)

* Table / View Name: OEHR_CUSTOMERS (table) [Menu Icon] (?)

> **Lookup Columns**

Columns [Hand Cursor]

- j. By default, the wizard selects all the columns. Move all the columns to the left by clicking the **double-left arrow (<<)** labeled **Remove All**.

Create Classic Report

Progress: [Green Check] [Green Check] [Blue Circle] **Report Source**

* Source Type: **Table** SQL Query (?)

* Table / View Owner: OEHR (?)

* Table / View Name: OEHR_CUSTOMERS (table) [Menu Icon] (?)

> **Lookup Columns**

Columns

* Select Columns (?)

[Empty Box] [Move All] [Move Right] [Move Left] [Move Double Right] [Move Double Left] [List of Columns]

Remove All [Hand Cursor]

- CUSTOMER_ID (Number)
- CUST_FIRST_NAME (Varchar2)
- CUST_LAST_NAME (Varchar2)
- STREET_ADDRESS (Varchar2)
- POSTAL_CODE (Varchar2)
- CITY (Varchar2)
- STATE_PROVINCE (Varchar2)
- COUNTRY_ID (Char)

Create Classic Report

● Report Source

* Source Type **Table** SQL Query ?

* Table / View Owner ?

* Table / View Name ☰ ?

> **Lookup Columns**

▼ **Columns**

* Select Columns ?

CUSTOMER_ID (Number)	⇄	
CUST_FIRST_NAME (Varchar2)	>>	
CUST_LAST_NAME (Varchar2)	>	
STREET_ADDRESS (Varchar2)	>	
POSTAL_CODE (Varchar2)	>	
CITY (Varchar2)	<	
STATE_PROVINCE (Varchar2)	<	
COUNTRY_ID (Char)	<<	

- k. Deselect all the columns.
- l. Select the columns to include in the report. Press and hold the **Ctrl** key and click the following items:
 - CUST_FIRST_NAME
 - CUST_LAST_NAME
 - STREET_ADDRESS
 - CITY
 - STATE_PROVINCE

Create Classic Report

✔ ✔ ● **Report Source**

* Source Type **Table** SQL Query ?

* Table / View Owner ?

* Table / View Name ☰ ?

> **Lookup Columns**

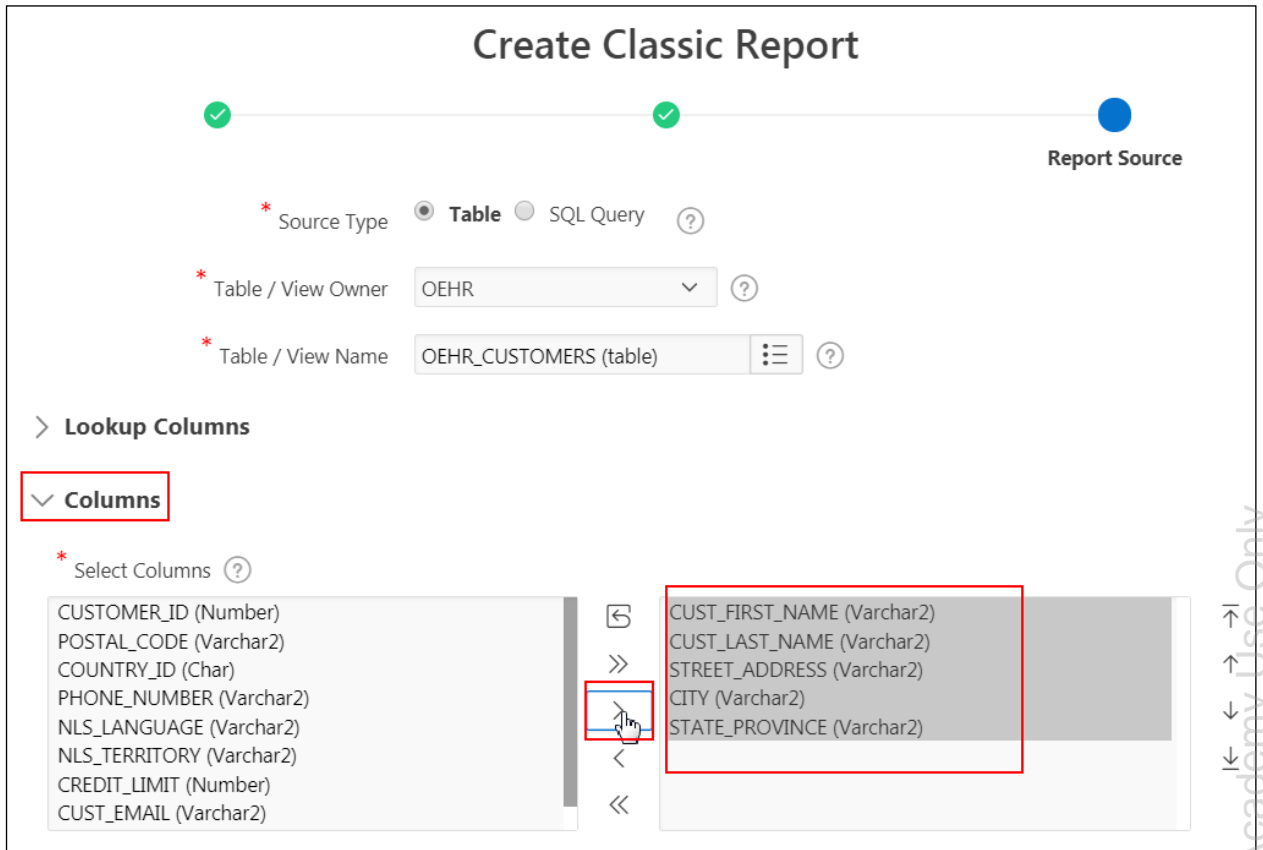
∨ **Columns**

* Select Columns ?

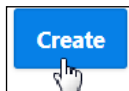
CUSTOMER_ID (Number) CUST_FIRST_NAME (Varchar2) CUST_LAST_NAME (Varchar2) STREET_ADDRESS (Varchar2) POSTAL_CODE (Varchar2) CITY (Varchar2) STATE_PROVINCE (Varchar2) COUNTRY_ID (Char)	↵ >> > < <<		↑ ↑ ↓ ↓
---	-------------------------	--	------------------

< Cancel
Create

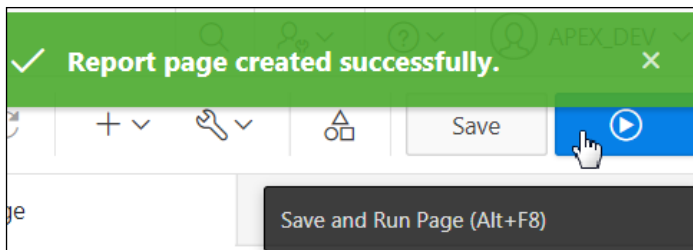
- m. Click the **right arrow (>)** labeled **Move**. The selected columns appear on the right.



n. Click **Create**.



o. Page Designer appears. Click the **Save and Run Page**.



- p. Review the report. When finished, click **Edit Page 3** on the Runtime Developer toolbar to return to Page Designer.

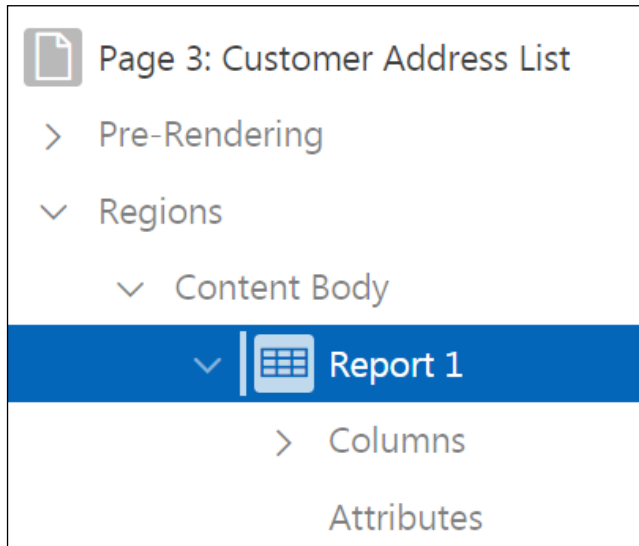
The screenshot displays the GlobalMart Management Tool interface. At the top, a blue header contains the text "GlobalMart Management Tool" and a home icon. Below the header, a dark sidebar on the left has a "Home" link. The main content area shows a report titled "Report 1" with a table of customer data. The table has three columns: "Cust First Name", "Cust Last Name", and "Street Address". The data rows are as follows:

Cust First Name	Cust Last Name	Street Address
Ajay	Sen	220 Penn Ave # 300
Ajay	Andrews	223 4Th Ave # 1100
Alain	Dreyfuss	Harmoniegasse 3
Alain	Barkin	Sonnenberg 4
Alain	Siegel	Alfred E. Neumann-Weg 3
Alan	Minnelli	Dr. Herbert Bitto Str 23

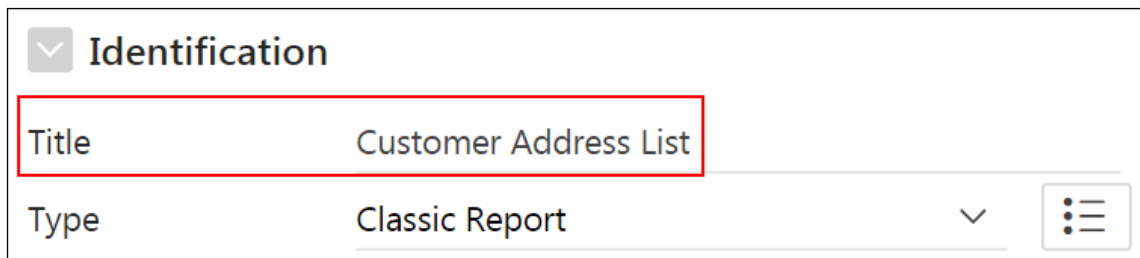
At the bottom, a toolbar contains several icons and labels: Home, Application 111, Edit Page 3 (highlighted with a red box), Session, View Debug, Debug, Page Info, Quick Edit, and Theme Roller.

Oracle Internal & Oracle Academy Use Only

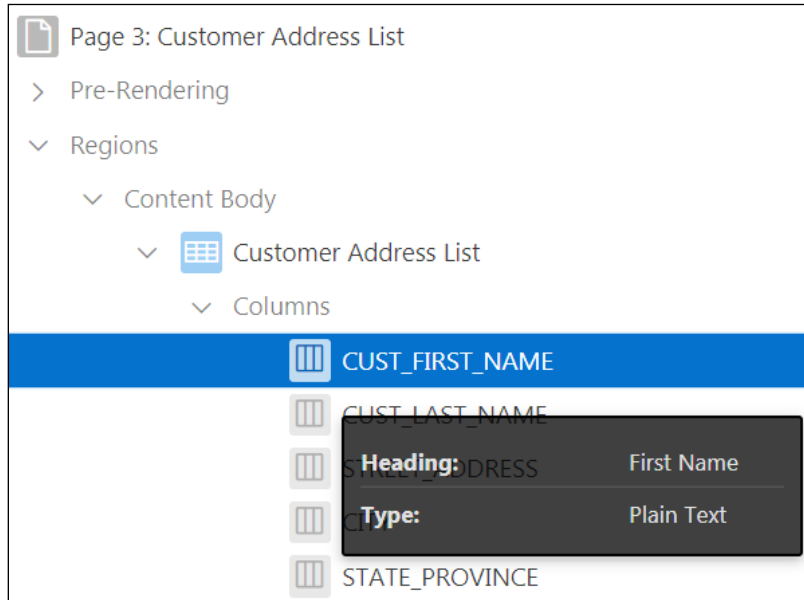
3. Modify the Customer Address List report with the following requirements:
- Change the report region from the default Report 1 to Customer Address List.
 - Change the report headings for `CUST_FIRST_NAME` and `CUST_LAST_NAME` to `First Name` and `Last Name`, respectively.
- a. On the Rendering tab (the left pane), under **Regions > Content Body**, select **Report 1**.



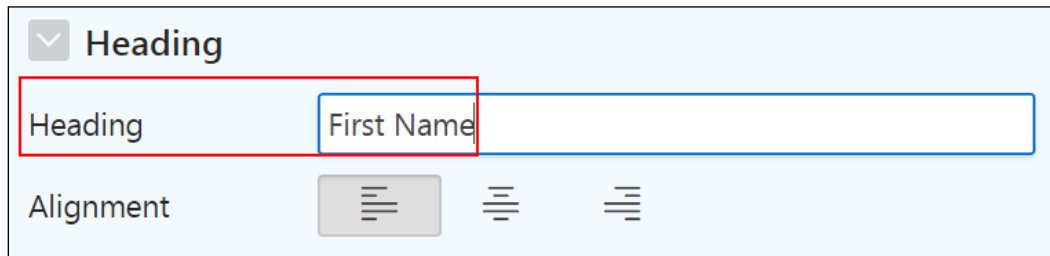
- b. In the Property Editor (the right pane), under Identification > Title, enter `Customer Address List`.



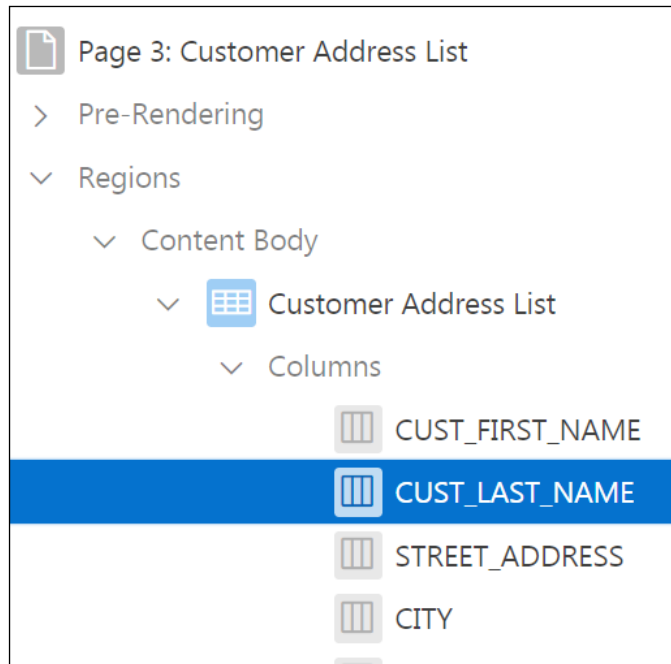
- c. Change the heading for the `CUST_FIRST_NAME` column.
 - On the Rendering tab (the left pane), under **Regions > Content Body > Customer Address List**, expand **Columns** and select `CUST_FIRST_NAME`.



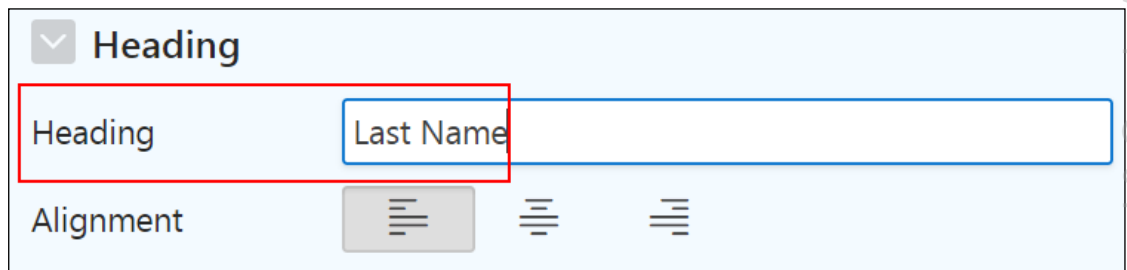
- In the Property Editor (right pane), change **Heading > Heading** to `First Name`.



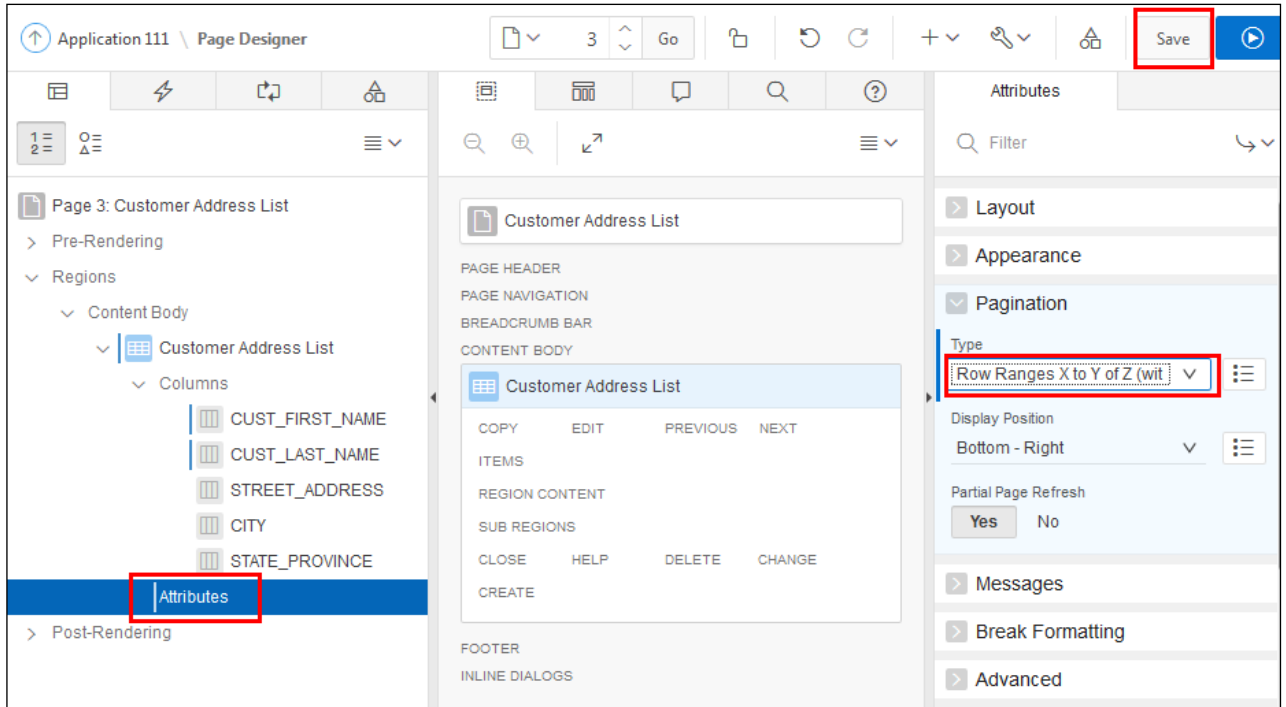
- d. Change the heading for the `CUST_LAST_NAME` column.
- On the Rendering tab (left pane), under **Regions > Content Body > Customer Address List > Columns**, select `CUST_LAST_NAME`.



- In the Property Editor, change **Heading > Heading** to `Last Name`.

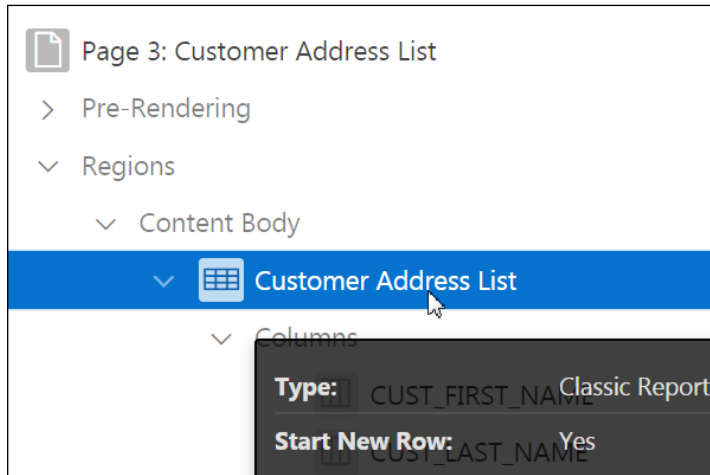



4. Change the Pagination to Row Ranges X to Y of Z (with pagination).
 - a. On the Rendering tab, under **Regions > Content Body > Customer Address List**, select **Attributes**.
 - b. In the Property Editor, under the **Pagination > Type**, select **Row Ranges X to Y of Z (with pagination)**.
 - c. Click the **Save** button (top-right corner).

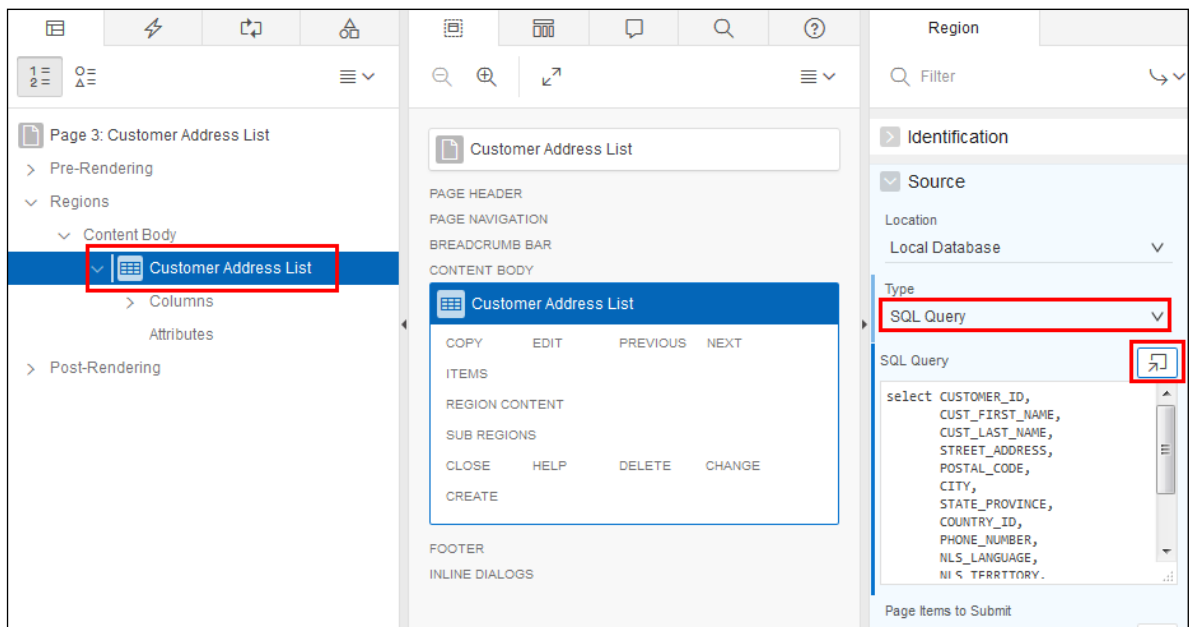



5. Review the query definition and add the `OEHR_COUNTRIES.COUNTRY_NAME` column to the report.
Hint: You will need to create a join.

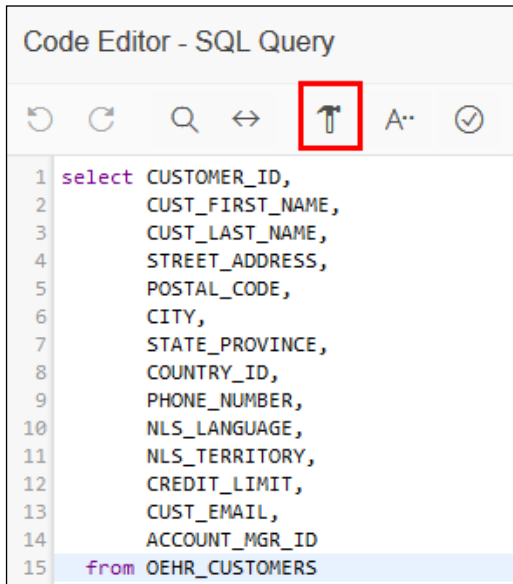
- a. On the Rendering tab, under **Regions > Content Body**, select **Customer Address List**.



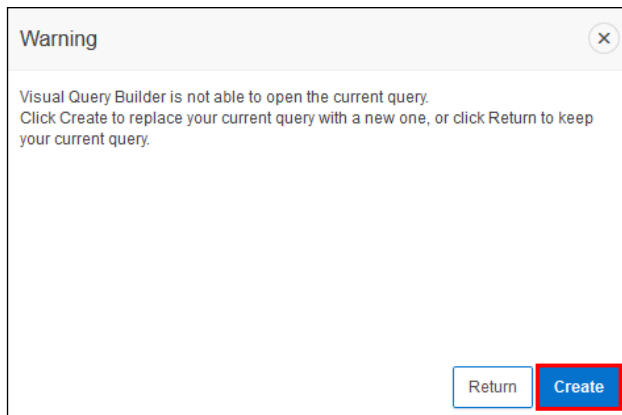
- b. In the Property Editor, under Source > Type, select **SQL Query**. A SQL Query attribute and field appear.
- c. Modify the query definition using Query Builder. Under **Source > SQL Query**, click the **Code Editor: SQL Query** icon .



- d. Click the **Query Builder** icon . A warning is displayed. Click **Create** to proceed.

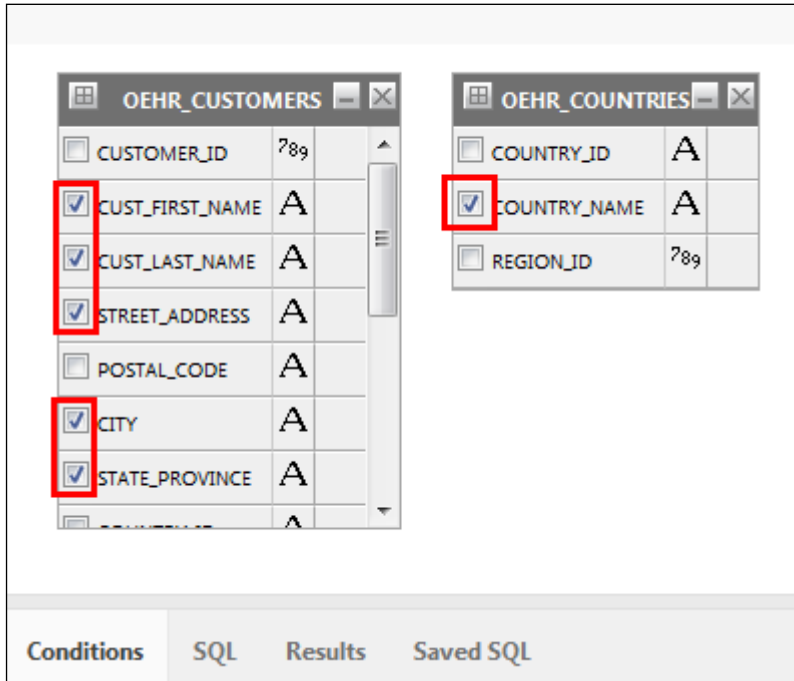


```
1 select CUSTOMER_ID,
2     CUST_FIRST_NAME,
3     CUST_LAST_NAME,
4     STREET_ADDRESS,
5     POSTAL_CODE,
6     CITY,
7     STATE_PROVINCE,
8     COUNTRY_ID,
9     PHONE_NUMBER,
10    NLS_LANGUAGE,
11    NLS_TERRITORY,
12    CREDIT_LIMIT,
13    CUST_EMAIL,
14    ACCOUNT_MGR_ID
15 from OEHR_CUSTOMERS
```

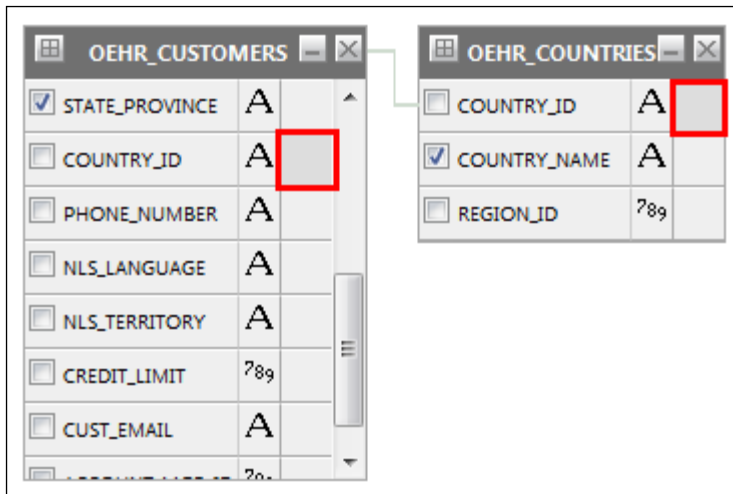


- e. On the **Object Selection** pane (on the left side of the page), select **OEHR_CUSTOMERS** and **OEHR_COUNTRIES**.
- f. In the **OEHR_CUSTOMERS** table, select the **CUST_FIRST_NAME**, **CUST_LAST_NAME**, **STREET_ADDRESS**, **CITY**, and **STATE_PROVINCE** columns.

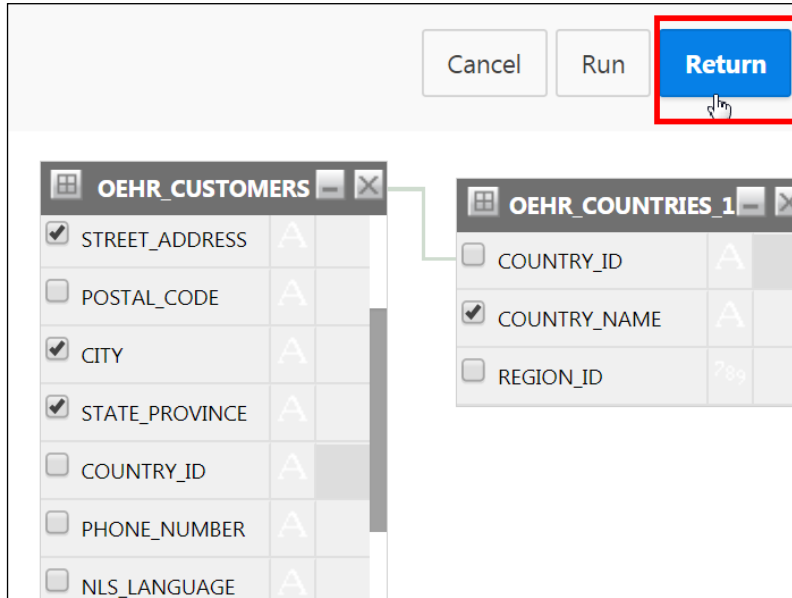
- g. In the OEHR_COUNTRIES table, select the COUNTRY_NAME column.



- h. Join the tables by clicking the **join column field** to the right of the COUNTRY_ID entry in both the tables.



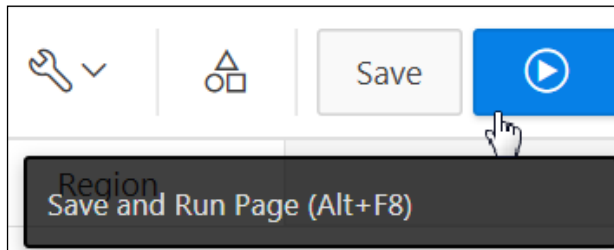
- i. Click **Run** and then **Return** in the top right of the screen.



Code Editor - SQL Query

```
1 select OEHR_CUSTOMERS.CUST_FIRST_NAME as CUST_FIRST_NAME,
2        OEHR_CUSTOMERS.CUST_LAST_NAME as CUST_LAST_NAME,
3        OEHR_CUSTOMERS.STREET_ADDRESS as STREET_ADDRESS,
4        OEHR_CUSTOMERS.CITY as CITY,
5        OEHR_CUSTOMERS.STATE_PROVINCE as STATE_PROVINCE,
6        OEHR_COUNTRIES_1.COUNTRY_NAME as COUNTRY_NAME
7 from   OEHR_COUNTRIES OEHR_COUNTRIES_1,
8        OEHR_CUSTOMERS OEHR_CUSTOMERS
9 where  OEHR_CUSTOMERS.COUNTRY_ID=OEHR_COUNTRIES_1.COUNTRY_ID
```

- j. Click **OK** to commit the new query.
- k. The SQL updates in the SQL Query field in the Property Editor. Click the **Save and Run Page**.



- I. Note the changes that you made to the report. Click **Edit Page 3** on the Runtime Developer toolbar to return to Page Designer.

The screenshot displays the GlobalMart Management Tool interface. At the top, a blue header contains the text "GlobalMart Management Tool". On the left, a dark sidebar shows a "Home" button. The main content area is titled "Customer Address List" and contains a table with the following data:

First Name	Last Name	Street Address	City	State Province
Ajay	Sen	220 Penn Ave # 300	Scranton	PA
Ajay	Andrews	223 4Th Ave # 1100	Pittsburgh	PA
Alain	Dreyfuss	Harmoniegasse 3	Baden-Daettwil	AG
Alain	Barkin	Sonnenberg 4	Baden-Daettwil	AG
Alain	Siegel	Alfred E. Neumann-Weg 3	Baden-Daettwil	AG


At the bottom, the Runtime Developer toolbar is visible, featuring buttons for "Home", "Application 111", "Edit Page 3", "Session", "View Debug", "Debug", "Page Info", "Quick Edit", "Theme Roller", and a settings icon. The "Edit Page 3" button is highlighted with a red box.

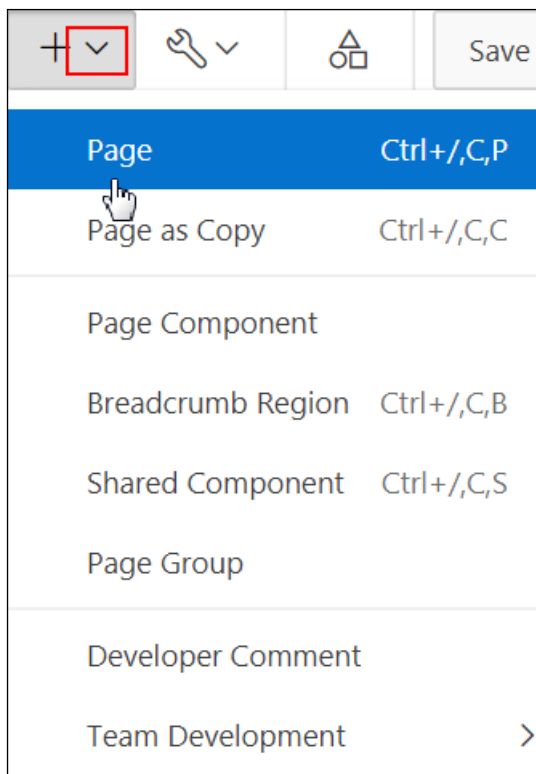
Solution 4-2: Creating a Column Toggle Report

Overview

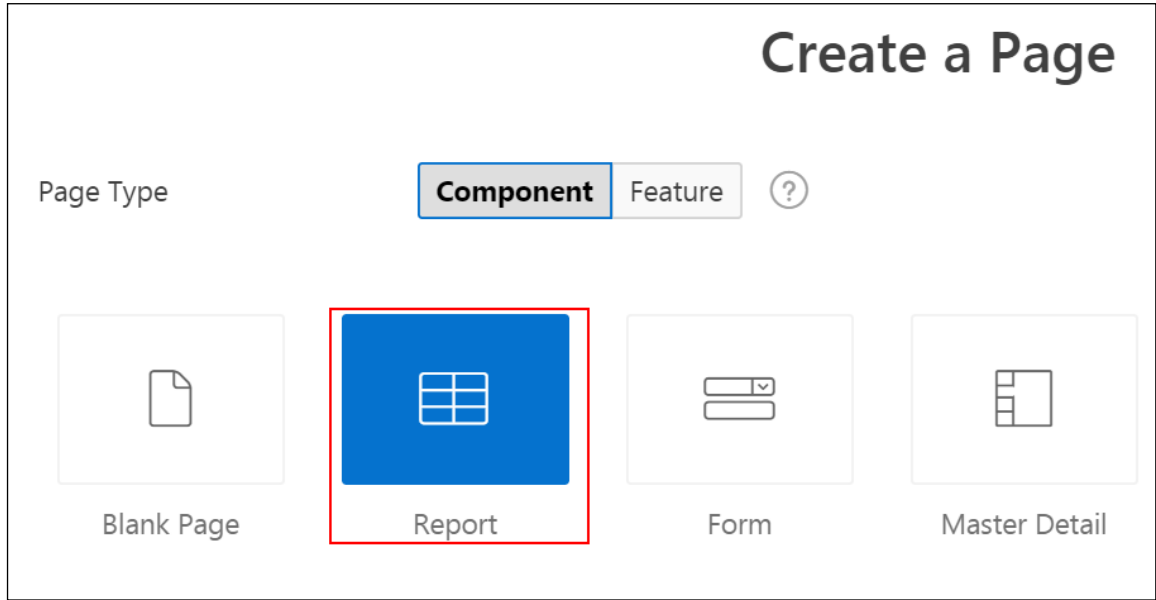
In this practice solution, you create a new page containing a Column Toggle report for your GlobalMart Management Tool (GMT) application. Column Toggle reports feature a responsive report optimized for mobile applications and Smartphones. By default, column toggle reports are created with all columns set to the same priority. However, the developer can edit the report column attributes and rank columns by importance.

Steps

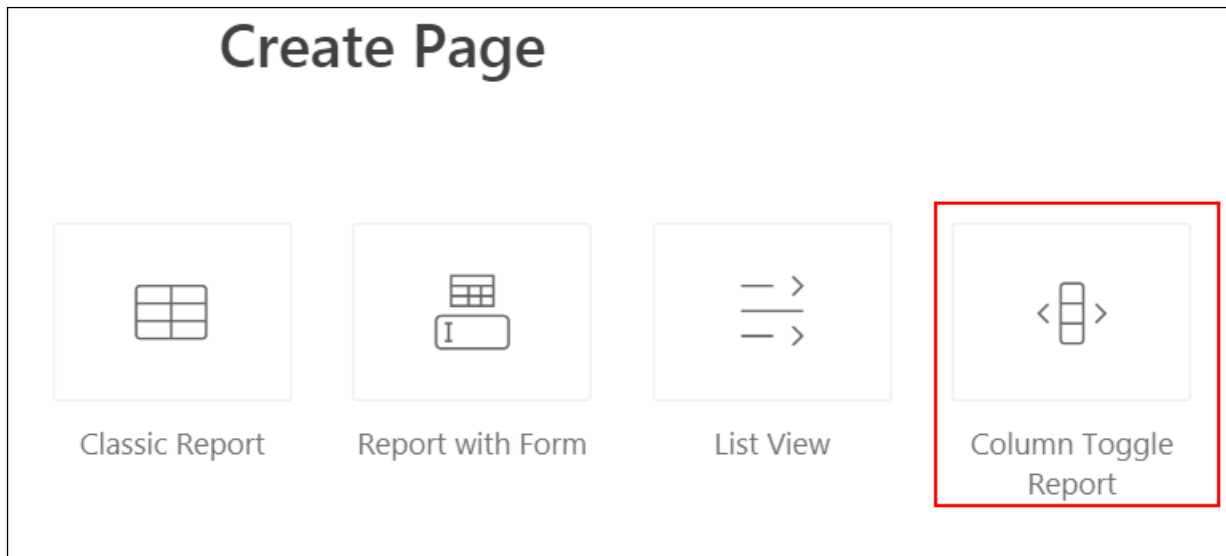
1. Create a new page in the GMT application containing a Column Toggle report. Enter Product Information as the Page Name. Change Page Number to 202. The report should select all the columns from the OEHR_PRODUCT_INFORMATION table.
 - a. Return to Page Designer (already open in another window). From the Page Designer toolbar, select Create  and then Page.



b. Click **Report**.



c. Click **Column Toggle Report**.



- d. Change Page Number to 202. For Page Name, enter Product Information.

The screenshot shows the 'Create Page' wizard at the 'Page Attributes' step. A progress bar at the top has four steps: the first is a green checkmark, the second is a blue circle (current step), and the last two are grey circles. Below the progress bar, the 'Region Type' is set to 'Column Toggle Report'. The 'Page Number' field contains '202' and is highlighted with a red box. The 'Page Name' field contains 'Product Information' and is also highlighted with a red box. The 'Page Mode' is set to 'Normal'. The 'Page Group' is set to '- Select Page Group -'. The 'Breadcrumb' is set to '- do not use breadcrumbs on page -'. Each field has a help icon (question mark) to its right.

- e. Click **Next >**.
For Navigation menu, accept the defaults and click **Next >**.

The screenshot shows the 'Create Page' wizard at the 'Navigation Menu' step. The progress bar now has three green checkmarks and one blue circle (current step). The 'Navigation Preference' section has three radio button options: 'Do not associate this page with a navigation menu entry' (which is selected and highlighted with a red box), 'Create a new navigation menu entry', and 'Identify an existing navigation menu entry for this page'. Each option has a help icon (question mark) to its right.

- f. For Source Type, click **Table**.

- g. From Table / View Name, click the  icon to open a search dialog box and select OEHR_PRODUCT_INFORMATION (table) . By default, all columns are selected.


Create Classic Report

Report Source

Data Source: Local Database | REST Enabled SQL Service | Web Source

Source Type: Table | SQL Query

Table / View Owner: OEHR

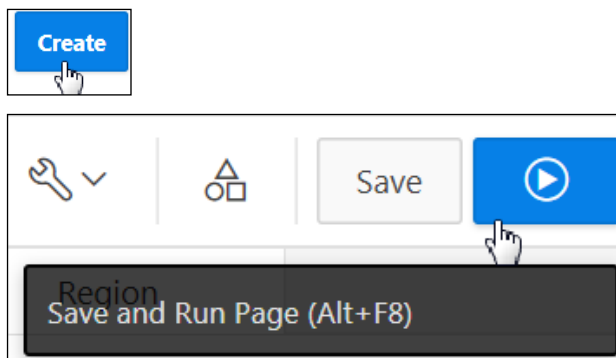
Table / View Name: OEHR_PRODUCT_INFORMATION (ta) 

Columns

Select Columns

- PRODUCT_ID (Number)
- PRODUCT_NAME (Varchar2)
- PRODUCT_DESCRIPTION (Varchar2)
- CATEGORY_ID (Number)
- WEIGHT_CLASS (Number)
- WARRANTY_PERIOD (Interval Year(2) To Month)
- SUPPLIER_ID (Number)
- PRODUCT_STATUS (Varchar2)

- h. Click **Create**. Click the **Save and Run Page** to view the report.



Note: If prompted, enter your developer credentials.

All the columns from PRODUCT_INFORMATION table appear.

- i. Try out the responsive nature of the report. Slowly reduce the size of the browser horizontally. Notice that the column starts disappearing from the right side (that is, starting from the Catalog URL field) as the size of the browser is being reduced.

2. Using the Columns option in the report, hide the columns Product Description, Category ID, and Supplier ID from the report.

a. On the Product Information Page, click **Columns** and then click the following columns to deselect them:

- Product Description
- Category Id
- Supplier Id

Product Id	Product Name	Weight Class	Warranty Period	Product Status	List Price	Min Price	Catalog Url
2453	Inkjet C/4	3	+000000002-00	orderable	195	174	http://www.supp-102090.com/cat/p2453.html
1797	Inkjet C/8/HQ	3	+000000002-00	orderable	349	288	http://www.supp-102094.com/cat/p1797.html
2459	LaserPro 1200/8/BW	5	+000000003-00	under development	699	568	http://www.supp-102099.com/cat/p2459.html
3127	LaserPro 600/6/BW	4	+000000003-00	orderable	498	444	http://www.supp-102087.com/cat/p3127.html
2254	HD 10GB /I	2	+000000002-00	obsolete	453	371	http://www.supp-102071.com/cat/hw/p2254.html

Columns...

- Product Id
- Product Name
- Product Description
- Category Id
- Weight Class
- Warranty Period
- Supplier Id
- Product Status
- List Price
- Min Price
- Catalog Url

b. Click anywhere on the page to close the Columns list. Notice that the columns that you deselected are hidden in the report.

GlobalMart Management Tool apex_dev

Home Columns...

Product Id	Product Name	Weight Class	Warranty Period	Product Status	List Price	Min Price	Catalog Url
1772	HD 9.1GB @10000	3	+000000005-00	orderable	456	393	http://www.supp-102070.com/cat/hw/p17
2414	HD 9.1GB @10000 /I	3	+000000005-00	orderable	454	399	http://www.supp-102098.com/cat/hw/p24
2415	HD 9.1GB @7200	3	+000000005-00	orderable	359	309	http://www.supp-102063.com/cat/hw/p24
2395	32MB Cache /M	1	+000000000-06	orderable	123	109	http://www.supp-102093.com/cat/hw/p2
1755	32MB Cache /NM	1	+000000000-06	orderable	121	99	http://www.supp-102076.com/cat/hw/p17

c. The column toggle report is complete. Click **Application 111** on the Runtime Developer toolbar to return to the Application home page.



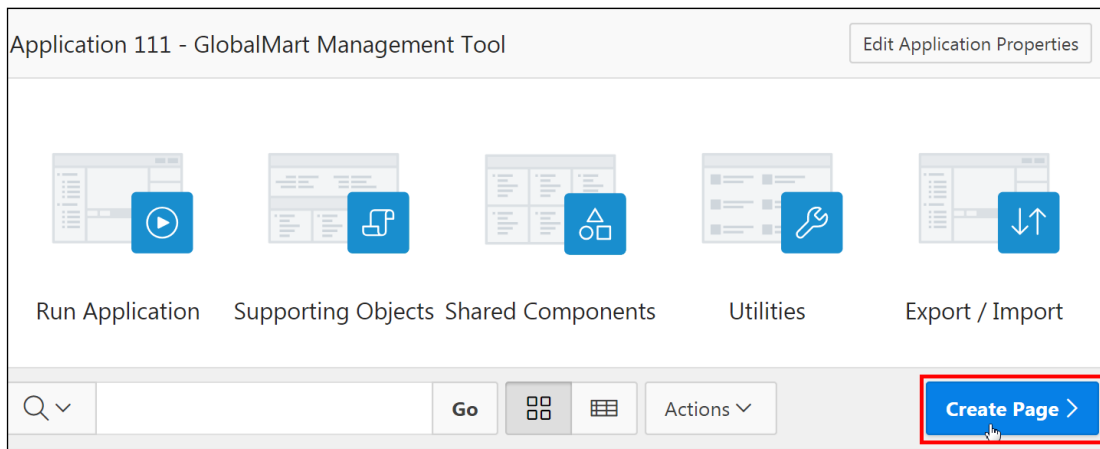
Solution 4-3: Adding and Modifying a List View Report

Overview

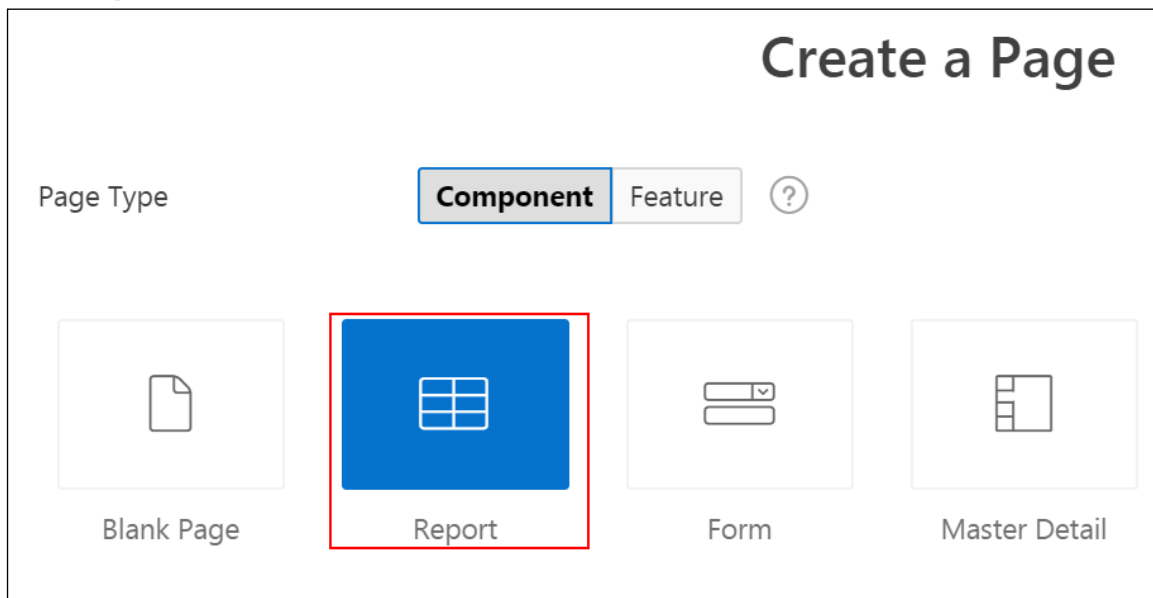
In this practice solution, you add and modify a List View report in your GlobalMart Management Tool (GMT) application. List View reports feature a responsive design to display data and provide easy navigation on Smartphones.

Steps

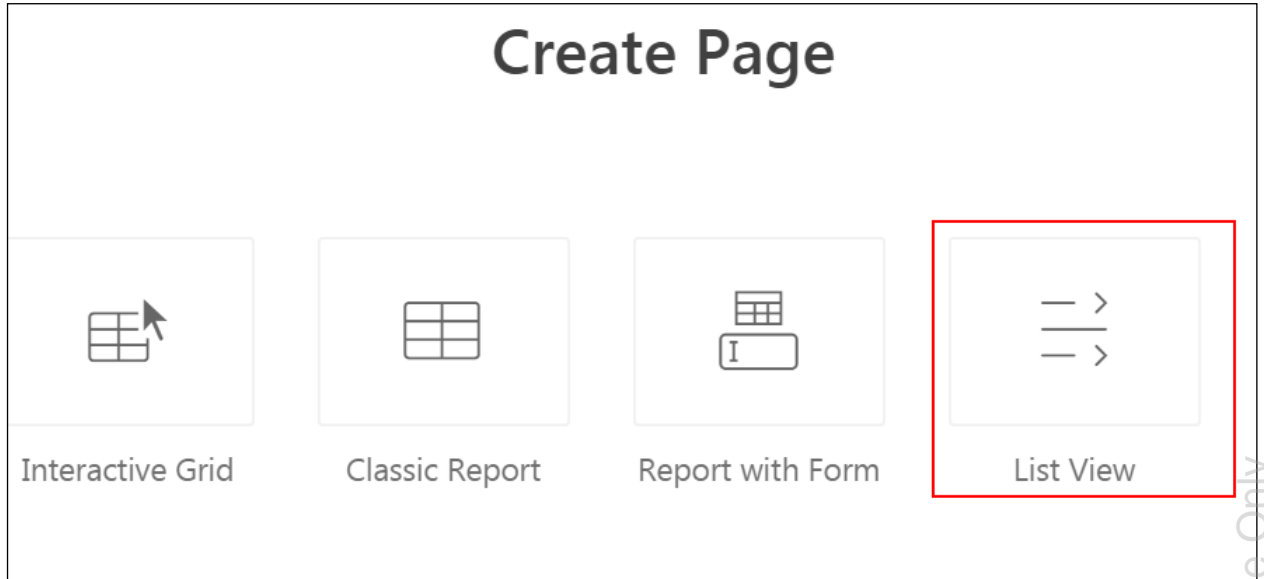
1. On a new page in the GMT application, create a List View report. Enter Employee List as the Page Name. Change Page Number to 201.
 - a. Navigate to the Application home page and click **Create Page**.



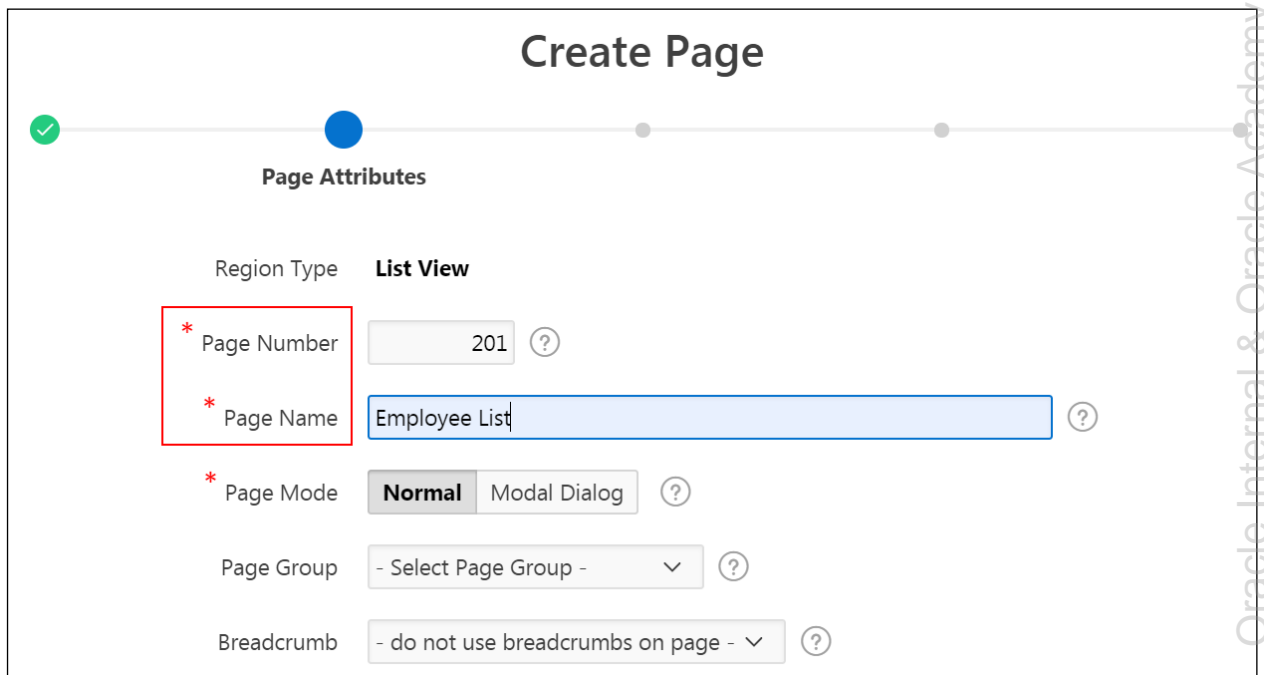
- b. Click **Report**.



c. Click **List View**.



d. Change Page Number to 201 and in Page Name enter `Employee List`.



e. Click **Next >**.

- f. For Navigation Menu, accept the defaults and click **Next >**.

The screenshot shows the 'Create Page' wizard at the 'Navigation Menu' step. A progress bar at the top has four steps: the first two are marked with green checkmarks, the third (Navigation Menu) is marked with a blue circle, and the fourth is a grey circle. Below the progress bar, the 'Navigation Preference' section has a radio button selected for 'Do not associate this page with a navigation menu entry', which is highlighted with a red box. Other options include 'Create a new navigation menu entry' and 'Identify an existing navigation menu entry for this page'. A help icon (?) is visible to the right.

- g. For Source Type, select **SQL Query**.

- h. Under Enter Region Source, enter the following SQL `SELECT` statement (in the `/home/oracle/labs/labs/lab_04_03_01.txt` file):

```
SELECT * from OEHR_EMPLOYEES
```

The screenshot shows the 'Create Page' wizard at the 'Source' step. The progress bar now has three green checkmarks and the 'Source' step is highlighted with a blue circle. The 'Data Source' is set to 'Local Database'. The 'Source Type' section has 'SQL Query' selected, highlighted with a red box, while 'Table' is unselected. Below this, the 'Enter Region Source:' field contains the SQL query '1 SELECT * from OEHR_EMPLOYEES', which is also highlighted with a red box. A toolbar with various icons is visible above the text area.

- i. Click **Next >**.

2. The list view should select all the columns from the `OEHR_EMPLOYEES` table and should display the last names as the text column. The list view should also be enabled to search the last name column with the Search Type Like & Ignore Case.
- a. Under Features, select **Enable Search** and **Inset List**. For **Text Column**, select `LAST_NAME` to display the last name as the text column. For **Search Type**, select **Server: Like & Ignore Case**.

Create Page

Settings

Features

- Advanced Formatting ?
- Show Image
- Show List Divider
- Has Split Button
- Enable Search**
- Is Nested List View
- Inset List**

Text Column: LAST_NAME ?

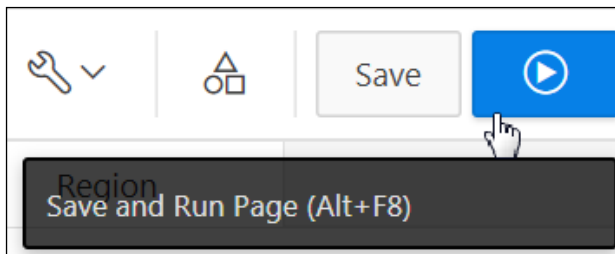
Supplemental Information Column: - Select - ?

Counter Column: - Select - ?

Link Target: ?

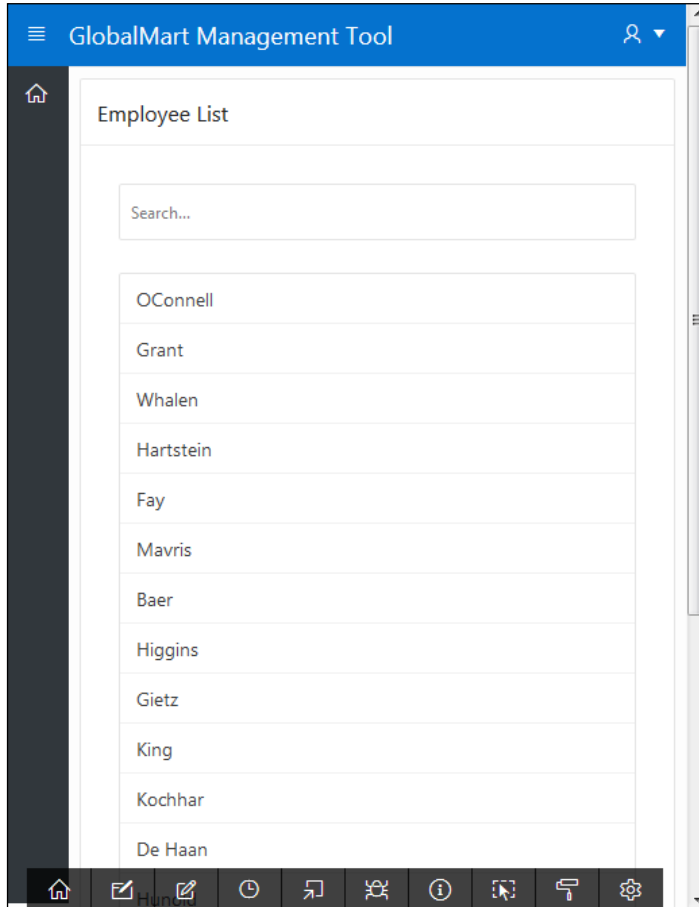
Search Type: Server: Like & Ignore Case ?

- b. Click **Create**. The Page Designer opens, displaying Page 201 - Employee List.
- c. Click the **Save and Run Page**.

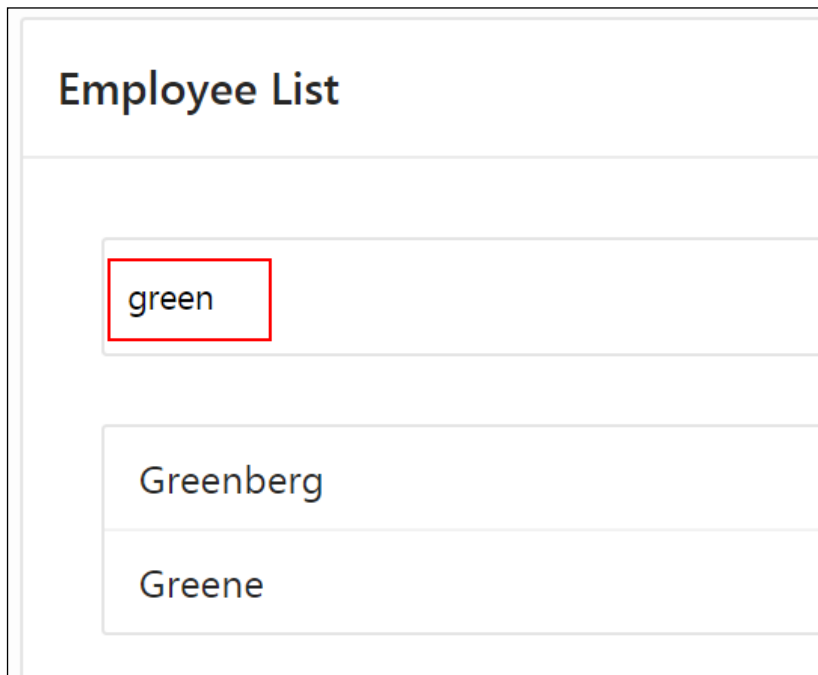


Note: If prompted, enter your developer workspace credentials.

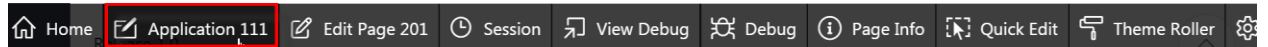
- d. Review the List View report.



- e. Enter `green` in the search bar and press the **Enter** key to display the names containing "green." Note the search results.



- f. Clear the search field and press **Enter** to reset the report.
- g. This List View report is complete. Click **Application 111** on the Runtime Developer toolbar to return to the Application home page.



**Practices for Lesson 5:
Working with Interactive
Reports**

Practices for Lesson 5: Overview

Overview

In these practices, you create, manipulate, and customize an interactive report to generate separate private, public, and default reports.

Practice 5-1: Creating and Manipulating an Interactive Report

Overview

In this practice, you create two interactive reports—Customer Report and Employee Commissions for GMT application. These two reports provide flexible customization for users.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Create an interactive report to display all the columns from the `OEHR_CUSTOMERS` table on a new page in the GMT application. Name the page **Customers**. Perform the following customizations to the report:
 - Create a **filter** on the city of Philadelphia.
 - Create a **highlight** where the credit limit is greater than 2500.
 - **Hide** columns to display only the Customer ID, Customer Name, Address, Phone Number, and Credit Limit.
 - Delete the filter that you created first.
 - **Sort** the rows in ascending order by State.
 - Change the pagination to display all rows.
 - Create a **Group By** report to display the number of customers in a particular province or state. Change the **pagination** to display all rows.
 - Create a **Pivot** report to display the total credit limit of customers for each account manager.
 - Save the report as a private report called **My Report**.
 - **Reset** the Primary Report to its original state.
 - Create a new computation. The computation should add `.15` to a commission of `.1` and `.05` to a commission of `.15`. Use the following CASE statement to perform the computation (located in `/home/oracle/labs/labs/lab_05_02_02.txt`).
2. Create an interactive report on a new page in the GMT application to display details (`employee_id`, `first_name`, `last_name`, `manager_id`, and `commission_pct`) from the `OEHR_EMPLOYEES` table about who earns a commission. Name the page and the report **Employee Commissions**. From the Create Report Wizard, create a breadcrumb for the page and select the Home page as the parent page. After creating the report, make the following customizations to the report:
 - Management proposes to increase the commission of employees whose existing commission percentage is less than or equal to 0.15. Create a computed column called New Commission, to display the new commission. The new commission scheme includes:
 - Employees with a commission percentage of 0.1 will get an additional commission of 0.15.

- Employees with a commission percentage of 0.15 will get an additional commission of 0.05.
- Create a **control break** on Manager ID.
- Display the maximum commission earned by employees under each manager.
- **Download** the HTML report.
- Save all the customizations that you have made to this report so that it is available to other users, but is not the default report. Name the saved report **Commission Proposal**.
- Reset the Primary Report.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_admin** user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the **apex_dev** user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 5-1**.

If you have not completed **Practice 4-3**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **App Builder** and select **Import**.
- c. For Import File, click the button and browse to the `sol_04_03.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- d. Click **Next**.
- e. For Install As Application, select **Reuse Application ID 111 From Export File** and click **Install Application**.
- f. Click **Replace Application** (if prompted).
- g. Wait for the application to successfully install.

Practice 5-2: Customizing an Interactive Report

Overview

By now, you have created two reports (Customer Report and Employee Commissions) with features for customization at the users' end. In this practice, you customize those two reports using all the features provided by Oracle Application Express.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Make the following customizations to the Employee Commissions report:
 - Hide `EMPLOYEE_ID` and change `MANAGER_ID` to be the `FIRST_NAME` and `LAST_NAME` of the manager.
 - Remove the Highlight option from the Actions menu.
 - Run the report and confirm the changes that you made.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- a. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- b. Click the **Upload >** button.
- c. Browse and upload the `sol_02_01.sql` file to the `/home/oracle/labs/solutions` directory.
- d. Run the script by clicking the **Run** icon.
- e. Click **Run Now**.
- f. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 5-2**.

If you have not completed **Practice 5-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **App Builder** and select **Import**.
- c. For Import File, click the button and browse to the `sol_05_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- d. Click **Next**.
- e. For Install As Application, select **Reuse Application ID 111 From Export File** and click **Install Application**.

- f. Click **Replace Application** (if prompted).
- g. Wait for the application to successfully install.

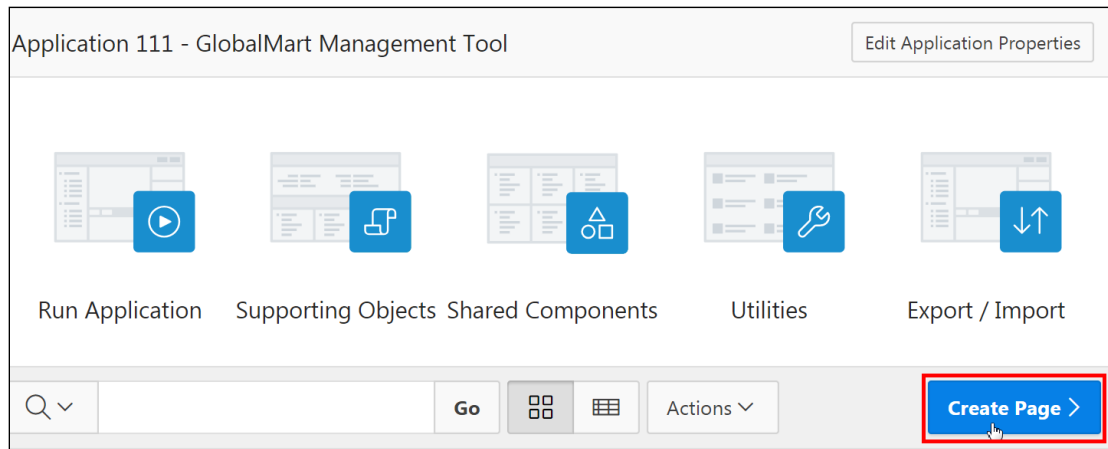
Solution 5-1: Creating and Manipulating an Interactive Report

Overview

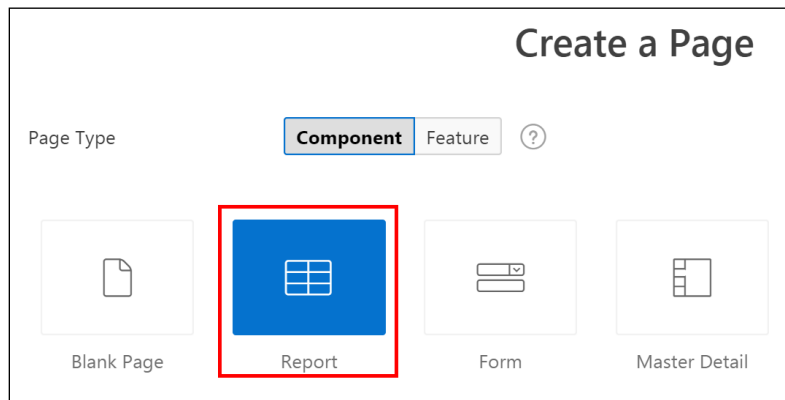
In this practice solution, steps are provided to create and manipulate the interactive report for the GMT application.

Steps

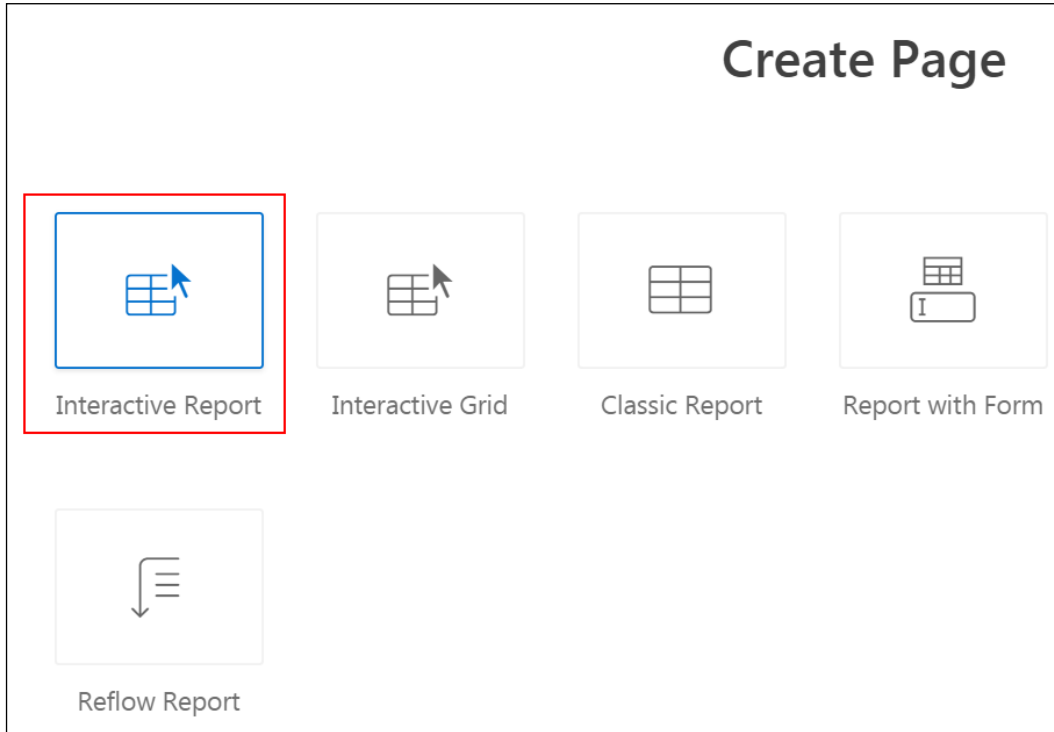
1. Create an interactive report to display all the columns from the OEHR_CUSTOMERS table on a new page in the GMT application. Name the page Customers and the region Customer Report.
 - a. Navigate to the GMT application home page and click **Create Page**.



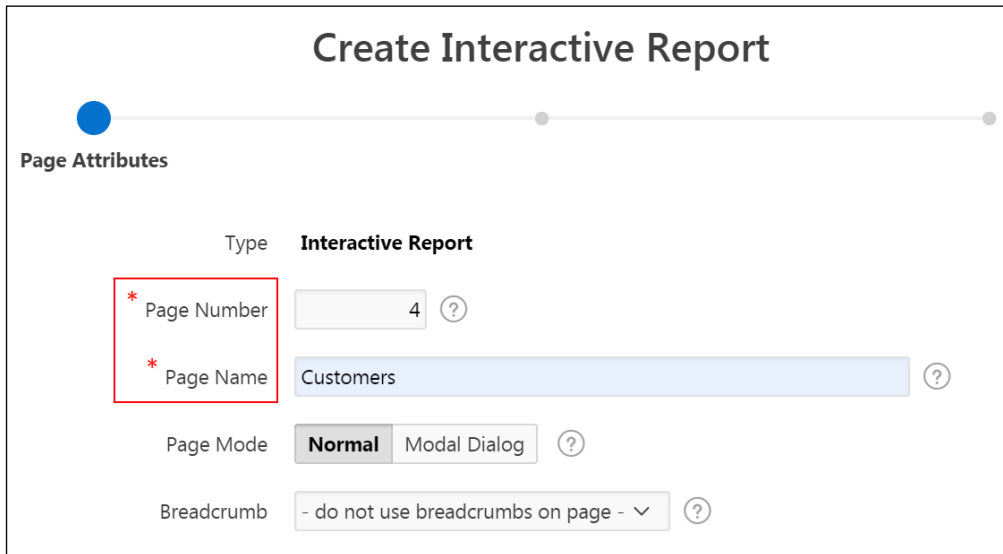
- b. Select **Report**.



c. Select **Interactive Report**.



a. In Report Page Number, enter 4; in Report Page Name, enter *Customers*. Click **Next**.



- b. In Navigation Preference, select **Create a new navigation menu entry**. Notice that Customers is auto-populated in the New Navigation Menu Entry field. Click **Next**.

Create Interactive Report

Navigation Menu

Navigation Preference

Do not associate this page with a navigation menu entry ?

Create a new navigation menu entry

Identify an existing navigation menu entry for this page

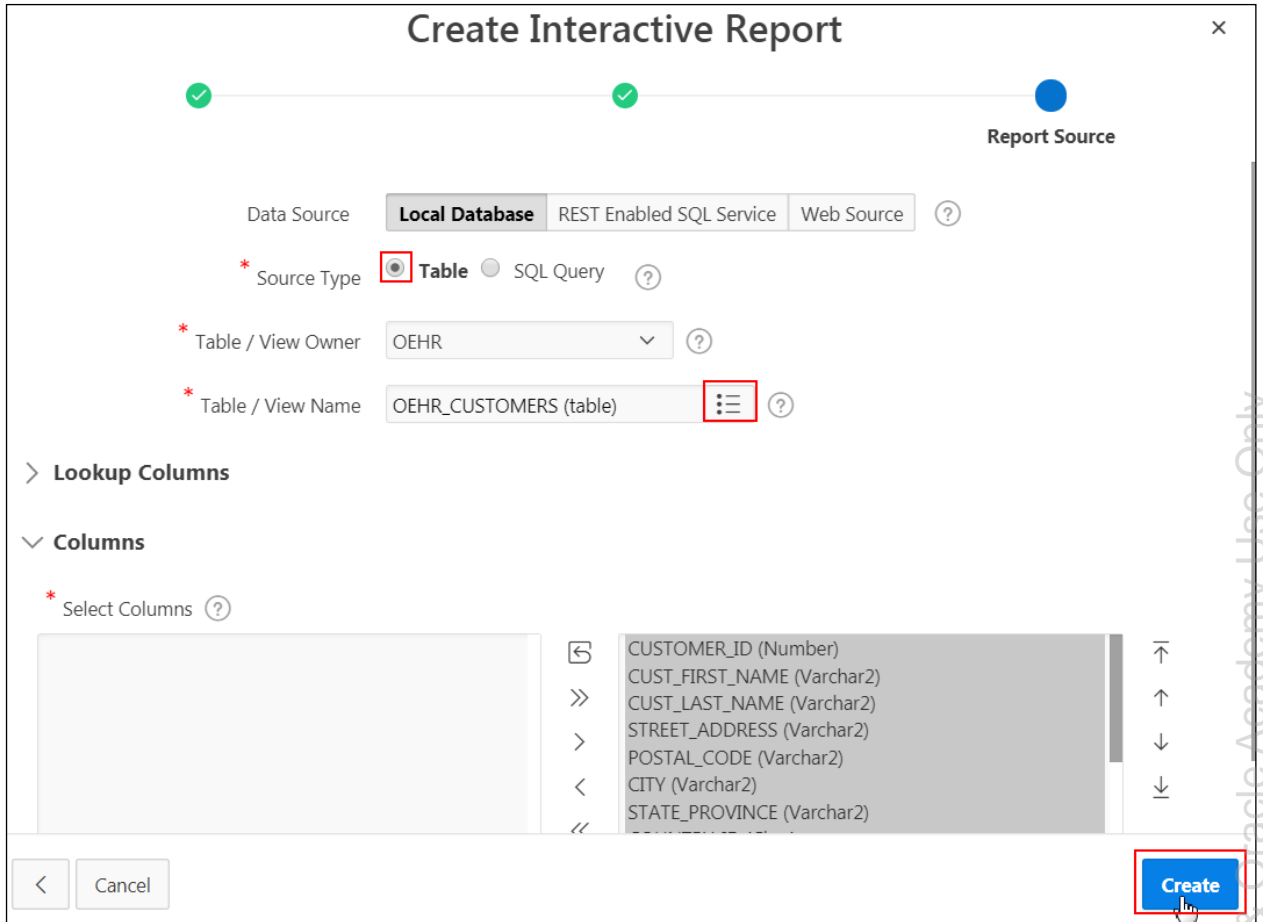
* New Navigation Menu Entry Customers ?

Parent Navigation Menu Entry

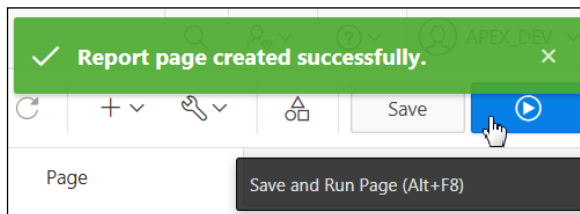
- No parent selected - ?

Home

- c. From Table / View Name, click the  icon to search for a table. In the Search dialog box, find and select OEHR_CUSTOMERS (table) . Click **Create**.



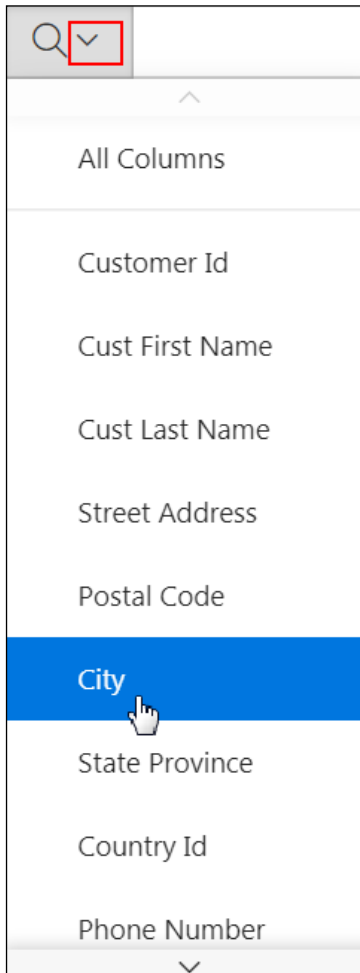
- d. The report is created. To view the report, click the **Save and Run Page** icon .



Note: If prompted, enter your developer user credentials.
The interactive report is displayed.

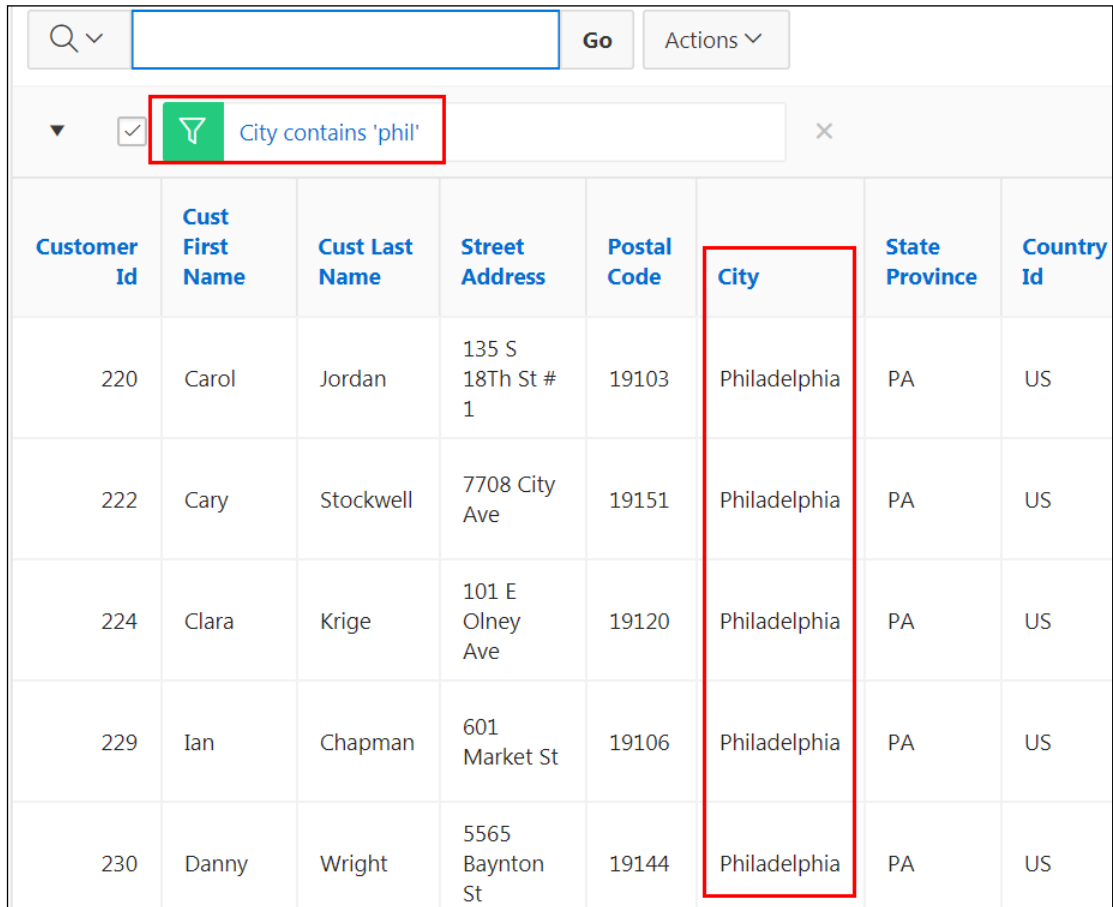
Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number	Nls Language
218	Bryan	Dvrrie	3376 Perrysville Ave	15214	Pittsburgh	PA	US	+1 412 123 4740	us
219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton	PA	US	+1 717 123 4741	us
220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US	+1 215 123 4743	us

2. Create a filter on the city of Philadelphia.
 - a. Click the **magnifying glass** icon labeled Select columns to search and select **City** from the Column Selector. Note that the selected search term appears as placeholder text in the field (Search: City). If you did not select a column, the search criteria you enter in the next step would search all columns.



- b. Enter `phil` in the search field and click **Go**. Note that the % wildcard is implied and is not entered.

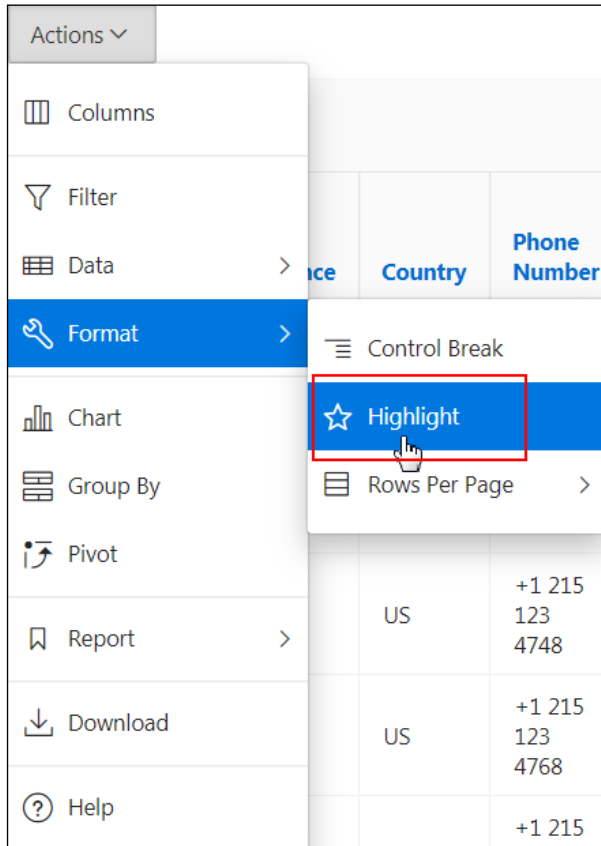
A filter is applied, and only the records that meet the search criteria are displayed.



The screenshot shows a report interface. At the top, there is a search bar with a magnifying glass icon, a text input field, a 'Go' button, and an 'Actions' dropdown menu. Below the search bar, a filter is applied, indicated by a green funnel icon and the text 'City contains 'phil''. The filter is highlighted with a red box. Below the filter, a table displays customer records. The table has columns for Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, and Country Id. The 'City' column is highlighted with a red box. The table contains five rows of data, all with 'Philadelphia' in the City column.

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id
220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US
222	Cary	Stockwell	7708 City Ave	19151	Philadelphia	PA	US
224	Clara	Krige	101 E Olney Ave	19120	Philadelphia	PA	US
229	Ian	Chapman	601 Market St	19106	Philadelphia	PA	US
230	Danny	Wright	5565 Baynton St	19144	Philadelphia	PA	US

3. Create a highlight where the credit limit is greater than 2500.
 - a. To highlight only those customers whose credit limit is greater than 2500, click **Actions** and select **Format > Highlight**.



- b. In Name, enter `Good Credit Rating`; in Background Color, select **[yellow]**; in Column, select **Credit Limit**; in Operator, select **>** (greater than), and in Expression, enter `2500`. Click **Apply**.

Highlight

Name

Sequence

Enabled

Highlight Type

Background Color ^ **[yellow]** [green] [blue] [orange] [red]

Text Color ^ [yellow] [green] [blue] [orange] [red]

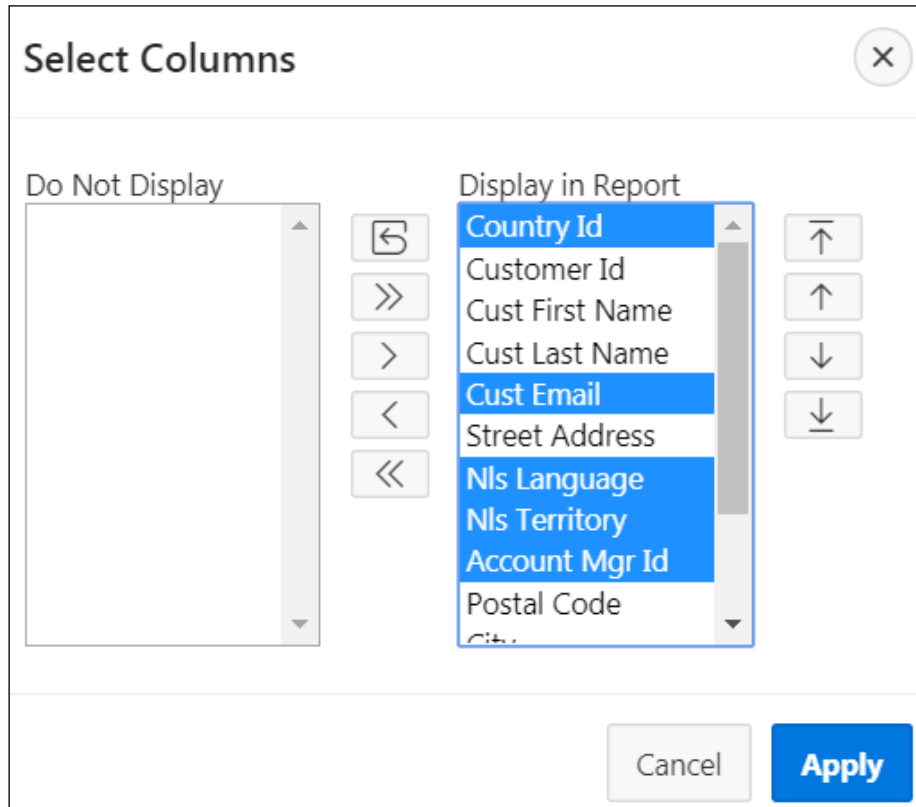
Highlight Condition

Column	Operator	Expression
<input type="text" value="Credit Limit"/>	<input type="text" value=">"/>	<input type="text" value="2500"/>

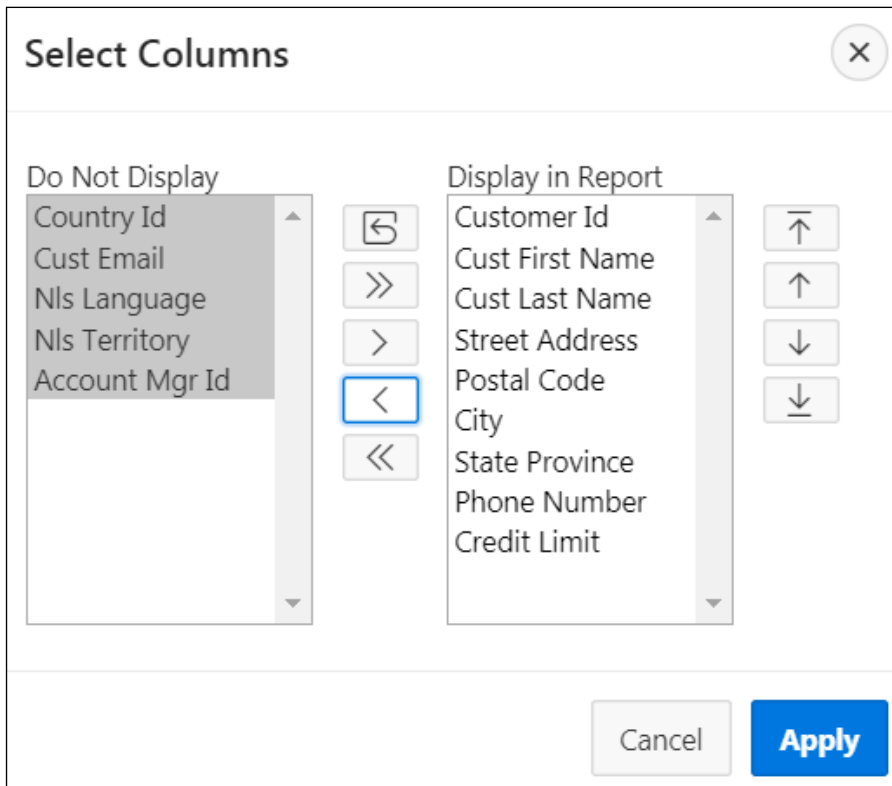
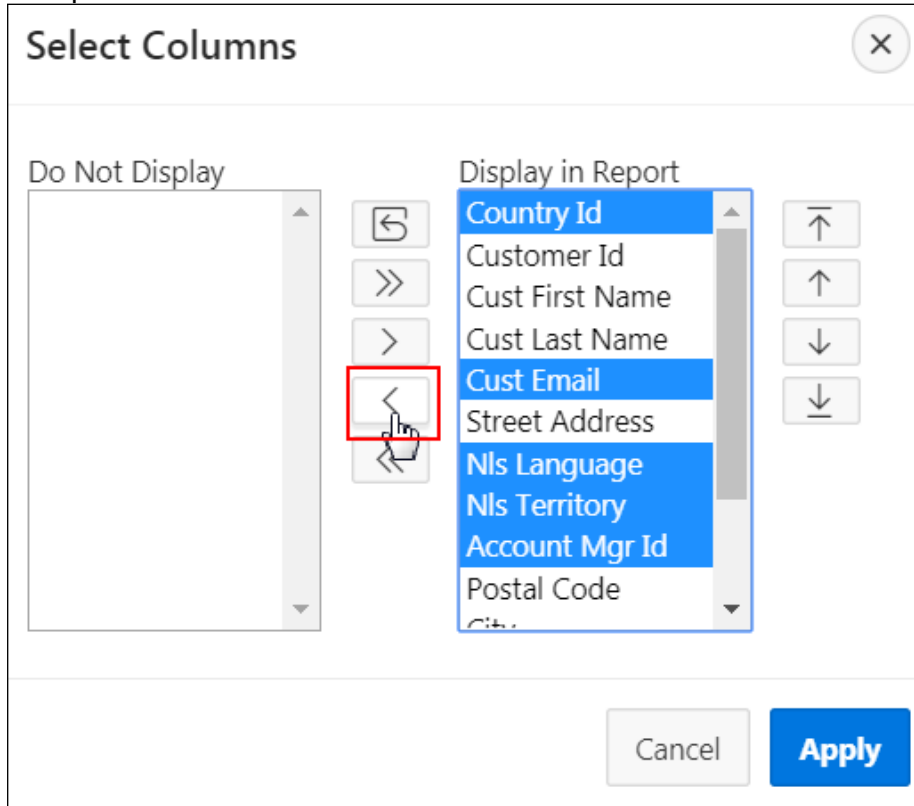
The records that meet the criteria are highlighted. (Scroll down to see them.)

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id
220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US
222	Cary	Stockwell	7708 City Ave	19151	Philadelphia	PA	US
224	Clara	Krige	101 E Olney Ave	19120	Philadelphia	PA	US
229	Ian	Chapman	601 Market St	19106	Philadelphia	PA	US
230	Danny	Wright	5565 Baynton St	19144	Philadelphia	PA	US
264	George	Adjani	1136 Arch St	19107	Philadelphia	PA	US
265	Irene	Laughton	6Th And Master St	19122	Philadelphia	PA	US
280	Rob	MacLaine	5344 Haverford Ave	19139	Philadelphia	PA	US
281	Don	Barkin	6959 Tulip St	19135	Philadelphia	PA	US

4. Display only the Customer ID, Customer Name, Address, Phone Number, and Credit Limit by hiding the other columns in the report.
 - a. Click **Actions > Columns**.
 - b. Ctrl + select **only** the following columns:
 - Country ID
 - Cust Email
 - Nls Language
 - Nls Territory
 - Account Manager ID



- c. Click the < icon (**Remove**) to move them to the Do Not Display area. Note that you can still perform other actions against these columns even though they are not displayed in the report.



d. Click **Apply**.

Only the columns that were under the **Display in Report** area are displayed.



The screenshot shows a report interface with a search bar at the top containing a magnifying glass icon and a 'Go' button. To the right of the search bar is an 'Actions' dropdown menu. Below the search bar, there are two active filters: 'City contains 'phil'' (indicated by a green funnel icon) and 'Good Credit Rating' (indicated by an orange star icon). Both filters have a checkmark and a close 'X' icon. Below the filters is a data table with the following columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, Phone Number, and Credit Limit. The table contains 10 rows of data. The last five rows (Customer Ids 264, 265, 280, and 281) are highlighted in yellow, corresponding to the 'Good Credit Rating' filter. The first five rows (Customer Ids 220, 222, 224, 229, and 230) are not highlighted, corresponding to the 'City contains 'phil'' filter.



Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Phone Number	Credit Limit
220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	+1 215 123 4743	2300
222	Cary	Stockwell	7708 City Ave	19151	Philadelphia	PA	+1 215 123 4745	2300
224	Clara	Krige	101 E Olney Ave	19120	Philadelphia	PA	+1 215 123 4748	2300
229	Ian	Chapman	601 Market St	19106	Philadelphia	PA	+1 215 123 4768	2400
230	Danny	Wright	5565 Baynton St	19144	Philadelphia	PA	+1 215 123 4771	2400
264	George	Adjani	1136 Arch St	19107	Philadelphia	PA	+1 215 123 4702	3600
265	Irene	Laughton	6Th And Master St	19122	Philadelphia	PA	+1 215 123 4749	3600
280	Rob	MacLaine	5344 Haverford Ave	19139	Philadelphia	PA	+1 215 123 4709	5000
281	Don	Barkin	6959 Tulip St	19135	Philadelphia	PA	+1 215 123 4751	5000

5. Delete the "phil" filter.

a. Click the **X** icon (**Remove Filter**) for the City contains 'phil' filter.

Q ▾ Go Actions ▾



 City contains 'phil' 


 Good Credit Rating 

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia
222	Cary	Stockwell	7708 City Ave	19151	Philadelphia
224	Clara	Krige	101 E Olney Ave	19120	Philadelphia
229	Ian	Chapman	601 Market St	19106	Philadelphia
230	Danny	Wright	5565 Baynton St	19144	Philadelphia
264	George	Adjani	1136 Arch St	19107	Philadelphia
265	Irene	Laughton	6Th And Master St	19122	Philadelphia
280	Rob	MacLaine	5344 Haverford Ave	19139	Philadelphia
281	Don	Barkin	6959 Tulip St	19135	Philadelphia

The report refreshes with the filter deleted.

6. Display the rows in ascending order by State.
 - a. Sort by State Province. Click the **State Province** column heading and click the **Sort Ascending** icon.

 Good Credit Rating 

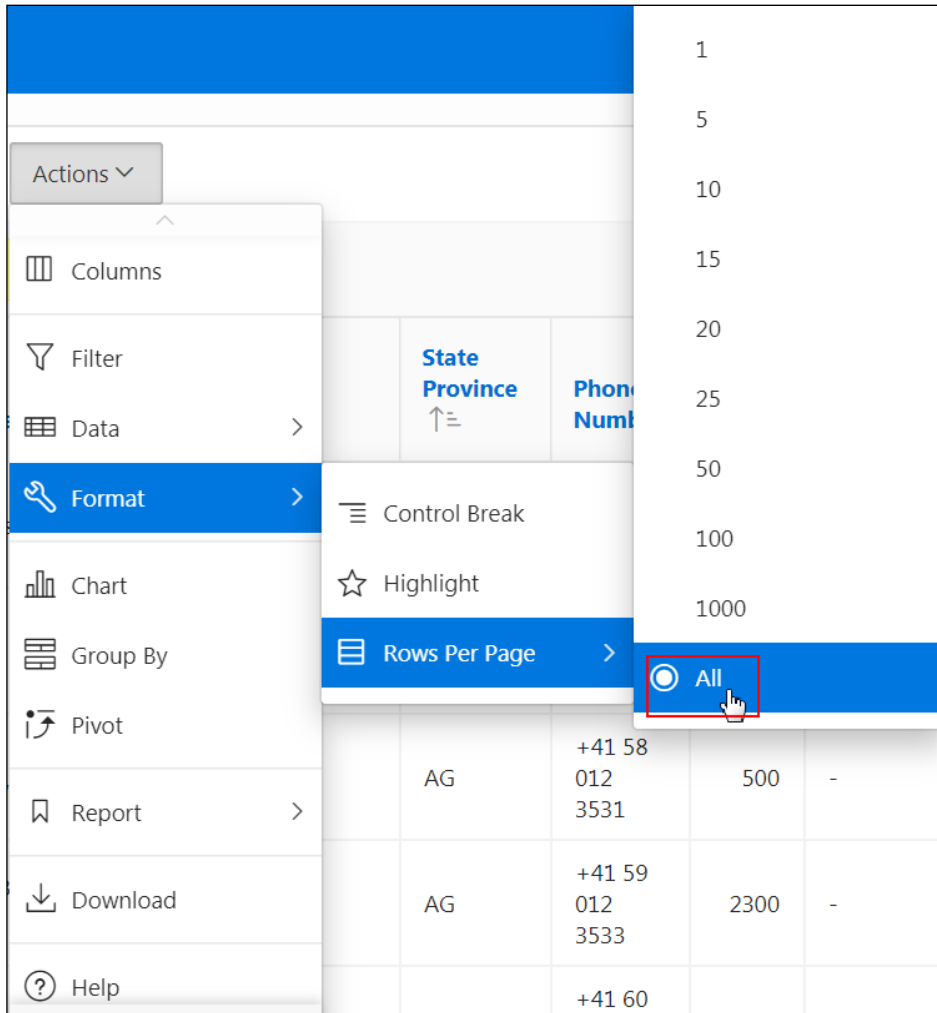
Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country	Phone Number	Nls Language
825	Alain	Dreyfuss	Harmoniegasse 3	3413	Baden-Daettwil				d
853	Amrish	Palin	1540 Stripes Crt	3413	Baden-Daettwil				d
827	Alain	Siegel	Alfred E. Neumann-Weg 3	3413	Baden-Daettwil				d
828	Alan	Minnelli	Dr. Herbert Bitto Str 23	3413	Baden-Daettwil				d
829	Alan	Hunter	Taefernstr 4	3413	Baden-Daettwil	AG	CH	+41 60 012 3535	d

The report sorts the entries as per the state in ascending order.

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province
825	Alain	Dreyfuss	Harmoniegasse 3	3413	Baden-Daettwil	AG
853	Amrish	Palin	1540 Stripes Crt	3413	Baden-Daettwil	AG
827	Alain	Siegel	Alfred E. Neumann-Weg 3	3413	Baden-Daettwil	AG
828	Alan	Minnelli	Dr. Herbert Bitto Str 23	3413	Baden-Daettwil	AG
829	Alan	Hunter	Taefernstr 4	3413	Baden-Daettwil	AG
830	Albert	Dutt	Kreuzritterplatz 5	3413	Baden-Daettwil	AG
831	Albert	Bel Geddes	Helebardenweg 5	3413	Baden-Daettwil	AG

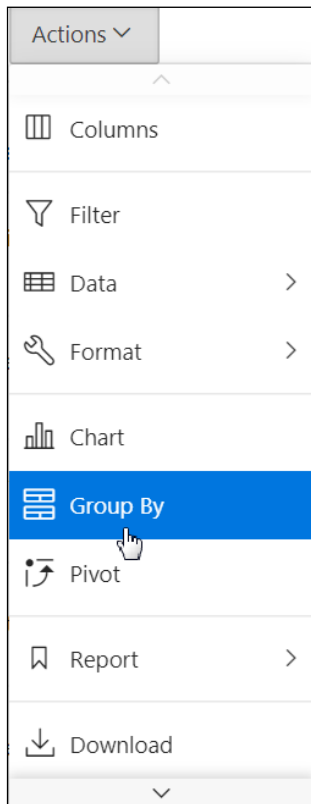
7. Change the pagination to display all rows.

- a. Because the pagination is set to default (50), you do not see all the rows. To view all the rows, click **Actions > Format > Rows Per Page > All**.

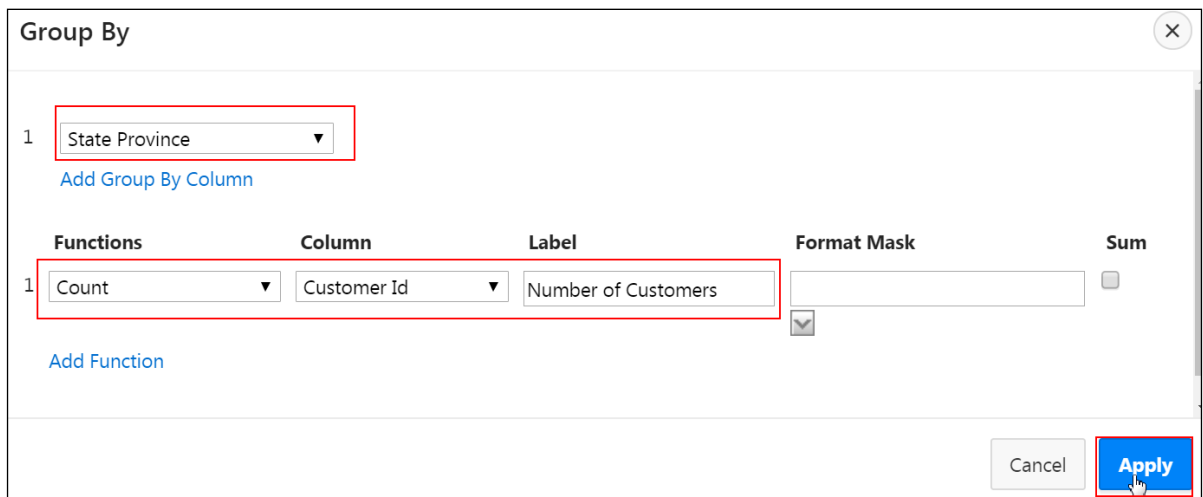



8. Create a Group By report to display the number of customers in a particular province or state.

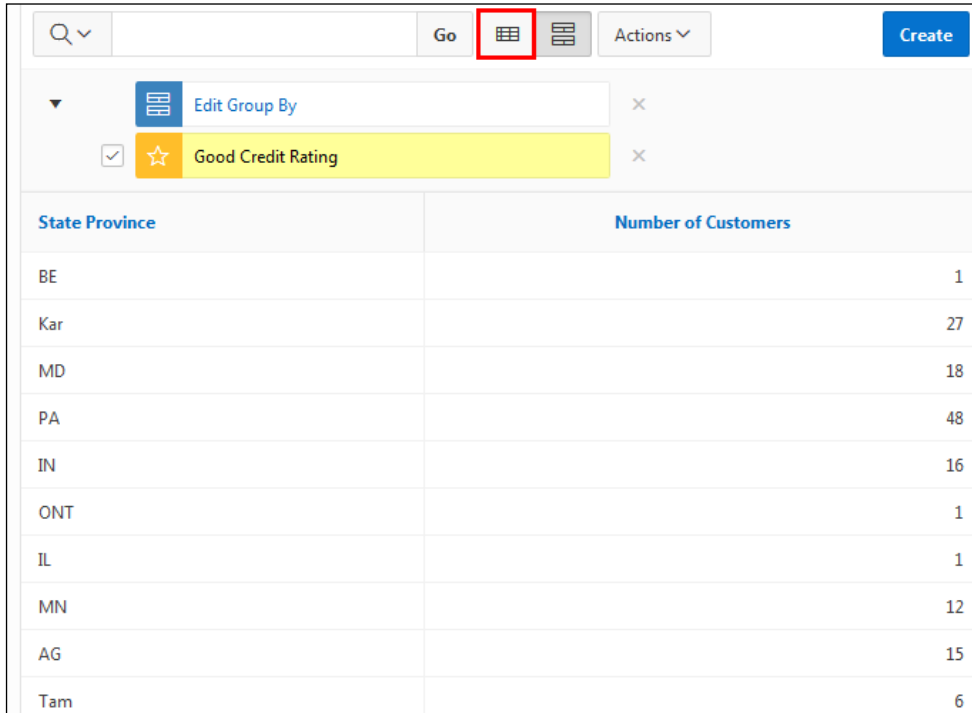
a. To create a Group By report, click **Actions** and select **Group By**.



b. Click **Select Group By Column** and select **State Province**. In Functions, select **Count**; in Column, select **Customer Id**; and in Label, enter `Number of Customers`. Click **Apply**.

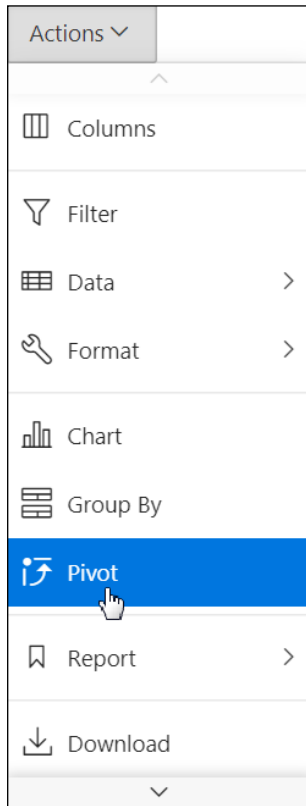


- c. The state provinces and the number of customers per state appear. To return to the report view, click the **View Report** icon .



State Province	Number of Customers
BE	1
Kar	27
MD	18
PA	48
IN	16
ONT	1
IL	1
MN	12
AG	15
Tam	6

9. Create a Pivot report to display the total credit limit of customers for each account manager to see how much potential debt you may hold.
- a. To create a Pivot, click **Actions > Pivot**.



- b. In the Pivot dialog box:
- In **Pivot Columns**, select **Account Manager Id**
 - In **Row Columns**, select **Customer Id**
 - In **Functions**, select **Sum**
 - In **Column**, select **Credit Limit**
 - In **Label**, enter `Total Credit Limit`
 - In **Sum**, select the **check box** to enable

Pivot
✕

Pivot Columns

1 Account Mgr Id ▼

Add Pivot Column

Row Columns

1 Customer Id ▼

Add Row Column

	Functions	Column	Label	Format Mask	Sum
1	Sum ▼	Credit Limit ▼	Total Credit Limit		<input checked="" type="checkbox"/>

Add Function

Cancel
Apply

c. Click **Apply**.

The credit limits for each customer per manager are displayed with an aggregation row at the bottom with the total amount of credit each manager has allocated.

Go

📄
📊
🔄
Actions ▼

✕
Edit Pivot

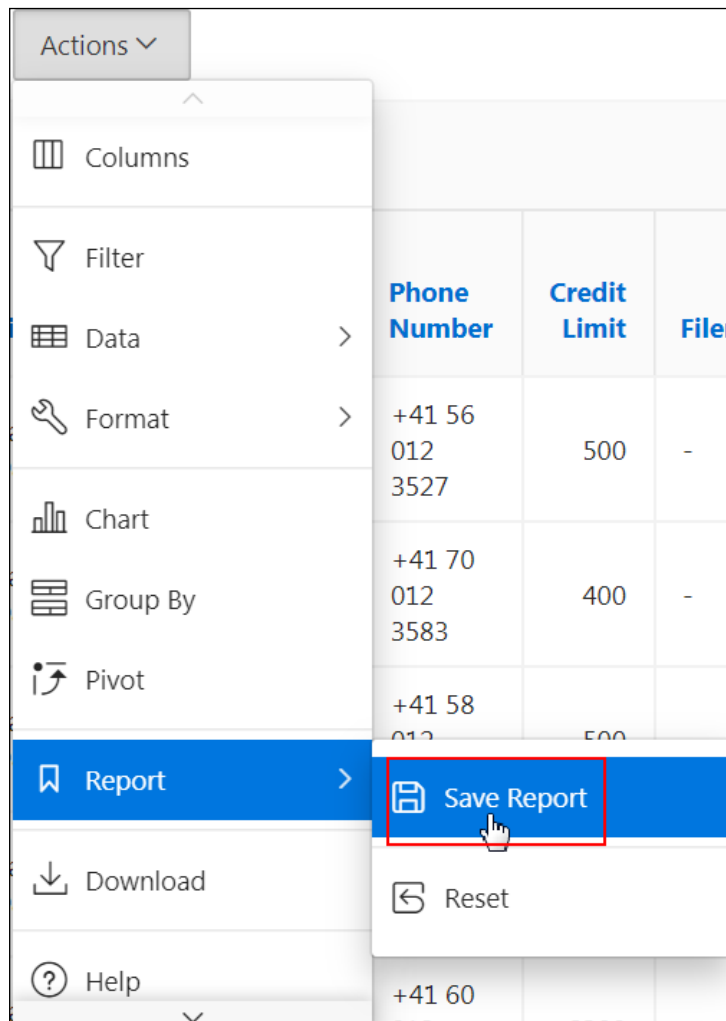
★ Good Credit Rating
✕

	145	147	148	149
Customer Id	Total Credit Limit	Total Credit Limit	Total Credit Limit	Total Credit Limit
833	-	3,500	-	-
840	-	1,400	-	-
934	-	-	600	-
919	-	-	3,500	-
920	-	-	3,500	-
239	2,400	-	-	-
448	-	500	-	-
450	-	1,500	-	-
451	-	700	-	-
475	-	-	5,000	-
487	-	-	1,900	-
771	-	400	-	-
	151,400	136,100	157,500	159,400

d. To return to the report view, click the **View Report** icon .

10. Save the report as a private report that is available only to you.

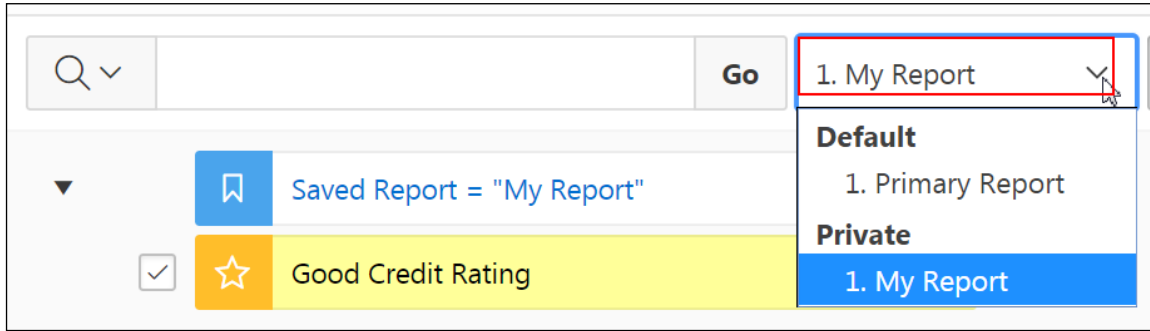
a. Click **Actions > Report > Save Report**.



b. In Name, enter My Report. Click **Apply**.

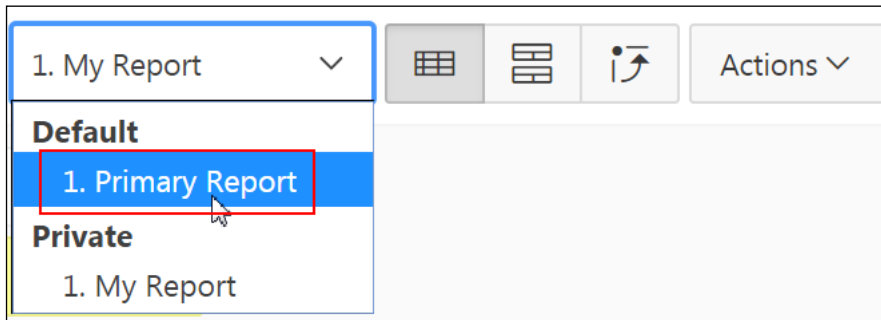
The screenshot shows a 'Save Report' dialog box with a close button (X) in the top right corner. The 'Save' section has a dropdown menu set to 'As Named Report' and the text '(Only displayed for developers)'. The 'Name' field contains 'My Report' and is highlighted with a red box. The 'Description' field is empty. At the bottom right, there are two buttons: 'Cancel' and 'Apply', with the 'Apply' button highlighted by a red box and a mouse cursor pointing at it.

- c. The report is saved. You can click the Reports drop-down list to see the list of reports.

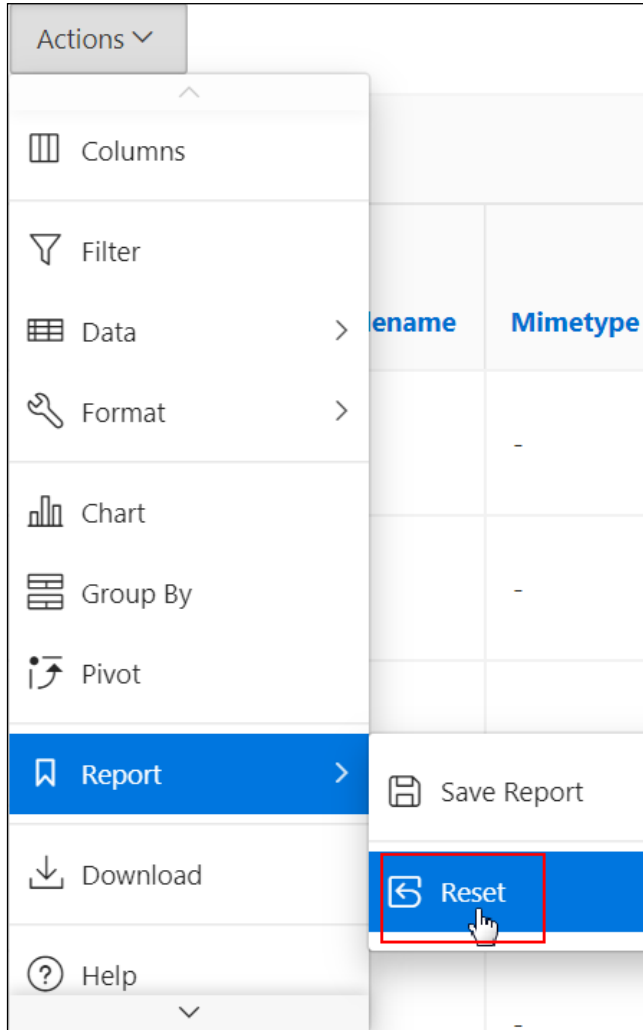


11. Reset the Primary Report to its original state.

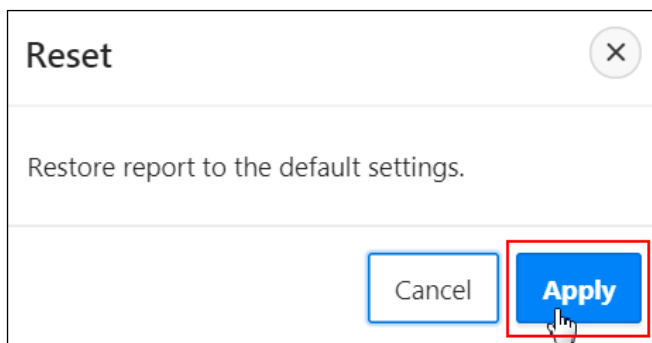
- a. Click the **Reports** drop-down menu (**1. My Report**) and select **1. Primary Report**.



- b. To return to the default settings, click **Actions > Report > Reset**.



- c. Click **Apply**.



You see the original report without customizations.

- d. Click the **Application 111** link at the bottom of the page to return to the Application home page.

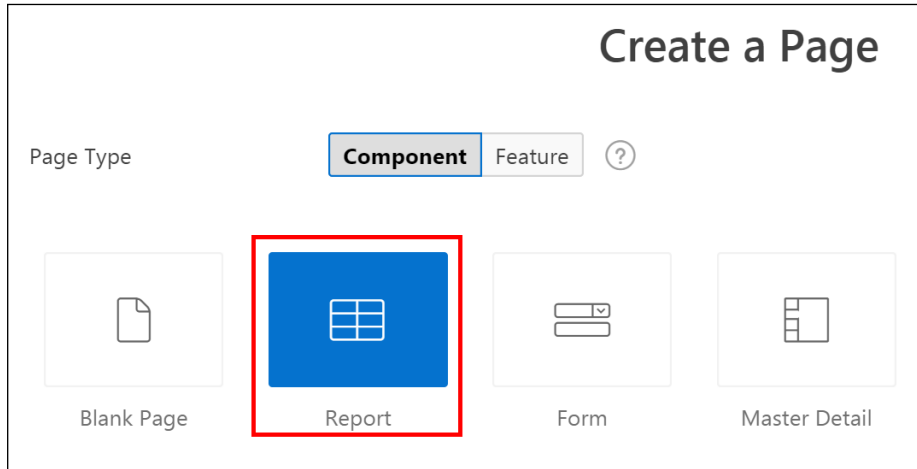
The screenshot displays the GlobalMart Management Tool interface. At the top, there is a blue header with a hamburger menu icon and the text "GlobalMart Management Tool". Below the header is a dark sidebar with a home icon and the text "Home", and a document icon with the text "Customers". The main content area features a search bar with a magnifying glass icon, a "Go" button, a dropdown menu showing "1. Primary Report", and an "Actions" dropdown button. Below the search bar is a table with the following data:

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id
218	Bryan	Dvrrie	3376 Perrysville Ave	15214	Pittsburgh	PA	US
219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton	PA	US
220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US

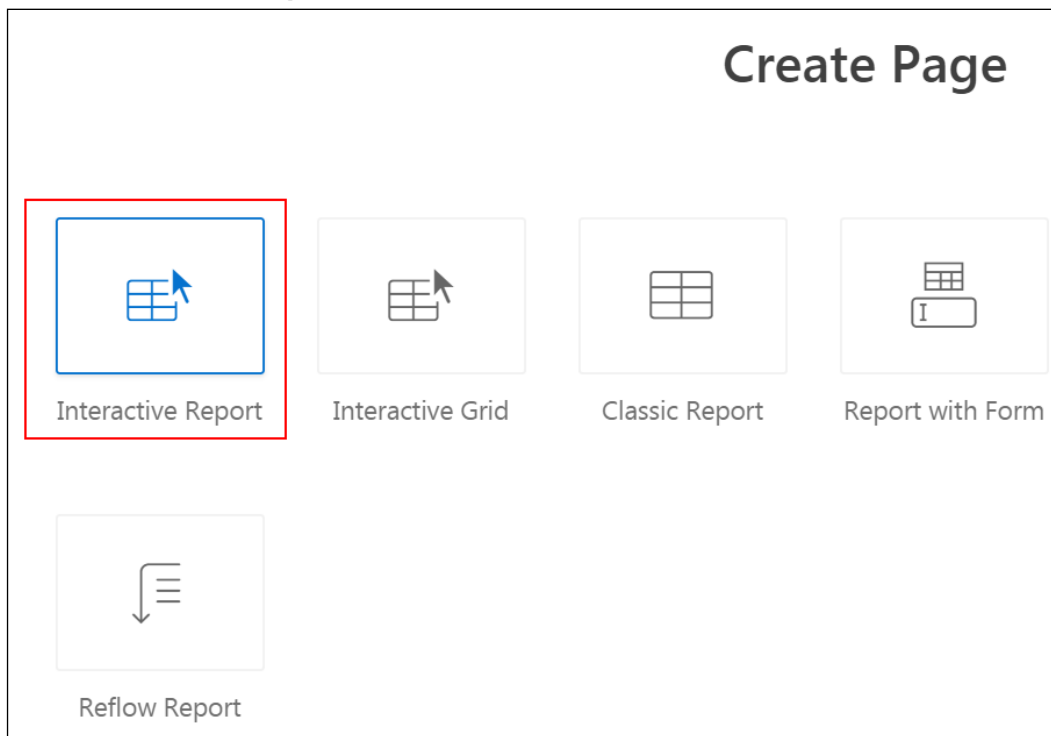
At the bottom of the interface is a dark navigation bar with several icons and labels: Home, Application 111 (highlighted with a red box), Edit Page 4, Session, View Debug, Debug, Page Info, Quick Edit, Theme Roller, and a gear icon.

12. Create a stand-alone interactive report page with breadcrumbs in the GMT application named Employee Commissions. This interactive report displays details from the OEHR_EMPLOYEES table about who earns a commission.

- a. Navigate to the GMT application home page and click **Create Page**.
- b. Select **Report**.



- c. Select **Interactive Report**.



- a. In Page Number, enter 5; in Page Name, enter `Employee Commission`; in Breadcrumb, select **Breadcrumb**; and in Parent Entry, select **Home (Page 1)**. Click **Next**.

Create Interactive Report

Page Attributes

Type **Interactive Report**

* Page Number ?

* Page Name ?

Page Mode **Normal** Modal Dialog ?

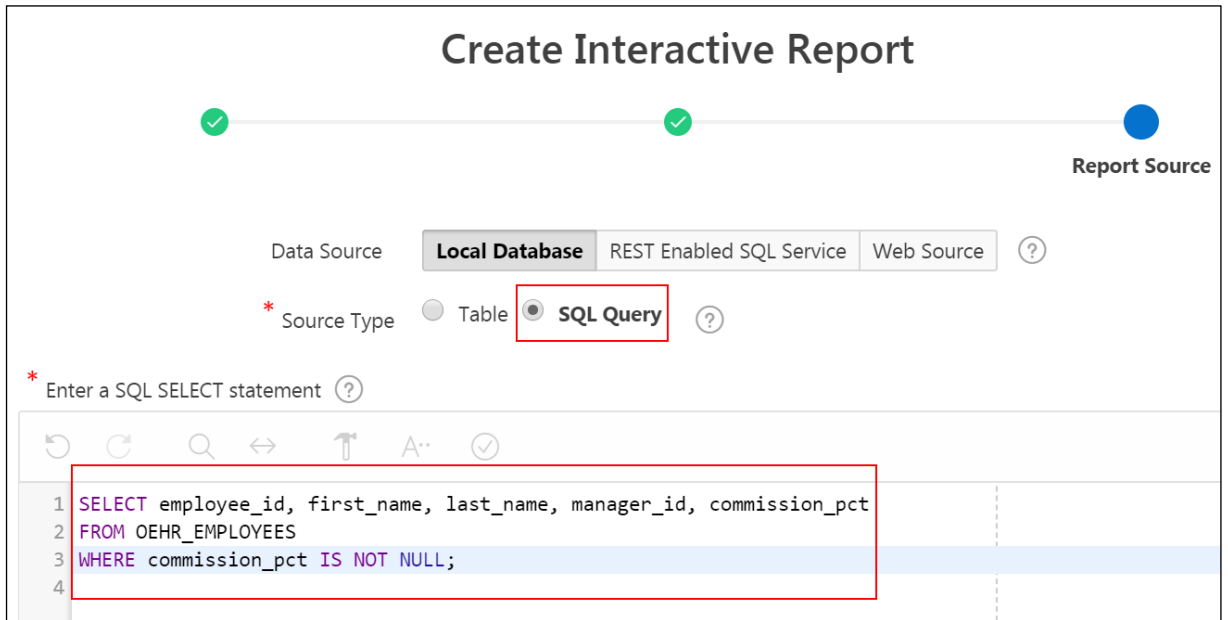
Breadcrumb ?

Parent Entry ?

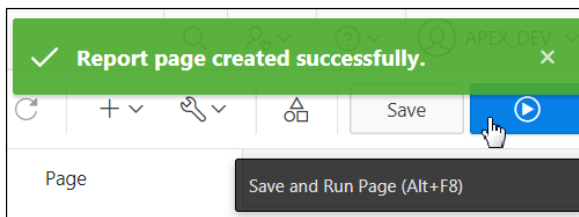
Entry Name ?

- b. In Navigation Preference, accept the default settings and click **Next**.
- c. In Source Type, select **SQL Query**. Enter the following SQL `SELECT` statement. You can copy and paste the SQL statement from `/home/oracle/labs/labs/lab_05_01_01.txt`. Alternatively, you can use the **Query Builder** button to create the report query.

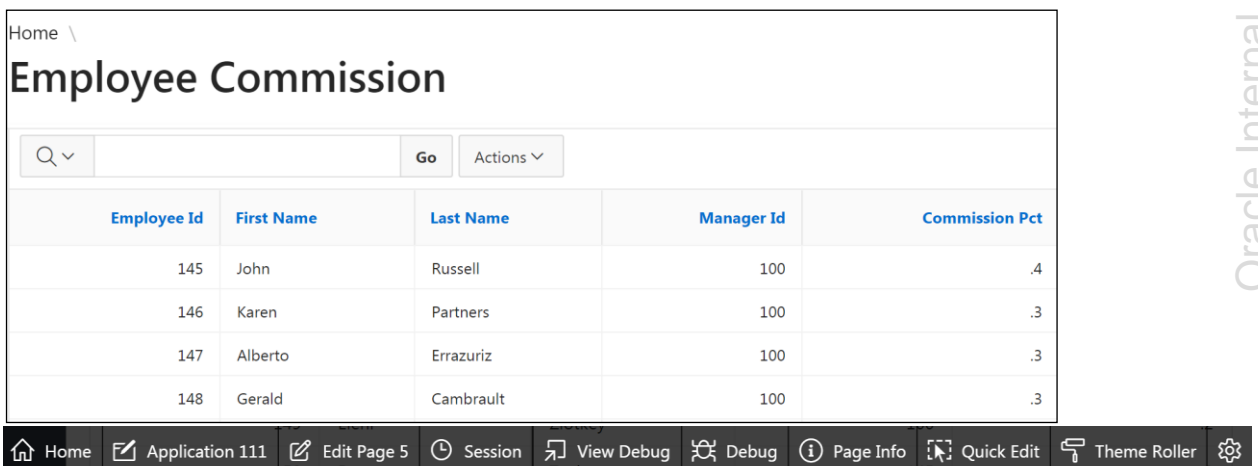
```
SELECT employee_id, first_name, last_name, manager_id,
commission_pct
FROM OEHR_EMPLOYEES
WHERE commission_pct IS NOT NULL;
```



- d. Click **Create**. The report is created.
- e. To view the report, click the **Save and Run Page** icon.



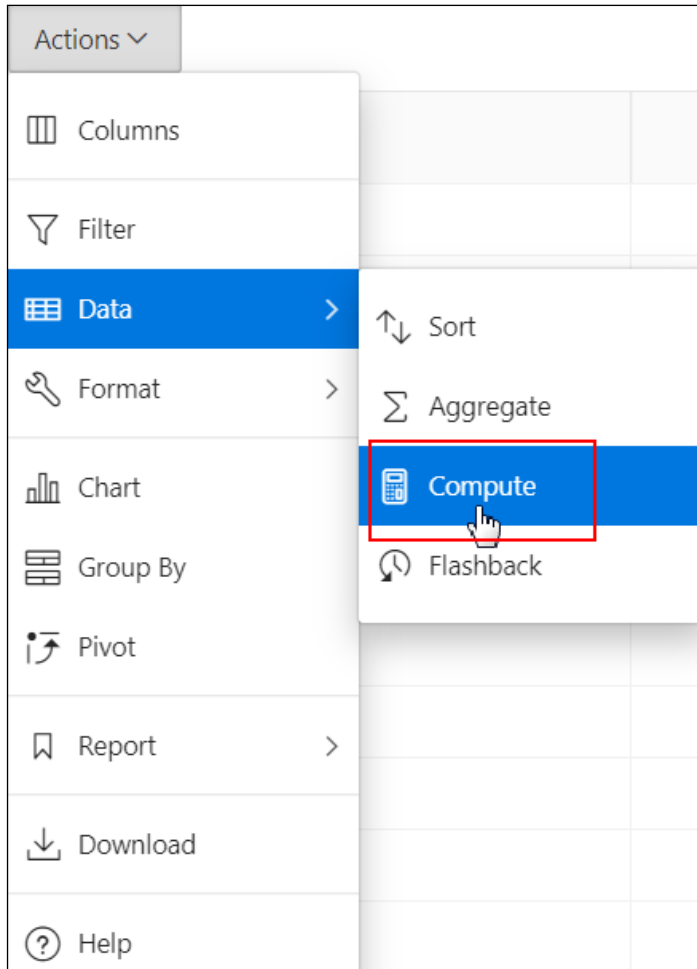
Note: If prompted, enter your developer user login credentials.
Your report is displayed.



13. Management proposes to increase the commission of employees whose existing commission percentage is less than or equal to 0.15. Create a computed column called **New Commission**, to display the new commission. The new commission scheme includes:

- Employees with a commission percentage of 0.1 will get an additional commission of 0.15.
- Employees with a commission percentage of 0.15 will get an additional commission of 0.05.

a. To create a new computation, click **Actions > Data > Compute**.



b. For Column Label, enter **New Commission**.

c. The computation should add .15 to a commission of .1 and .05 to a commission of .15. For Computation Expression, enter the `CASE` statement (located in `/home/oracle/labs/labs/lab_05_01_02.txt`):

```
CASE E WHEN 0.1 THEN E+0.15 WHEN 0.15 THEN E+0.05 ELSE E END
```

You can use the columns list, functions list, and keypad to enter the code in the computation area or paste the previous `CASE` statement into the computation area. When you select `Commission Pct` from Columns, notice that the letter corresponding to the column appears in the computation area. This is the column alias.

After entering the code, click **Apply**.

Compute ✕

Computation - New Computation - ▼

Column Label New Commission Format Mask ▼

Computation Expression

```
CASE E WHEN 0.1 THEN E+0.15 WHEN 0.15 THEN E+0.05 ELSE E
END
```

Columns	Keypad	Functions / Operators
A. Employee Id	() '	!=
B. First Name	7 8 9 -	<
C. Last Name	4 5 6 +	<=
D. Manager Id	1 2 3 *	=
E. Commission Pct	0 . /	>
	space ,	>=
		ABS

Create a computation using column aliases. Examples:

- (B+C)*100
- INITCAP(B)||', '||INITCAP(C)
- CASE WHEN A = 10 THEN B + C ELSE B END
- ROUND(C / 1000000)

Cancel
Apply

The computed column appears in the report.

Home \ Go Actions ▼

Employee Commission

Employee Id	First Name	Last Name	Manager Id	Commission Pct	New Commission
146	Karen	Partners	100	.3	.3
147	Alberto	Errazuriz	100	.3	.3
148	Gerald	Cambrault	100	.3	.3
149	Eleni	Zlotkey	100	.2	.2
150	Peter	Tucker	145	.3	.3
151	David	Bernstein	145	.25	.25

14. Create a control break on Manager ID.

- a. Click the **Manager Id** column heading and click the **Control Break** icon. (To more fully configure a control break, you can click **Actions > Format > Control Break**.)

Employee Id	First Name	Last Name	Manager Id	Commission Pct
145	John	Russell	100	.4
146	Karen	Partners	100	.3
147	Alberto	Errazuriz	100	.3
148	Gerald	Cambrault	100	.3
149	Eleni	Zlotkey	100	.3
150	Peter	Tucker	145	.3
151	David	Bernstein	145	.25
152	Peter	Hall	145	.25

The column now appears before each break point in the report.

Home \

Employee Commission

Manager Id

Manager Id : 100

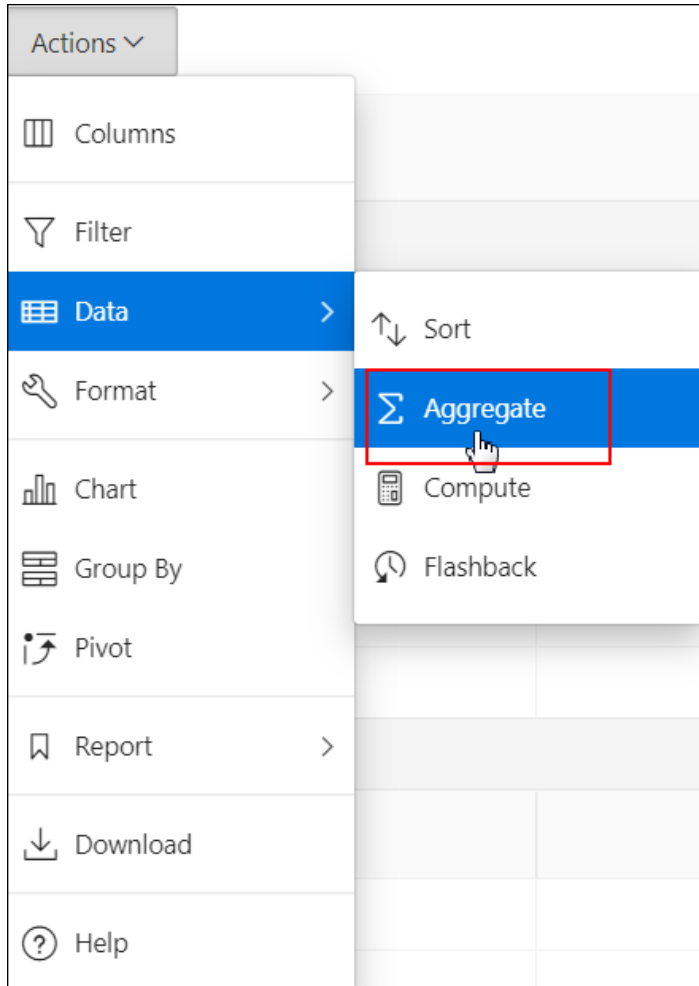
Employee Id	First Name	Last Name	Commission Pct	New Commission
147	Alberto	Errazuriz	.3	.3
146	Karen	Partners	.3	.3
145	John	Russell	.4	.4

Manager Id : 145

Employee Id	First Name	Last Name	Commission Pct	New Commission
152	Peter	Hall	.25	.25
151	David	Bernstein	.25	.25
150	Peter	Tucker	.3	.3
153	Christopher	Olsen	.2	.2
155	Oliver	Tuvault	.15	.2

Home Application 111 Edit Page 5 Session View Debug Debug Page Info Quick Edit Theme Roller

15. Display the maximum commission earned by employees under each manager.
- a. To find out the maximum commission earned by employees under each manager, click **Actions > Data > Aggregate**.



- b. In Function, select **Maximum**, and in Column, select ****New Commission** (a computed column from the column list).

The screenshot shows the 'Aggregate' dialog box with the following configuration:

- Aggregation: - New Aggregation -
- Function: Maximum
- Column: **New Commission

The 'Apply' button is highlighted in blue.

- c. Click **Apply**.

The report includes the maximum commission earned by employees under each manager.

Home \

Employee Commission

Actions ▾

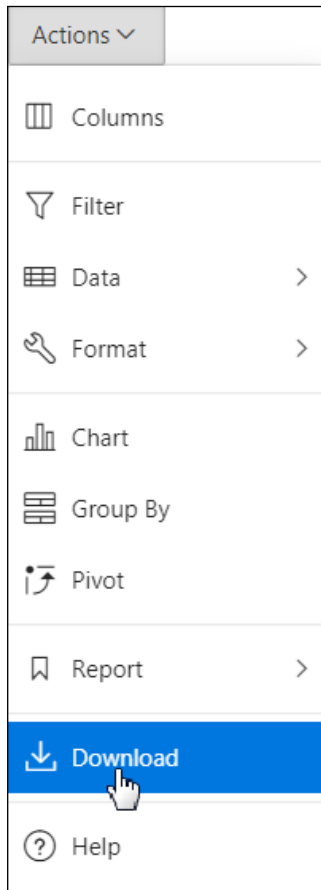
Manager Id

Manager Id : 100

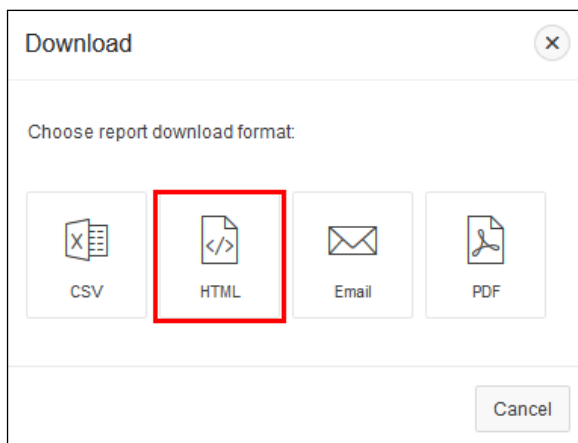
Employee Id	First Name	Last Name	Commission Pct	New Commission
147	Alberto	Errazuriz	.3	.3
146	Karen	Partners	.3	.3
145	John	Russell	.4	.4
148	Gerald	Cambrault	.3	.3
149	Eleni	Zlotkey	.2	.2
				Maximum: .4

16. Download the HTML report.

a. To download a report, click **Actions** and select **Download**.



b. Click **HTML**.



- c. Open the file to view the report in your web browser.

Manager Id	Employee Id	First Name	Last Name	Commission Pct	New Commission
100	147	Alberto	Errazuriz	.3	.3
100	146	Karen	Partners	.3	.3
100	145	John	Russell	.4	.4
100	148	Gerald	Cambraut	.3	.3
100	149	Eleni	Zlotkey	.2	.2
145	152	Peter	Hall	.25	.25
145	151	David	Bernstein	.25	.25
145	150	Peter	Tucker	.3	.3
145	153	Christopher	Olsen	.2	.2
145	155	Oliver	Tuvault	.15	.2
145	154	Nanette	Cambraut	.2	.2
146	156	Janette	King	.35	.35
146	157	Patrick	Sully	.35	.35
146	158	Allan	McEwen	.35	.35
146	160	Louise	Doran	.3	.3

- d. Close the HTML report.
e. Click **Cancel** to close the Download window.

17. Save this as a public report. Name the saved report **Commission Proposal**.
 - a. Click **Actions > Report > Save Report**.
 - b. In the Save drop-down list, select **As Default Report Settings**.

Save Report [X]

Save [Red Box] As Named Report (Only displayed for developers)

Name As Named Report

Description As Default Report Settings [Blue Highlight]

Cancel Apply [Red Box]

The Save Report dialog changes to **Save Default Report**.

- c. In Default Report Type, select **Alternative**, and in Name, enter **Commission Proposal**. Click **Apply**.

Save Default Report [X]

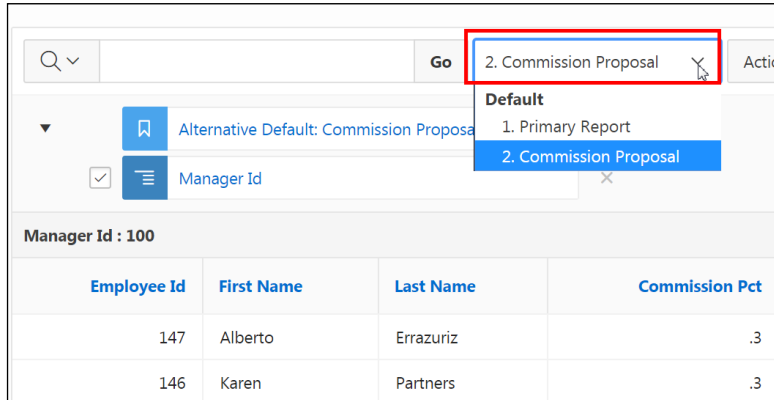
The current report settings will be used as the default for all users.

Default Report Type Primary Alternative [Red Box]

Name Commission Proposal

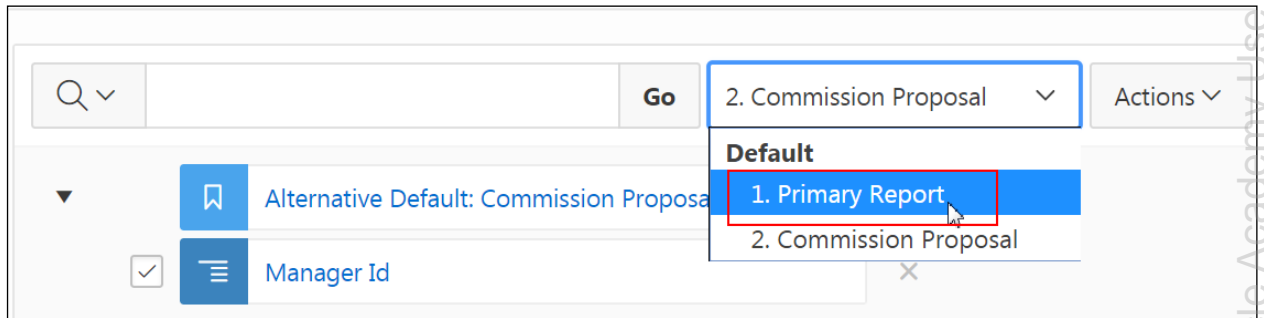
Cancel Apply [Red Box]

The alternative report now appears in the Reports drop-down list.



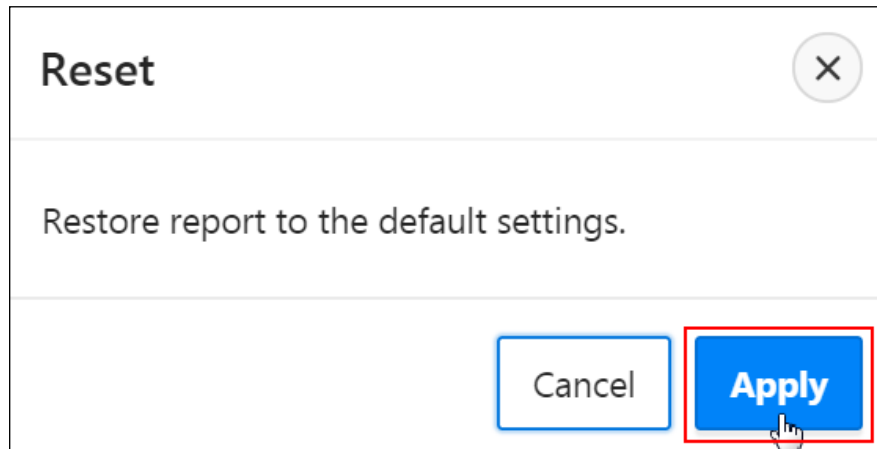
18. Reset the Primary Report.

a. Click the Reports drop-down list and select **1. Primary Report**.



b. To reset this primary report to its original settings, click **Actions > Report > Reset**.

c. Click **Apply**.



- d. The primary report is reset to its original settings. Click **Edit Page 5** on the Runtime Developer toolbar at the bottom of the page to return to Page Designer.

Home \

Employee Commission

Q ▾ Go 1. Primary Report ▾ Actions ▾

Employee Id	First Name	Last Name	Manager Id	Commission Pct
145	John	Russell	100	.4
146	Karen	Partners	100	.3
147	Alberto	Errazuriz	100	.3
148	Gerald	Cambrault	100	.3
149	Eleni	Zlotkey	100	.2
150	Peter	Tucker	145	.3

Home Application 111 **Edit Page 5** Session View Debug Debug Page Info Quick Edit Theme Roller

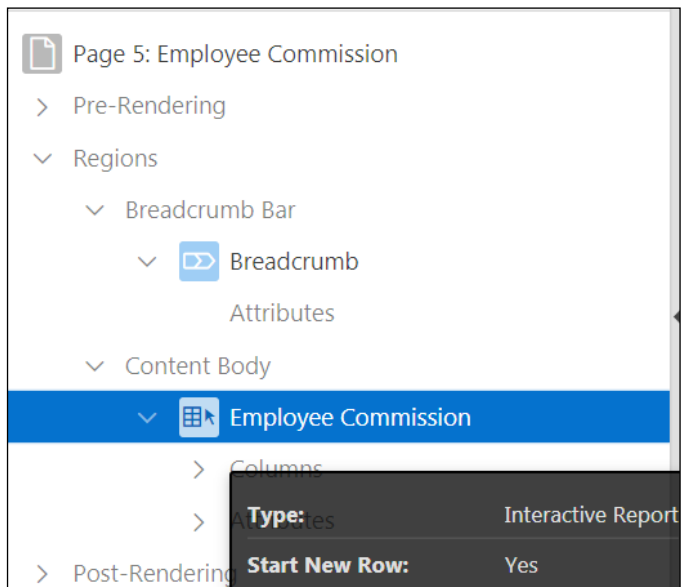
Solution 5-2: Customizing an Interactive Report

Overview

In this practice solution, steps are provided to customize the interactive report that you created for the GMT application.

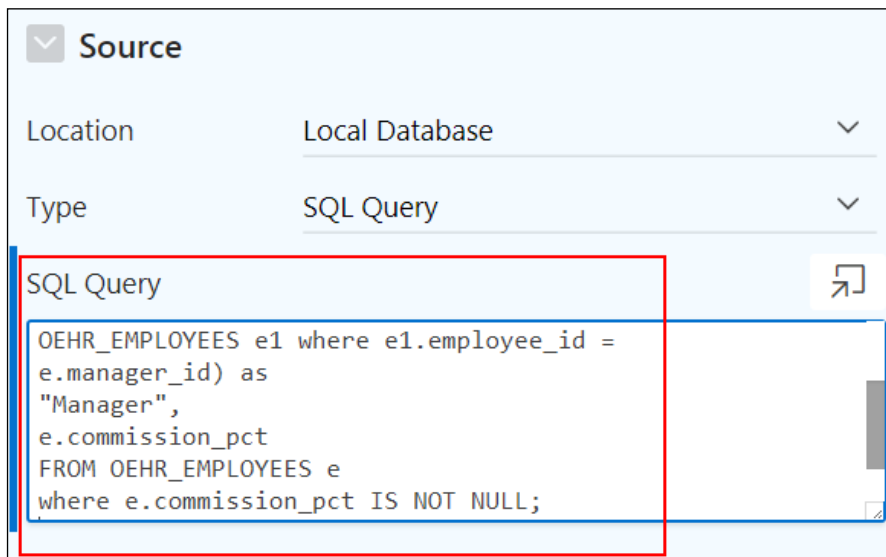
Steps

1. Make the following customizations to the Employee Commissions report:
 - Hide `EMPLOYEE_ID`.
 - Change `MANAGER_ID` to be the `FIRST_NAME` and `LAST_NAME` of the manager.
- a. Navigate to the Page Designer view of the Employee Commission page.
- b. On the Rendering tab (left pane), expand **Regions > Content Body** and select **Employee Commission**.

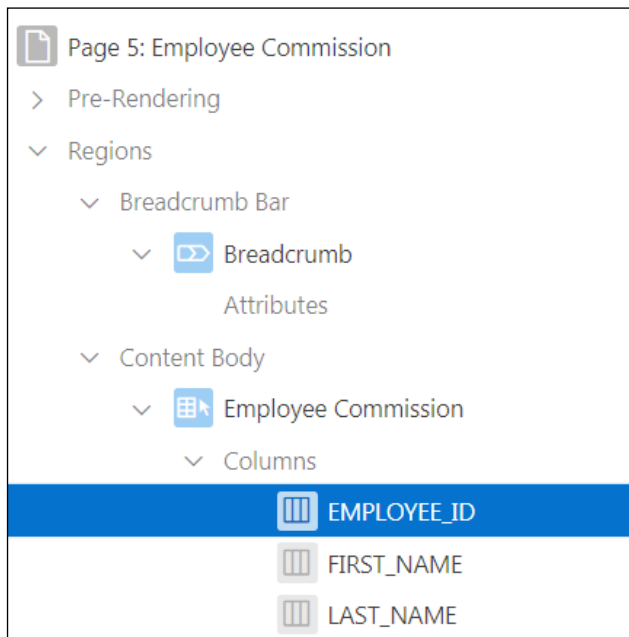


- c. In the Property Editor (right pane), in the Source section, change the SQL Query field value to reflect the following query (located in /home/oracle/labs/labs/lab_05_02_01.txt):

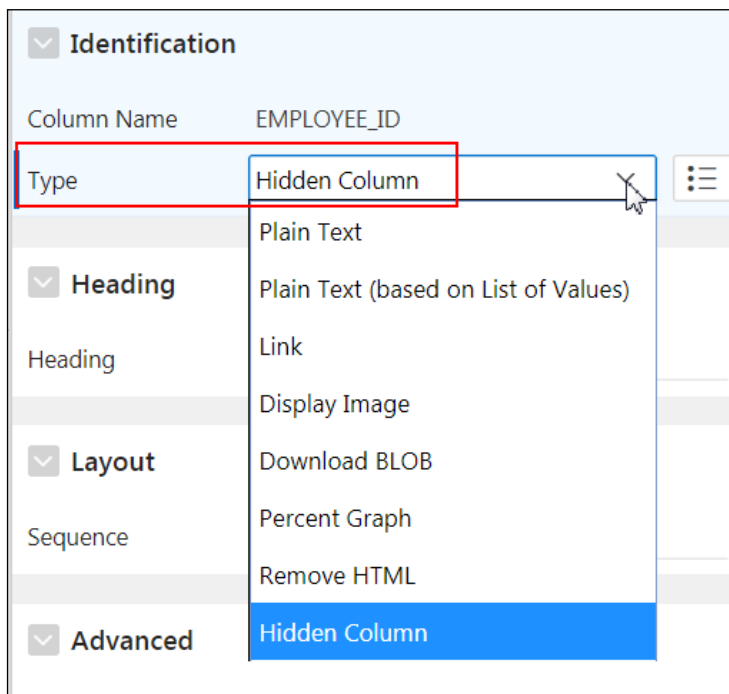
```
SELECT e.employee_id,  
e.first_name,  
e.last_name,  
(SELECT e1.first_name||' '||e1.last_name from  
OEHR_EMPLOYEES e1 where e1.employee_id =  
e.manager_id) as  
"Manager",  
e.commission_pct  
FROM OEHR_EMPLOYEES e  
where e.commission_pct IS NOT NULL;
```



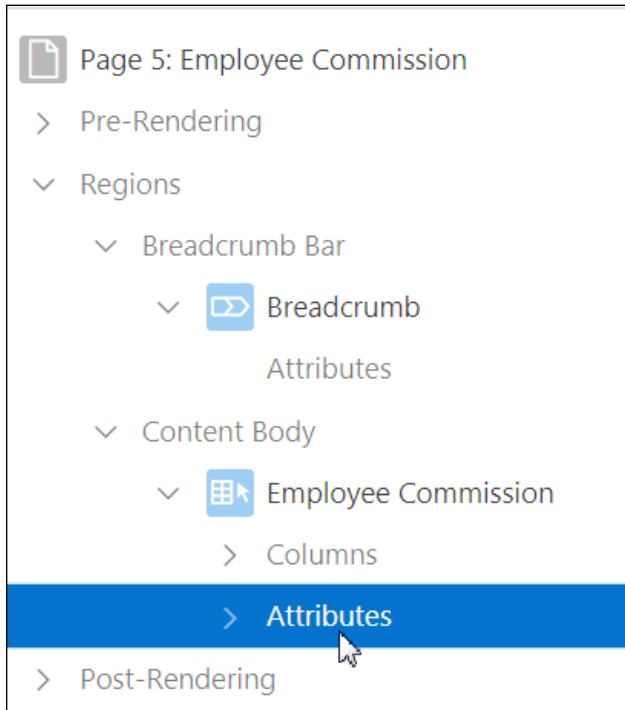
- d. On the Rendering tab (left pane), expand **Regions > Content Body > Employee Commission > Columns** and select `EMPLOYEE_ID`.



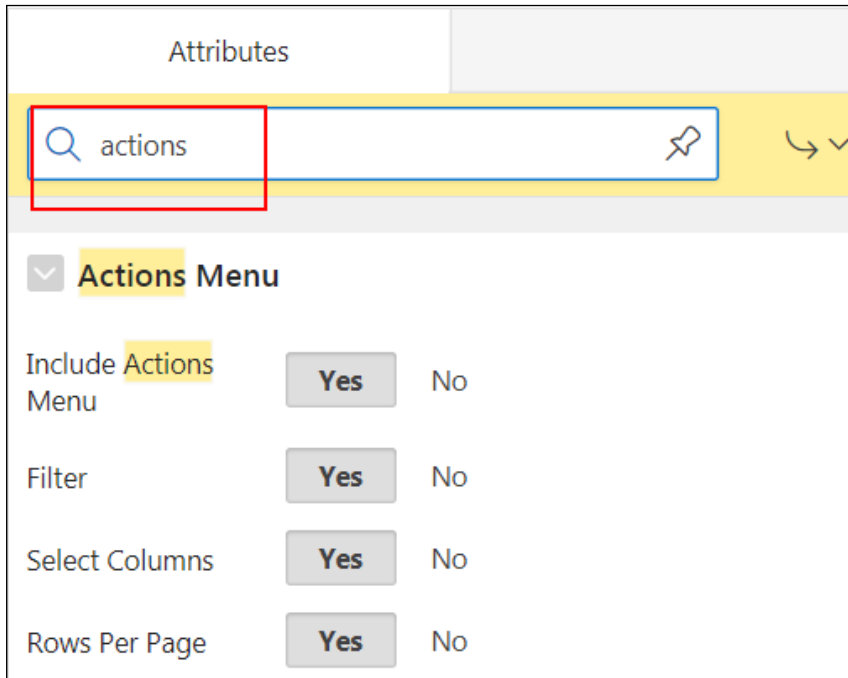
- e. In the Property Editor (right pane), under Identification, click the **Type** drop-down list and select **Hidden Column**.



2. Remove the Highlight option from the Actions menu.
 - a. On the Rendering tab (left pane), expand **Regions > Content Body > Employee Commission** and select **Attributes**.



- b. In the Property Editor (right pane), scroll down to the Actions Menu section. Alternatively, enter `actions` in the Filter field.

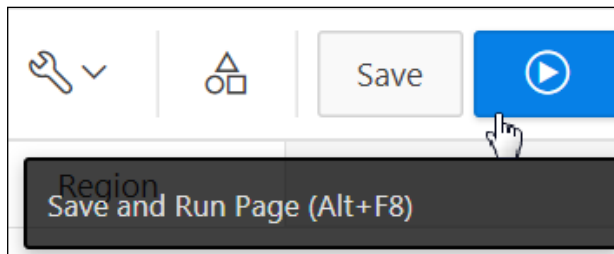


- c. For Highlight, select **No** to remove it from the Actions Menu. (If you used the filter, clear the Filter field to redisplay all options.)

The screenshot shows the 'Attributes' configuration panel for the 'Actions Menu'. The 'Highlight' option is selected as 'No'.

Attribute	Yes	No
Include Actions Menu	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Select Columns	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rows Per Page	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sort	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Control Break	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Highlight	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Compute	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Aggregate	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- d. Click the **Save and Run Page**.



The report appears. Note that Employee ID is excluded from the report. The Manager column displays the First Name and Last Name of the manager.

First Name	Last Name	Commission Pct	Manager
John	Russell	.4	Steven King
Karen	Partners	.3	Steven King
Alberto	Errazuriz	.3	Steven King
Gerald	Cambrault	.3	Steven King

Additionally, the Highlight option is removed in the **Actions > Format** menu.

- e. The interactive report creation is complete. Click **Application 111** on the Runtime Developer Toolbar at the bottom of the page to return to the Application home page.



**Practices for Lesson 6:
Working with Interactive
Grids**

Practices for Lesson 6

Overview

In these practices, you will create a page with an interactive grid, customize it in the application, then convert it to an editable interactive grid, and customize it further.

Practice 6-1: Creating an Interactive Grid

Overview

In this practice, you create a report on `OEHR_PRODUCT_INFORMATION` for the GMT application. This report uses an interactive grid for end users to update the data more easily.

Assumptions

You have completed the previous practices.

Note: If you have not completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On a new page in the GMT application, create an interactive grid to display columns from the `OEHR_PRODUCT_INFORMATION` table. Name the new page and report `Product Information Details` and number it page 6.
2. Run the app and customize the report.
 - a. Sort the report by Product Id.
 - b. Hide the Category Id column.
 - c. Break the report by Product Status. (**Hint:** Apply a control break.)
 - d. Save the report as the Primary report.
 - e. Create a Pie chart that counts the number of items in each weight class.
 - f. Save your customizations as a private report named `My Report`.

Catch Up

If you have not completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 6-1**.

If you have not completed **Practice 5-2**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **App Builder** and select **Import**.

- c. For Import File, click the button and browse to the `sol_05_02.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- d. Click **Next**.
- e. For Install As Application, select **Reuse Application ID 111 From Export File** and click **Install Application**.
- f. Click **Replace Application** (if prompted).
- g. Wait for the application to successfully install.

Practice 6-2: Using and Manipulating the Interactive Grid

Overview

In this practice, you convert the interactive grid to an editable interactive grid and explore the data entry capabilities.

Assumptions

You have completed the previous practices.

Note: If you have not completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Convert the interactive grid to an editable interactive grid in Page Designer.
2. In the app run time, customize the report further:
 - Add a blank new row to the report.
 - Duplicate the blank row.
 - Attempt to save the report.
 - Delete the blank rows.
3. In Page Designer, lock all displayed columns but one: Product Description. (**Hint:** Lock a column by making it Display Only.)

Catch Up

If you have not completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 6-2**.

If you have not completed **Practice 6-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **App Builder** and select **Import**.
- c. For Import File, click the button and browse to the `sol_06_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.

- d. Click **Next**.
- e. For Install As Application, select **Reuse Application ID 111 From Export File** and click **Install Application**.
- f. Click **Replace Application** (if prompted).
- g. Wait for the application to successfully install.

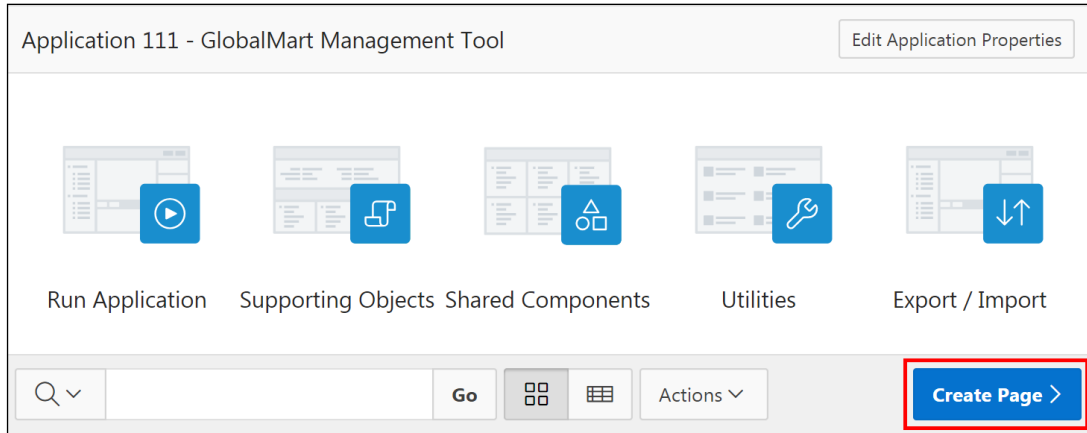
Solution 6-1: Creating an Interactive Grid

Overview

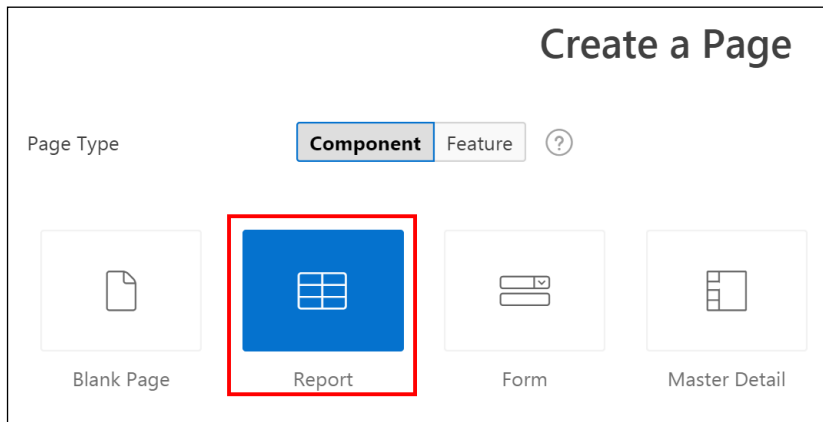
In this practice solution, steps are provided to create the interactive grid for the GMT application.

Steps

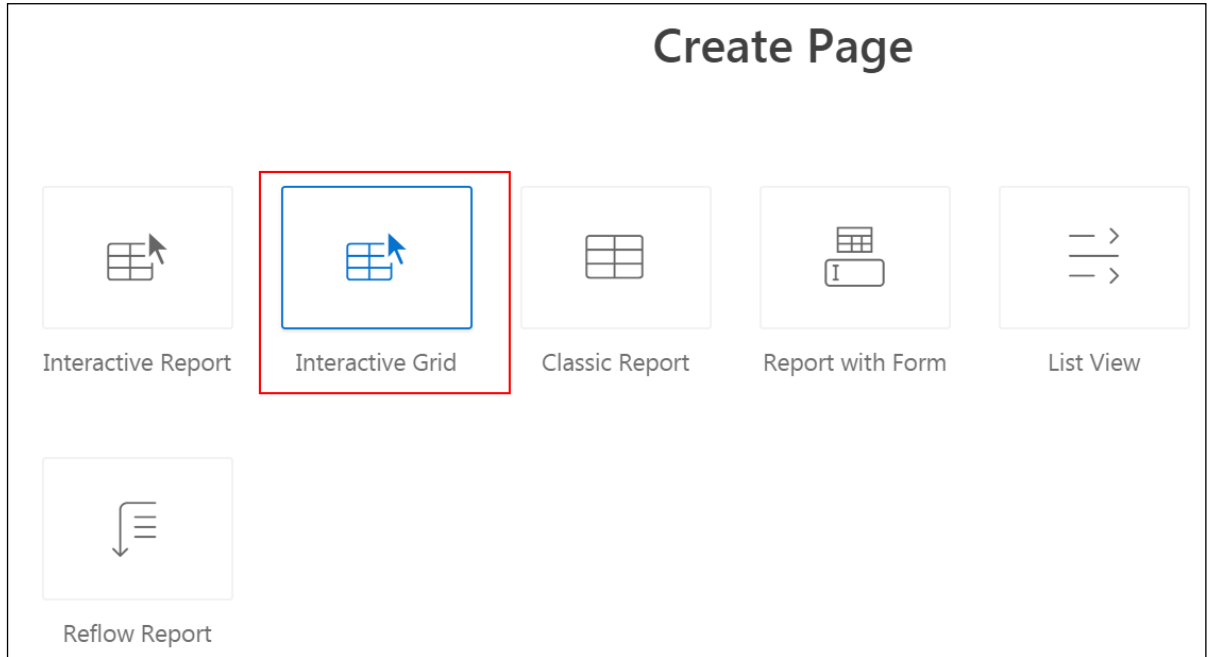
1. Create an interactive grid to display columns from the `OEHR_PRODUCT_INFORMATION` table.
 - a. Navigate to the GMT application home page and click **Create Page**.



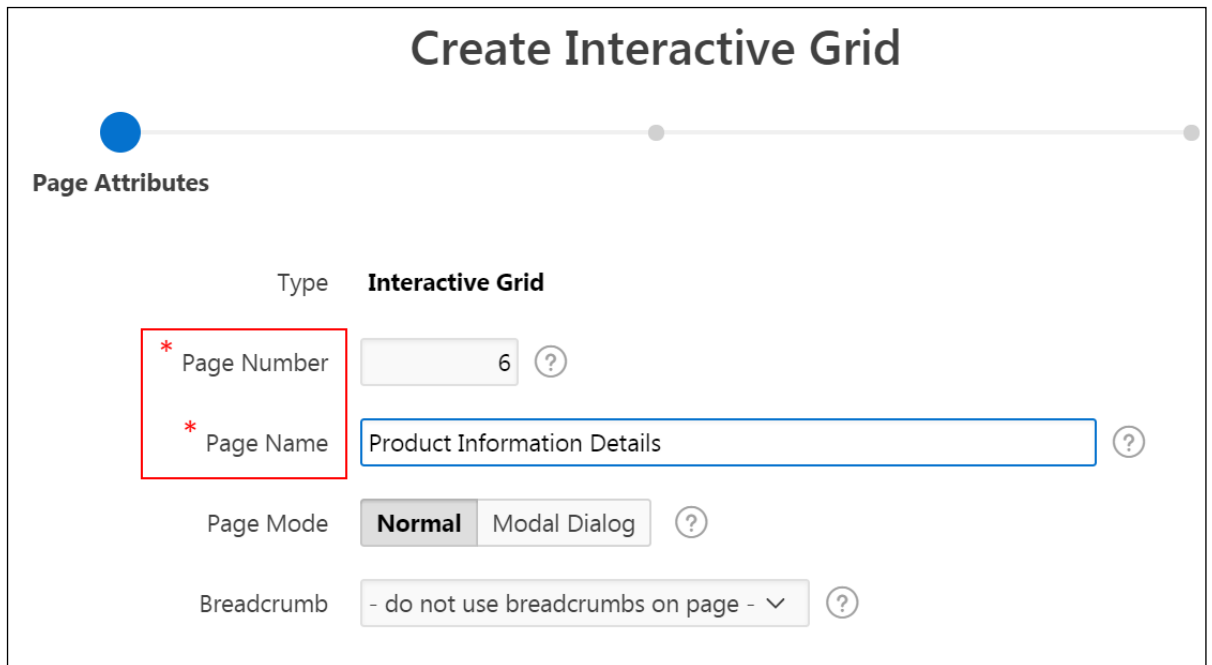
- b. Select **Report**.



- c. Select **Interactive Grid**.

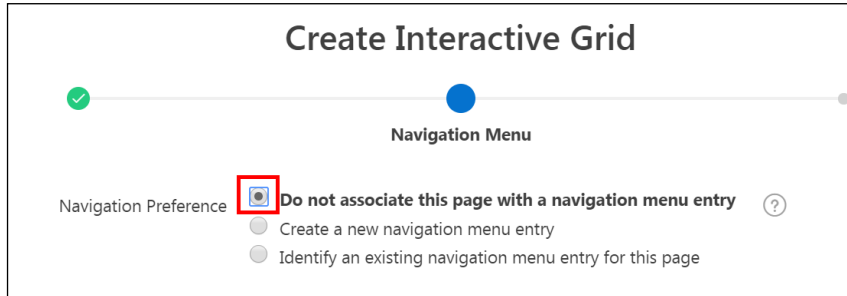


- d. For Page Number, enter 6. For Page Name, enter Product Information Details.



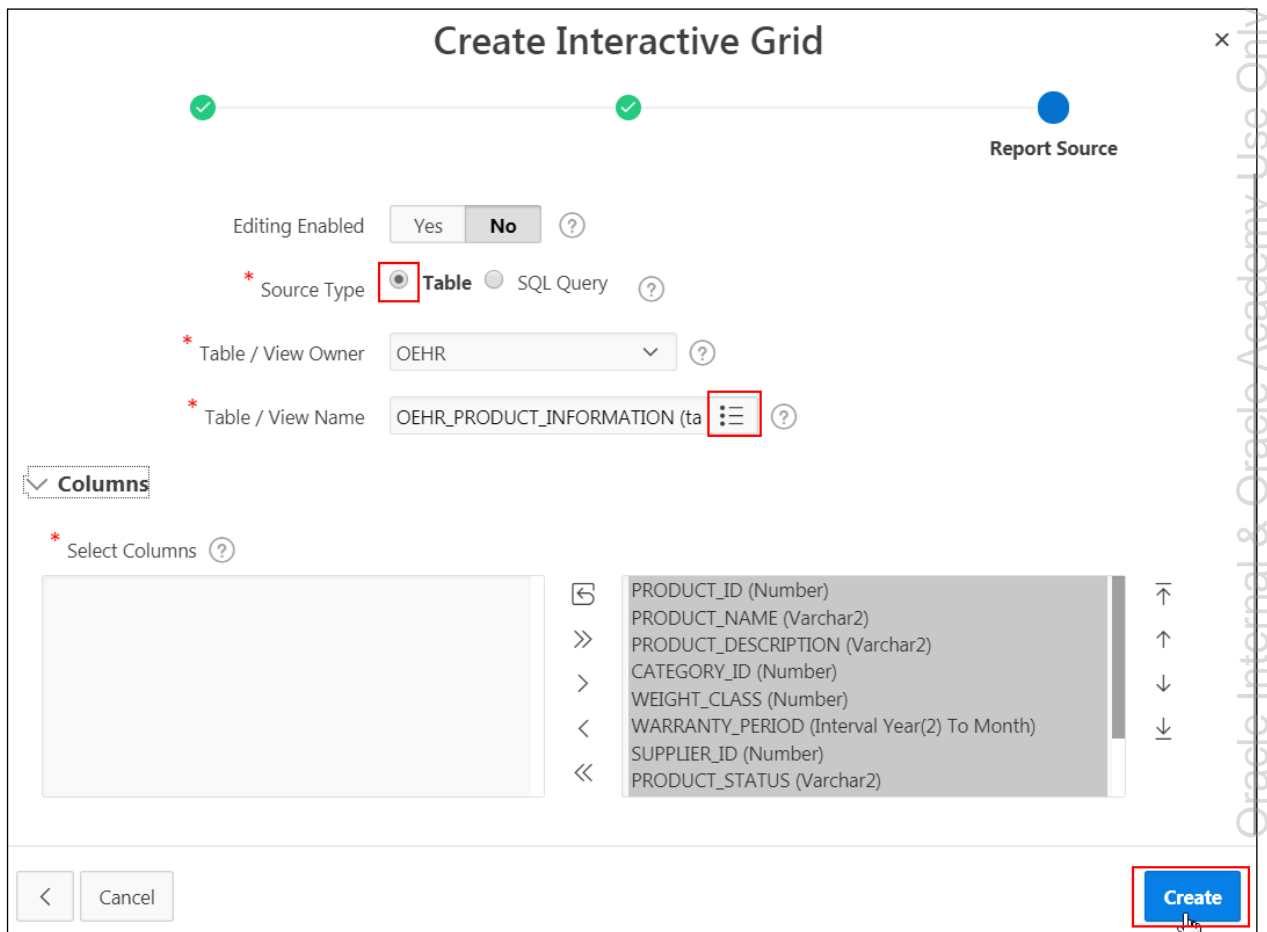
- e. Click **Next**.

- f. For **Navigation Preference**, accept the default and click **Next**.

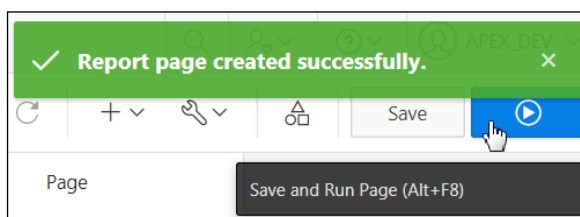


- g. For **Source Type**, select **Table**.

- h. For **Table / View Name**, click the  icon to search for a table. In the Search dialog box, find and select OEHR_PRODUCT_INFORMATION (table) and click **Create**.



- i. The report is created. To view the report, click the **Save and Run Page**.



Note: If prompted, enter your developer user credentials. The Interactive Grid is displayed.

Product Information Details							
<input type="text" value="Search: All Text Columns"/> <input type="button" value="Go"/>		<input type="button" value="Actions"/>					
Product Id	Product ...	Product ...	Category...	Weight ...	Warrant...	Supplier Id	Product ...
2257	HD 8GB /I	8GB capa...	13	1	+03-00	102061	orderable
3400	HD 8GB /SE	8GB capa...	13	2	+03-00	102063	orderable
3355	HD 8GB /SI	8GB SCSI ...	13	1	+02-00	102050	orderable
1772	HD 9.1GB...	Hard disk ...	13	3	+05-00	102070	orderable
2414	HD 9.1GB...	9.1 GB SC...	13	3	+05-00	102098	orderable

2. Explore the interactive grid interface. Interactive grids share many of the same features as interactive reports.

a. Sort by **Product Id**.

- i. Place the cursor over the **Product Id** column heading.
- ii. On the right side of the column name, two arrow icons have now appeared. Click the **up arrow** icon (**Sort Ascending**).

Product Information Details										
<input type="text" value="Search: All Text Columns"/> <input type="button" value="Go"/>		<input type="button" value="Actions"/>							<input type="button" value="Reset"/>	
Product Id	Product ...	Product ...	Categor...	Weight ...	Warrant...	Supplier Id	Product ...	List Price	Min Price	Catalog Url
205	Sort Ascending	Standard ...	16	1	+01-00	102099	planned	8	6	http://ww...
2211	Wrist Pad	A foam st...	16	1	+01-00	102072	orderable	4	3	http://ww...
2944	Wrist Pad...	Wrist Pad...	16	1	+01-00	102063	under de...	3	2	http://ww...
1742	CD-ROM ...	CD drive, ...	17	1	+00-06	102052	orderable	101	81	http://ww...
2402	CD-ROM ...	600 MB e...	17	2	+00-09	102052	orderable	127	113	http://ww...
2403	CD-ROM ...	600 MB i...	17	2	+01-00	102052	orderable	117	103	http://ww...
1761	CD-ROM ...	600 MB l...	17	2	+01-00	102052	under de...	134	119	http://ww...

The interactive grid after sorting the **Product ID** column.

Product Information Details

Search: All Text Columns Actions

Product Id	Produ...	Produ...	Categ...	Weig...	Warra...	Suppli...	Produ...	List Pr...	Min Pr...	Catalog Url
1726	LCD M...	Liquid ...	11	3	+00-03	102067	under ...	259	208	http://www...
1729	Chemi...	Cleani...	39	2	+05-00	103094	ordera...	80	66	http://www...
1733	PS 220...	220V P...	19	2	+00-09	102080	ordera...	89	76	http://www...
1734	Cable ...	10 ft R...	19	2	+01-00	102055	ordera...	6	5	http://www...

- b. Hide the **Category Id** column.
- Click the column heading **Category Id** to open the Column Heading menu.
 - Click the Hide icon.

Description	Category	Weight Class	Warranty Period
color (wi...		3	+02-00
color, 8 ...		3	+02-00
black and...		5	+03-00
ck and w...	12	4	+03-00

The column is hidden from display.

- c. Apply a Control Break to organize the report by **Product Status**.
 - i. Click the column heading **Product Status** to open the Column Heading menu.
 - ii. Click the Control Break icon.

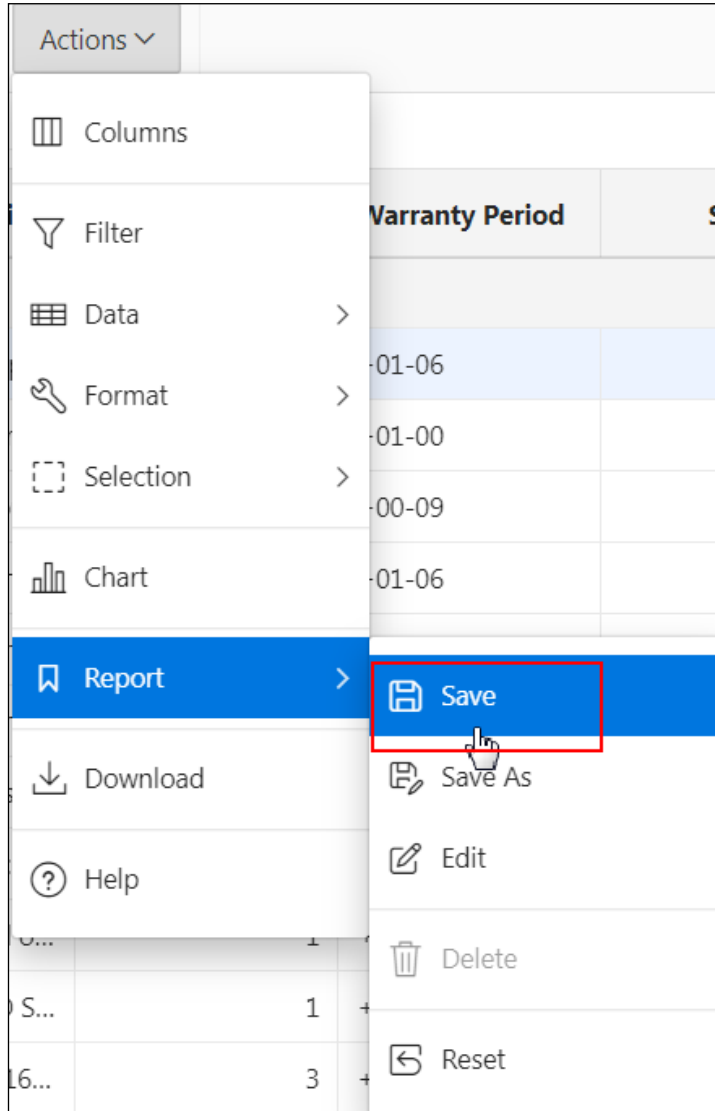
Supplier Id	Product Status	List Price
102090		195
102094		349
102099		699
102087	obsolete	498
102071	orderable	453
102071	planned	489
102051	under development	436
102069	obsolete	399

The Control Break is applied. A Control Break item also appears above the report (“Product Status”).

Product Id	Product ...	Product ...	Weight C...	Warrant...	Supplier Id
▼ Product Status: obsolete					
2252	Monitor 2...	Monitor 2...	5	+01-06	102079
1782	Compact ...	400 chara...	4	+01-06	102088
3073	HD 6GB /I	6GB capa...	2	+05-00	102072
2253	HD 10GB ...	10GB cap...	2	+03-00	102069
▼ Product Status: orderable					
3060	Monitor 1...	CRT Moni...	4	+00-06	102081
2243	Monitor 1...	Monitor 1...	4	+00-06	102060
3057	Monitor 1...	CRT Moni...	4	+00-06	102055
3061	Monitor 1...	CRT Moni...	5	+00-09	102094
2245	Monitor 1...	Monitor 1...	5	+00-09	102053

d. Save this as the new Primary report.

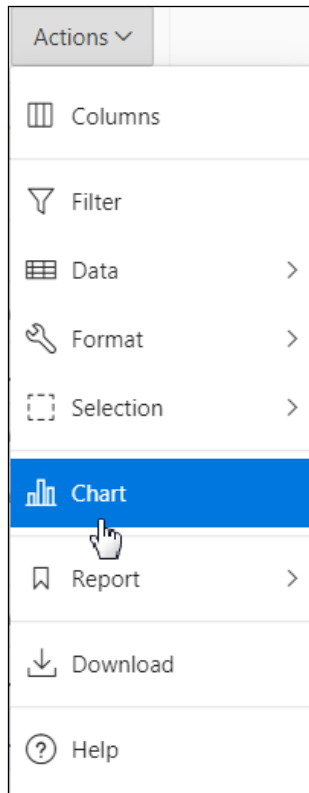
- i. Click **Actions > Report > Save**.



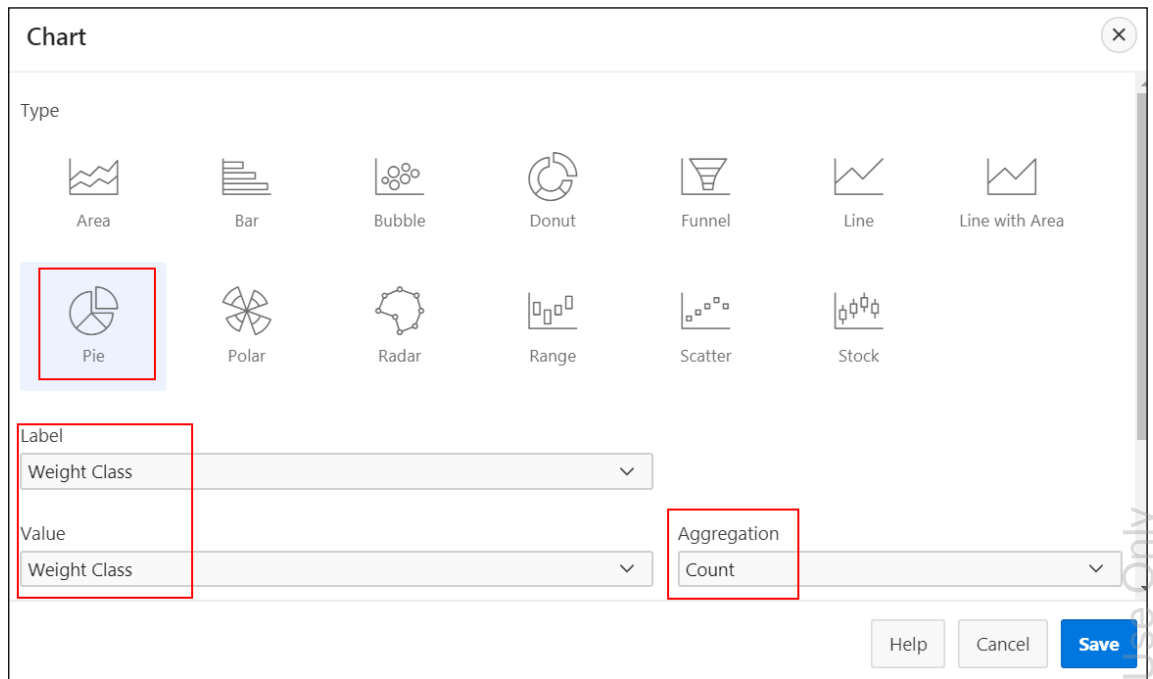
This is now the default report for all users.



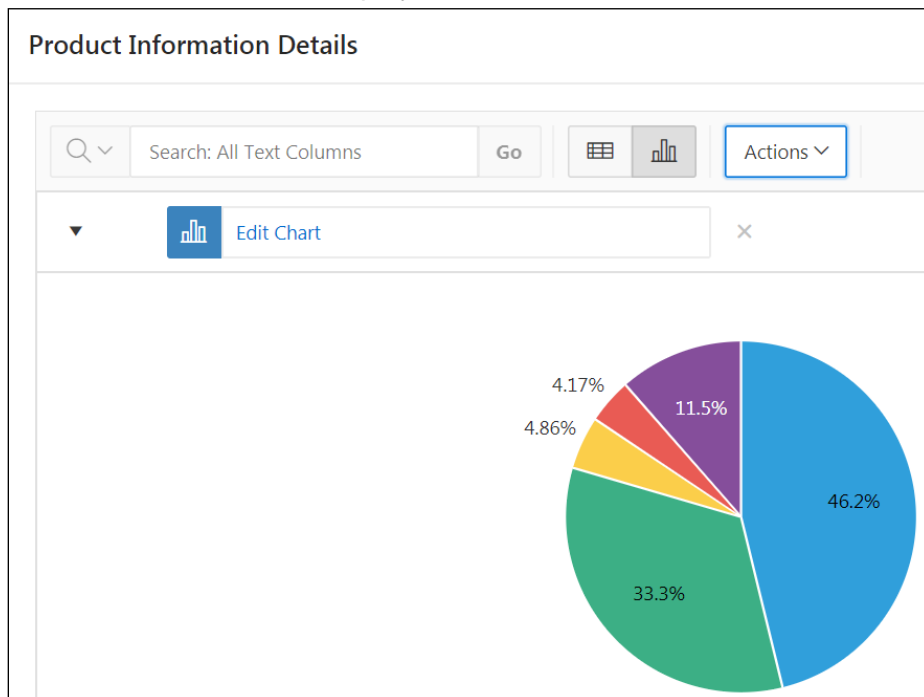
- e. Create a chart to see the proportion of products by weight class.
- i. Click **Actions > Chart**.



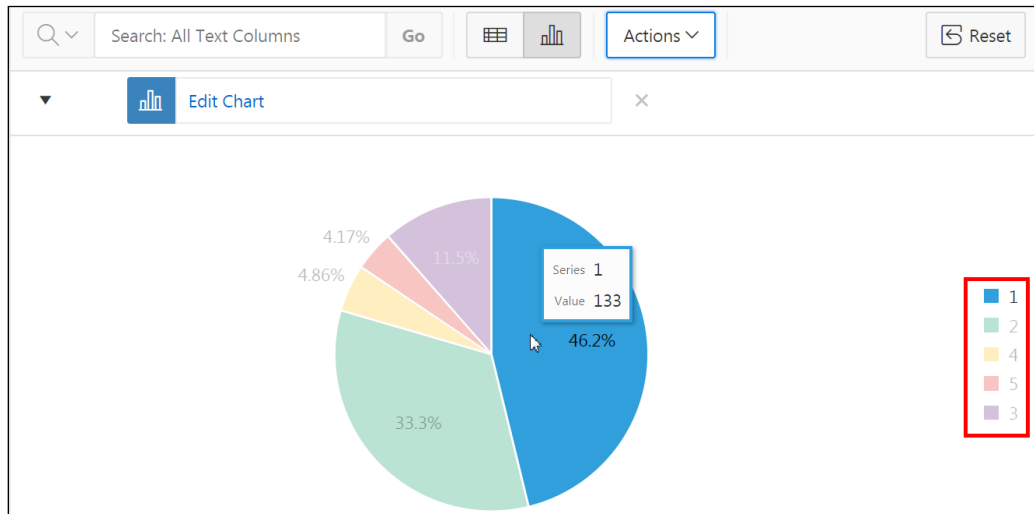
- ii. For **Type**, select **Pie**.
- iii. Update the following fields:
- **Label:** Select **Weight Class**
 - **Value:** Select **Weight Class**
 - **Aggregation:** Select **Count**



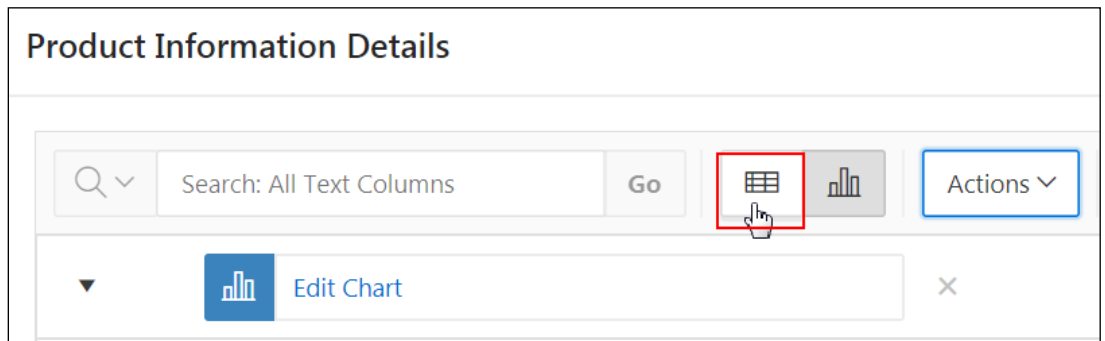
iv. Click **Save**. The chart is displayed.



- v. Move the mouse over different parts of the chart and the legend to see how the interactive grid responds.



- vi. When finished, click the Grid icon  near the **Actions** menu button.



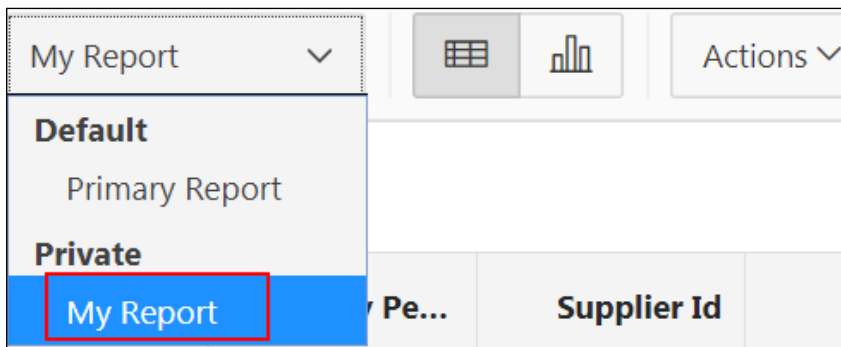
- f. Save this as a private report.

- i. Click **Actions > Report > Save As**.
- ii. For **Name**, enter `My Report` and click **Save**.

The screenshot shows a dialog box titled "Report - Save As". It has a close button (X) in the top right corner. Below the title bar, there is a "Type" dropdown menu currently set to "Private". Below that is a "Name" text input field containing the text "My Report". At the bottom right of the dialog, there are three buttons: "Help", "Cancel", and "Save". The "Save" button is highlighted with a red rectangular box.

You get the message “*Private report saved*”.

Note: A drop-down menu appears with a list of available reports for the interactive grid.



- iii. On the Runtime Developer toolbar at the bottom of the screen, click **Edit Page 6** to return to Page Designer.



Solution 6-2: Using and Manipulating the Interactive Grid

Overview

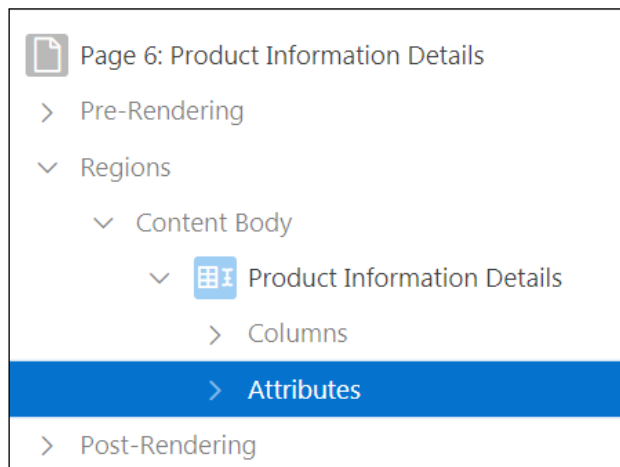
In this practice solution, steps are provided to convert the interactive grid for the GMT application to an editable interactive grid and customize it further in the application and in Page Designer.

Steps

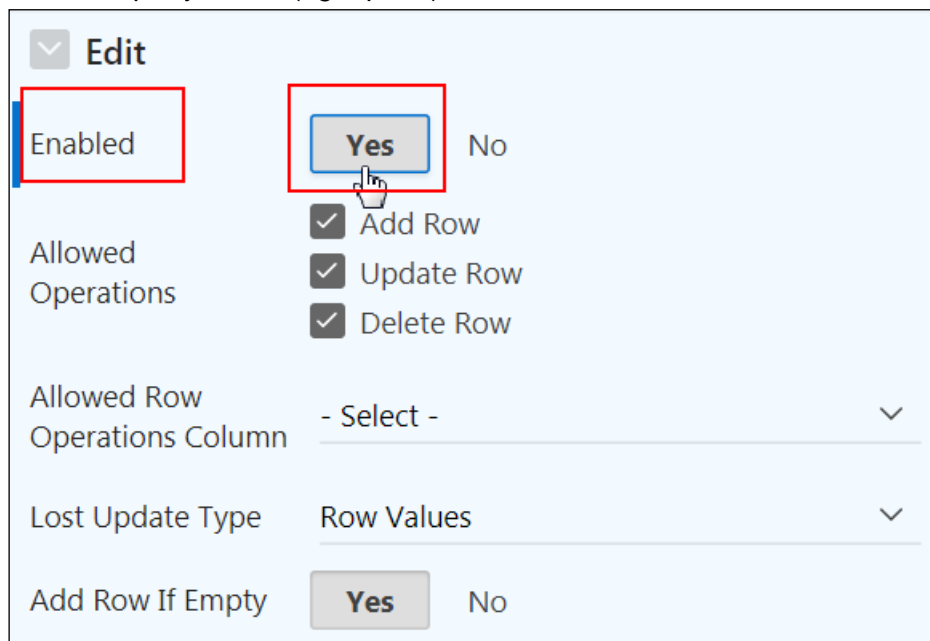
1. Convert the interactive grid to an editable interactive grid in Page Designer and run the page again.

a. Return to Page Designer and make the interactive grid region editable.

- On the Rendering tab (left pane), under **Regions > Content Body > Product Information Details**, select **Attributes**.

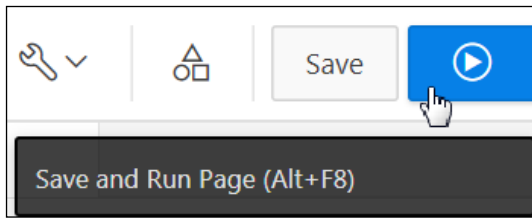


- In the Property Editor (right pane), under the Edit section, for **Enabled** select **Yes**.



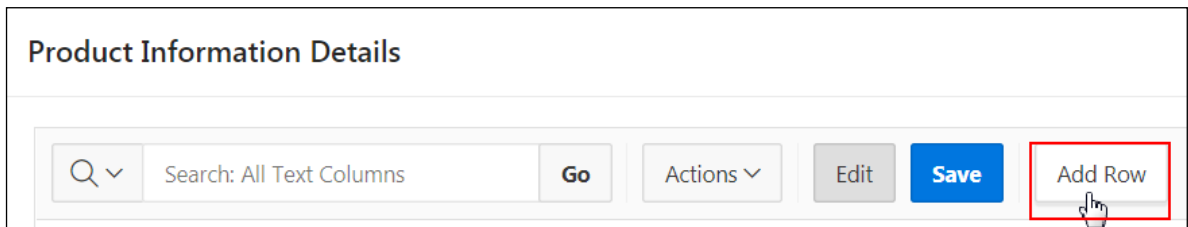
The interactive grid is now an editable interactive grid.

- Click the **Save and Run Page**.



Note: If prompted, enter your developer user credentials.

- b. Note the greatly expanded toolset at the top of the interactive grid. Editable interactive grids enable users to add to and modify the table directly without a form.
 - i. Near the Actions menu, click the **Add Row** button.

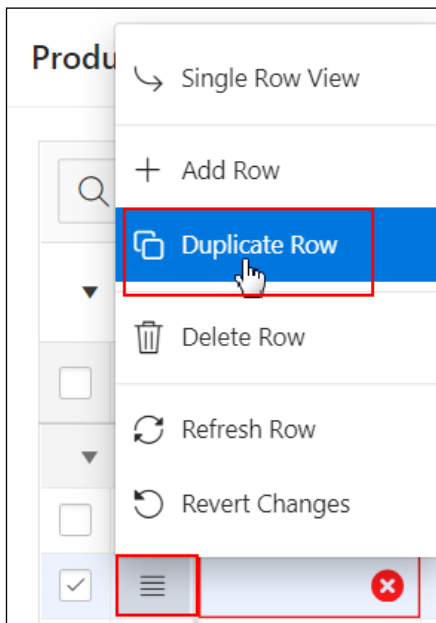


A blank row appears. The two left-most columns of an editable interactive grid are:

- The Selection column
- The Actions column

The top-most icons (located in the same row as the column headings) are for batch actions, such as Select All or Select None. The icons below the column heading row are for individual rows.

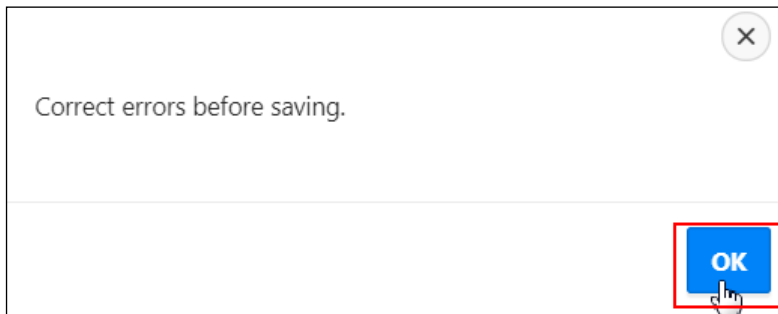
- ii. Click the **Row Actions** menu for the blank row.
- iii. Click **Duplicate Row**.



A second blank row appears. Note the error markings that appear.

<input type="checkbox"/>	☰	Product Id ↑	Product Name	Product Descr...	Weight Class
▼		Product Status: obsolete			
<input type="checkbox"/>	☰	1782	Compact 400/...	400 characters ...	4
<input type="checkbox"/>	☰				
<input checked="" type="checkbox"/>	☰				
<input type="checkbox"/>	☰	2049	MB - S300	PC type mother...	2
<input type="checkbox"/>	☰	2152	Router - DTMF4	DTMF 4 port ro...	3
<input type="checkbox"/>	☰	2252	Monitor 21/HR...	Monitor 21 inc...	5
<input type="checkbox"/>	☰	2253	HD 10GB @540...	10GB capacity ...	2

- iv. Try clicking the **Save** button at the top of the report. You see an error. The table does not change until the report saves, and Application Express prevents you from saving in the event of an error. Click **OK**.



- v. Select the check box for each blank row to select both, click the **Selection Actions** icon at the top of the column, and click **Delete Rows**.

Product Information Details

Search: All Text Columns Go My Report Actions Edit Save Add

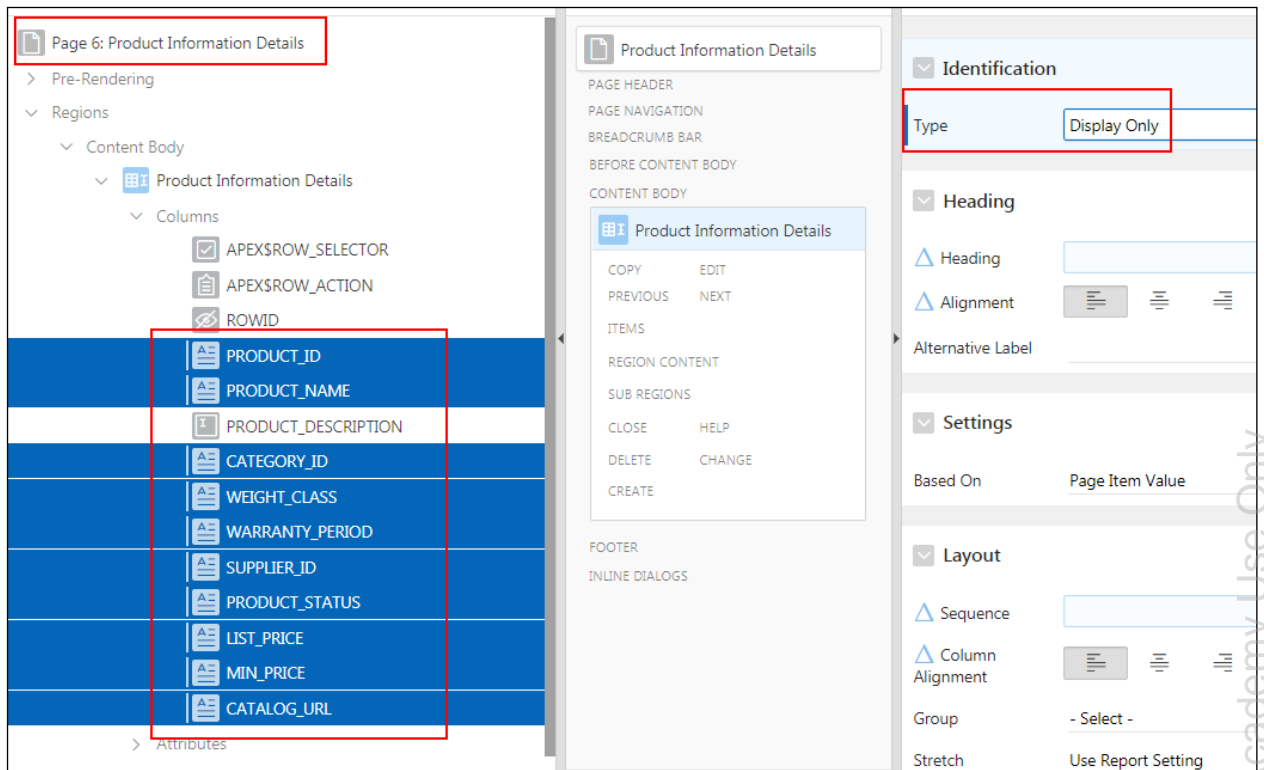
<input type="checkbox"/>	Product Id	Product Name	Product Des...	Weight Class	W...	S...	Product Status	Li...
<input type="checkbox"/>			Inkjet Printer, ...	3	+0...	10...	orderable	195
<input checked="" type="checkbox"/>								
<input checked="" type="checkbox"/>								
<input type="checkbox"/>			Inkjet printer, ...	3	+0...	10...	orderable	349
<input type="checkbox"/>			Professional b...	5	+0...	10...	under development	699
<input type="checkbox"/>			Standard blac...	4	+0...	10...	orderable	498
<input type="checkbox"/>			10GB capacity...	2	+0...	10...	obsolete	453
<input type="checkbox"/>			10GB Remova...	1	+0...	10...	obsolete	489
<input type="checkbox"/>			10GB hard dis...	1	+0...	10...	obsolete	436

- c. You want to keep most of the information in this report intact, so set columns to **Display Only** to prevent users from updating. Lock columns in the report so that only Product Description is editable.
- i. Click **Edit Page 6** on the Runtime Developer toolbar at the bottom of the page to return to Page Designer.
- ii. On the Rendering tab, expand the **Columns** node.
- iii. Ctrl-click the following items: (Do NOT select all columns.)

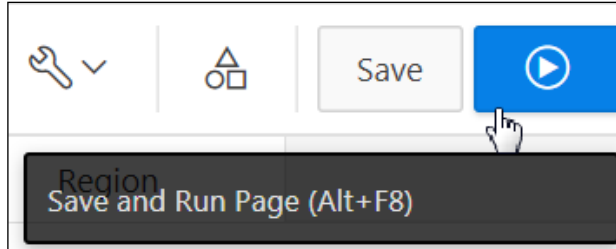


- PRODUCT_ID
- PRODUCT_NAME
- CATEGORY_ID
- WEIGHT_CLASS
- WARRANTY_PERIOD
- SUPPLIER_ID
- PRODUCT_STATUS
- LIST_PRICE
- MIN_PRICE
- CATALOG_URL

- iv. In the Property Editor (right pane), under the **Identification** section, for **Type** select **Display Only**.



- v. Click the **Save and Run Page**.



- d. The Product Description column is now the only editable column in the report. Try double-clicking within the Product Description column to see what happens and then click other entries in different columns too.

Product Information Details

Search: All Text Columns My Report

Product Status

<input type="checkbox"/>	<input type="checkbox"/>	Product Id ↑	Product Name	Product Descripti...	Weight Class	Warranty Period
Product Status: obsolete						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1782	Compact 400/DQ			+01-06
<input type="checkbox"/>	<input type="checkbox"/>	2049	MB - S300	PC typ		+01-00
<input type="checkbox"/>	<input type="checkbox"/>	2152	Router - DTMF4	DTMF		+00-09
<input type="checkbox"/>	<input type="checkbox"/>	2252	Monitor 21/HR/M	Monitor 21 inch (2...	5	+01-06
<input type="checkbox"/>	<input type="checkbox"/>	2253	HD 10GB @5400 /...	10GB capacity har...	2	+03-00

- e. The interactive grid is complete. Click **Application 111** on the Runtime Developer toolbar to return to the Application home page.



**Practices for Lesson 7:
Working with Pages and
Regions**

Practices for Lesson 7: Overview

Overview

In these practices, you work with pages and regions and update the Global Page for the application.

Practice 7-1: Creating and Modifying Pages and Regions

Overview

In this practice, you create a report region, create a subregion, and modify the attributes of the report. You create a sidebar region and add footer to the Customer Details page.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Create a blank page called **Products** with a region called **Products List**. Set the page number as 7. Create a new tab called **Products** by using the existing tab set for this page.
2. Create a new report region called **Products List** on the Products page. Use a Classic Report and display all the rows in the `OEHR_PRODUCTS_INFORMATION` table. Run the report after it is created.
3. Modify the report so that it is a subregion in the Products region and displays only the Product ID, Product Name, Category ID, Product Status, and List Price columns in the report. Also, you want to display only 10 rows at a time and show the pagination in a select list. After you have performed these tasks, run the report.
4. Create a **Hint** sidebar region on the right side of the Customer Details page that includes the following HTML code (located in `/home/oracle/labs/labs/lab_07_01_01.txt`):

```
Use this page to enter and <br> maintain customer information.
```

5. Add a footer to the Customer Details region on the Customer Details page so that the following message (located in `/home/oracle/labs/labs/lab_07_01_02.txt`) appears at the bottom of the region when a user enters this page:

```
<i>The record created or modified in this form is reflected in the Customer Report.</i>
```

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 7-1**.

If you haven't completed **Practice 6-2**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_06_02.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Practice 7-2: Working with Global Pages

Overview

In this practice, you view the Global page in your application and then add a Static HTML subregion to the Global Desktop Page.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Navigate to Global desktop page in the GlobalMart Management Tool application and review it in Application Properties.
2. Add a Static HTML region to the Global Desktop page. Call the region as **In the News** on the Global page with the following code (located in `/home/oracle/labs/labs/lab_07_02.txt`):

```
<html><body>
<p><strong>News and Events</strong></p>
<p>Visit us at <a href="http://www.oracle.com">
www.oracle.com</a></p>
</body></html>
```

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 7-2**.

If you haven't completed **Practice 7-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.

- d. Browse and open the `sol_07_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

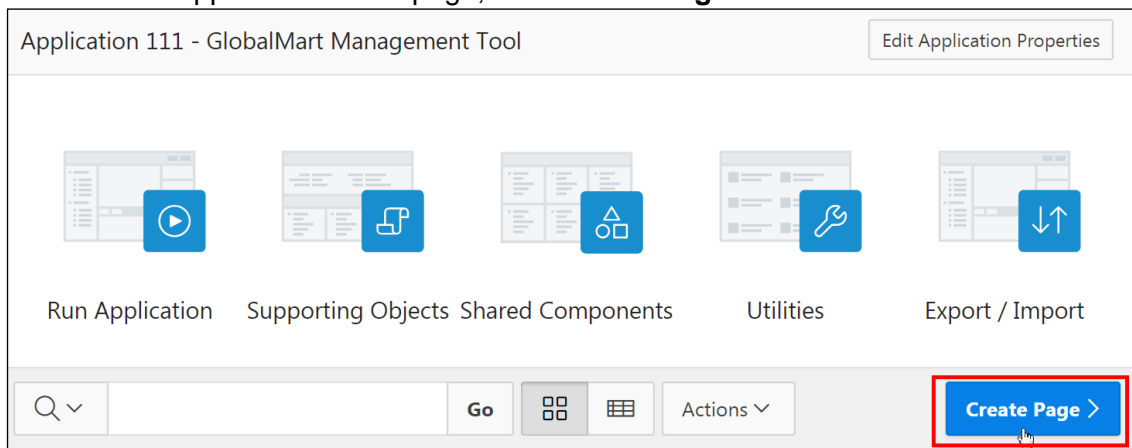
Solution 7-1: Creating and Modifying Pages and Regions

Overview

In this practice solution, steps are provided for creating and modifying pages and regions in the GMT application.

Steps

1. Create a blank page called **Products** with a region called **Products List**. Set the page number as 7. Create a new tab called **Products** by using the existing tab set for this page.
 - a. On the GMT Application Home page, click **Create Page**.



b. Select **Blank Page**.

Create a Page

Page Type: **Component** Feature ?

Blank Page Report Form Master Detail

Dashboard Calendar Tree Wizard

c. For Page Attributes:

- **Page Number:** Enter 7.
- **Name:** Enter *Products*.
- **Optional Static Content Regions:** Expand and enter *Products* for **Region 1**.

Create a Blank Page

Page Attributes

* Page Number: 7 ?

* Name: Products ?

* Page Mode: **Normal** Modal Dialog Non-Modal Dialog ?

Page Group: - Select Page Group - ?

Breadcrumb: - don't use breadcrumbs on page - ?

Optional Static Content Regions

Region 1: Products ?

2: ?

d. Click **Next >**.

e. For Navigation Menu:

- **Navigation Preference:** Select **Create a new navigation menu entry**.
- **New Navigation Menu Entry:** Ensure that the text field is set to **Products**.
- **Parent Navigation Menu Entry:** Ensure that **- No parent selected -** is selected.

The screenshot shows the 'Create a Blank Page' wizard at the 'Navigation Menu' step. A progress bar at the top indicates that the 'Navigation Menu' step is the current active step, marked with a blue dot, while the previous step is marked with a green checkmark. The 'Navigation Preference' section has three radio button options: 'Do not associate this page with a navigation menu entry', 'Create a new navigation menu entry' (which is selected and highlighted with a red box), and 'Identify an existing navigation menu entry for this page'. Below this, the 'New Navigation Menu Entry' field is highlighted with a red box and contains the text 'Products'. The 'Parent Navigation Menu Entry' dropdown menu is also highlighted with a red box and shows '- No parent selected -' as the selected option, with 'Home' and 'Customers' as other visible options. Question mark icons are present next to the 'Navigation Preference' options and the 'New Navigation Menu Entry' and 'Parent Navigation Menu Entry' fields.

f. Click **Next >**.

- g. Click **Finish**.

Create a Blank Page

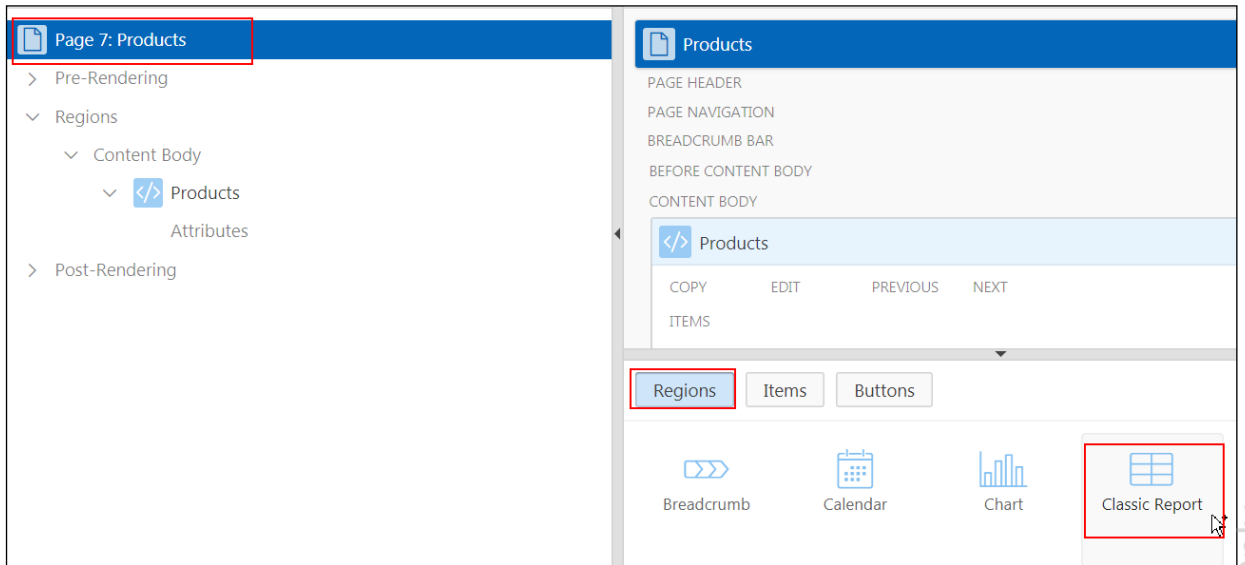
Confirm

You have requested to create a page with the following attributes. Please confirm your selections.

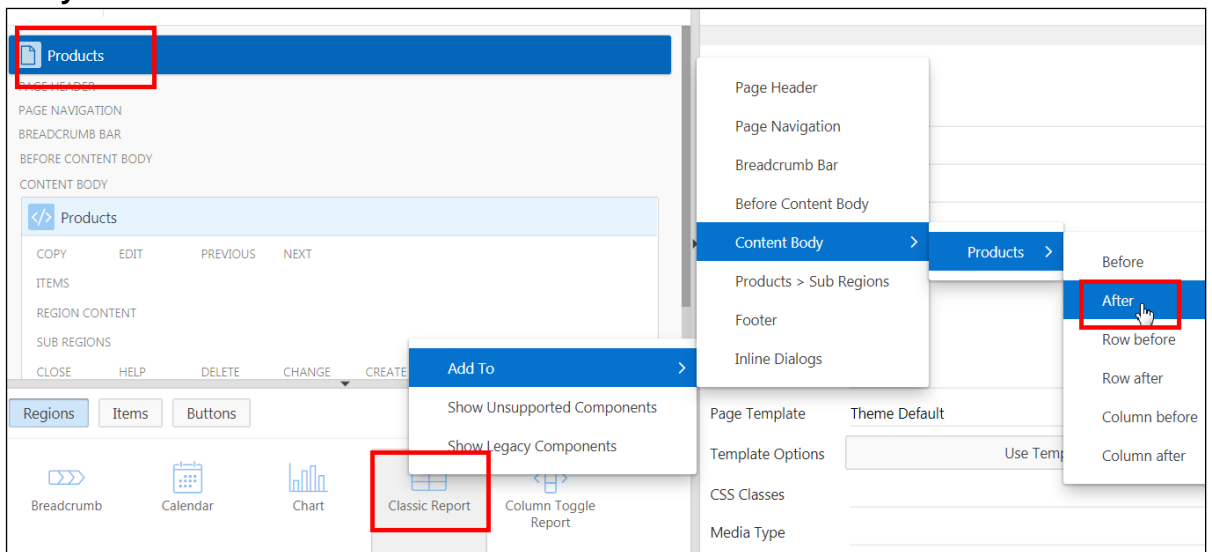
Application	111
Page	7
Page Name	Products
Page Title	Products

< Cancel **Finish**


2. Create a new report region called **Products List** on the Products page. Use a Classic Report and display all the rows in the `OEHR_PRODUCTS_INFORMATION` table. Run the report after it is created.
- a. In the Gallery at the bottom of the central pane in Page Designer, select the **Regions** tab and find **Classic Report**.





- b. Right-click **Classic Report** to display the context menu and select **Add To > Content Body > Products > After**.

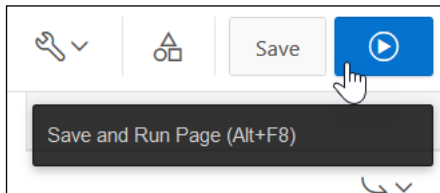


- c. Edit the appropriate attributes in the Property Editor (the right pane):
- **Identification > Title:** Enter `Products List`.
 - **Source > Type:** Select **Table/View** (if not selected by default).

- **Source > Table Name:** Select OEHR_PRODUCT_INFORMATION by clicking the  icon.

Identification	
Title	Products List
Type	Classic Report 
Source	
Location	Local Database
Type	Table / View
Table Owner	Parsing Schema
Table Name	OEHR_PRODUCT_INFORMATION 
Include ROWID Column	Yes <input type="radio"/> No <input type="radio"/>

- Click **Save**.
- Test your page by clicking **Save and Run Page**.



- f. The report is displayed. (**Note:** If you are prompted to sign in, the Home page is displayed. Click the **Products** tab to view the report.) Click the **Edit Page 7** link on the Runtime Developer toolbar.

Products

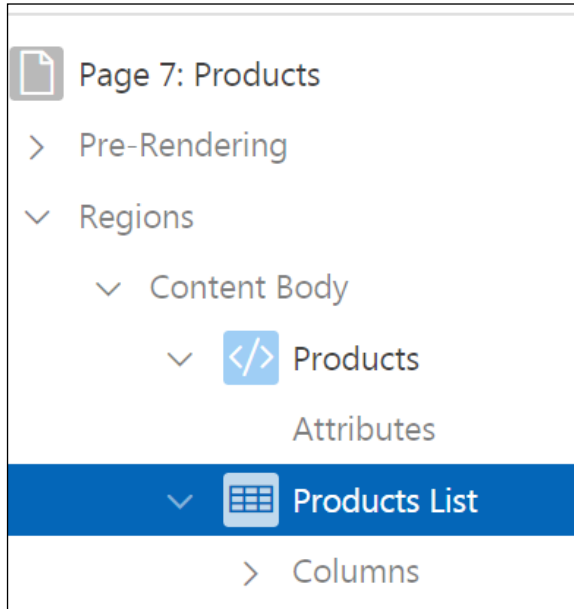
Products List

Product Id ↑≡	Product Name	Product Description	Category Id	Weight Class	Warranty Period
1726	LCD Monitor 11/PM	Liquid Cristal Display 11 inch passive monitor. The virtually-flat, high-resolution screen delivers outstanding image quality with reduced glare.	11	3	+000000000-03
1729	Chemicals - RCP	Cleaning Chemicals - 3500 roller clean pads	39	2	+000000005-00
1733	PS 220V /UK	220V Power supply type - United Kingdom	19	2	+000000000-09
1734	Cable RS232 10/AM	10 ft RS232 cable with M/M and 9M/25M adapters	19	2	+000000001-00

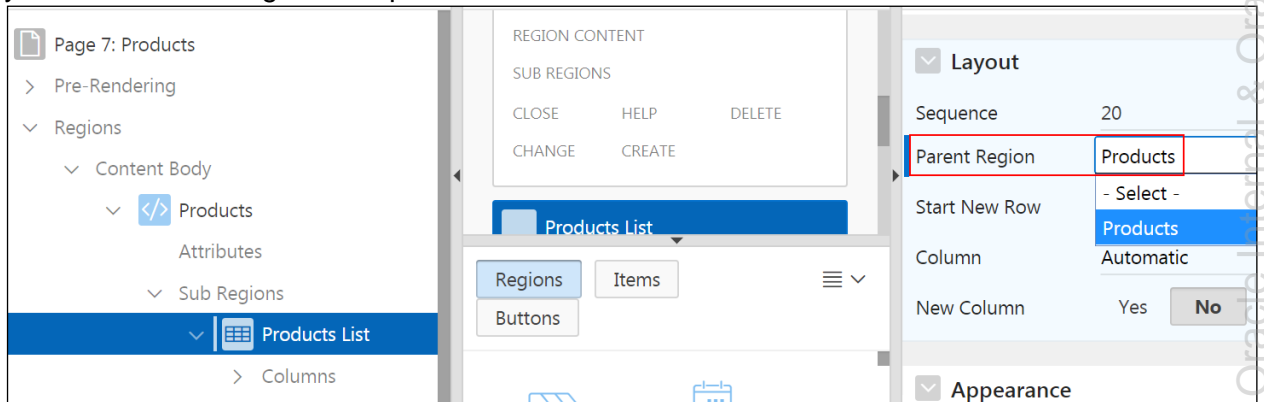
Home Application 111 Edit Page 7 Session View Debug Debug Page Info Quick Edit Theme Roller

3. Modify the **Products List** report so that it becomes a subregion under the Products region and only displays Product ID, Product Name, Category ID, Product Status, and List Price columns in the report. Also, you want to display only 10 rows at a time and show the pagination in a select list. After you have performed these tasks, run the report.

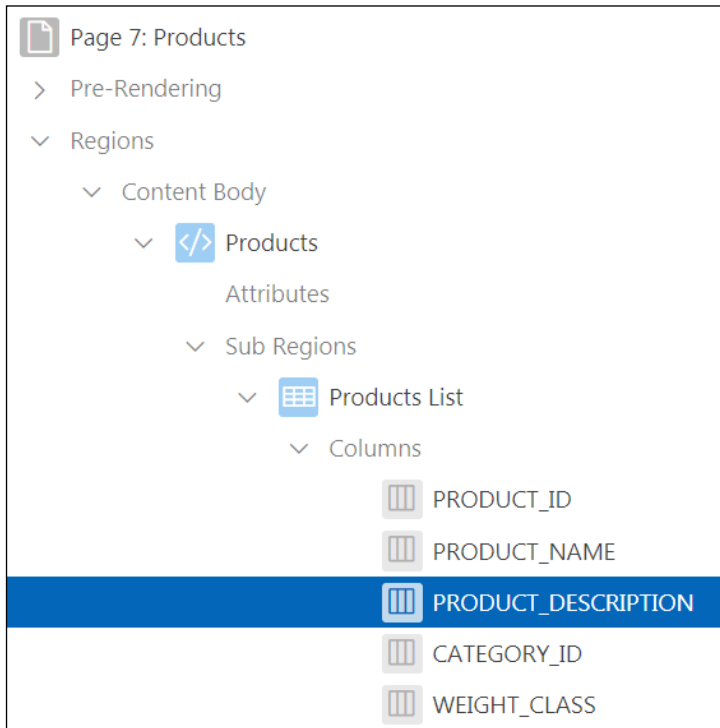
- a. On the Rendering tab, expand **Regions > Content Body** and select **Product List**.



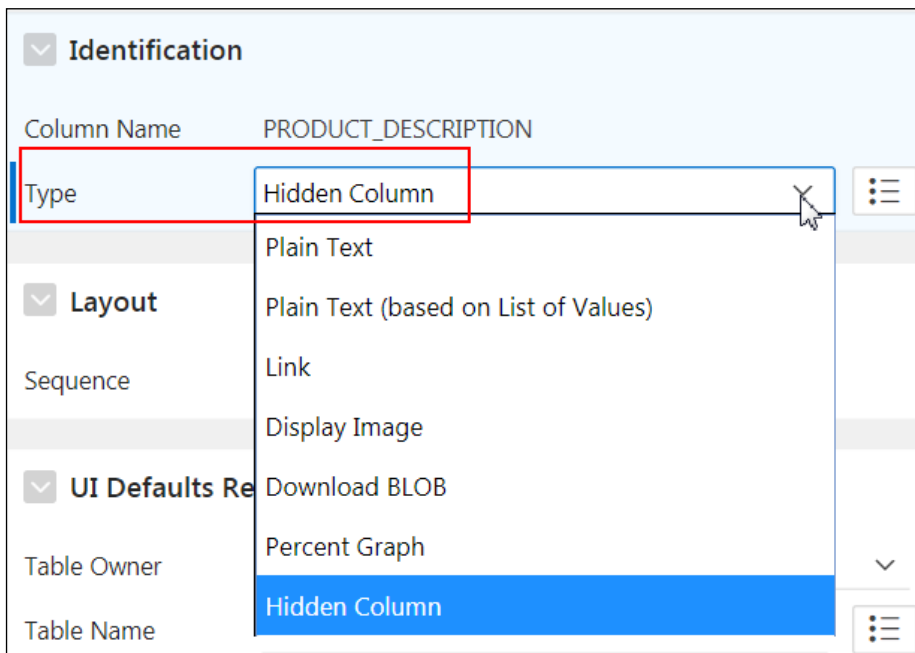
- b. In the Property Editor (the right pane), **Layout > Parent Region**, select **Products**. Notice that the Products List region becomes a subregion of Products. Alternatively, you can use the drag-and-drop feature.



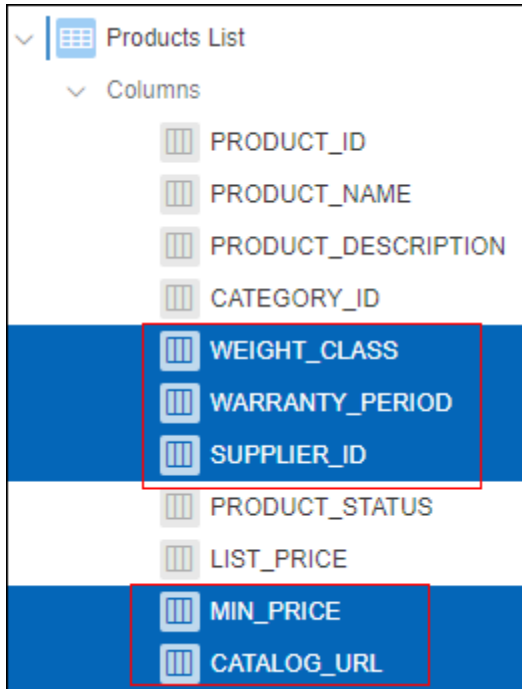
- c. On the Rendering tab, expand **Regions > Content Body > Products > Sub Regions > Products List > Columns >** and select `PRODUCT_DESCRIPTION`.



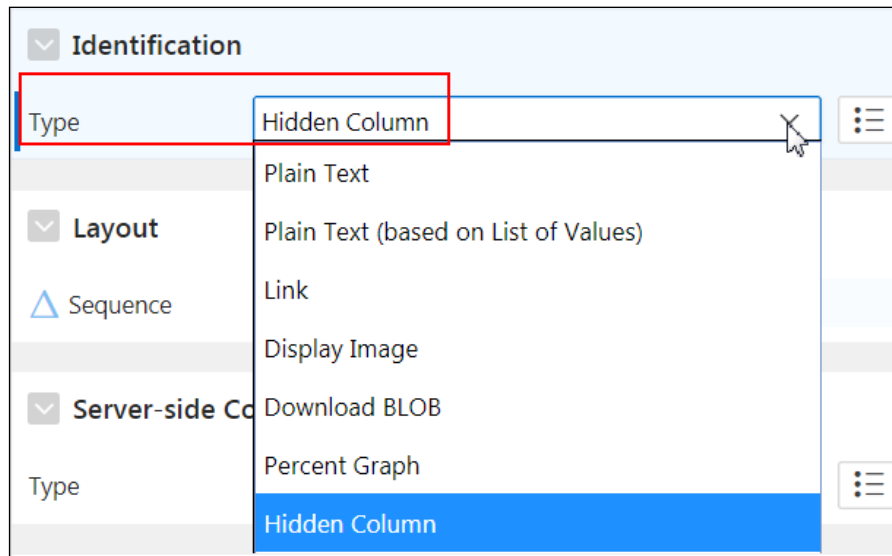
- d. In the Property Editor (the right pane), **Identification > Type**, select **Hidden Column**.



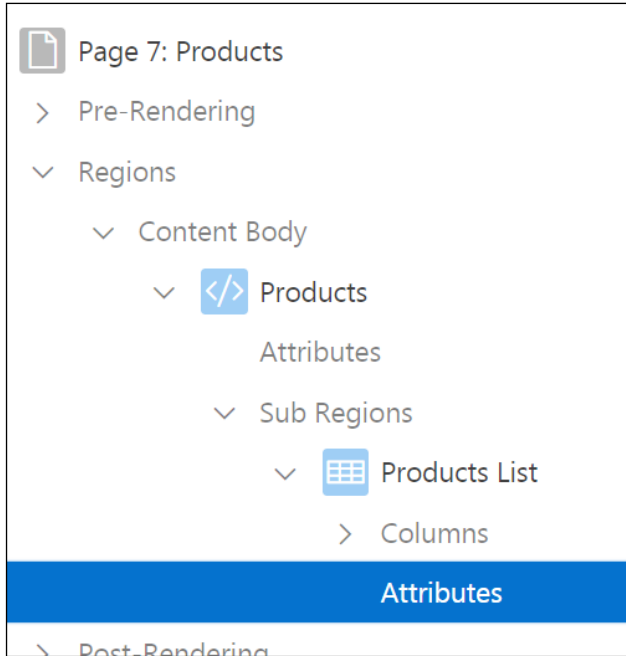
- e. On the Rendering tab, press Ctrl and select the following columns:
- WEIGHT_CLASS
 - WARRANTY_PERIOD
 - SUPPLIER_ID
 - MIN_PRICE
 - CATALOG_URL



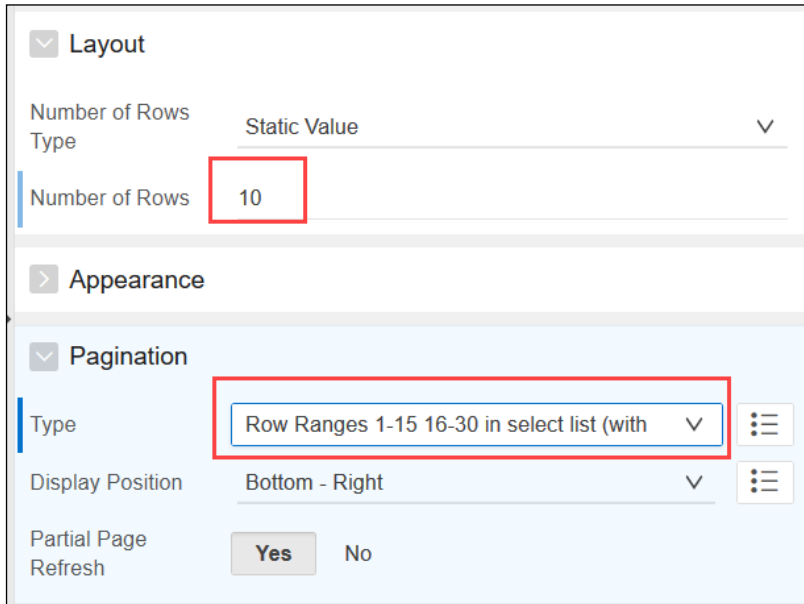
- f. In the Property Editor (the right pane), **Identification** > **Type**, select **Hidden Column**.



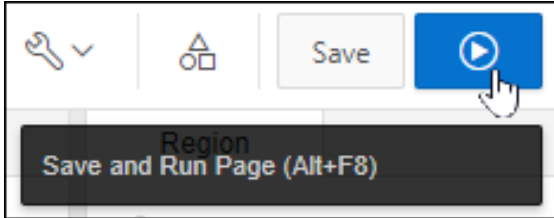
- g. On the Rendering tab, expand **Regions > Content Body > Products > Sub Regions > Products List >** and select **Attributes**.



- h. In the Property Editor (the right pane):
- 1) **Layout > Number of Rows:** Enter 10.
 - 2) **Pagination > Type:** Select **Row Ranges 1-15 16-30 in select list (with pagination)** from the drop-down list.



- i. Click **Save** and then **Save and Run Page**.



- j. Notice that the **Products List** region is now displayed in the Products parent region, and only the columns that you specified appear. Also, notice the pagination is now in a select list.

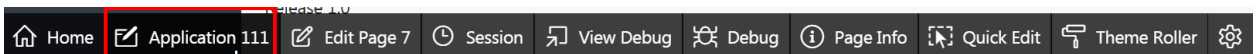
Products

Products List

Product Id ↑≡	Product Name	Category Id	Product Status	List Price
1726	LCD Monitor 11/PM	11	under development	259
1729	Chemicals - RCP	39	orderable	80
1733	PS 220V /UK	19	orderable	89
1734	Cable RS232 10/AM	19	orderable	6
1737	Cable SCSI 10/FW/ADS	19	orderable	8
1738	PS 110V /US	19	orderable	86
1739	SDRAM - 128 MB	14	orderable	299
1740	TD 12GB/DAT	17	orderable	134
1742	CD-ROM 500/16x	17	orderable	101
1743	HD 18.2GB @10000 /E	13	planned	800

row(s) 1 - 10 of 292 ▼
Next ▶

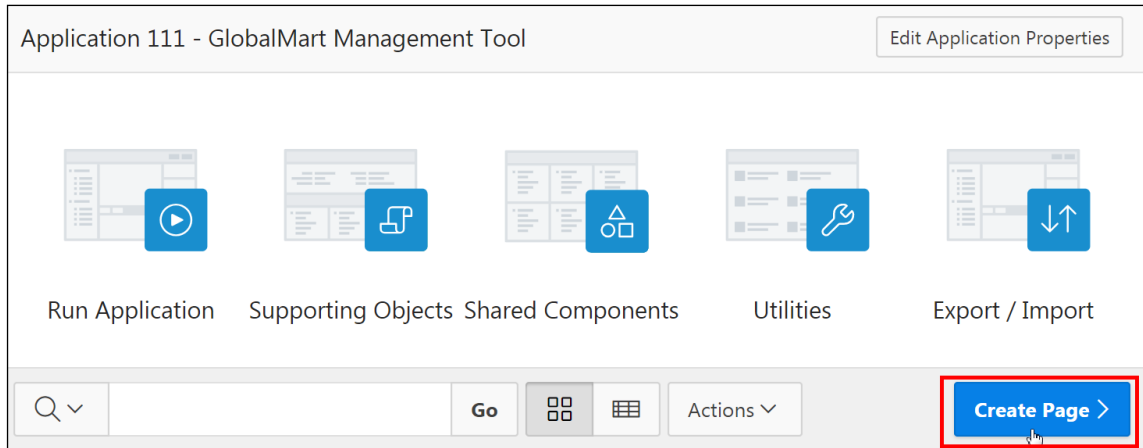
Click the **Application 111** link on the Runtime Developer toolbar.



4. Create a page (**Page 8 – Update Customer**) and modify it to create a **Hint** sidebar region on the right side of the Update Customer page that includes the following HTML code (located in `/home/oracle/labs/labs/lab_07_01_01.txt`):

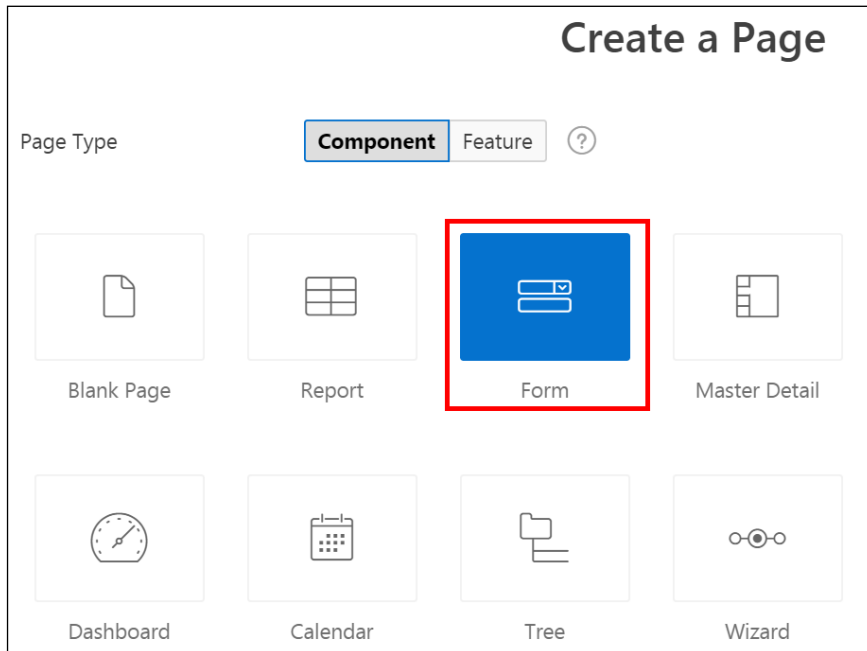
Use this page to enter and
 maintain customer information.

- a. You will first create a Form Page. Go to your **Application 111** and click **Create Page**.

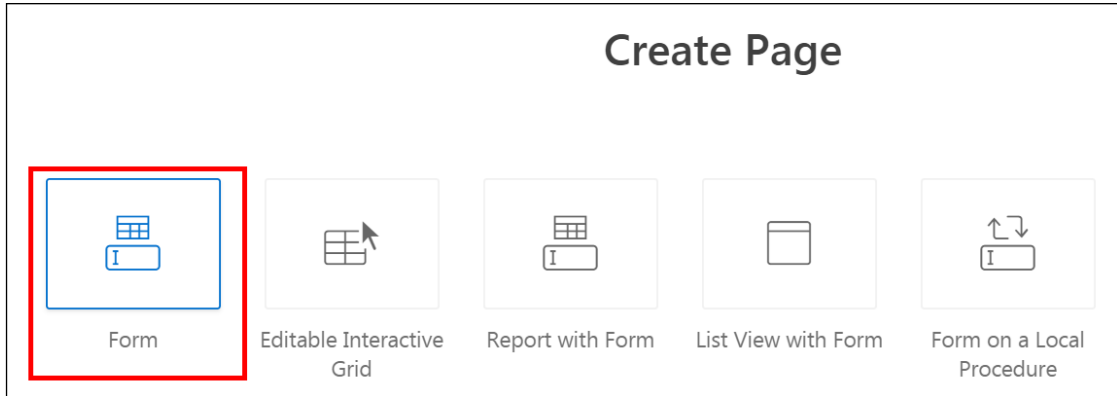


- b. Click **Form** and click **Next >**.

Note: In this example, we create a simple Form and add a **Hint** sidebar region. In the lesson titled “Managing Forms,” you will be learning more about creating different types of Forms.



c. Click **Form**.



d. In the Create Form on a Table page, enter the following details:

- **Page Number:** Enter 8
- **Page Name:** Update Customers
- **Branch here on Submit:** Select 4
- **Cancel and Go to Page:** Select 4
- Click **Next>**.

The screenshot shows the 'Create Form' configuration page. The 'Page Attributes' section is visible. The 'Page Number' field is set to 8, and the 'Page Name' field is set to 'Update Customers'. The 'Page Mode' is set to 'Normal'. The 'Page Group' is set to '- Select Page Group -'. The 'Branch Here on Submit' field is set to 4, and the 'Cancel and Go To Page' field is set to 4. The 'Breadcrumb' field is set to '- do not add breadcrumb region to page -'. The 'Page Number' and 'Page Name' fields are highlighted with a red box. The 'Branch Here on Submit' and 'Cancel and Go To Page' fields are also highlighted with a red box.

- e. Keep the default navigation settings and click **Next>**.

The screenshot shows the 'Create Form' wizard at the 'Navigation Menu' step. A progress bar at the top has four steps: the first is completed (green checkmark), the second is active (blue circle), and the last two are not yet started (grey circles). Below the progress bar, the text 'Navigation Menu' is centered. Underneath, there is a 'Navigation Preference' section with three radio button options. The first option, 'Do not associate this page with a navigation menu entry', is selected and highlighted with a red box. The other two options are 'Create a new navigation menu entry' and 'Identify an existing navigation menu entry for this page'. A help icon (?) is visible to the right of the selected option.

- f. To define the table source, select the following:

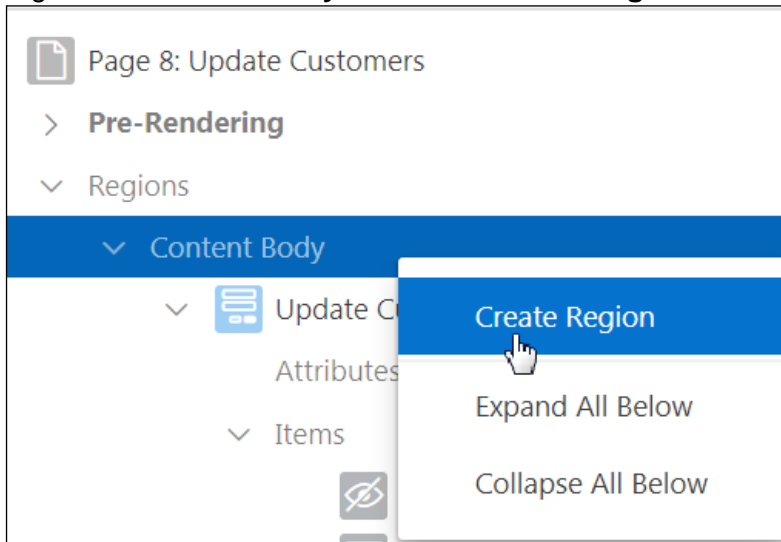
- **Source Type:** Select **Table**
- **Table/View Name:** Select `OEHR_CUSTOMERS` (table)

The screenshot shows the 'Data Source' configuration screen. At the top, the title 'Data Source' is centered. Below it, there are three tabs for 'Data Source': 'Local Database' (selected), 'REST Enabled SQL Service', and 'Web Source'. A help icon (?) is to the right of these tabs. Below the tabs, there are three required fields marked with a red asterisk (*):
1. 'Source Type' with radio buttons for 'Table' (selected and highlighted with a red box) and 'SQL Query'. A help icon (?) is to the right.
2. 'Table / View Owner' with a dropdown menu showing 'OEHR' and a help icon (?).
3. 'Table / View Name' with a text input field containing 'OEHR_CUSTOMERS (table)' and a help icon (?). A red box highlights a menu icon (three horizontal lines) to the right of the input field.

- Click **Next>**.

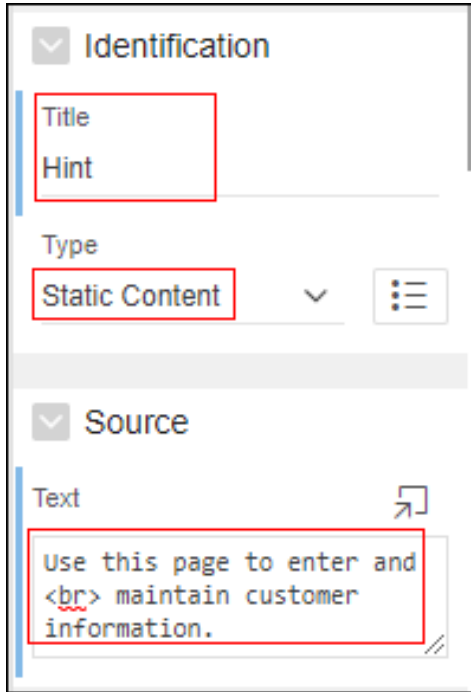
- Select **Select Primary Key Column(s)** for Primary Key Type. For **Primary Key Column**, select `CUSTOMER_ID` (Number).

- Click **Create**.
- g. The Update Customers form page is created and opens in Page Designer view. In the bottom of the central pane of Page Designer, click the **Regions** tab.
- h. Right-click **Content Body** and select **Create Region**.

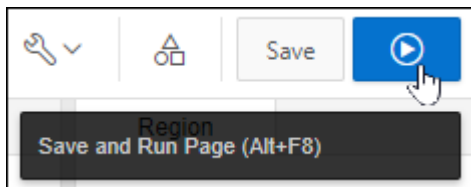


- i. In the Property Editor (the right pane):
 - **Identification > Title:** Enter `Hint`.
 - **Identification > Type:** Select **Static Content** (if not selected by default).
 - **Source > Text:** Enter the following (located in `/home/oracle/labs/labs/lab_07_01_01.txt`) in the **Text** field.

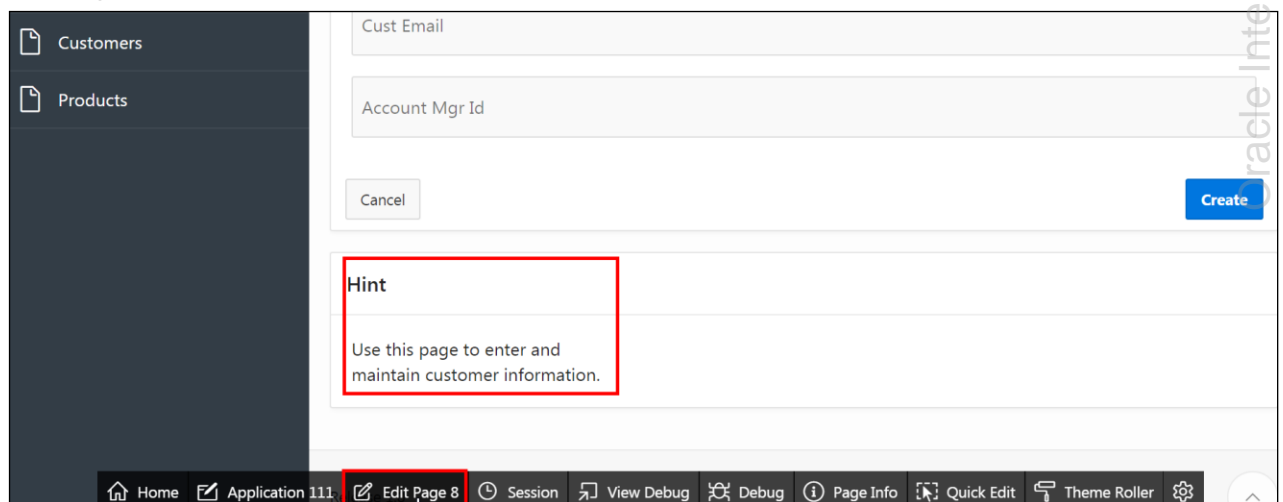
Use this page to enter and `
` maintain customer information.



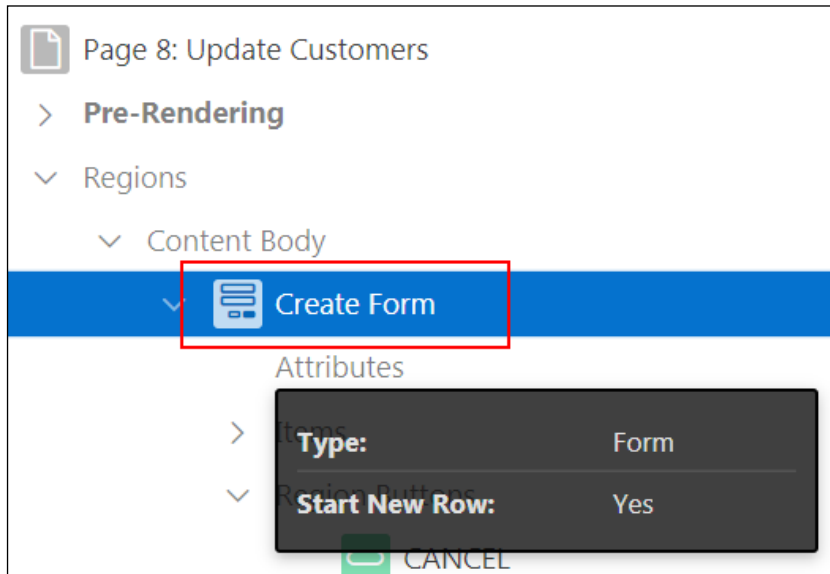
- j. Click **Save** and then **Save and Run Page**.



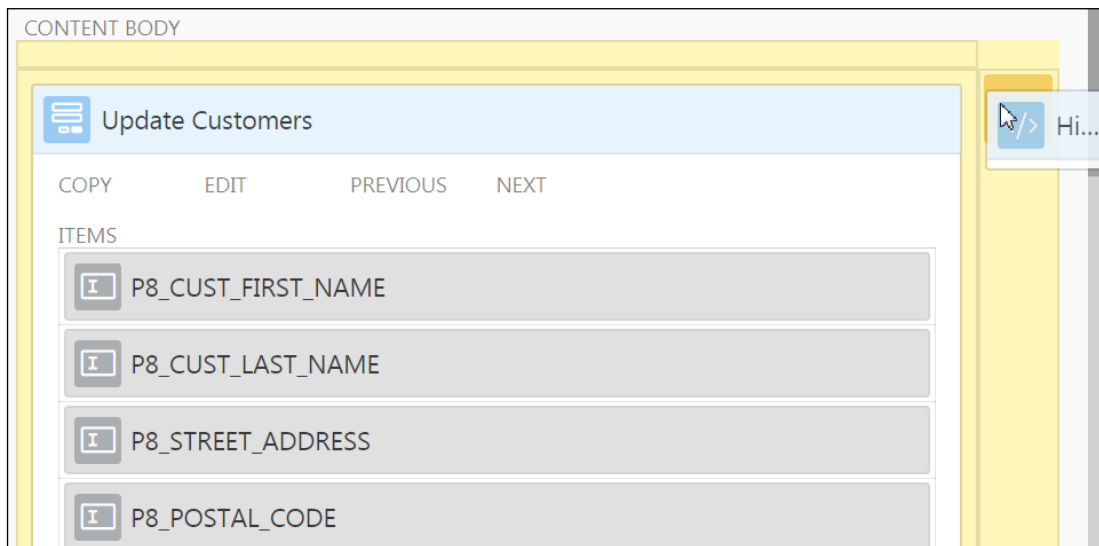
- k. Note that although the Hint region is created, it is not displayed as a sidebar region on the right side of the page. To display it as a side bar region, you need to change the page template so that a sidebar is provided. Click the **Edit Page 8** link on the Runtime Developer toolbar.

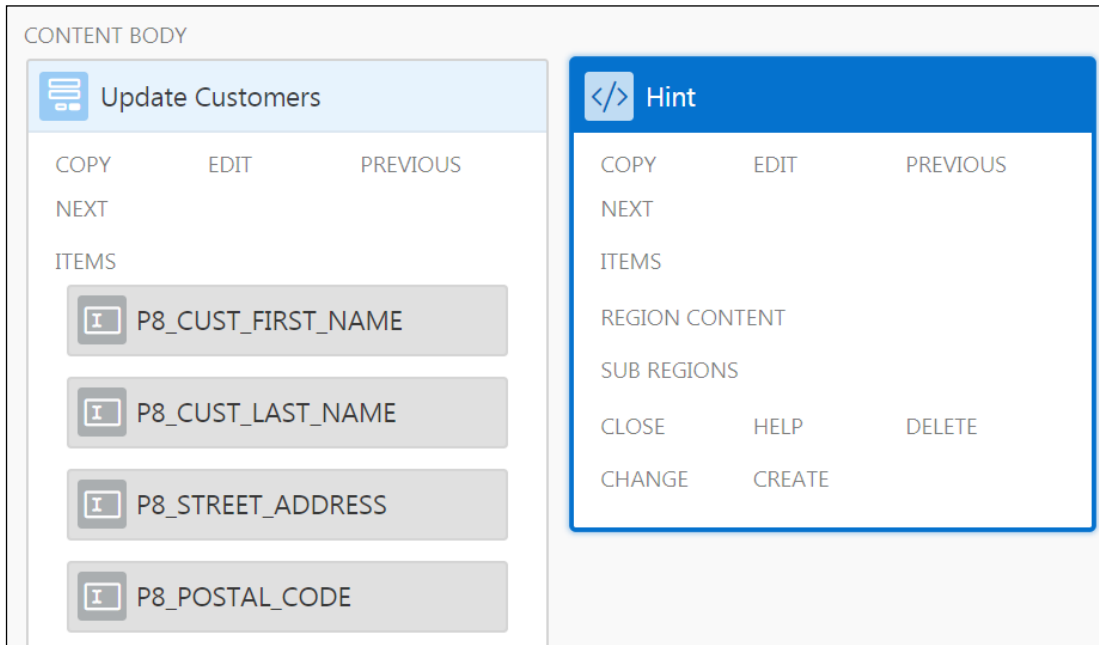


- I. Select **Create Form**, and then in the Property Editor, **Identification > Title**: Enter Update Customers.

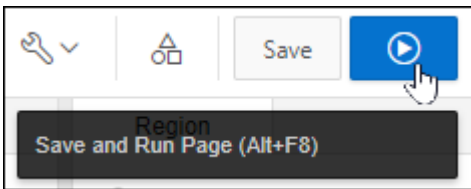


- m. Drag the **Hint** region to the right of the **Update Customers** region.

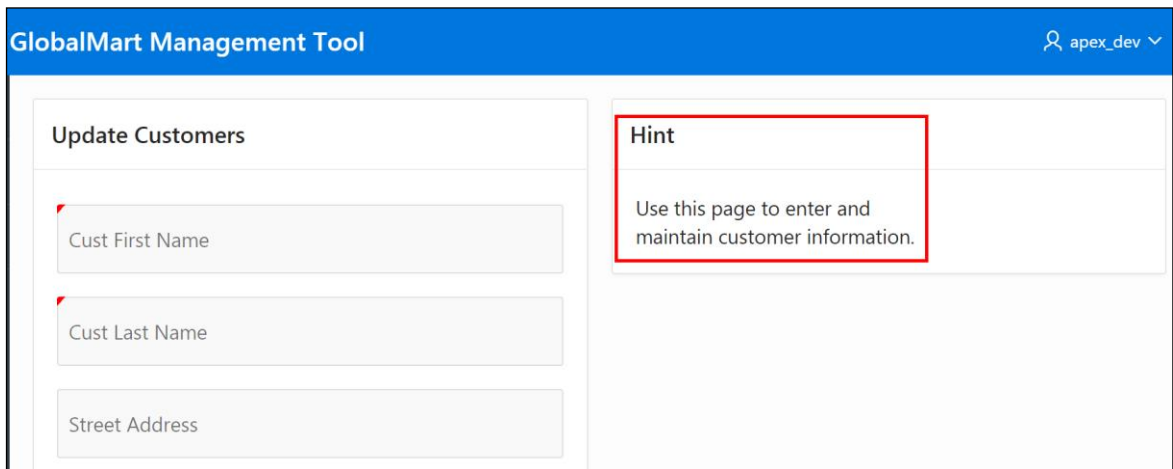




- n. Run the page again and you see the Hint region on the right. Click **Save**. Run the page by clicking **Save and Run Page**.



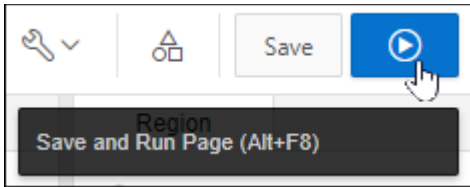
- o. Modify the Hint region such that it takes only two column span. Click the **Edit Page 8** link on the Runtime Developer toolbar.



- p. Ensure that the **Hint** region is selected either on the Rendering tab or on the Layout tab (Central pane). In the Property Editor, under **Layout > Column Span**, select **2**.

The screenshot shows the 'Layout' section of the Property Editor. The 'Column Span' property is highlighted with a red box and has a value of '2' entered in its input field. Other visible properties include 'Sequence' (20), 'Parent Region' (- Select -), 'Position' (Content Body), 'Start New Row' (Yes/No), 'Column' (Automatic), and 'New Column' (Yes/No).

- q. Click **Save** and then **Save and Run Page**.



- r. Note that the Hint region now displays on the right side of the page, occupying lesser space than before. Click the **Edit Page 8** link on the Runtime Developer toolbar.

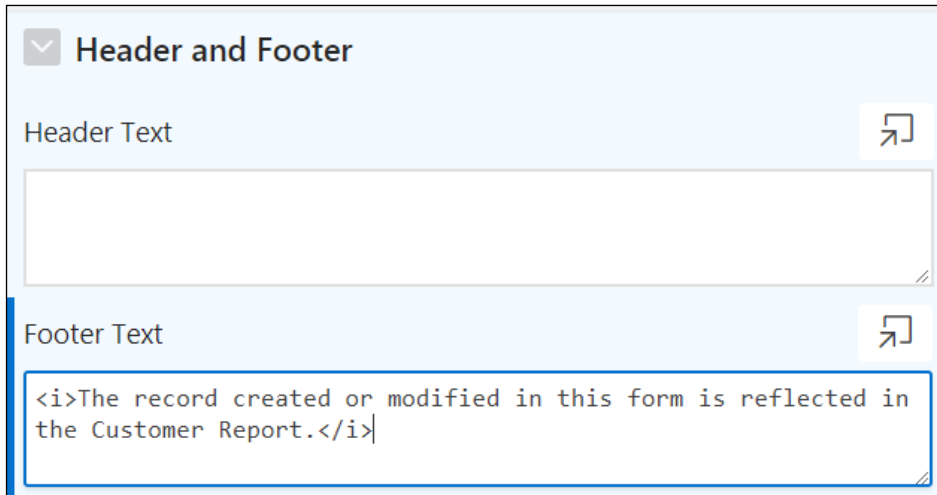
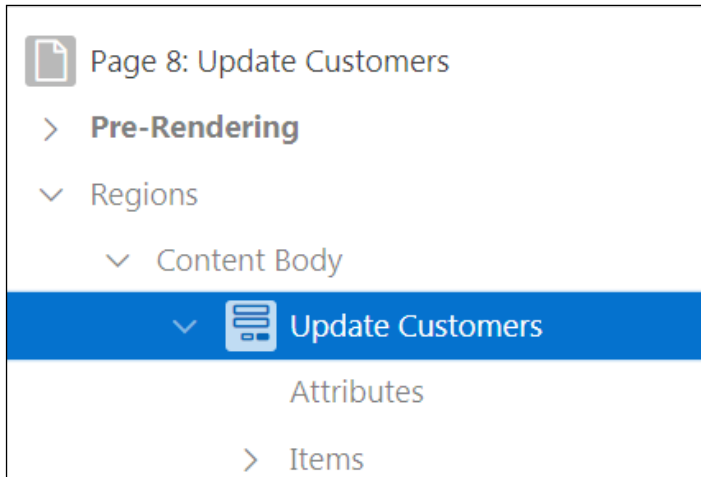
The screenshot shows the 'Update Customers' page in the Runtime Developer. The page has a 'Hint' region on the right side with the text 'Use this page to enter and maintain customer information.' The 'Edit Page 8' link in the toolbar is highlighted with a red box. The page contains four input fields: 'Cust First Name', 'Cust Last Name', 'Street Address', and 'Postal Code'.

5. Add a footer to the Update Customer region on the Update Customer page so that the following message (located in /home/oracle/labs/labs/lab_07_01_02.txt) appears at the bottom of the region when a user enters this page:

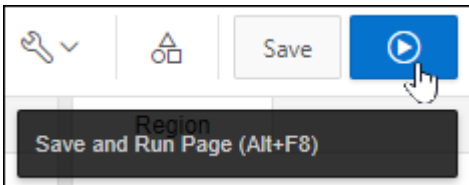
```
<i>The record created or modified in this form is reflected in the Customer Report.</i>
```

- a. On the Rendering tab, select **Regions > Content Body > Update Customers**.
- b. In the Property Editor (the right pane): Copy the footer text (located in the /home/oracle/labs/labs/lab_07_01_02.txt) and paste it into the **Header Footer > Footer Text**.

```
<i>The record created or modified in this form is reflected in the Customer Report.</i>
```



- c. Click **Save** and then **Save and Run Page**.



- d. The footer text is displayed. Click the **Application 111** link on the Runtime Developer toolbar.

The screenshot shows a form with three input fields: "Credit Limit", "Cust Email", and "Account Mgr Id". Below these fields is a red-bordered box containing the text: "The record created or modified in this form is reflected in the Customer Report." At the bottom left of the form is a "Cancel" button, and at the bottom right is a blue "Create" button. Below the form is a dark toolbar with several icons and labels: Home, Application 111 (highlighted with a red box), Edit Page 8, Session, View Debug, Debug, Page Info, Quick Edit, and Theme Roller.

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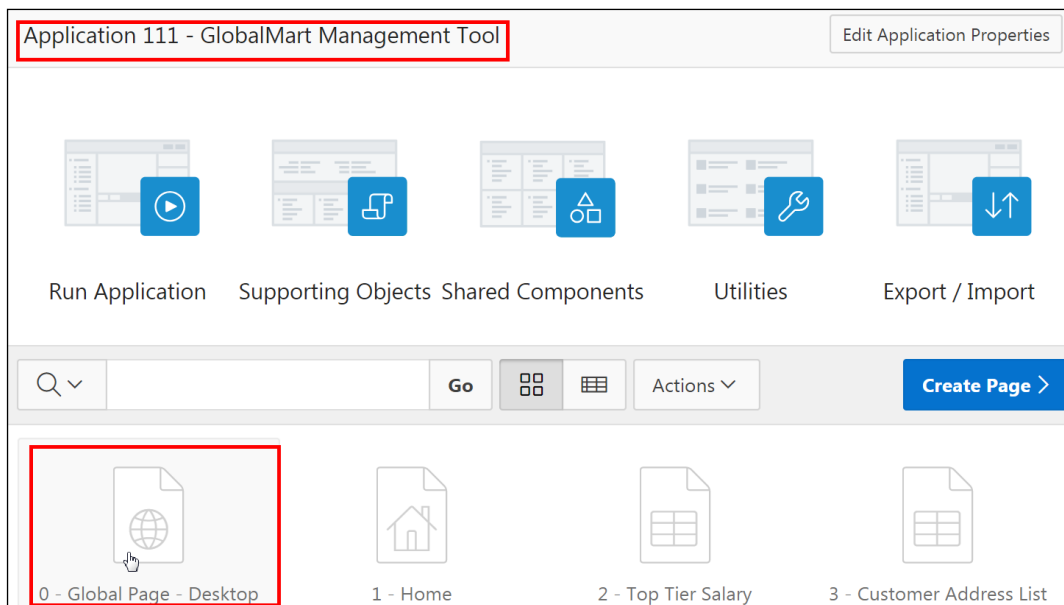
Solution 7-2: Working with Global Pages

Overview

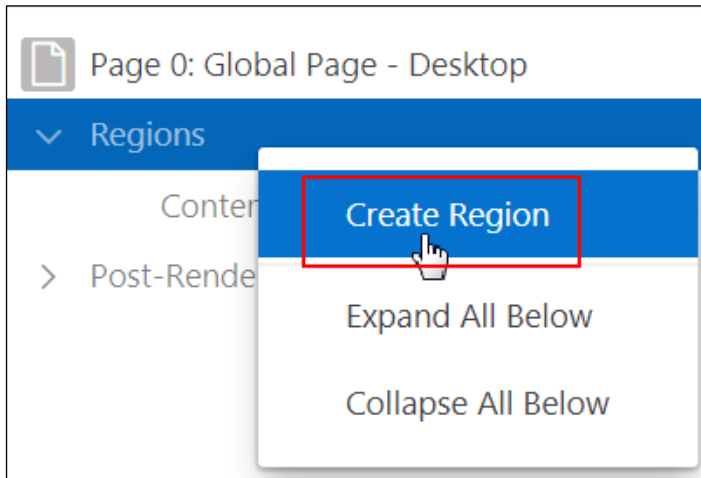
In this practice solution, steps are provided to update the Global page in the GMT application.

Steps

1. View the **0 – Global Page – Desktop** page in the GlobalMart Management Tool application and review it in Application Properties.
 - a. Navigate to the **GlobalMart Management Tool** application home page and click **0-Global Page**.



- b. The Global Page - Desktop opens in Page Designer.
2. Add a Static HTML region to the Global Desktop page. Name the region as **In the News** on the Global page with the following code (located in `/home/oracle/labs/labs/lab_07_02.txt`):
 - a. On the Rendering tab, right-click the **Regions** and click **Create Region**.



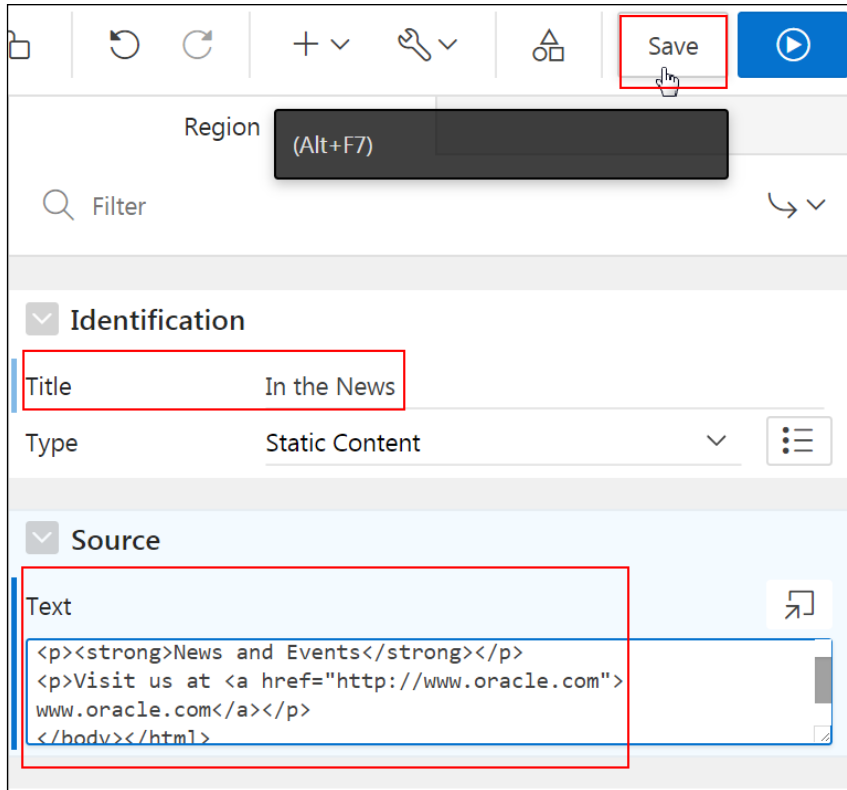
- b. In the Property Editor (the right pane):
- 1) **Identification > Title:** Enter In the News.
 - 2) **Source > Text:** (Copy content from the `/home/oracle/labs/labs/lab_07_02.txt`.)

```
<html><body>
<p><strong>News and Events</strong></p>
<p>Visit us at <a href="http://www.oracle.com">
www.oracle.com</a></p>
</body></html>
```

- 3) **Layout > Position:** Select **Before Content Body**

A screenshot of the 'Layout' property editor in a web editor. The 'Layout' section is expanded, showing several properties: 'Sequence' (10), 'Parent Region' (- Select -), 'Position' (Before Content Body), 'Start New Row' (Yes/No), and 'Column' (Automatic). The 'Position' dropdown menu is highlighted with a red rectangular box, and its value is 'Before Content Body'. The 'Start New Row' property has a 'Yes' button selected.

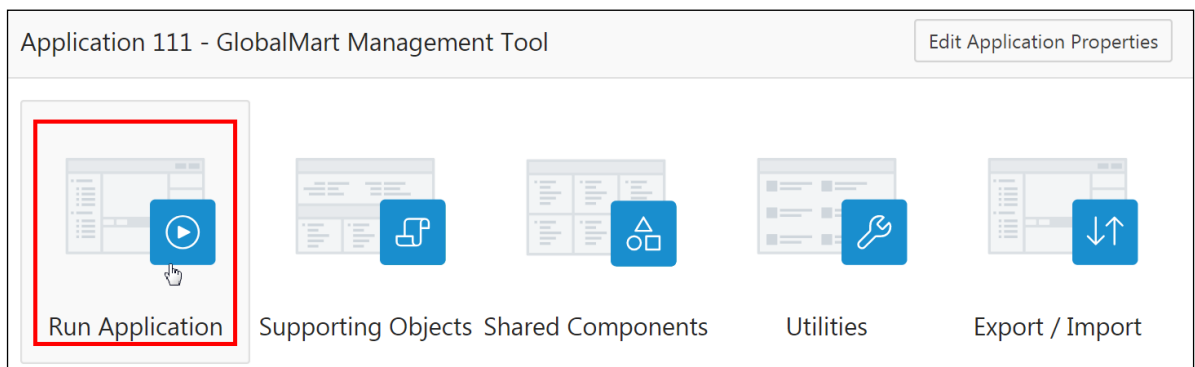
4) Click **Save**.



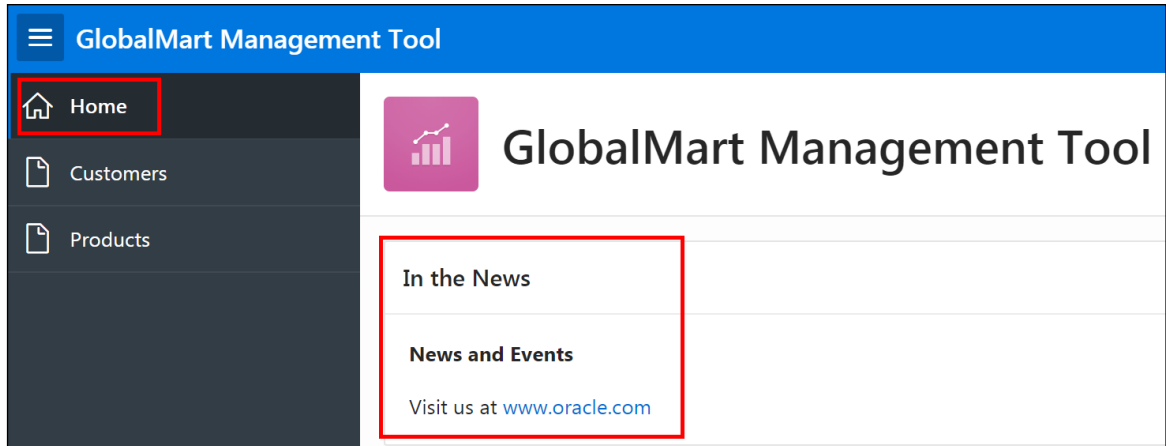
c. Click the **Application 111** breadcrumb.



d. Click **Run Application**.



The home page is displayed with the **In the News** region.



- e. Click the **Customers** tab. You will notice that the **In the News** region appears on this page too.

GlobalMart Management Tool

Home
Customers
Products

In the News
News and Events
Visit us at www.oracle.com

Go 1. Primary Report Actions

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province
218	Bryan	Dvrrie	3386 Perrysville	15214	Pittsburgh	PA

- f. Click the **Products** tab. The region appears here as well.

GlobalMart Management Tool

Home
Customers
Products

In the News
News and Events
Visit us at www.oracle.com

Products

Products List

Product Id ↑	Product Name	Category Id	Product Status	List Price
1726	LCD Monitor 11/PM	11	under development	259

- g. Click the **Application 111** link on the Runtime Developer toolbar.

Home Application 111 Edit Page 7 Session View Debug Debug Page Info Quick Edit Theme Roller

Practices for Lesson 8: Managing Forms

Practices for Lesson 8: Overview

Overview

In these practices, you create and use different types of forms for GMT application, namely, Form on a Table, Report with List View on a Table, and Master Detail Form – Side By Side, Drill-down, and Stacked.

Practice 8-1: Creating a Form

Overview

In this practice, you create a form and then link the form to the Customers report that was created previously.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Create a form based on the `CUSTOMERS` table. Enter 9 as the page number. The form page and region should be titled **Customer Details** and contain the customer's First Name, Last Name, Email, and Manager ID fields. The following are the other requirements:
 - Ensure that the primary key has the value `CUSTOMER_ID`.
 - The Create and Cancel buttons are required.
 - Branch to the Customers page for both: "After Page Submit and Processing" and "When Cancel Button Pressed."
 - Run the form for verification.
2. Link the form to the report. When the Edit icon in the report is clicked, the user should be redirected to the form and the details populated in the form.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 8-1**.

If you haven't completed **Practice 7-2**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.

- c. Click the **Browse** button.
- d. Browse and open the `sol_07_02.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Practice 8-2: Creating a List View with Form

Overview

In this practice, you create a list view with form.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Create a list view with a form based on the `Customers` table. Enter 10 as the report page number and 11 as the form page number. The report page should be titled **Customers List View** and contain the Customer's First Name, Last Name, Email, and Manager ID fields. The form page should be titled **Form on Customers** and contain the Customer's First Name, Last Name, Email, and Manager ID fields. The following are the other requirements:
 - Ensure that the primary key has the value `Customer_ID`.
 - The Create, Cancel, Delete, and Apply Changes buttons are required.
 - Run the form for verification.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 8-2**.

If you haven't completed **Practice 8-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_08_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.

e. Click **Next** >.

- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Practice 8-3: Creating a Master Detail Form (Side By Side)

Overview

In this practice, you create a form that is based on two tables (Master table and Detail table) and make some modifications to it.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On a new page called **Master Detail Form**, create a Master Detail Form (List of Orders page 12) based on the `ORDERS` and `ORDER_ITEMS` tables.
Note: Two additional pages are created while creating the Master Detail Form (Side by Side). You cannot choose the page numbers of these two pages. In this activity, the page numbers are 13 (`Oehr Orders`) and 14 (`Oehr Order Items`). The page numbers may vary with different application IDs.
 - Include a report page called **List of Orders** on the master table.
 - Display the master table and detail table forms on a single page.
 - Exclude the `ORDER_ID` column in the `ORDER_ITEMS` table.
 - Include navigation based on the `ORDER_ID` column.
2. On the Master Detail Form page, change the region name for the master region to **Order Master** and change the region name for the detail region to **Order Details**.
3. On the Master Detail page, move the **Order Status** item to appear before the **Customer ID** in the Order Master region.
4. On the **List of Orders (master report)** page, do not show the `PROMOTION_ID` column. Change the heading of **Sales Rep ID** to **Sales Rep**.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 8-3**.

If you haven't completed **Practice 8-2**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_08_02.sql` file in the `/home/oracle/labs/solutions` directory, and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Practice 8-4: Creating a Master Detail Form (Stacked)

Overview

In this practice, you create a form that is based on two tables (Master table and Detail table).

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On a new page called **Master Detail Form**, create a Master Detail Form based on the `ORDERS` and `ORDER_ITEMS` tables and specify the page number as 15.
 - Include a report page called **Orders List** on the master table.
 - Display the master table and detail table forms on a single page.
 - Include navigation based on the `ORDER_ID` column.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 8-4**.

If you haven't completed **Practice 8-3**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_08_03.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Practice 8-5: Creating a Master Detail Form (Drill-Down)

Overview

In this practice, you create a form that is based on two tables (Master table and Detail table).

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On a new page called **Master Detail Form**, create a Master Detail Form based on the `CUSTOMERS` and `ORDERS` tables and specify the page numbers as 20 and 21, respectively.
 - Include a report page called **Customer Master Information** on the master table.
 - Display the master table and detail table forms on a single page.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 8-5**.

If you haven't completed **Practice 8-4**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_08_04.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

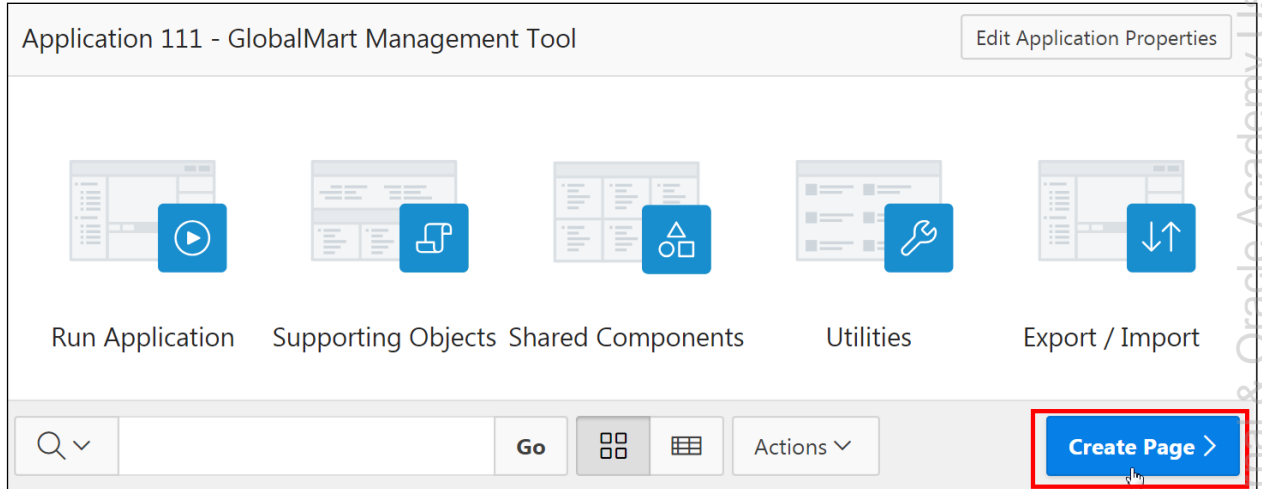
Solution 8-1: Creating a Form

Overview

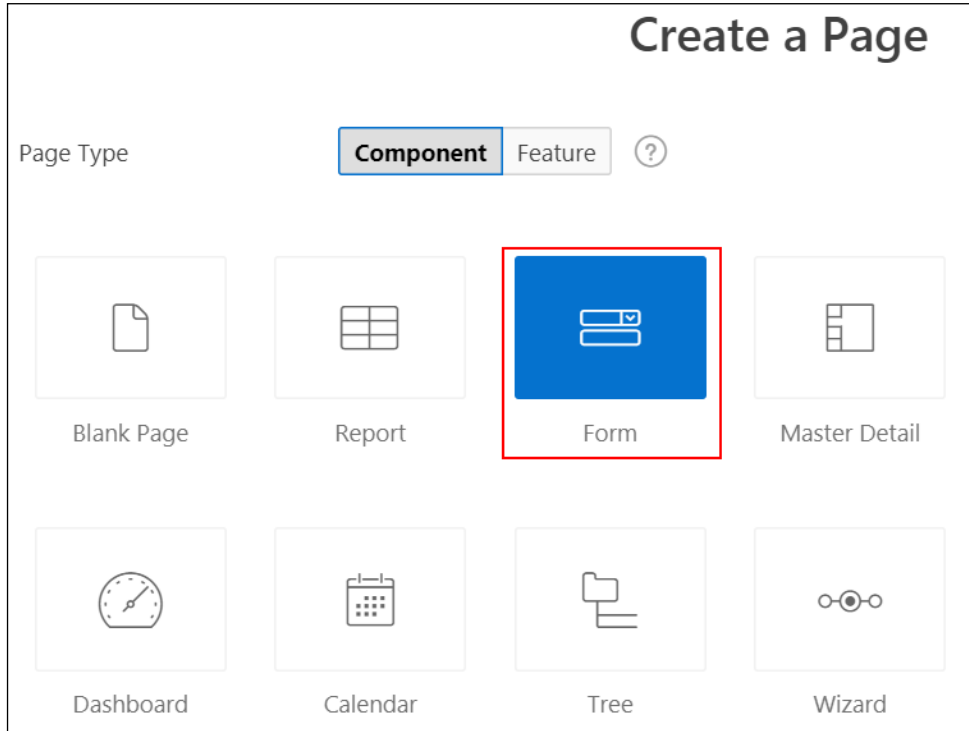
In this practice solution, steps are provided for creating a form for the GMT application.

Steps

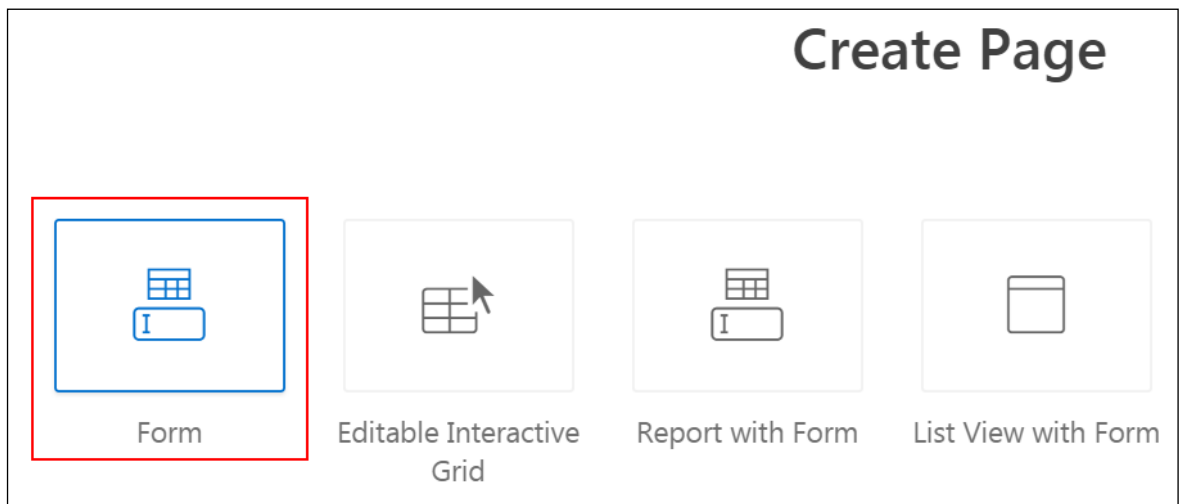
1. Create a form based on the `OEHR_CUSTOMERS` table. Enter 9 as the page number. The form page and region should be titled **Customer Details** and contain the customer's First Name, Last Name, Email, and Manager ID fields. The following are the other requirements:
 - Ensure that the primary key has the value `CUSTOMER_ID`.
 - The Create and Cancel buttons are required.
 - Branch to the Customers page for both: "After Page Submit and Processing" and "When Cancel Button Pressed."
 - Run the form for verification.
- a. On the GMT Application Home page, click **Create Page**.



- b. Select the **Form** option.



- c. Click **Next >**.
d. Select **Form**.



- e. Click **Next**.
- f. Enter the Page Attributes:
 - **Page Number:** Enter 9
 - **Page Name:** Enter Customer Details
 - **Branch Here on Submit:** Select 4 (**Customer Report**) page.
 - **Cancel and Go To Page:** Select 4 (**Customer Report**) page.

Create Form

Page Attributes

* Page Number: 9

* Page Name: Customer Details

Page Mode: **Normal** Modal Dialog

Page Group: - Select Page Group -

* Branch Here on Submit: 4

* Cancel and Go To Page: 4

Breadcrumb: - do not add breadcrumb region to page -

- g. Click **Next >**.
- h. Accept the default for Navigation Menu and click **Next >**.

Create Form


Navigation Menu

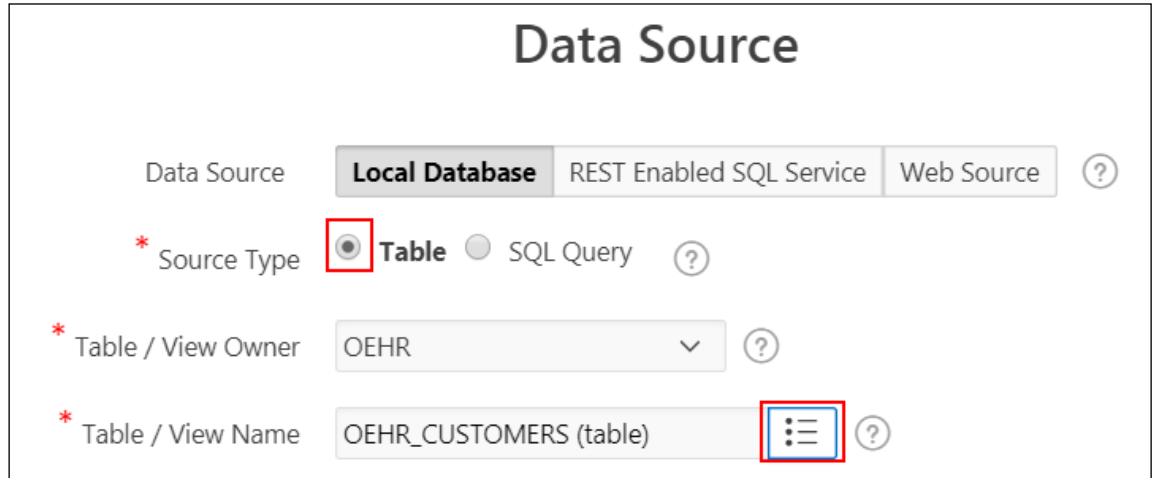
Navigation Preference: **Do not associate this page with a navigation menu entry**

Create a new navigation menu entry

Identify an existing navigation menu entry for this page

- i. For Data Source:
 - **Source Type:** Select **Table**

- **Table/View Name:** Click the  icon and select **OEHR_CUSTOMERS (table)** from the drop-down list.




Data Source

Data Source **Local Database** REST Enabled SQL Service Web Source ?

* Source Type **Table** SQL Query ?

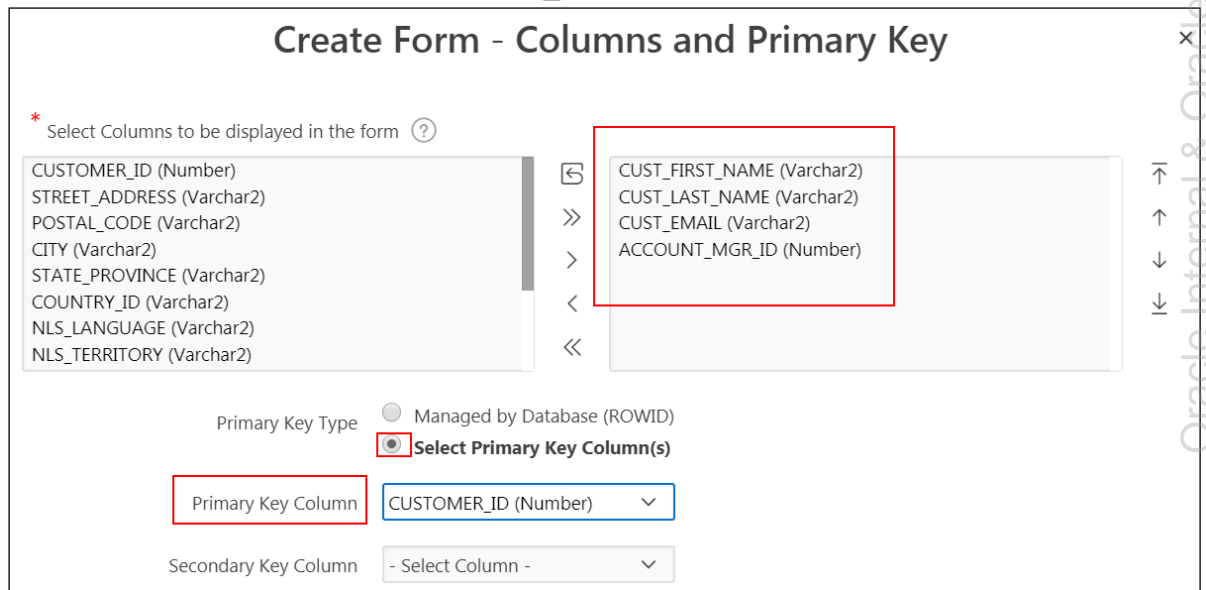
* Table / View Owner OEHR ?

* Table / View Name OEHR_CUSTOMERS (table)  ?

j. Click **Next >**.

k. For Form Attributes:

- **Select Columns:** Select `CUST_FIRST_NAME`, `CUST_LAST_NAME`, `CUST_EMAIL`, and `ACCOUNT_MGR_ID`. Ensure that these columns are in the right column. Use the right arrow (**>**) and left arrow (**<**) to move the columns.
- **Primary Key Type:** Select **Select Primary Key Column(s)**.
- **Primary Key Column:** Select `CUSTOMER_ID` (Number) from the drop-down list.



Create Form - Columns and Primary Key

* Select Columns to be displayed in the form ?

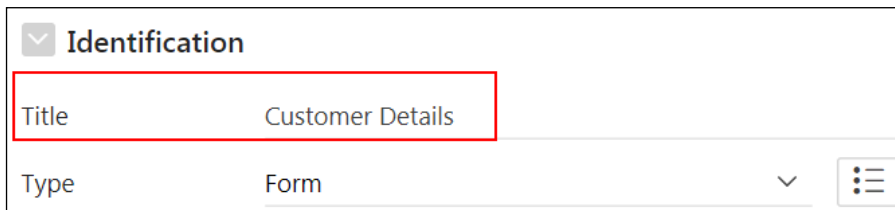
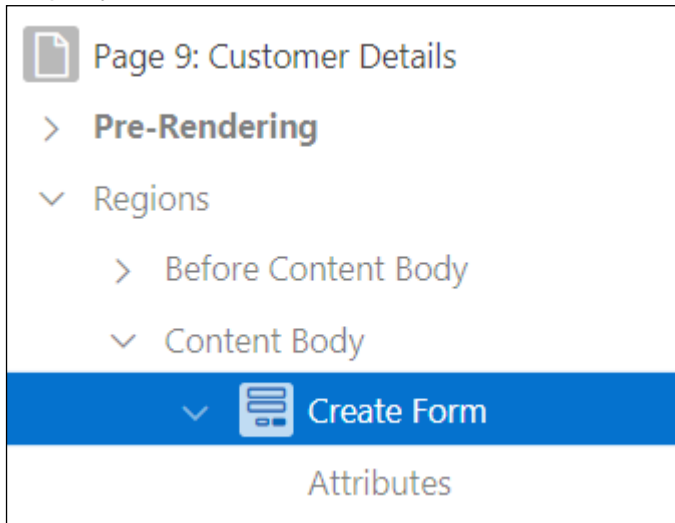
CUSTOMER_ID (Number)	⊞	CUST_FIRST_NAME (Varchar2)
STREET_ADDRESS (Varchar2)	>>	CUST_LAST_NAME (Varchar2)
POSTAL_CODE (Varchar2)	>	CUST_EMAIL (Varchar2)
CITY (Varchar2)	<	ACCOUNT_MGR_ID (Number)
STATE_PROVINCE (Varchar2)	<<	
COUNTRY_ID (Varchar2)		
NLS_LANGUAGE (Varchar2)		
NLS_TERRITORY (Varchar2)		

Primary Key Type Managed by Database (ROWID)
 Select Primary Key Column(s)

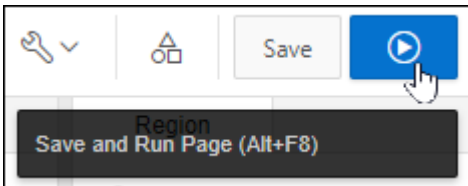
Primary Key Column **CUSTOMER_ID (Number)**

Secondary Key Column - Select Column -

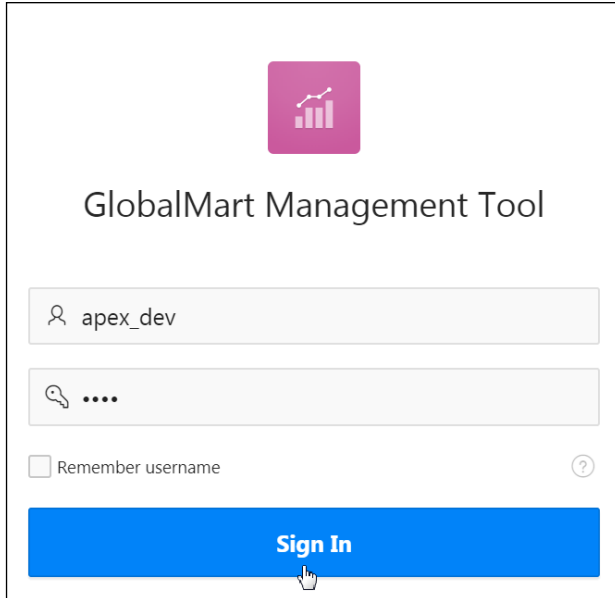
- I. Click **Create**. The Customer Details form page opens in Page Designer view.
- m. Select **Customer Details > Regions > Content Body > Create Form** and in the Property Editor **Identification > Title > Enter Customer Details**.



- n. Click the **Save and Run Page** icon.



- o. If the sign in page appears, enter your credentials and click **Sign in**.



The image shows the sign-in page for the GlobalMart Management Tool. At the top center is a purple square icon with a white bar chart. Below the icon is the text "GlobalMart Management Tool". There are two input fields: the first contains the username "apex_dev" and the second contains masked characters "....". Below the input fields is a checkbox labeled "Remember username" with a question mark icon to its right. At the bottom is a large blue button with the text "Sign In" in white. A mouse cursor is pointing at the "Sign In" button.

- p. Review the form. Click **Cancel** and the Customer Report page appears.



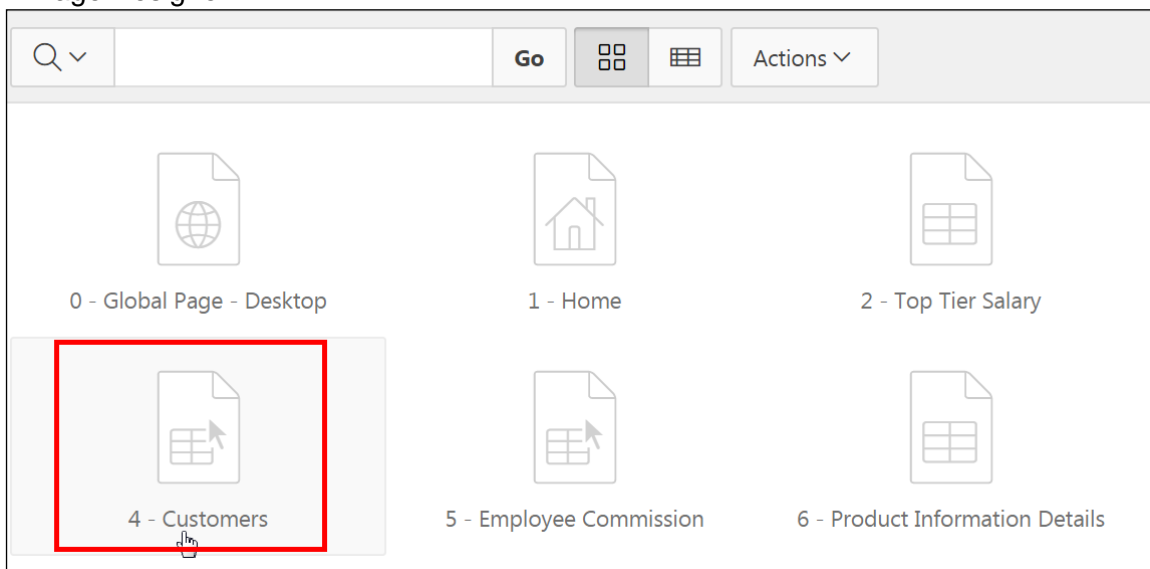
The image shows a form titled "Customer Details" with a red border around the title. The form contains four input fields: "Cust First Name", "Cust Last Name", "Cust Email", and "Account Mgr Id". At the bottom left is a "Cancel" button with a red border, and at the bottom right is a blue "Create" button. A vertical watermark on the right side of the page reads "Oracle Internal & Oracle Academy Use Only".

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id
218	Bryan	Dvrrie	3386 Perrysville Ave	15214	Pittsburgh	PA	US
219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton	PA	US
220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US
221	Carol	Bradford	522 Swede St	19401	Norristown	PA	US

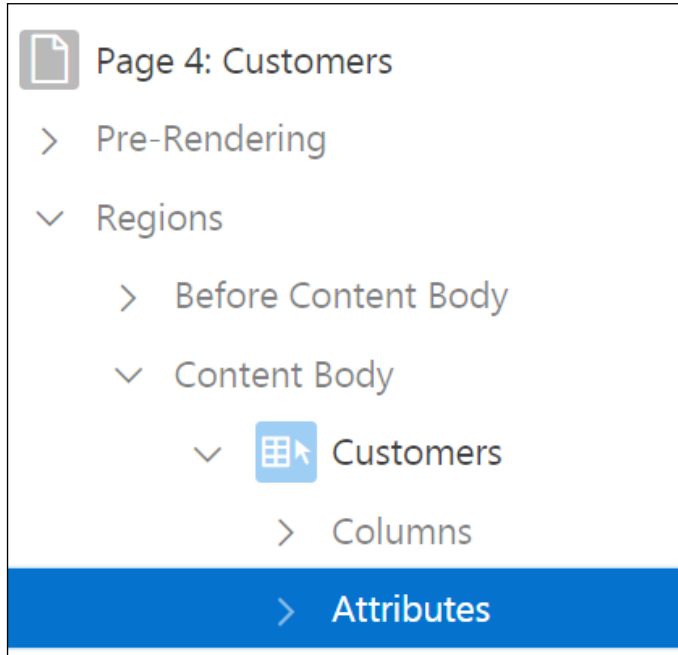
To return to the application home page, click the **Application 111** link on the Runtime Developer toolbar.



2. Link the **Customers** report (page 4) that was created previously to the newly created **Customer Details** form. When the Edit icon in the report is clicked, the user should be redirected to the form and the details populated in the form. After you create the link, run the report and verify the changes.
 - a. On the GMT Application Home page, click **4 - Customers**. The Customers page opens in Page Designer.

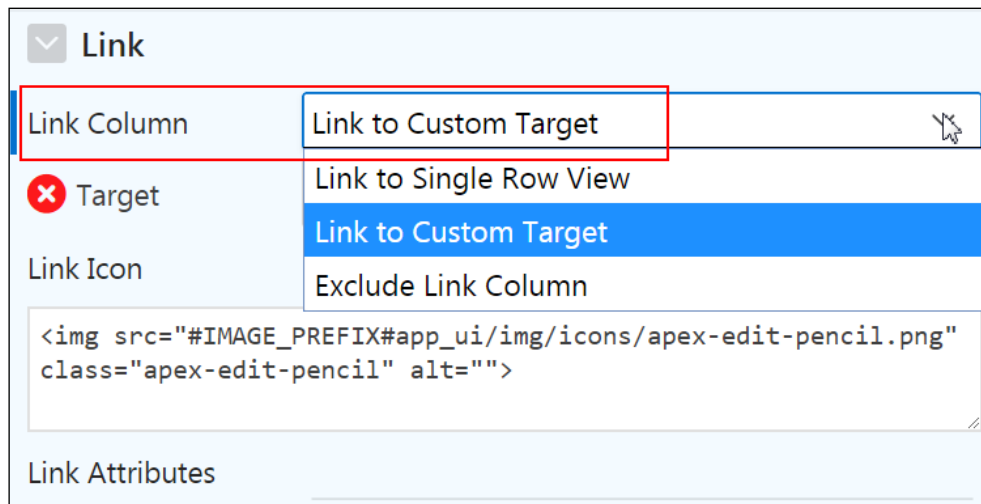


- b. In the Rendering tab, select **Regions > Content Body** and select **Attributes**.



- c. In the Property Editor (the right pane):

- **Link > Link Column:** Select **Link to Custom Target**



- **Link > Target:** Click **No Link Defined**. The **Link Builder –Target** page is displayed.

Link

Link Column

Target

Link Icon

Link Attributes

Target

Type

Page

Set Items




Name	Value
<input type="text"/>	<input type="text"/>

Clear Session State

Clear Cache

Reset Pagination Yes No

Advanced

- Target > Page:** Click  icon and select **9 - Customer Details** from the drop-down list
- Set items > Name:** Click  icon and select **P9_CUSTOMER_ID** link from the Name drop-down list
- Set items > Value:** Click  icon and select **CUSTOMER_ID** link from the value drop-down list

- Click **OK**.

Link Builder - Target

Target

Type Page in this application

Page 9

Set Items

Name	Value
P9_CUSTOMER_ID	#CUSTOMER_ID#

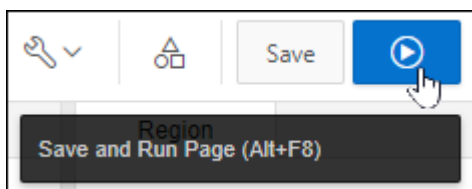
Clear Session State

Clear Cache





Reset Pagination Yes No

Cancel Clear OK

- d. Click **Save** and then **Save and Run Page**.



- e. The **Customers** report page opens. Click the **Edit** icon for any one of the rows.

	Customer Id	First Name	Last Name	Street Address	Postal Code	City	State Province	Country
	224	Clara	Krige	101 E Olney Ave	19120	Philadelphia	PA	US
	225	Clara	Ganesan	612 Jefferson Ave	18510	Scranton	PA	US
	226	Ajay	Andrews	223 4Th Ave # 1100	15222	Pittsburgh	PA	US
	227	Kathy	Prashant	36 W 34Th St	16508	Erie	PA	US

- f. Note that you are redirected to the **Customer Details** form and that the values are automatically populated in the form. You can make changes and delete the active record by using this form. To return to the application home page, click the **Application 111** link on the Runtime Developer toolbar.

Customer Details

Cust First Name
Clara

Cust Last Name
Ganesan

Cust Email
Clara.Ganesan@WIGEON.COM

Account Manager 149

 Home
  **Application 111**
 Edit Page 9
  Session
  View Debug
  Debug
  Page Info
  Quick Edit
  Theme Roller
 

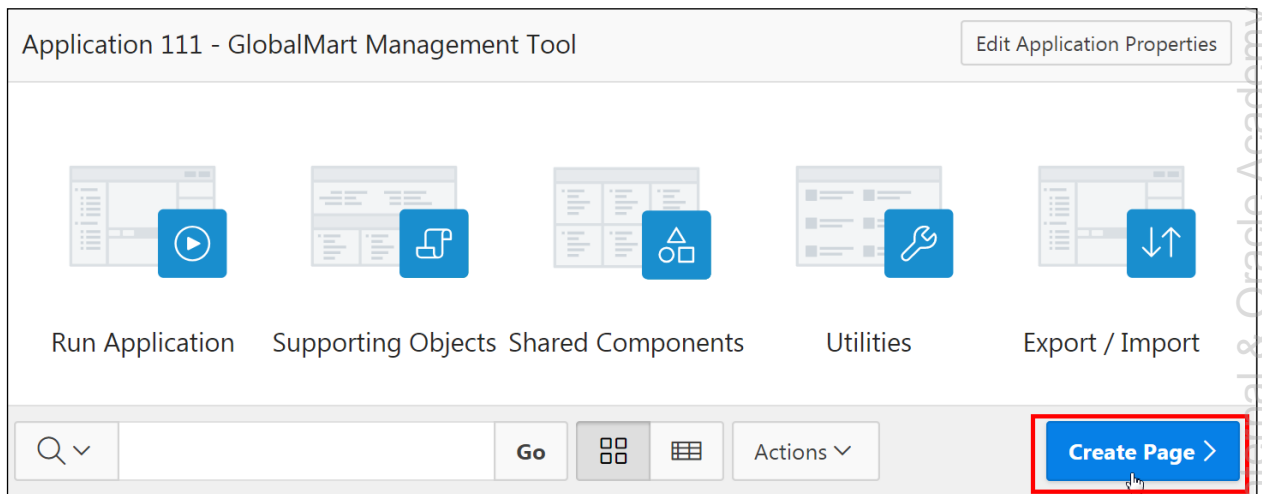
Solution 8-2: Creating a List View with Form

Overview

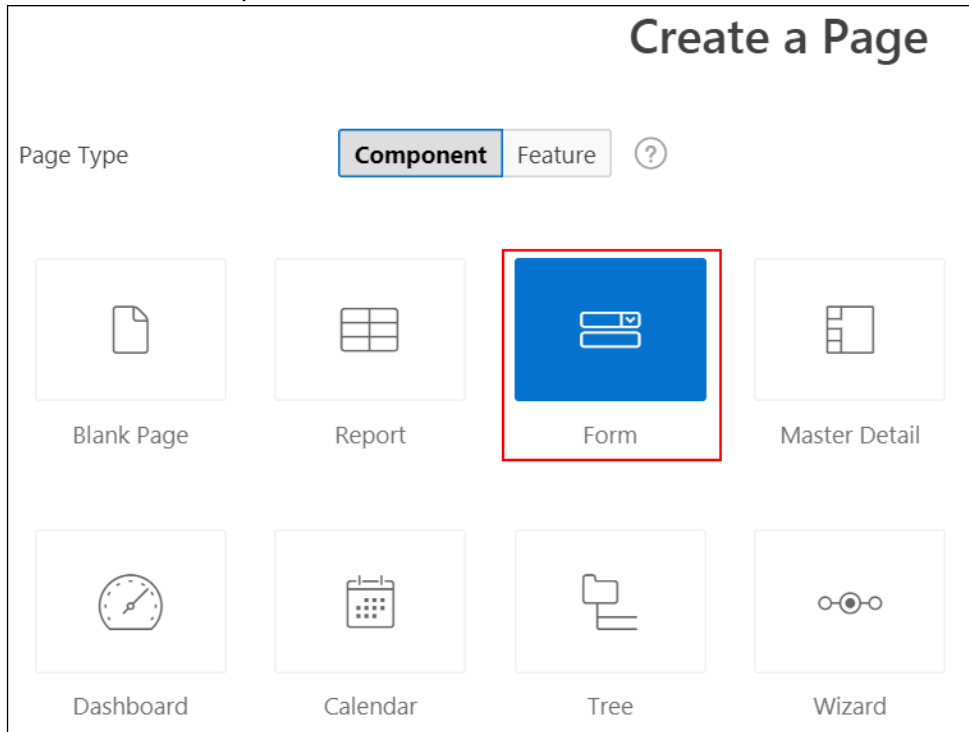
In this practice solution, steps are provided for creating a list view with form for the GMT application.

Steps

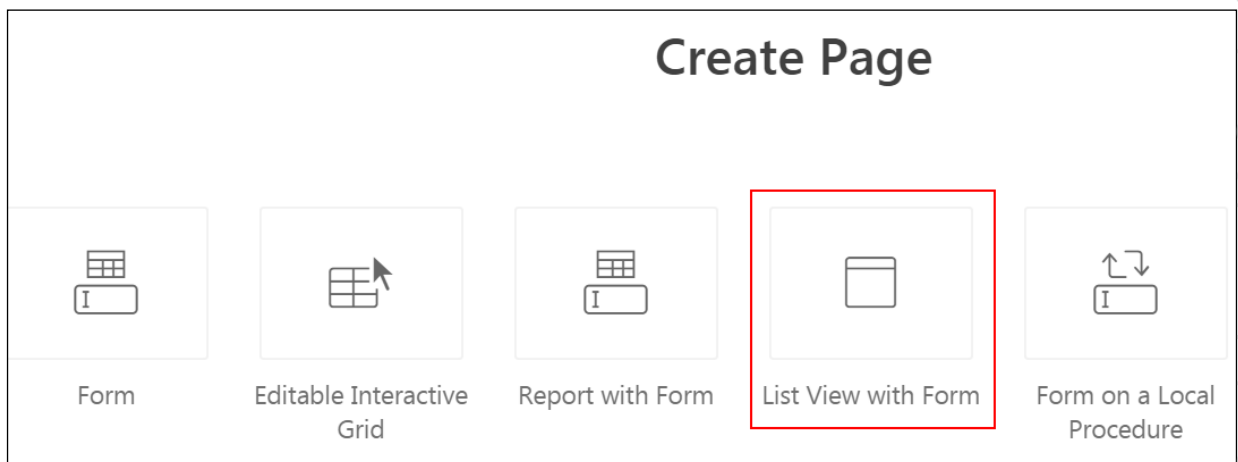
1. Create a list view with a form based on the `Customers` table. Enter 10 as the report page number and 11 as the form page number. The form page should be titled **Customers List View** and contain the Customer's First Name, Last Name, Email, and Manager ID fields. The report page should be titled **Form on Customers** and contain the Customer's First Name, Last Name, Email, and Manager ID fields. The following are the other requirements:
 - Ensure that the primary key has the value `Customer_ID`.
 - The Create, Cancel, Delete, and Apply Changes buttons are required.
 - Run the form for verification.
- a. On the GMT Application Home page, click **Create Page**.



- b. Select the **Form** option.



- c. Click **Next >**.
d. Select **List View with Form**.



- e. For List View Page:
- **Report Page Number:** Enter 10
 - **Report Page Name:** Enter Customers List View
 - **Form Page Number:** Enter 11

- **Form Page Name:** Enter Form on Customers

Create Form and List View

List View Page

* Report Page Number ?

* Report Page Name ?

* Form Page Number ?

* Form Page Name ?

Form Page Mode **Normal** Modal Dialog ?

Page Group ?

Breadcrumb ?

- f. Click **Next >**.

g. For Navigation Menu:

- **Navigation Preference:** Select the **Create a new navigation menu entry**.
- **New Navigation Menu Entry:** Ensure that the text field is set to **Customer List View**.
- **Parent Navigation Menu Entry:** Select **- No parent selected -** (if not selected by default)

Create Form and List View

Navigation Menu

Navigation Preference

- Do not associate this page with a navigation menu entry ?
- Create a new navigation menu entry**
- Identify an existing navigation menu entry for this page

* New Navigation Menu Entry Customers List View ?

Parent Navigation Menu Entry

- No parent selected - ?
- Home
- Customers
- Products

h. For Data Source:

- **Table/View Owner:** Selected by default **OEHR**.
- **Table/View Name:** Select **OEHR_CUSTOMERS** (table) from the drop-down list.
- **Select Columns to be shown in the report:** Select **CUSTOMER_ID**, **CUST_FIRST_NAME**, **CUST_LAST_NAME**, **PHONE_NUMBER**, **CUST_EMAIL**, and **ACCOUNT_MGR_ID**. Ensure these columns are in the right column. Use the right arrow (**>**) and left arrow (**<**) to move the columns.

The screenshot shows the 'Data Source' configuration window. At the top, there are three progress indicators: a green checkmark, another green checkmark, and a blue circle. Below these, the 'Data Source' is set to 'Local Database', with 'REST Enabled SQL Service' and 'Web Source' as options. The 'Source Type' is set to 'Table'. The 'Table / View Owner' is 'OEHR' and the 'Table / View Name' is 'OEHR_CUSTOMERS (table)'. A red box highlights the 'Table / View Name' field. Below this, there is a section for 'Select Columns to be shown in the report'. On the left, a list of columns is shown, including 'STREET_ADDRESS (Varchar2)', 'POSTAL_CODE (Varchar2)', 'CITY (Varchar2)', 'STATE_PROVINCE (Varchar2)', 'COUNTRY_ID (Char)', 'NLS_LANGUAGE (Varchar2)', 'NLS_TERRITORY (Varchar2)', and 'CREDIT_LIMIT (Number)'. On the right, a list of selected columns is shown, including 'CUSTOMER_ID (Number)', 'CUST_FIRST_NAME (Varchar2)', 'CUST_LAST_NAME (Varchar2)', 'PHONE_NUMBER (Varchar2)', 'CUST_EMAIL (Varchar2)', and 'ACCOUNT_MGR_ID (Number)'. A red box highlights the selected columns. A blue box highlights the right arrow button between the two columns lists.

i. Click **Next >**.

j. On the Form page:

- **Select Column(s) to be included in Form:** Ensure that these columns are in the right column: **CUSTOMER_ID**, **CUST_FIRST_NAME**, **CUST_LAST_NAME**, **PHONE_NUMBER**, **CUST_EMAIL**, and **ACCOUNT_MGR_ID**.
- **Primary Key Column 1:** Select **CUSTOMER_ID** (Number) from the drop-down list.

k. Click **Create**.

Create Form - Columns and Primary Key

Form Page

* Select Columns to be displayed in the form ?

STREET_ADDRESS (Varchar2)
POSTAL_CODE (Varchar2)
CITY (Varchar2)
STATE_PROVINCE (Varchar2)
COUNTRY_ID (Varchar2)
NLS_LANGUAGE (Varchar2)
NLS_TERRITORY (Varchar2)
CREDIT_LIMIT (Number)

CUSTOMER_ID (Number)
CUST_FIRST_NAME (Varchar2)
CUST_LAST_NAME (Varchar2)
PHONE_NUMBER (Varchar2)
CUST_EMAIL (Varchar2)
ACCOUNT_MGR_ID (Number)

Primary Key Type Managed by Database (ROWID) **Select Primary Key Column(s)**

Primary Key Column **CUSTOMER_ID (Number)**

Secondary Key Column - Select Column -

Cancel Create

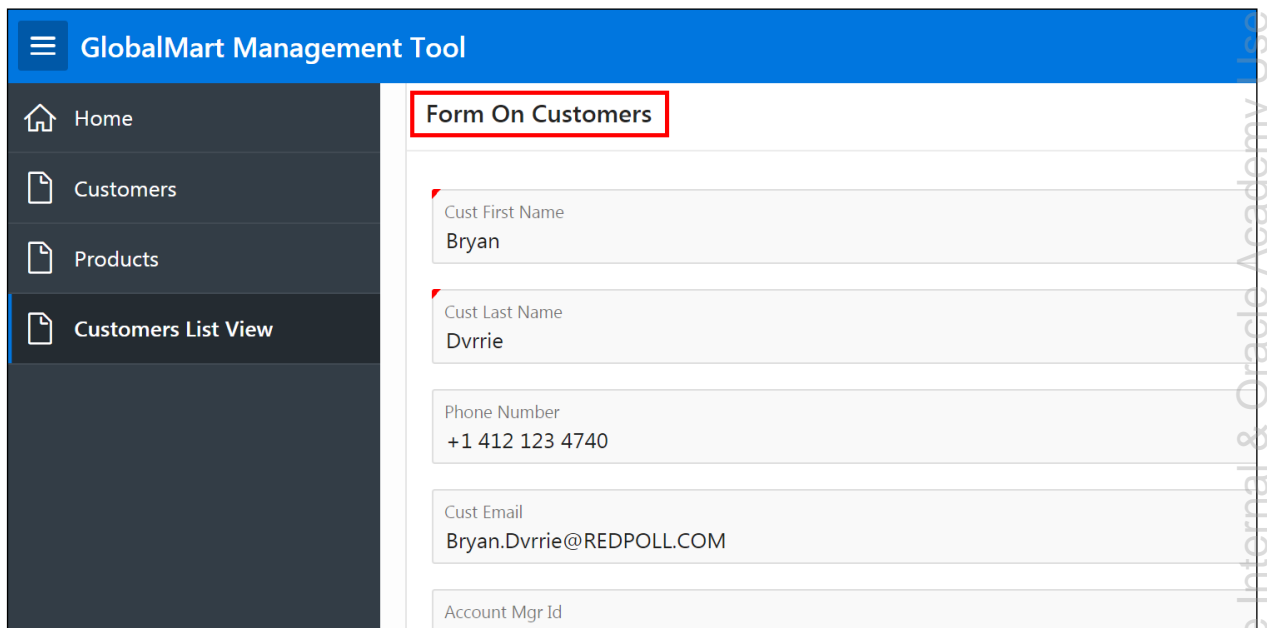
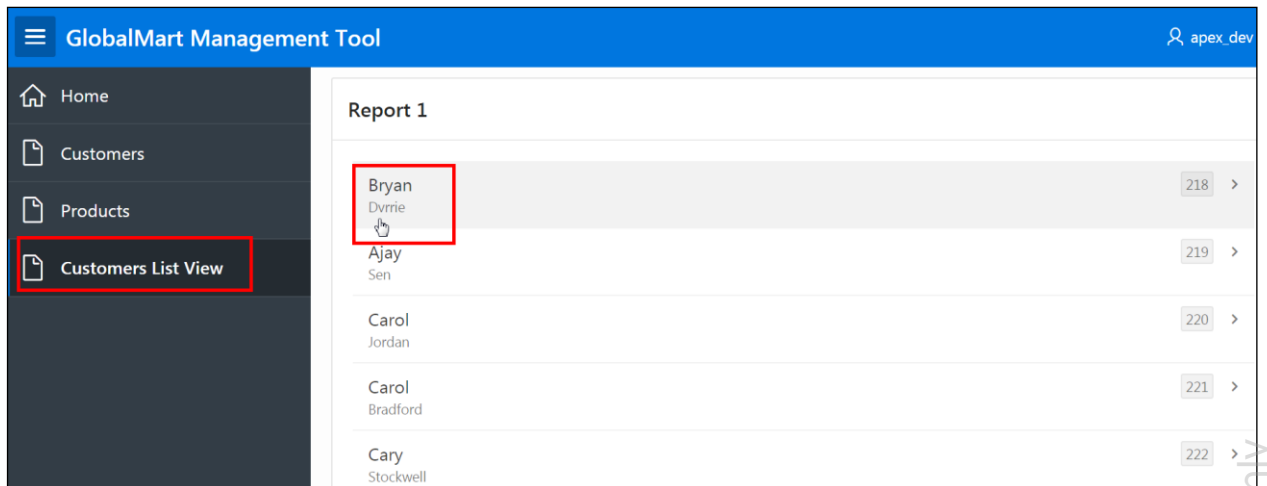
l. Click **Save and Run Page**.

Save Run

Region
Save and Run Page (Alt+F8)

m. If the Sign in page appears, enter your credentials and click **Sign in**.

- n. Review the form. Click on any list view entry. It opens the corresponding **Form on Customers**.



- o. To return to the application home page, click the **Application 111** link on the Runtime Developer toolbar.



Solution 8-3: Creating a Master Detail Form (Side by Side)

Overview

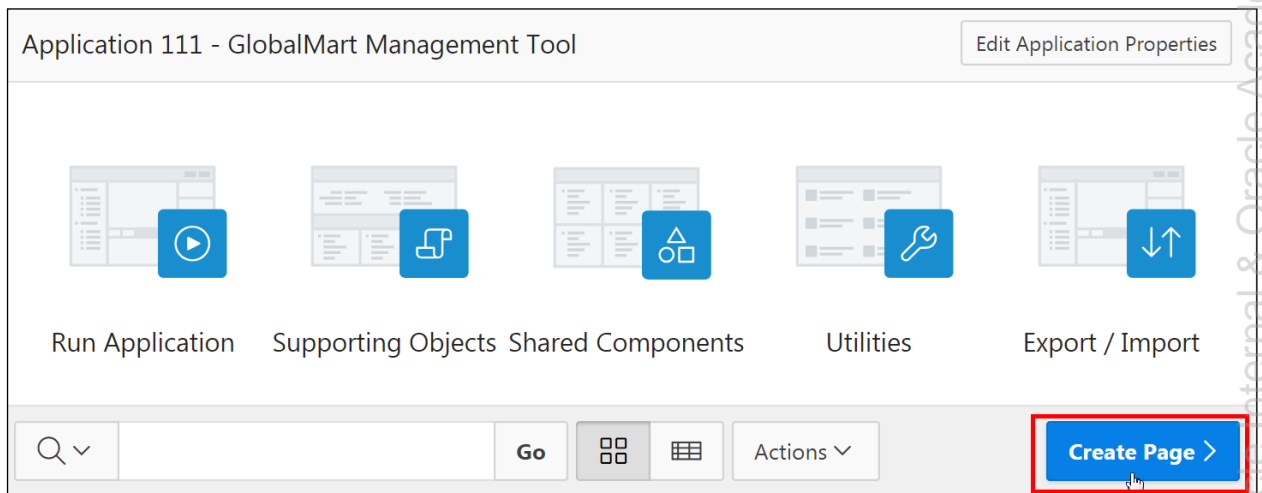
In this practice solution, steps are provided for creating a Master Detail (Side by Side) Form for the GMT application.

Steps

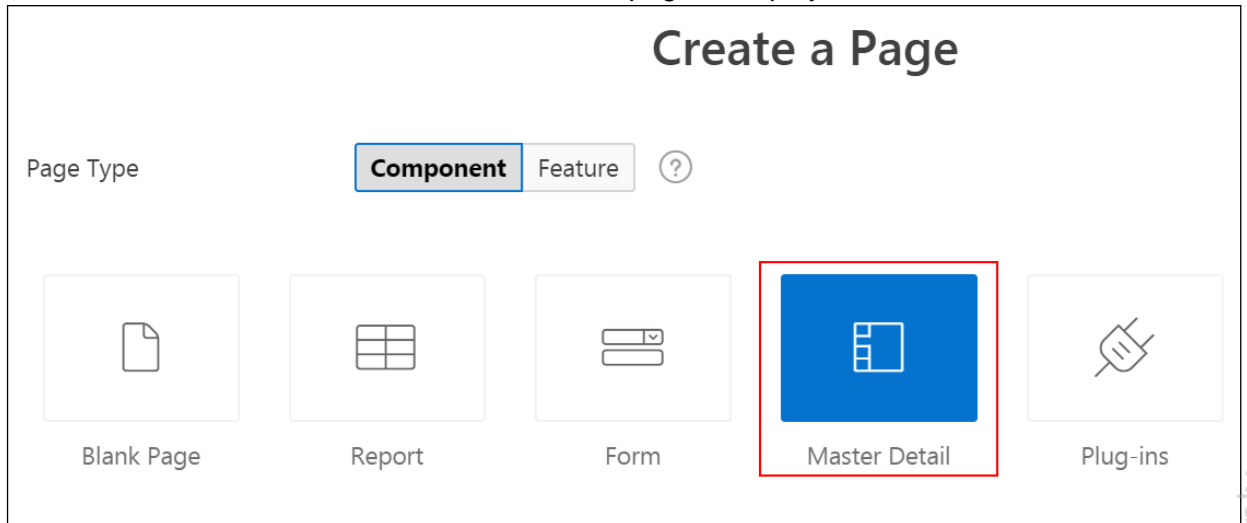
1. On a new page called **Master Detail Form**, create a Master Detail Form (List of Orders page 12) based on the `ORDERS` and `ORDER_ITEMS` tables.

Note: Two additional pages are created while creating the Master Detail Form (Side by Side). You cannot choose the page numbers of these two pages. In this activity, the page numbers are 13 (Oehr Orders) and 14 (Oehr Order Items). The page numbers may vary with different application IDs.

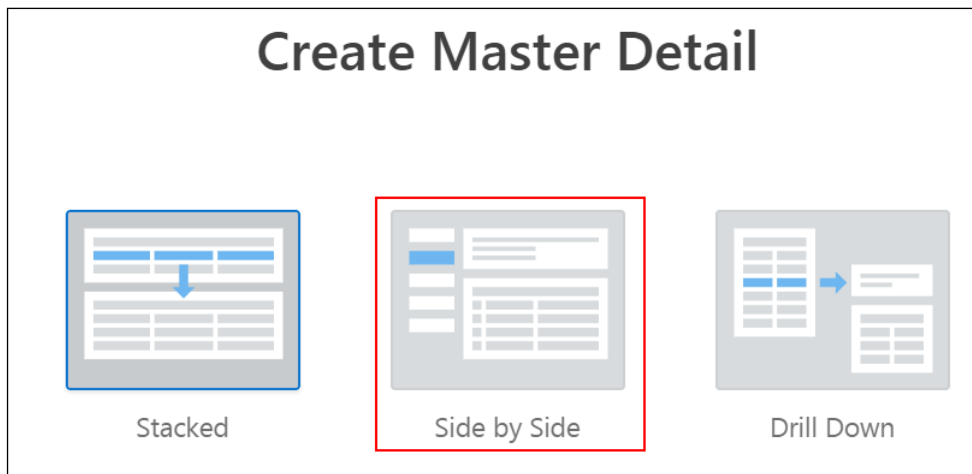
- Include a report page called **List of Orders** on the master table.
 - Display the master table and detail table forms on a single page.
 - Exclude the `ORDER_ID` column in the `ORDER_ITEMS` table.
 - Include navigation based on the `ORDER_ID` column.
- a. On the GMT Application Home page, click **Create Page**.



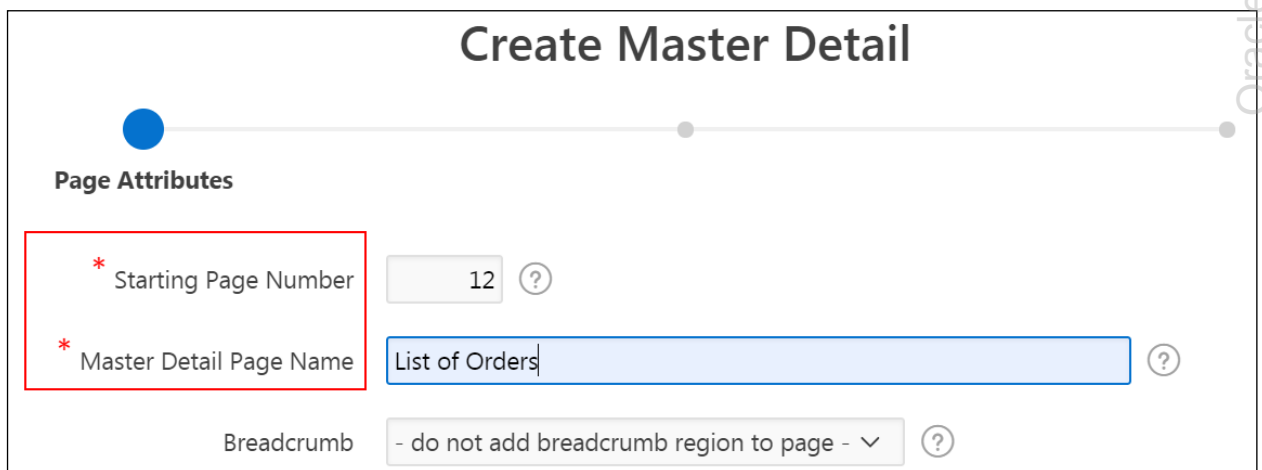
- b. Select **Master Detail**. The Create Master Detail page is displayed.



- c. Click **Side by Side**.



- d. Enter the Page Attributes and click **Next >**:
- **Starting Page Number:** Enter 12
 - **Master Page Detail Name:** Enter List of Orders.

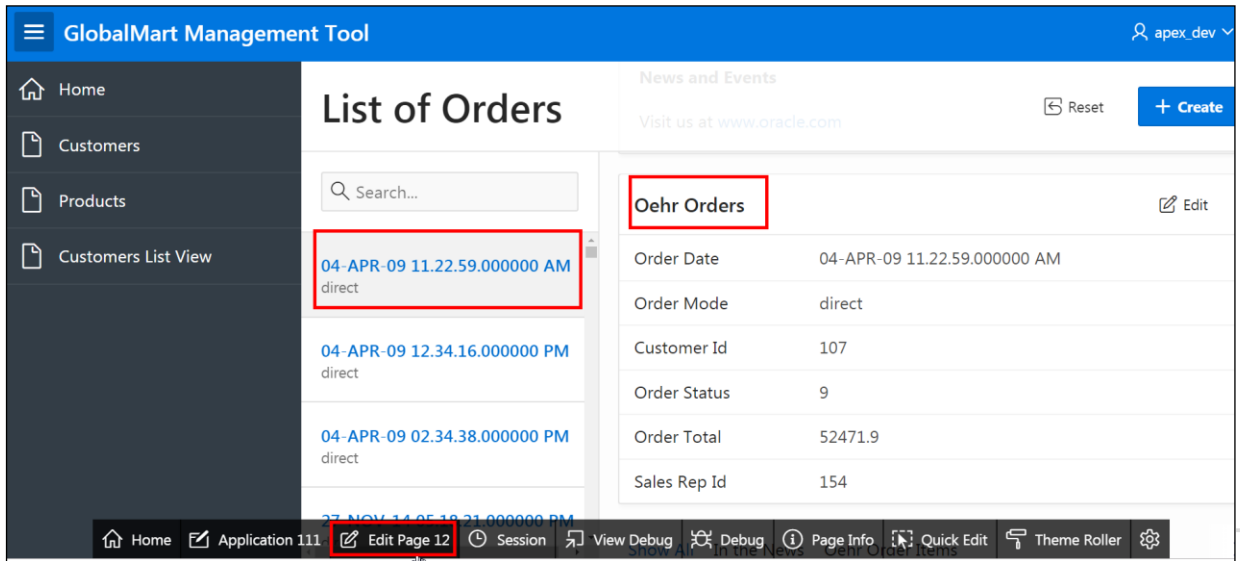


- e. Accept the default for **Navigation Menu** and click **Next >**.

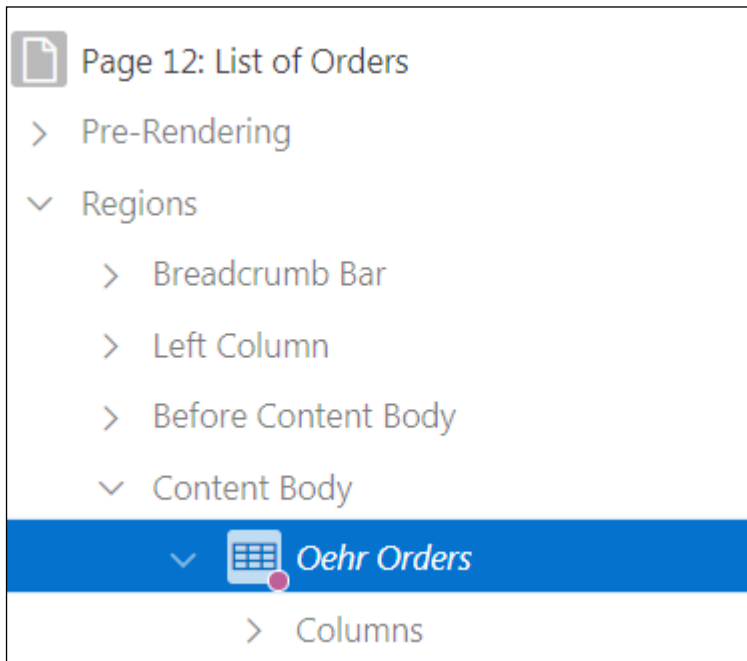
- f. For Master Detail Source:
- **Table/View Owner:** OEHR.
 - **Master Table:** Select OEHR_ORDERS (table) from the drop-down list.
 - **Primary Display Column:** Select ORDER_DATE (Timestamp(6) With Local Time Zone) from the drop-down list.
 - **Secondary Display Column:** Select ORDER_MODE (varchar 2) from the drop-down list.
 - **Detail Table:** Select OEHR_ORDER_ITEMS from drop-down list.
- g. Click **Create**.

- h. The Master Detail Side by Side page is created. Click **Save and Run Page**, to view the Master Detail Form.

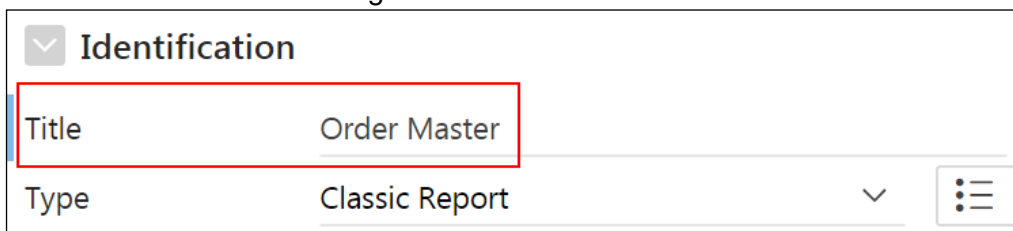
- i. The Master detail Form is displayed. Select any order. The order details are displayed side by side. Review the information. Click **Edit Page 12** on the Runtime Developer toolbar.



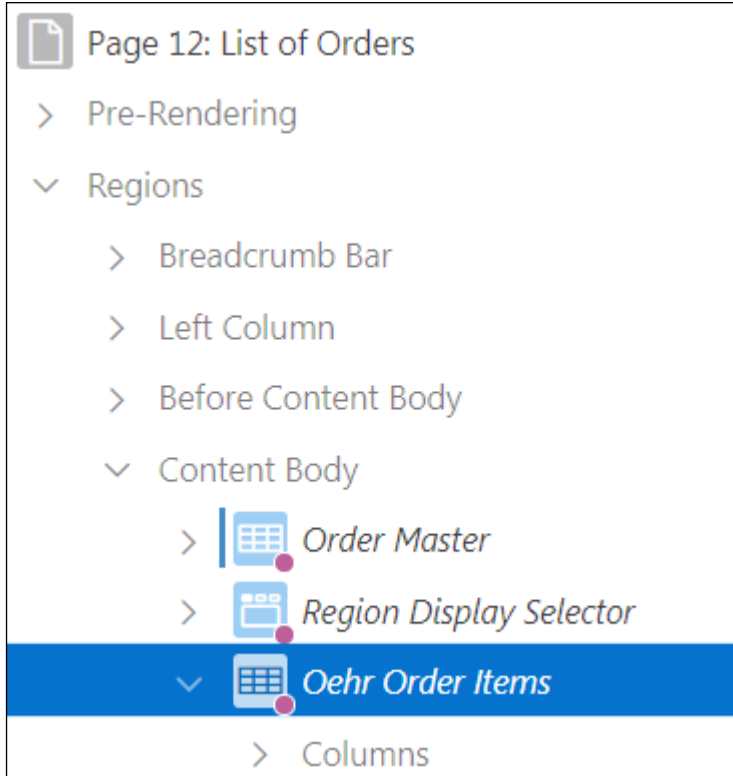
2. On the Master Detail Form page, change the region name for the master region to **Order Master** and change the region name for the detail region to **Order Details**.
 - a. Select **Regions > Content Body > Oehr ORDERS**.



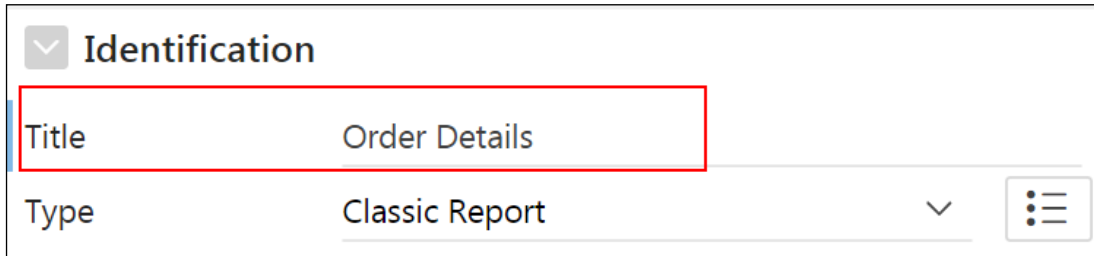
- b. Edit the appropriate attributes in the Property Editor (the right pane):
Identification > Title: Change from Oehr Orders to Order Master.



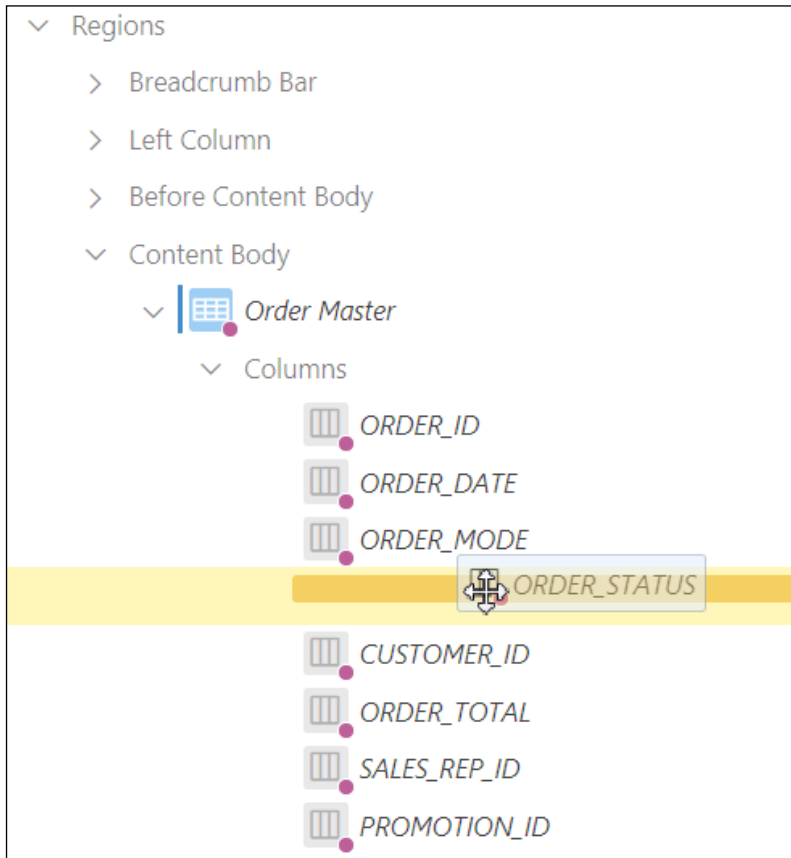
- c. Select **Regions > Content Body > Oehr ORDER_ITEMS**.



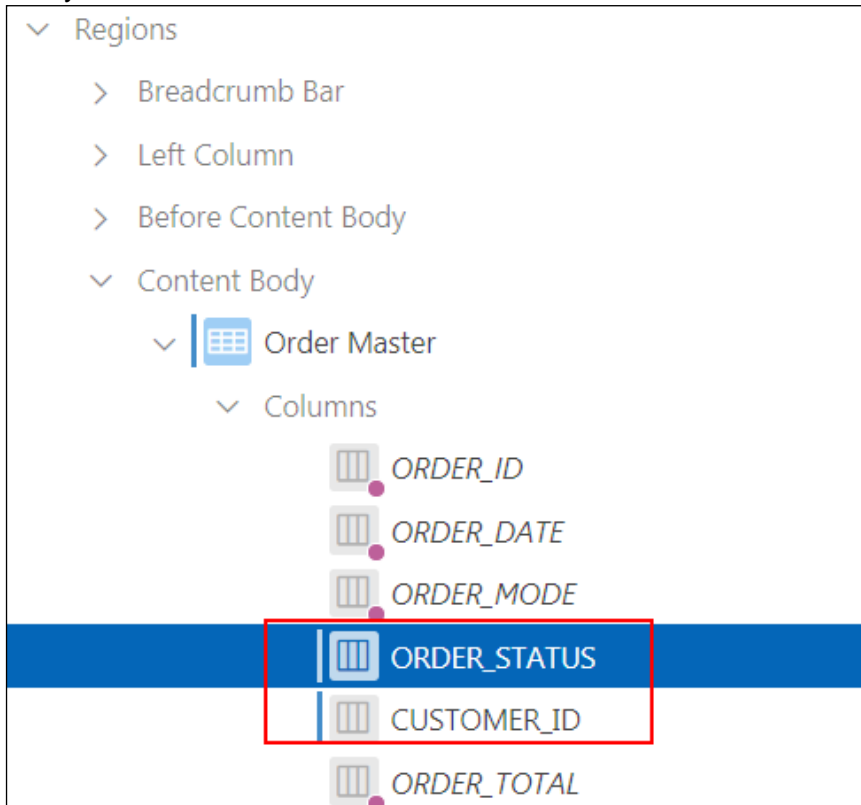
- d. Edit the appropriate attributes in the Property Editor (the right pane):
Identification > Title: Change from `Oehr Order items` to `Order Details`.

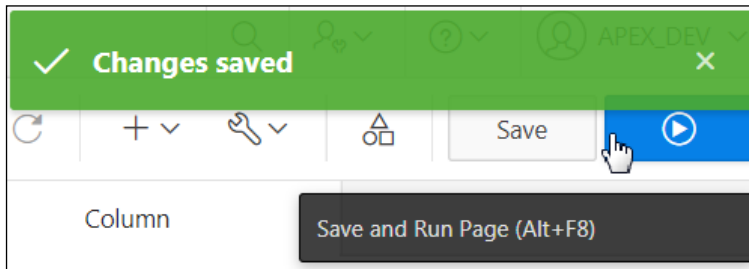


- 3. On the Master Detail page, move the **Order Status** (under **Order Master > Columns > Order Status**) item to appear before the **Customer ID** in the Order Master region.
 - a. You can reorder items very easily by dragging and dropping them. Drag `ORDER_STATUS` to above `CUSTOMER_ID`.



b. Verify that the item is moved. Click **Save** and then **Save and Run Page**.





c. Review the information. Click **Edit Page 12** on the Runtime Developer toolbar.

Visit us at www.oracle.com

List of Orders

Search...

- 04-APR-09 11.22.59.000000 AM direct
- 04-APR-09 12.34.16.000000 PM direct
- 04-APR-09 02.34.38.000000 PM direct
- 27-NOV-14 05.18.21.000000 PM direct
- 06-DEC-15 02.34.50.000000

Order Master

Order Date: 04-APR-09 11.22.59.000000 AM

Order Mode: direct

Order Status: 9

Customer Id: 107

Order Total: 52471.9

Sales Rep Id: 154

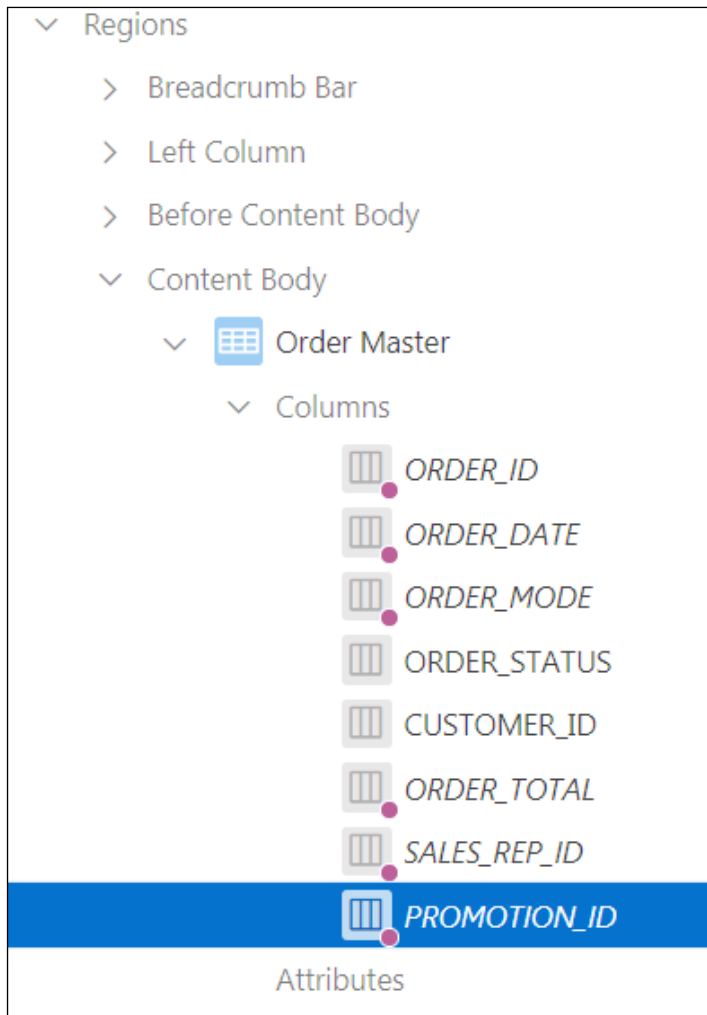
[Show All](#)
[In the News](#)
[Order Details](#)

Order Details

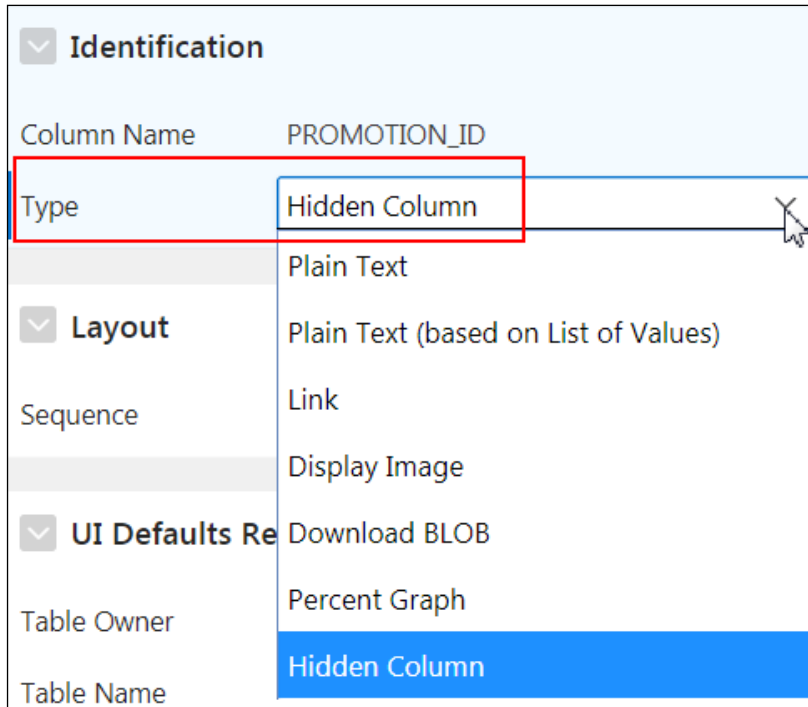
Line Item Id	Product Id	Unit Price	Quantity
1	2402	300	50



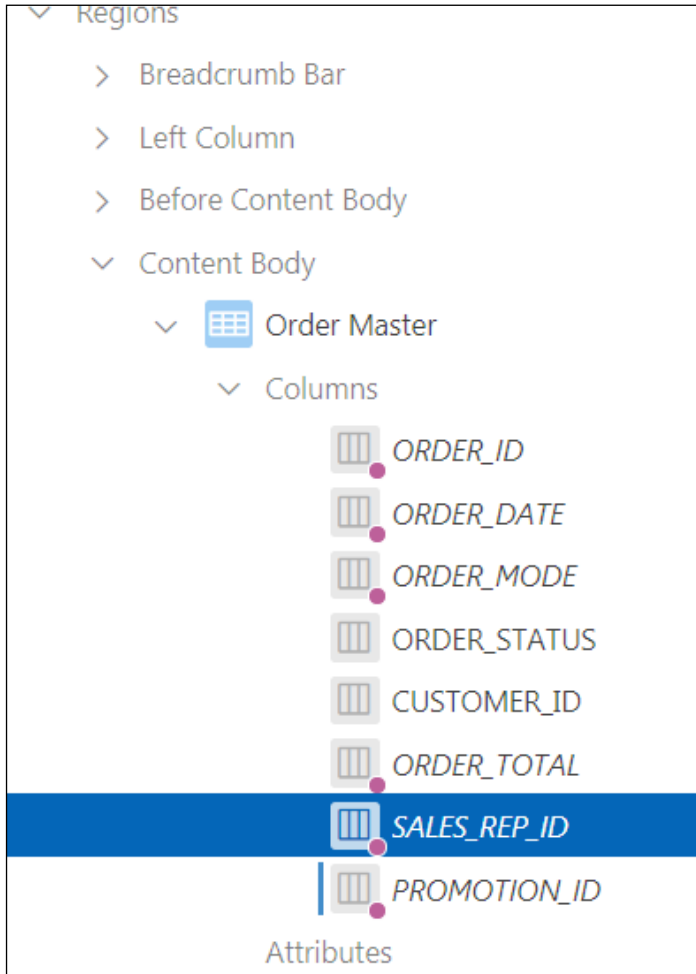
4. On the **List of Orders (master report)** page, do not show the `PROMOTION_ID` column. Change the heading of **Sales Rep ID** to **Sales Rep**.
 - a. Select **Regions > Content Body > Order Master > Columns > PROMOTION_ID**.



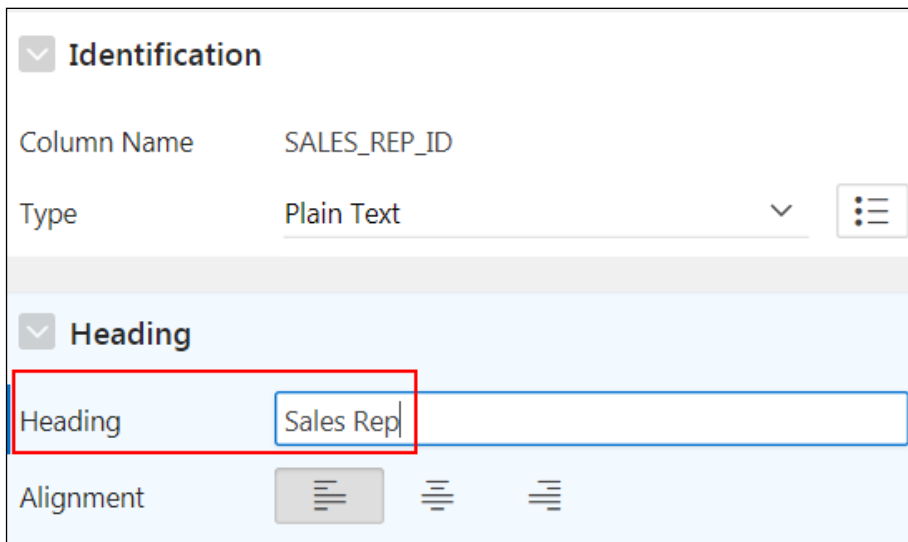
- b. In the Property Editor (the right pane), under Identification > Type, select **Hidden Column**.



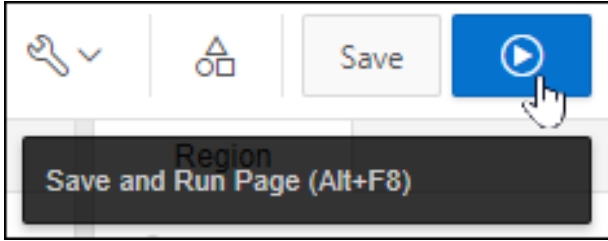
- c. Select **Regions > Content Body > Order Master > Columns > SALES_REP_ID**.



- d. In the Property Editor (the right pane): **Heading > Heading**, change the heading to Sales Rep.



- e. Click **Save** and then **Save and Run Page**.



- f. Review the report. Note that `PROMOTION_ID` is no longer shown and the heading for Sales Rep ID has changed to Sales Rep. Click the **Application 111** link on the Runtime Developer toolbar.

The screenshot displays the GlobalMart Management Tool interface. On the left is a navigation menu with options: Home, Customers, Products, and Customers List View. The main content area is titled 'List of Orders' and includes a search bar. Below the search bar is a list of orders with columns for date, time, and status. The first order is '04-APR-09 11.22.59.000000 AM direct'. To the right of the list is an 'Order Master' details view with the following data:

Order Date	04-APR-09 11.22.59.000000 AM
Order Mode	direct
Order Status	9
Customer Id	107
Order Total	52471.9
Sales Rep	154

Below the Order Master view are links for 'Show All', 'In the News', and 'Order Details'. At the bottom of the page is the Runtime Developer toolbar, which includes icons for Home, Application 111 (highlighted with a red box), Edit Page 12, Session, View Debug, Debug, Page Info, Quick Edit, Theme Roller, and a settings icon.

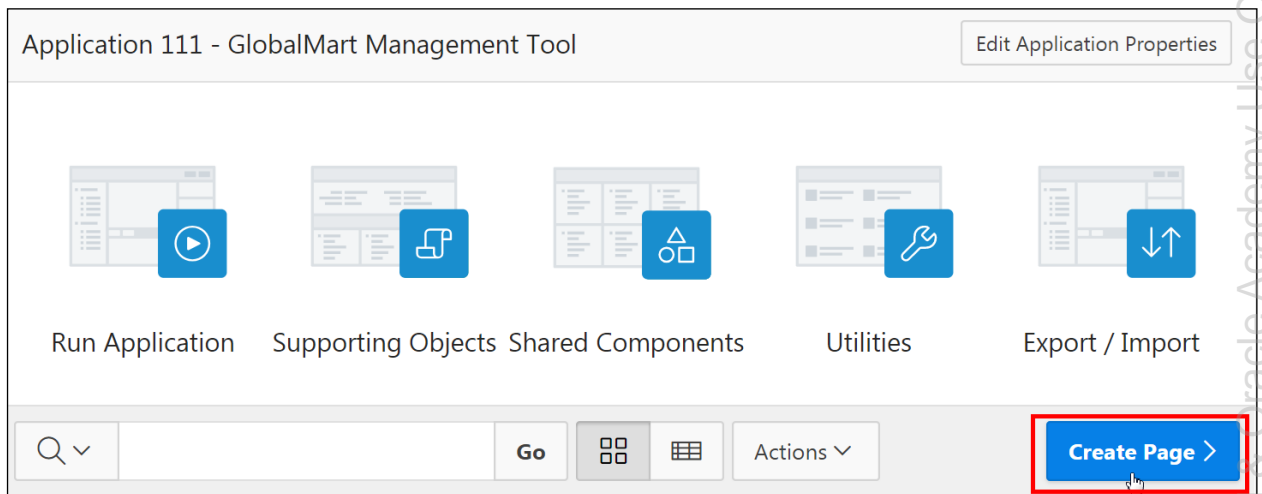
Solution 8-4: Creating a Master Detail Form (Stacked)

Overview

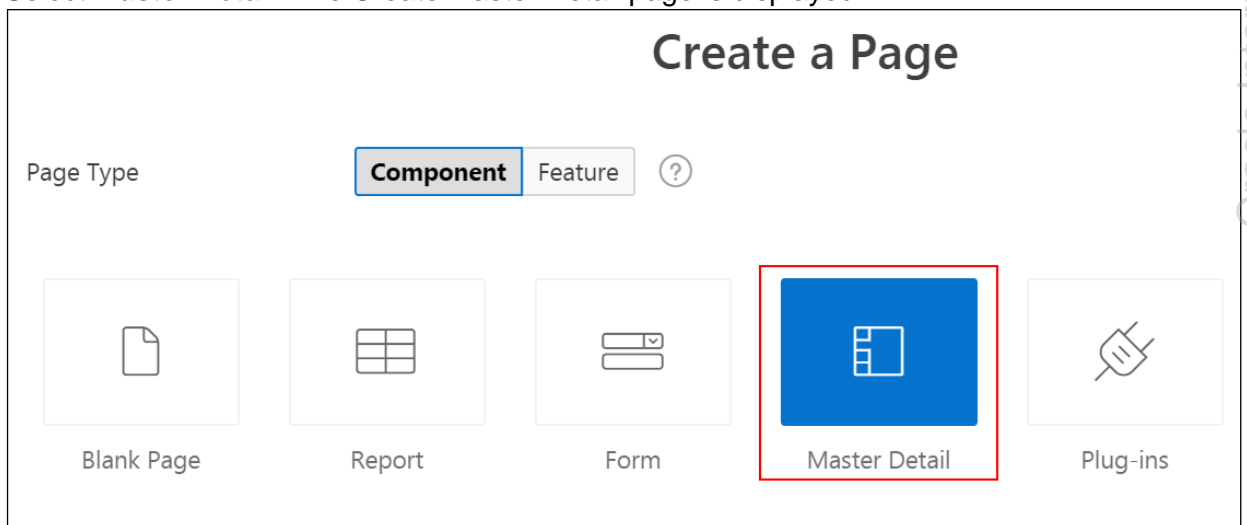
In this practice solution, steps are provided for creating a Master Detail (Stacked) Form for the GMT application.

Steps

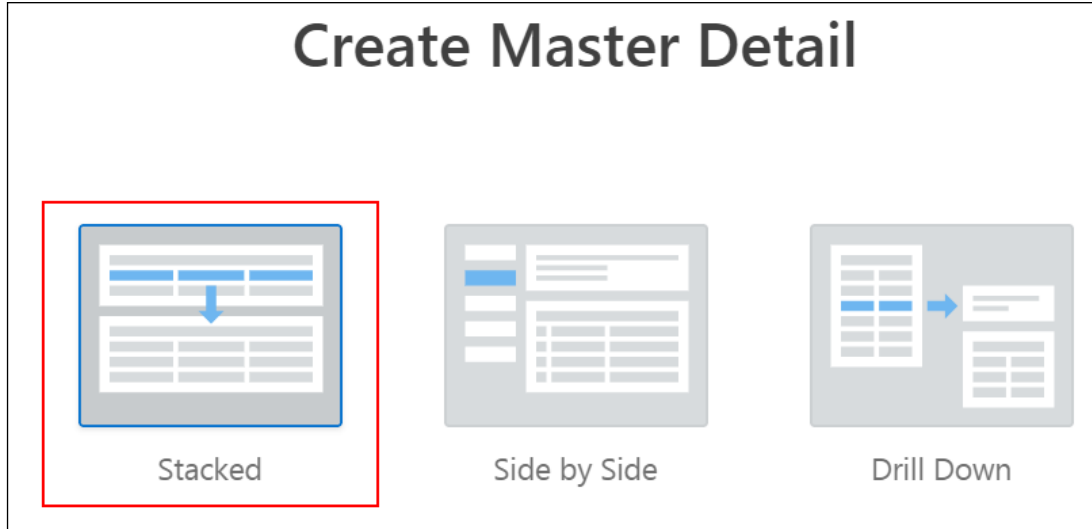
1. On a new page called **Master Detail**, create a Master Detail (Stacked) Form based on the `ORDERS` and `ORDER_ITEMS` tables.
 - Include a report page called **Orders List** on the master table.
 - Display the master table and detail table forms on a single page.
 - Include navigation based on the `ORDER_ID` column.
- a. On the GMT Application Home page, click **Create Page**.



- b. Select **Master Detail**. The Create Master Detail page is displayed.



- c. Click **Stacked**.



- d. Enter the Page Attributes:


- **Page Number:** Enter 15
- **Page Name:** Enter Orders List

The screenshot shows the 'Create Master Detail' dialog with the 'Page Attributes' section. The 'Page Number' field is set to 15 and the 'Page Name' field is set to Orders List. The 'Page Mode' is set to Normal and the 'Breadcrumb' is set to - do not use breadcrumbs on page -. The 'Page Number' and 'Page Name' fields are highlighted with a red box.

- e. Click **Next >**.

- f. Accept the default for **Navigation Menu** and click **Next >**.


The screenshot shows the 'Create Master Detail' dialog with the 'Navigation Menu' section. The 'Navigation Preference' is set to 'Do not associate this page with a navigation menu entry'. The 'Navigation Preference' field is highlighted with a red box.

- g. For Master Source, enter the following and click **Next >**:
- **Master Region Title:** Enter `Orders List`
 - **Table/View Owner:** Selected by default `OEHR`.
 - **Table / View Name:** Click  icon and select `OEHR_ORDERS (table)` from the list.

- **Primary Key Column:** Select `ORDER_ID (Number)` from the drop-down list.

The screenshot shows the 'Create Master Detail' dialog box. At the top, there is a progress bar with three steps: the first two are marked with green checkmarks, and the third is marked with a blue circle. Below the progress bar, the title 'Master Source' is displayed. The main form area contains several fields, each with a red asterisk indicating a required field. These fields are: 'Master Region Title' (text input with 'Orders List'), 'Table / View Owner' (dropdown menu with 'OEHR'), 'Table / View Name' (text input with 'OEHR_ORDERS (table)' and a list icon), and 'Primary Key Column' (dropdown menu with 'ORDER_ID (Number)'). Below these is 'Primary Key Column 2' (dropdown menu with '- Select Column -'). A 'Select Columns' section is located below the main fields, featuring a list of columns: 'ORDER_ID (Number)', 'ORDER_DATE (Timestamp(6) With Local Time Zone)', 'ORDER_MODE (Varchar2)', 'CUSTOMER_ID (Number)', 'ORDER_STATUS (Number)', 'ORDER_TOTAL (Number)', 'SALES_REP_ID (Number)', and 'PROMOTION_ID (Number)'. The 'ORDER_ID (Number)' column is highlighted in grey. To the right of the column list are navigation arrows. At the bottom left, there are '<' and 'Cancel' buttons. At the bottom right, there is a blue 'Next >' button highlighted with a red box.

h. For Detail Source:

- **Detail Region Title:** Enter `Item Details`
- **Show only Related Tables:** Ensure **Yes** is selected.
- **Table/ View Name:** Click  icon and select `OEHR_ORDER_ITEMS`.
- **Primary Key Column:** Select `ORDER_ITEM_ID (Number)` from the drop-down list.
- **Master Detail Foreign Key:** Select `ORDER_ID -> ORDER_ID` from the drop-down list.

i. Click **Create**.

Create Master Detail

Detail Source

* Detail Region Title: Item Details

Show Only Related Tables: Yes No

Table / View Owner: OEHR

* Table / View Name: OEHR_ORDER_ITEMS

* Primary Key Column: ORDER_ITEM_ID (Number)

Primary Key Column 2: - Select Column -

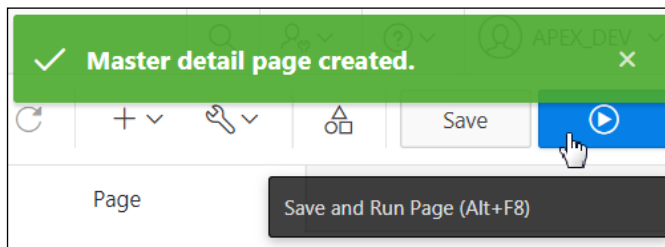
* Master Detail Foreign Key: ORDER_ID -> ORDER_ID

* Select Columns

- ORDER_ID (Number)
- LINE_ITEM_ID (Number)
- PRODUCT_ID (Number)
- UNIT_PRICE (Number)
- QUANTITY (Number)
- ORDER_ITEM_ID (Number)

Cancel Create

j. The Master Detail Stacked page is created. Click **Save and Run Page**, to view the Master Detail Form.



- k. The Master detail Form is displayed. Review the information. Click **Application 111** on the Runtime Developer toolbar.

Orders List

Search: All Text Columns

<input type="checkbox"/>		Order Date	Order Mode	Customer Id	Order Status
<input checked="" type="checkbox"/>		24-APR-18 02.34.12.0...	direct	101	0
<input type="checkbox"/>		28-JUL-18 03.41.54.00...	direct	102	1
<input type="checkbox"/>		10-JUN-18 04.49.34.0...	direct	103	1
<input type="checkbox"/>		23-MAR-19 05.18.23.0...	direct	104	0
<input type="checkbox"/>		16-SEP-18 06.03.12.00...	direct	105	2
<input type="checkbox"/>		21-JAN-19 07.59.08.0...	direct	106	3

Item Details

Search: All Text Columns

<input type="checkbox"/>		Line Item Id	Product Id
<input checked="" type="checkbox"/>		6	3163
<input type="checkbox"/>		1	3117
<input type="checkbox"/>		2	3123
<input type="checkbox"/>		3	3127
<input type="checkbox"/>		4	3134
<input type="checkbox"/>		5	3143

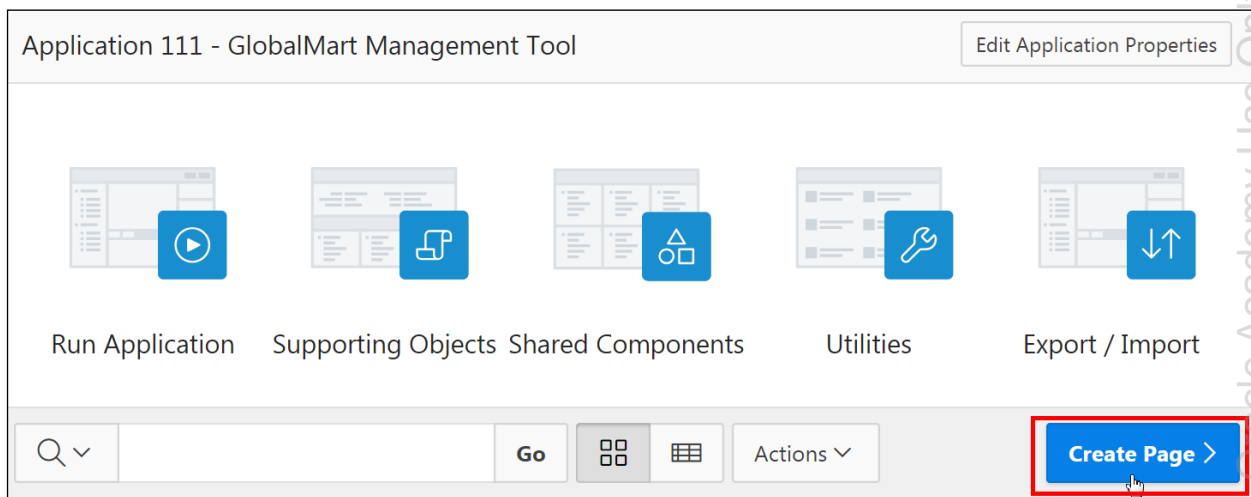
Solution 8-5: Creating a Master Detail Form (Drill Down)

Overview

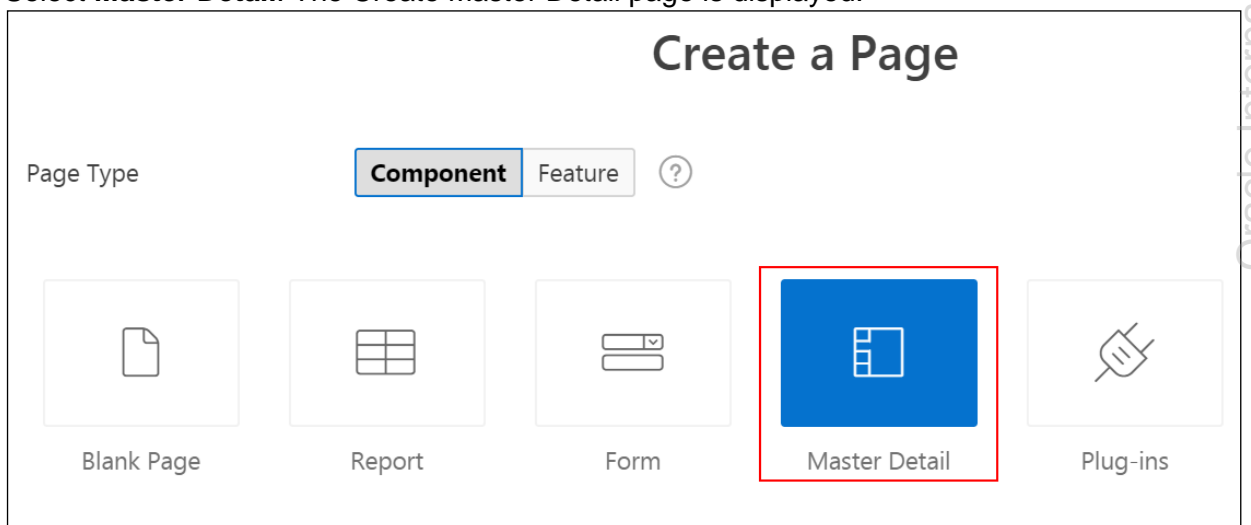
In this practice solution, steps are provided for creating a Master Detail (Drill Down) Form for the GMT application.

Steps

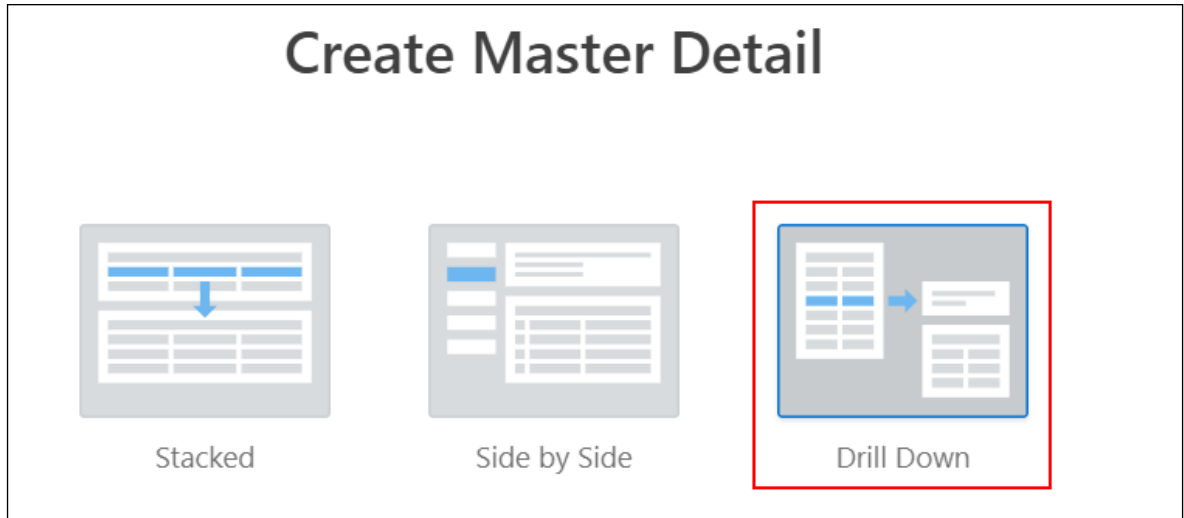
1. On a new page called **Master Detail**, create a Master Detail (Drill Down) Form based on the `OEHR_CUSTOMER` and `OEHR_ORDERS` tables.
 - Include a report page called **Customer Master Information** on the master table.
 - Include navigation based on the `CUST_FIRST_NAME` column.
- a. On the GMT Application Home page, click **Create Page**.



- b. Select **Master Detail**. The Create Master Detail page is displayed.




- c. Click **Drill Down**.



- d. Define the Page Attributes and click **Next >**:
- **Master Page Number:** Enter 16
 - **Master Page Name:** Enter Customer Master Information
 - **Detail Page Number:** Enter 17
 - **Detail Page Name:** Enter Customer Order History

- e. Accept the default for **Navigation Menu** and click **Next >**.

- f. For Master Source:
- **Table/View Owner:** Selected by default OEHR.
 - **Table / View Name:** Click  icon and select OEHR_CUSTOMERS (table) from the list.
 - **Primary Key Column:** Select CUSTOMER_ID (Number) from the drop-down list.
 - **Form navigation Order:** Select CUST_FIRST_NAME (Varchar2) from the drop-down list.

g. Click **Next >**.

Create Master Detail

Master Source

* Table / View Owner: OEHR

* Table / View Name: OEHR_CUSTOMERS (table)

* Primary Key Column: CUSTOMER_ID (Number)

Primary Key Column 2: - Select Column -


* Form Navigation Order: CUST_FIRST_NAME (Varchar2)

* Select Columns

- CUSTOMER_ID (Number)
- CUST_FIRST_NAME (Varchar2)
- CUST_LAST_NAME (Varchar2)
- STREET_ADDRESS (Varchar2)
- POSTAL_CODE (Varchar2)
- CITY (Varchar2)
- STATE_PROVINCE (Varchar2)
- COUNTRY_ID (Char)

< Cancel **Next >**

h. For Detail Source:

- **Table/ View Name:** Click  icon and select OEHR_ORDERS.
- **Primary Key Column:** Select ORDER_ID (Number) from the drop-down list.
- **Primary Key Column 2:** Select CUSTOMER_ID (Number) from the drop-down list.
- **Master Detail Foreign Key:** Select CUSTOMER_ID -> CUSTOMER_ID from the drop-down list.

- i. Click **Create**.

Create Master Detail

Detail Source

Show Only Related Tables: Yes No ?

Table / View Owner: **OEHR** ?

* Table / View Name: OEHR_ORDERS ?

* Primary Key Column: ORDER_ID (Number) ?

Primary Key Column 2: CUSTOMER_ID (Number) ?

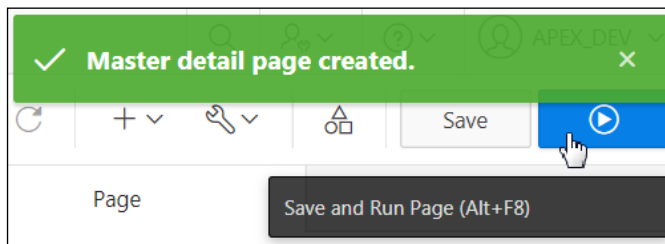
* Master Detail Foreign Key: CUSTOMER_ID -> CUSTOMER_ID ?

* Select Columns ?

ORDER_ID (Number)
ORDER_DATE (Timestamp(6) With Local Time Zone)
ORDER_MODE (Varchar2)
CUSTOMER_ID (Number)
ORDER_STATUS (Number)
ORDER_TOTAL (Number)
SALES_REP_ID (Number)
PROMOTION_ID (Number)

< Cancel **Create**

- j. The Master Detail Drill Down page is created. Click **Save** and then **Save and Run Page**, to view the Master Detail Form.



- k. The Master Detail Form is displayed. Review the information.

GlobalMart Management Tool							
Home	<input type="text" value=""/> <input type="button" value="Go"/> <input type="button" value="Actions"/>						
Customers	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province
Products		218	Bryan	Dvrrie	3386 Perrysville Ave	15214	Pittsburgh PA
Customers List View		219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton PA
		220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia PA

- l. Select a customer, for example, Eddie Bowyer (Customer Id: 159) and click the edit icon.

Customer Id	First Name	Last Name	Street Address	Postal Code	City	State Province	Country	Phone Number	Nls Language	
	159	Eddie	Boyer	411 E Wisconsin Ave # 2550	53202	Milwaukee	WI	US	+1 414 123 4369	us
	160	Eddie	Stern	808 3Rd St # 100	54403	Wausau	WI	US	+1 715 123 4372	us

The Customer Master information and Order Details appear.

Cust Email Eddie.Boyer@GALLINULE.COM				
Account Mgr Id				
112 of 321				
<input type="button" value="Cancel"/>	<input type="button" value="Delete"/> <input type="button" value="Apply Changes"/>			
<input type="text" value=""/> Search: All Text Columns <input type="button" value="Go"/> <input type="button" value="Actions"/> <input type="button" value="Edit"/> <input type="button" value="Add Row"/>				
<input checked="" type="checkbox"/>	Order Date	Order Mode	Order Status	Order Total
<input checked="" type="checkbox"/>	18-MAR-18 12.34.29.00...	direct	2	69286.4

Click **Application 111** on the Runtime Developer toolbar.



Practices for Lesson 9: Adding Items and Buttons

Practices for Lesson 9: Overview

Overview

There are two practices for this lesson. In these practices, you create a variety of items and buttons and manipulate the way they work.

Practice 9-1: Adding Items and Buttons

Overview

In this practice, you create a Customer Feedback form that contains some items and two buttons. You create a button on the Customers page to link to the feedback form.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Create a blank page called **Customer Feedback**. Enter the page number as 18.
2. Add the following items to the form:

Items	Type
Customer ID	Text Field
Feedback	Text Area
Added On	Date Picker

3. Add a button on the Customers page to redirect to the Customer Feedback page.
4. Add an **Apply** button on the Customer Feedback page.
5. Add a **Cancel** button on the Customer Feedback page to redirect to the Customers page.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_admin** user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the **apex_dev** user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 9-1**.

If you haven't completed **Practice 8-5**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **Application Builder** and select **Import**.

- c. Click the **Browse** button.
- d. Browse and open the `sol_08_05.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Practice 9-2: Manipulating Items

Overview

In this practice, you add additional item types (select list and cascading LOV) and modify the way the fields in Customer Details forms are displayed.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Modify the Account Manager item to be a select list with the following query (located in /home/oracle/labs/labs/lab_09_02_01.txt):

```
select LAST_NAME||', '||FIRST_NAME display_value, EMPLOYEE_ID
return_value
from OEHR_EMPLOYEES
where DEPARTMENT_ID=80
order by 1
```

2. Add a quick pick list to the Account Manager item with the following labels and values:

Label	Value
Bates, Elizabeth	172
Russell, John	145
Cambraut, Gerald	148

3. Add a select list item called **Country** that contains the following query (located in /home/oracle/labs/labs/lab_09_02_02.txt). This item should allow nulls.

```
select COUNTRY_NAME display_value, COUNTRY_ID return_value
from OEHR_COUNTRIES
order by 1
```

4. Change the Account Manager of an existing customer record.

Note: You must navigate to the customer report and edit one of the records.

5. Create and Modify the Employee Detail form page to take advantage of some of the new HTML5 item types and add a LOV using the following query (located in /home/oracle/labs/labs/lab_09_02_03.txt).

```
select first_name||' '||last_name d, employee_id r
from oehr_employees
```

6. Change the Account Manager of an existing customer record.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_admin** user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the **apex_dev** user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 9-2**.

If you haven't completed **Practice 9-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_09_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

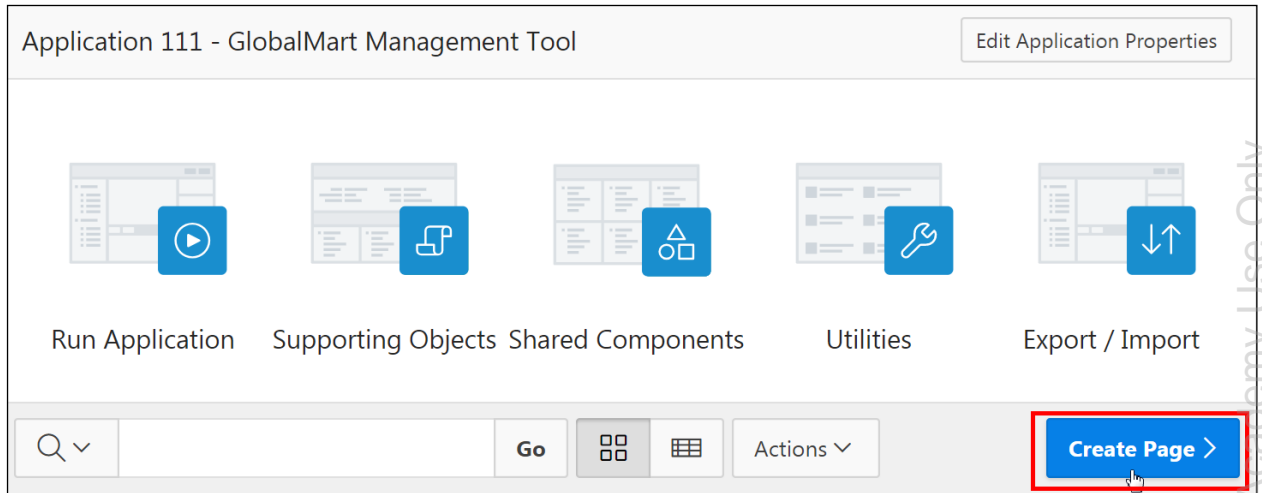
Solution 9-1: Adding Items and Buttons

Overview

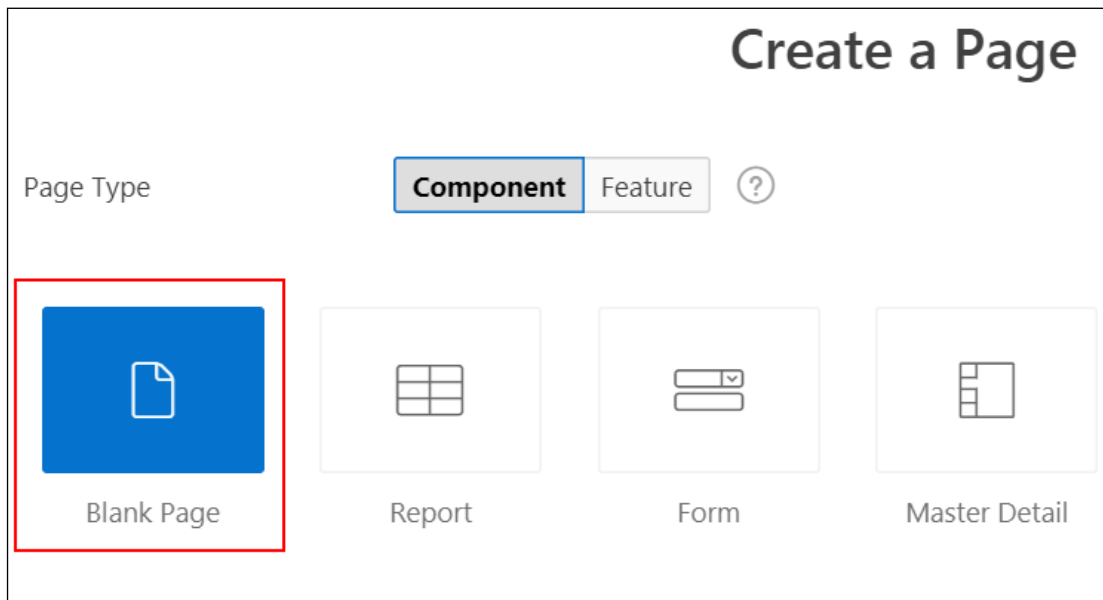
In this practice solution, steps are provided for adding items and buttons to the GMT application.

Steps

1. Create a blank page called **Customer Feedback**. Enter the page number as 18.
 - a. On the GMT Application Home page, click **Create Page**.



- b. Select **Blank Page**.



- c. Enter the Page Attributes:
- **Page Number:** Enter 18
 - **Name:** Enter Customer Feedback

The screenshot shows the 'Create a Blank Page' dialog box with the 'Page Attributes' section active. A progress bar at the top has a blue dot under 'Page Attributes'. The form fields are: 'Page Number' (text input with '18'), 'Name' (text input with 'Customer Feedback'), 'Page Mode' (radio buttons for 'Normal', 'Modal Dialog', 'Non-Modal Dialog'), 'Page Group' (dropdown menu with '- Select Page Group -'), and 'Breadcrumb' (dropdown menu with '- don't use breadcrumbs on page -'). A red box highlights the 'Page Number' and 'Name' fields. Below the form is a section for 'Optional Static Content Regions'.

- d. Click **Next >**.
- e. Accept the default for **Navigation Menu** and click **Next >**.

The screenshot shows the 'Create a Blank Page' dialog box with the 'Navigation Menu' section active. A progress bar at the top has a green checkmark under 'Page Attributes' and a blue dot under 'Navigation Menu'. The form field is 'Navigation Preference' with a radio button selected for 'Do not associate this page with a navigation menu entry'. Other options are 'Create a new navigation menu entry' and 'Identify an existing navigation menu entry for this page'.

- f. The Confirm page opens. Click **Finish**.

Create a Blank Page

Confirm

You have requested to create a page with the following attributes. Please confirm your selections.

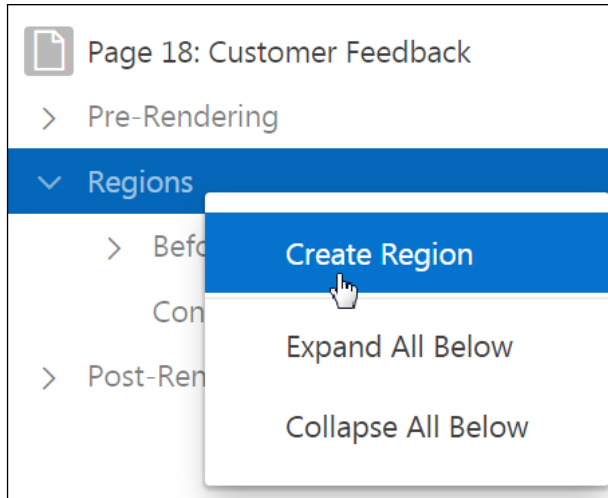
Application	111
Page	18
Page Name	Customer Feedback
Page Title	Customer Feedback

< CancelFinish

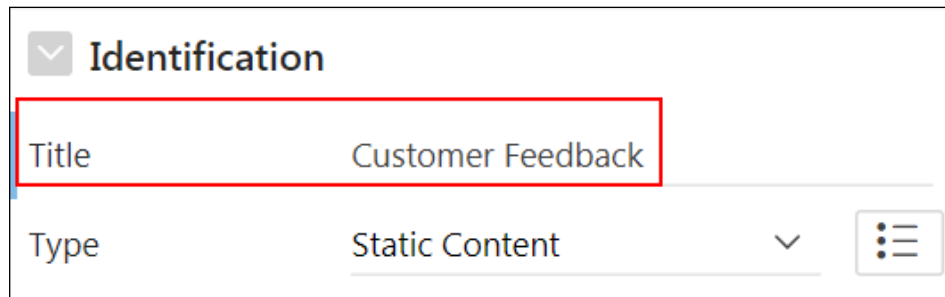
- g. The **Page 18: Customer Feedback** page opens in Page Designer.

The screenshot shows the Oracle APEX Page Designer interface. At the top, there is a navigation bar with 'ORACLE' and several application tabs: 'App Builder', 'SQL Workshop', 'Team Development', and 'App Gallery'. A green notification banner in the top right corner says 'Page 18 created.' Below the navigation bar, the breadcrumb path is 'Application 111 \ Page Designer'. The main workspace is divided into three panes. The left pane shows a tree view of the page structure, with 'Page 18: Customer Feedback' selected. The middle pane shows a preview of the page layout, with 'Customer Feedback' selected. The right pane shows the 'Page' properties, including 'Identification' with fields for 'Name' (Customer Feedback), 'Page Alias', 'Title' (Customer Feedback), and 'Page Group' (- Select -).

- h. To create a region on this page, right-click **Regions** and select **Create Region**.



- i. In the Property Editor (the right pane), under **Identification > Title**, enter Customer Feedback.

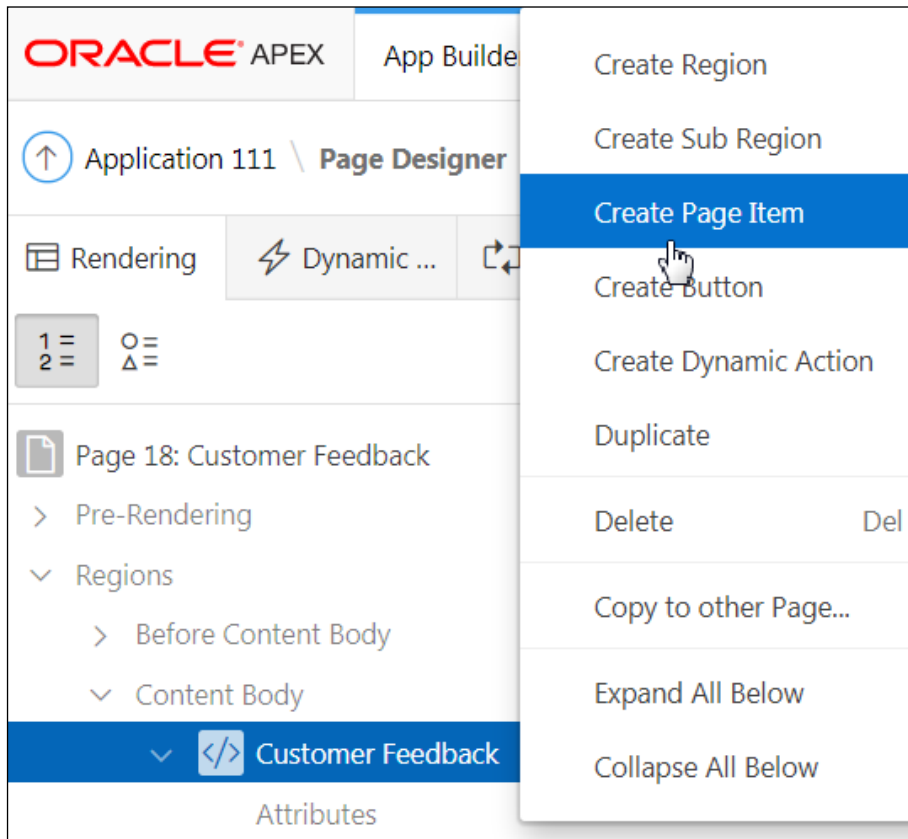


- j. Click **Save**.

2. Add the following page items to the Customer Feedback form:

Items	Type
Customer ID	Text Field
Feedback	Text Area
Added On	Date Picker

a. To create page items in the **Customer Feedback** region, right-click **Customer Feedback** and select **Create Page Item**.



b. Select the Page Item.

c. In the Property Editor (the right pane):

- **Identification > Name:** Enter `P18_CUSTOMER_ID`
- **Identification > Type:** Select **Text Field** (if not selected by default)
- **Source > Type:** Select `Database Column`

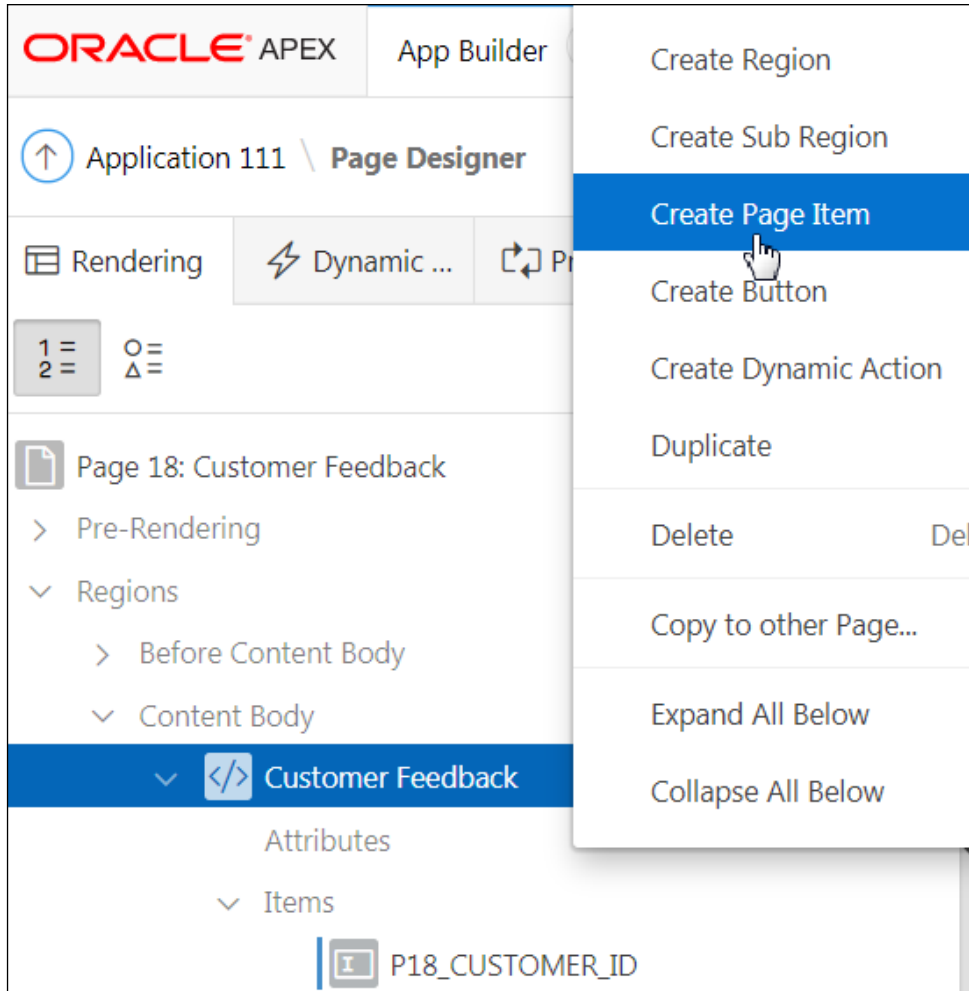
- **Source > Database Column:** Enter CUSTOMER_ID

Identification	
Name	P18_CUSTOMER_ID
Type	Text Field

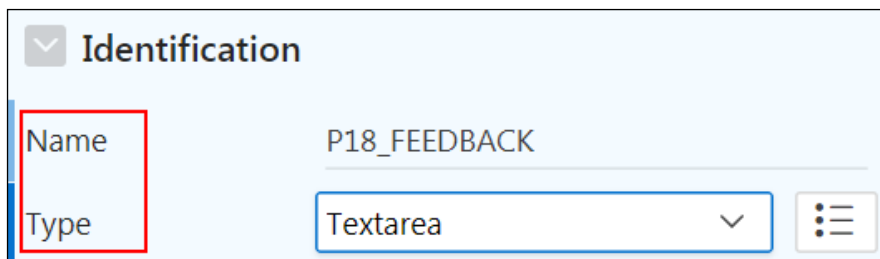
Source	
Form Region	- Select -
Type	Database Column
Database Column	CUSTOMER_ID
Used	Always, replacing any existing valu
Maintain Session State	Per Session (Disk)

- d. Click **Save**.

- e. Right-click **Customer Feedback** and select **Create Page Item**.



- f. In the Property Editor (the right pane):
- **Identification > Name:** Enter `P18_FEEDBACK`
 - **Identification > Type:** Select **Textarea**
 - **Source > Type:** Select **Database Column**
 - **Source > Database Column:** Enter `FEEDBACK`



Source	
Form Region	- Select -
Type	Database Column
Database Column	FEEDBACK
Used	Always, replacing any existing valu
Maintain Session State	Per Session (Disk)

- g. Right-click **Customer Feedback** and select **Create Page Item**.

The screenshot shows the Oracle APEX Page Designer interface. A right-click context menu is open over the 'Customer Feedback' region. The menu items are: Create Region, Create Sub Region, **Create Page Item** (highlighted), Create Button, Create Dynamic Action, Duplicate, Delete, Copy to other Page..., Expand All Below, and Collapse All Below. The background shows the page structure with 'Page 18: Customer Feedback' expanded to show 'Regions' and 'Content Body'.

- h. In the Property Editor (the right pane):
- **Identification > Name:** Enter `P18_ADDED_ON`
 - **Identification > Type:** Select **Date Picker**
 - **Source > Type:** Select **Database Column**

- **Source > Database Column:** Enter ADDED_ON

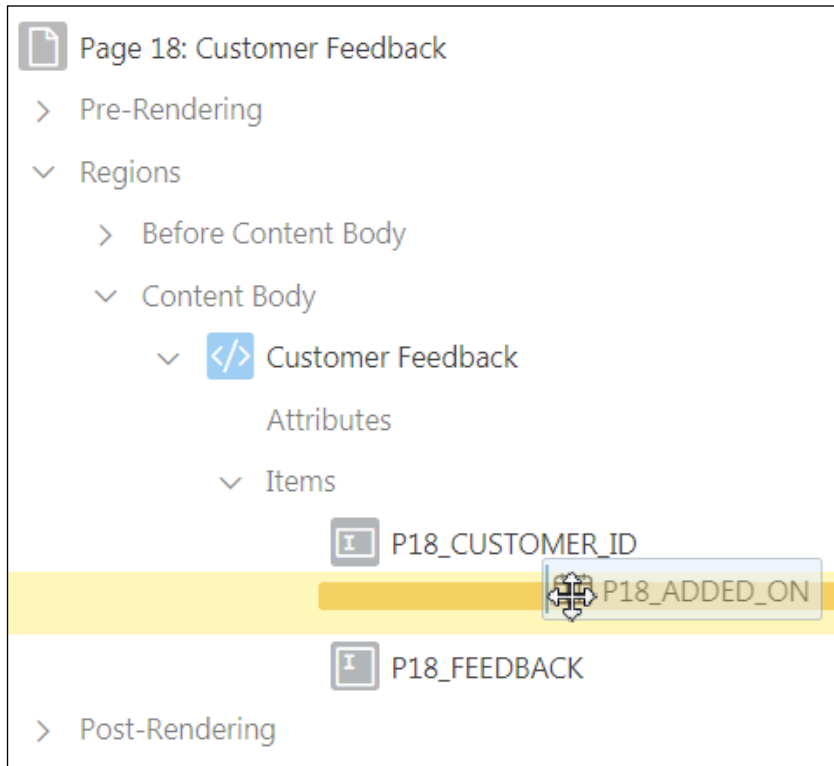
Identification

Name	P18_ADDED_ON
Type	Date Picker

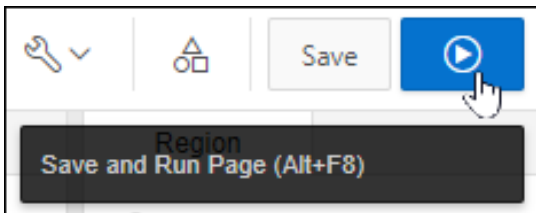
Source

Form Region	- Select -
Type	Database Column
Database Column	ADDED_ON
Used	Always, replacing any existing valu
Maintain Session State	Per Session (Disk)

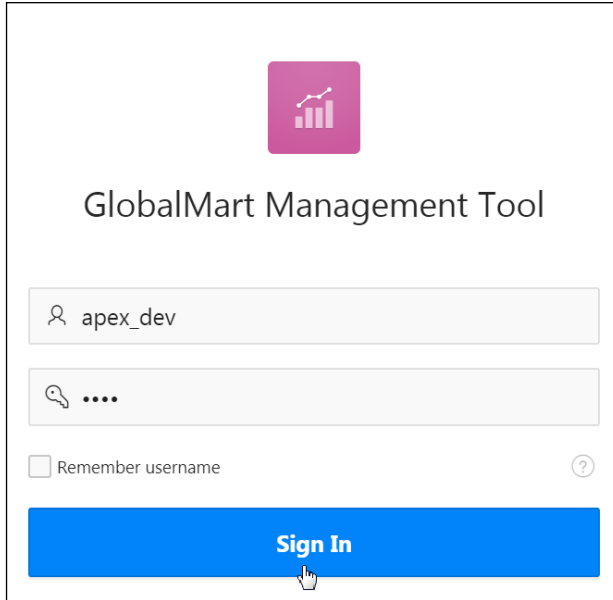
- i. You can drag and drop an item to reposition the item in the list. Drag the P18_ADDED_ON item to the above P18_FEEDBACK item.



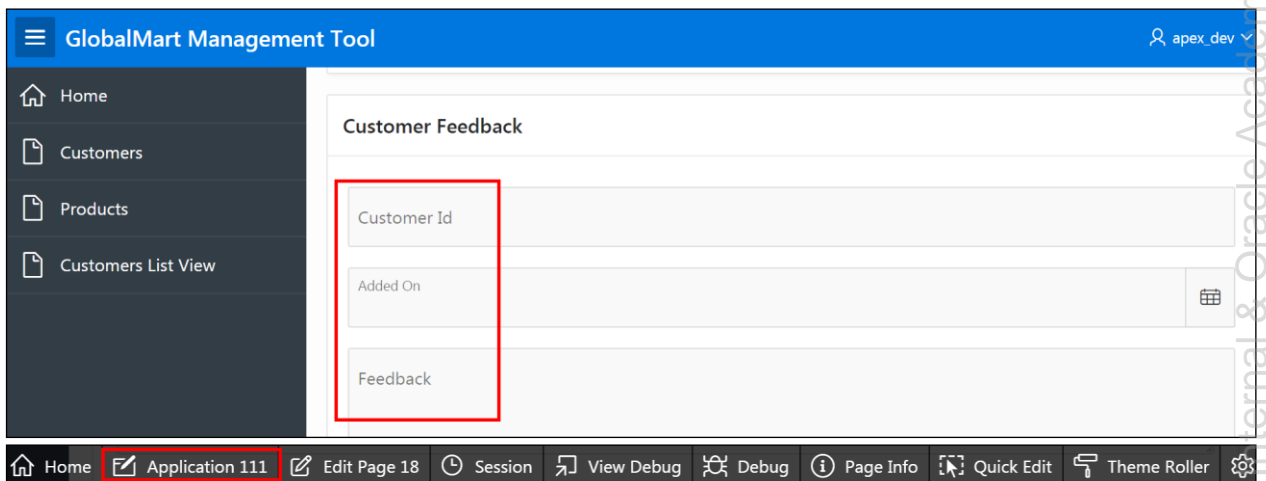
- j. Click **Save and Run Page**.



- k. On the sign in page, enter your user credentials if prompted.

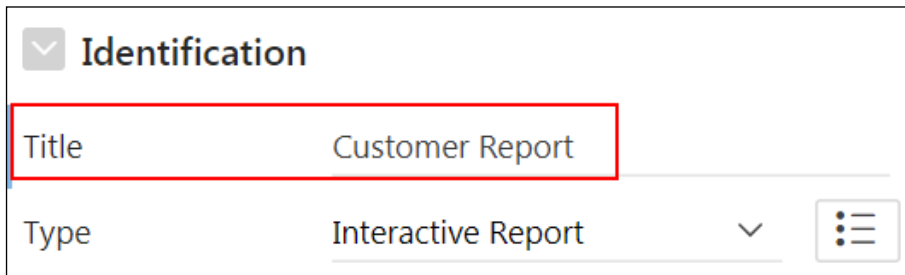
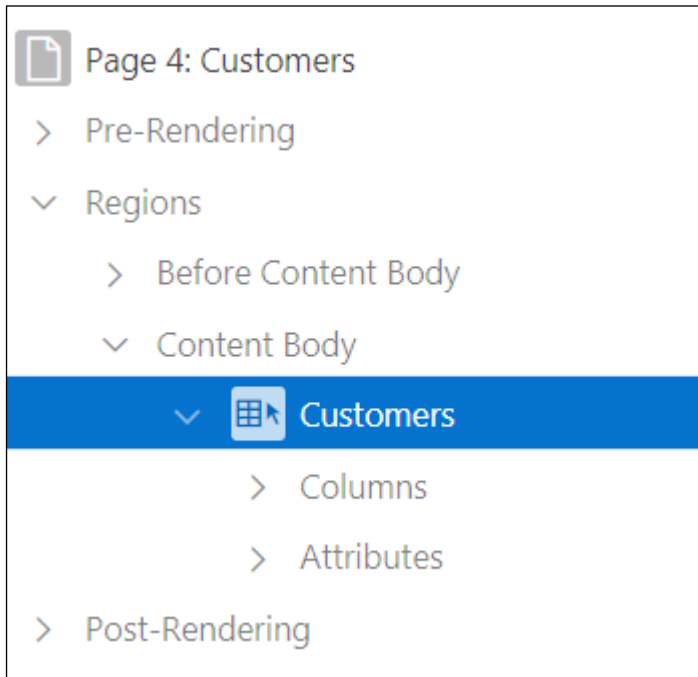


- l. The Customer Feedback page loads with all the fields. Click the **Application 111** link on the Runtime Developer toolbar.

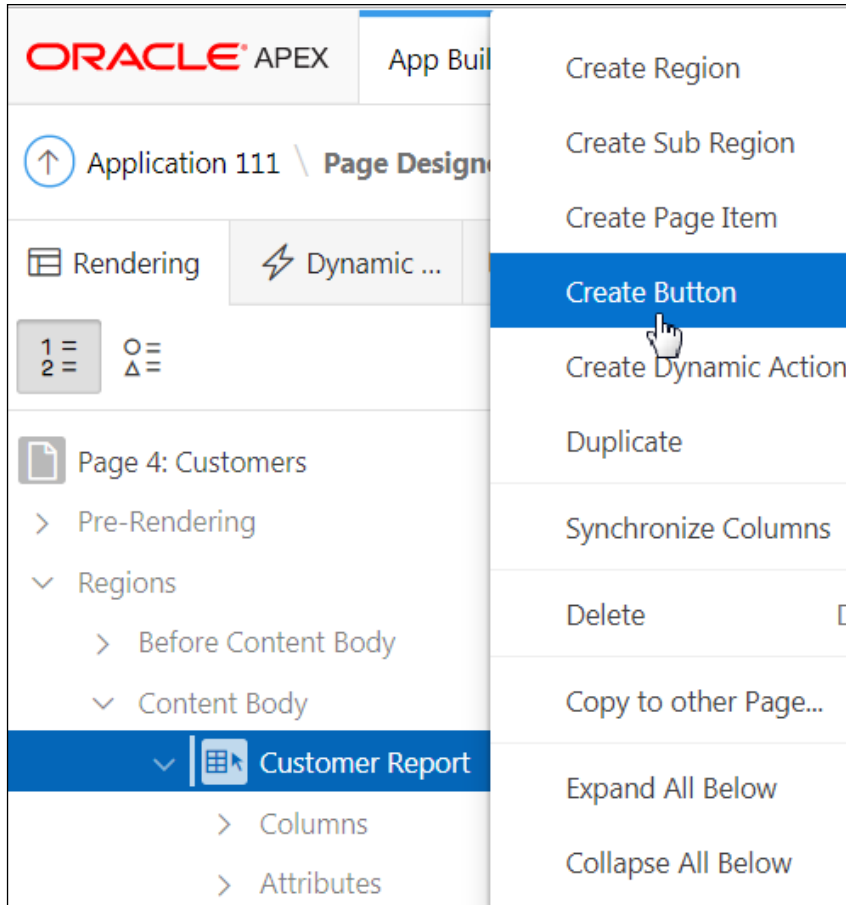


3. Add a button `Customer Feedback` on the Customers page (page 4) to redirect to the Customer Feedback page.
- a. Click Page 4 - **Customers** page.
The Customers page opens in Page Designer.

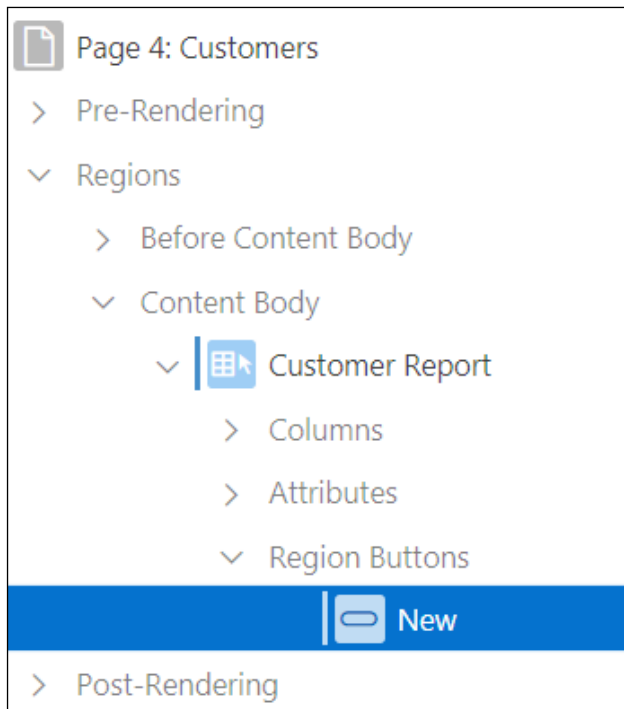
- b. Click **Customers** under Content Body. In **Property Editor > Identification**, enter `Customer Report` in the **Title** field.



c. Now, right-click the **Customer Report** region and select **Create Button**.



d. Select **Customer Report > Region Buttons > New**.



- e. In the Property Editor (the right pane):
- **Identification > Button Name:** Enter `CUSTOMER_FEEDBACK`.
 - **Layout > Button Position:** Select **Right of Interactive Report Search Bar** from the drop-down list.
 - **Appearance > Template Options > Common > Size:** Select **Large** from the drop-down list and click **OK**.
 - **Behavior > Action:** Select **Redirect to Page in this Application** from the drop-down list.
 - **Behavior > Target > Page:** Select **Customer Feedback (Page 18)**.

Identification

Button Name	CUSTOMER_FEEDBACK
Label	Customer Feedback

Layout

Sequence	10	
Region	Customer Report	>
Button Position	Right of Interactive Report Search Bar	>

Template Options ✕

Common

General Use Template Defaults

Size	Large	▼
Type	Normal	▼
Style	Default	▼

Advanced

Button Set	Default	▼
Width	Auto - Default	▼
Spacing Left	Default	▼
Spacing Right	Default	▼
Spacing Top	Default	▼

Cancel

Behavior

Action: Redirect to Page in this Applica

Target: No Link Defined

Warn on Unsaved Changes: Do Not Check

Database Action: - Select -

Link Builder - Target

Target

Type: Page in this application

Page: 18

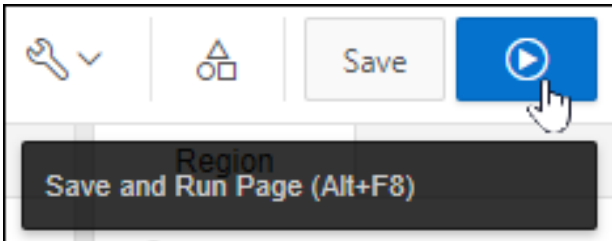
Behavior

Action: Redirect to Page in this Application

Target: Page 18

Warn on Unsaved Changes: Do Not Check

f. Click **Save and Run Page**.



g. Click **Customer Feedback**.

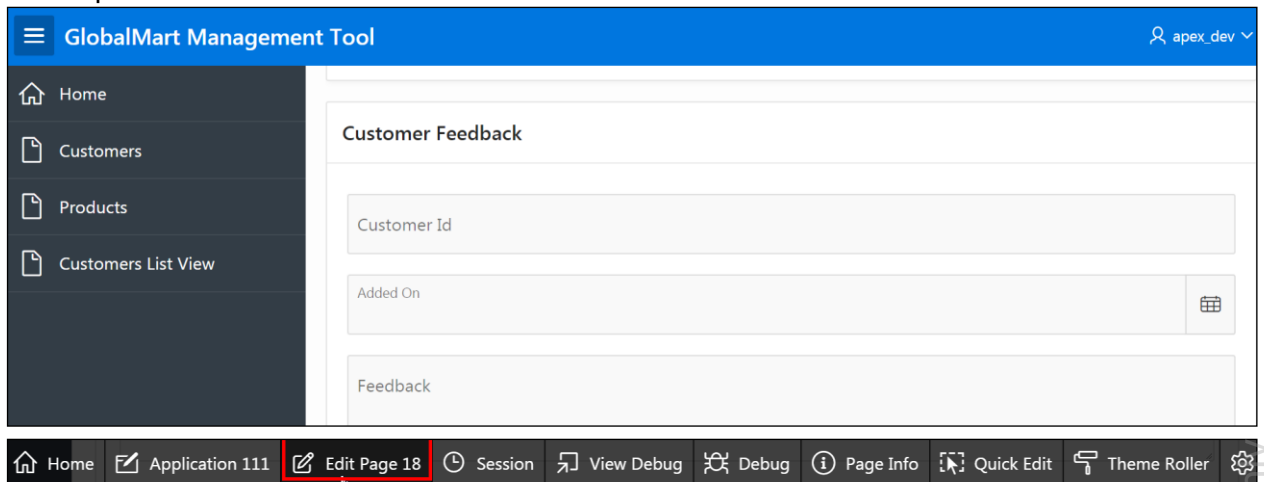
GlobalMart Management Tool

apex_dev

Customer Feedback

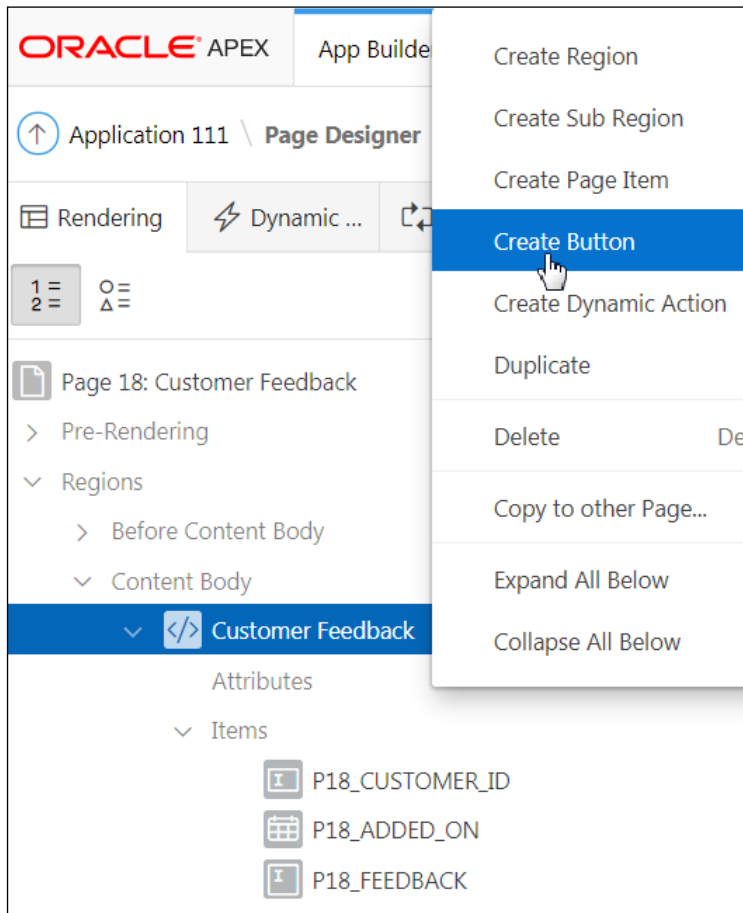
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number
	218	Bryan	Dvrrie	3386 Perrysville Ave	15214	Pittsburgh	PA	US	+1 412 123 4740
	219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton	PA	US	+1 717 123 4741

The Customer Feedback page is displayed. Click the **Edit Page 18** link on the Runtime Developer toolbar.

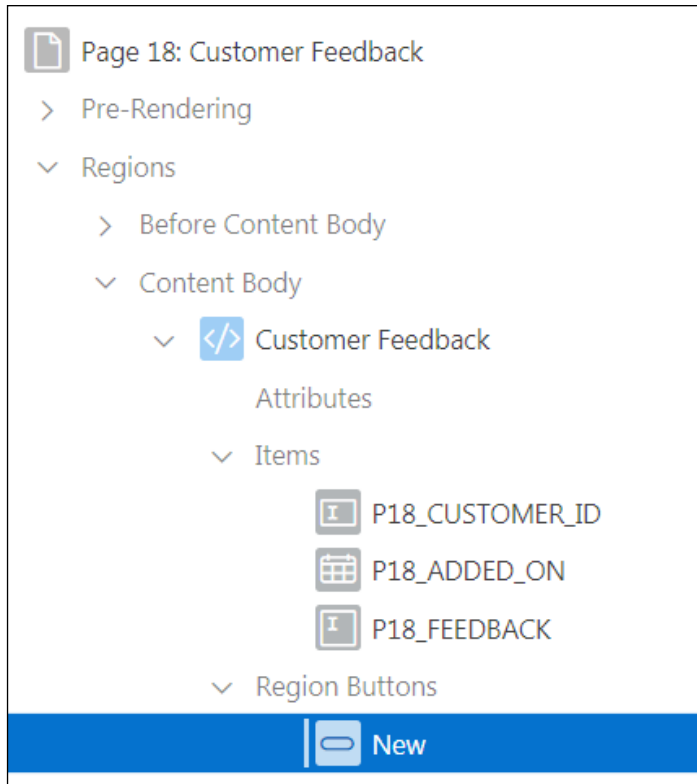


4. Add an **Apply** button on the Customer Feedback page.

- a. The **Page 18: Customer Feedback** opens in Page Designer view. You want to create an **Apply** button on this page.
- b. Right-click the **Customer Feedback** region and select **Create Button**.



c. Select the **New** button.



d. In the Property Editor (the right pane):

- **Identification > Button Name:** Enter `APPLY_CHANGES`
- **Identification > Label:** Enter `Apply`
- **Appearance > Hot:** Click **Yes**
- **Appearance > Template Options > Default Template Options:** In the Template Options dialog, under **Common > Size**, select **Large** from the drop-down list.

- Click **OK**.

Identification

Button Name	APPLY_CHANGES
Label	Apply

Appearance

Button Template	Text	>
Hot	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Template Options	<input type="text" value="Use Template Defaults"/>	
CSS Classes		⋮

Template Options

Common

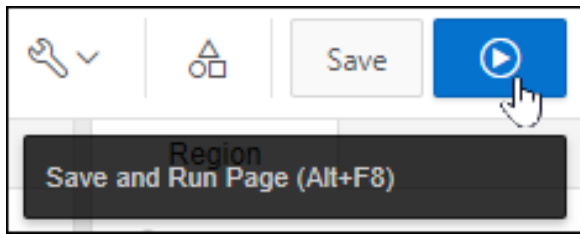
General	<input checked="" type="checkbox"/> Use Template Defaults
Size	Large
Type	Normal
Style	Default

Advanced

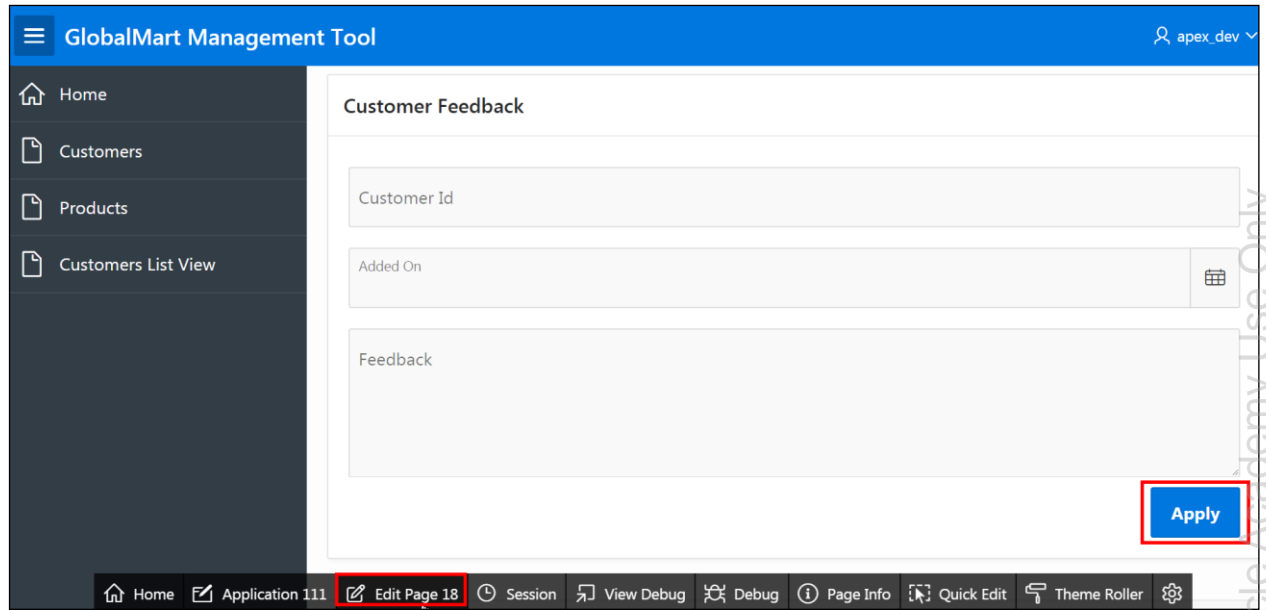
Button Set	Default
Width	Auto - Default
Spacing Left	Default
Spacing Right	Default
Spacing Top	Default

Cancel

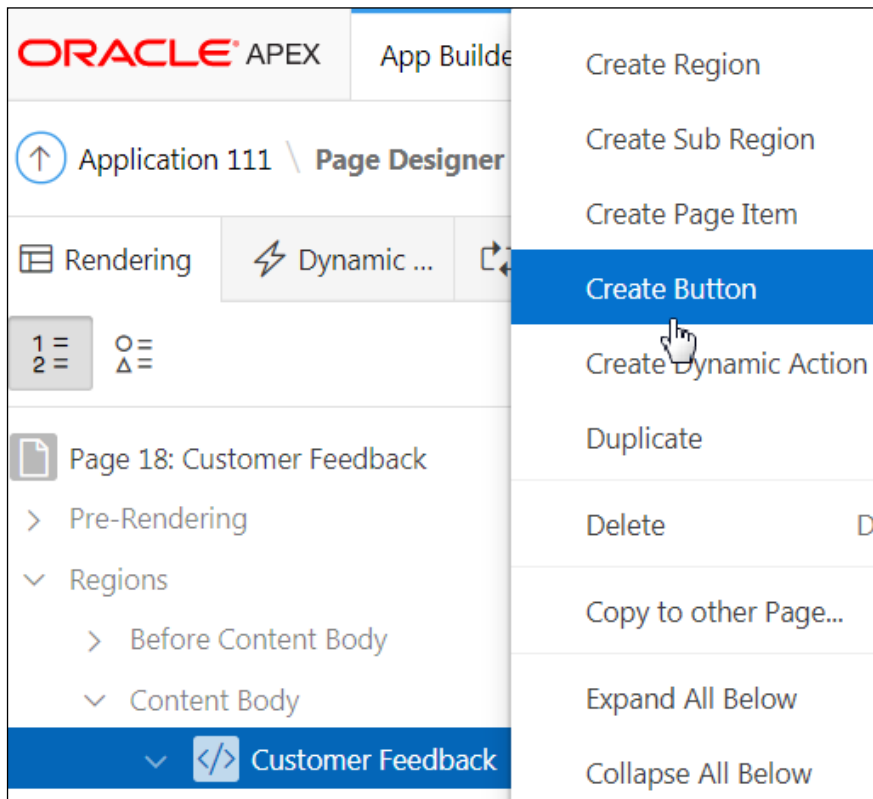
- e. Click **Save** and then **Save and Run Page**.



- f. Notice that the **Apply** button is created. Click the **Edit Page 18** link on the Runtime Developer toolbar.



- 5. Add a **Cancel** button on the Customer Feedback page to redirect to the Customers page.
 - a. To redirect to the **Customer Feedback** page when the **Cancel** button is clicked, right-click the **Customer Feedback** region and select **Create Button**.



- b. Select the **New** button.
- c. In the Property Editor (the right pane):
 - **Identification > Button Name:** Enter `CANCEL`.
 - **Identification > Label:** Enter `Cancel` (populates by default).
 - **Appearance > Template Options > Default Template Options:** In the Template Options dialog, under **Common > Size**, select **Large** from the drop-down list.
 - Click **OK**.
 - **Behavior > Action:** Select **Redirect to Page in this Application** from the drop-down list.
 - **Behavior > Target > Page:** Select **Page 4 - Customers**.
 - Click **OK**.

Identification

Button Name	CANCEL
Label	Cancel

Layout

Appearance

Button Template	Text	>
Hot	Yes	No
Template Options	Use Template Defaults	
CSS Classes		

Template Options

Common

General Use Template Defaults

Size	Large
Type	Normal
Style	Default

Advanced

Button Set	Default
Width	Auto - Default
Spacing Left	Default
Spacing Right	Default
Spacing Top	Default

Cancel **OK**

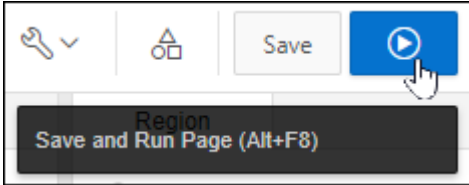
Behavior

Action: Redirect to Page in this Application

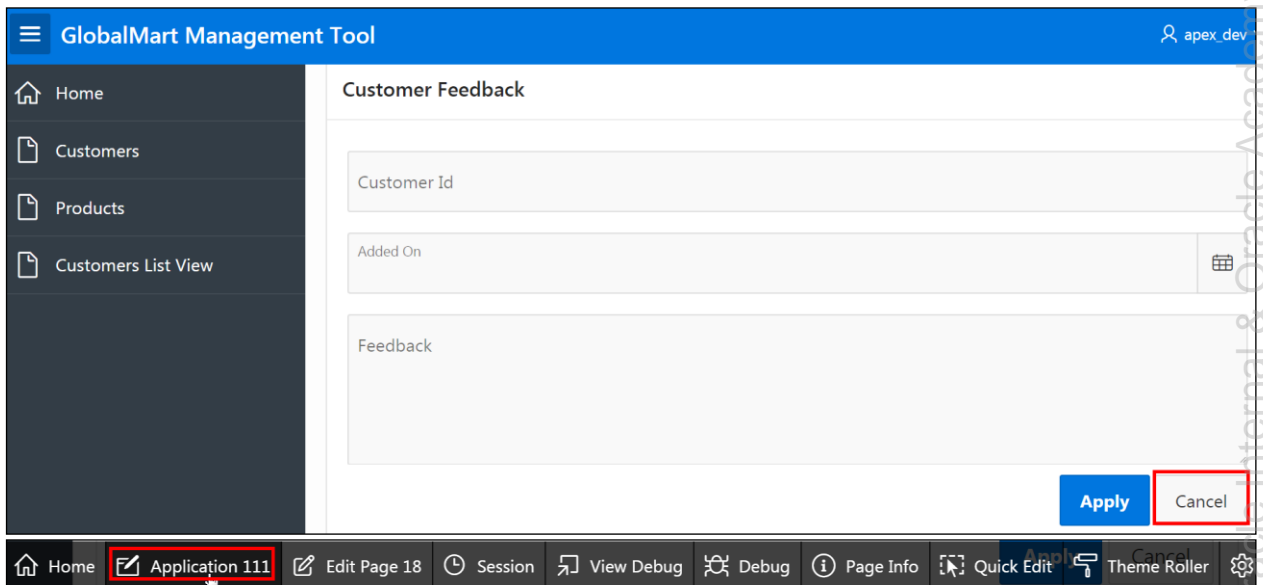
Target: Page 4

Warn on Unsaved Changes: Do Not Check

d. Click **Save** and then **Save and Run Page**.



e. The **Cancel** button is created successfully. Observe that when you click the **Cancel** button, it takes you to the Customers report. Click the **Application 111** link on the Runtime Developer toolbar.



Solution 9-2: Manipulating Items

Overview

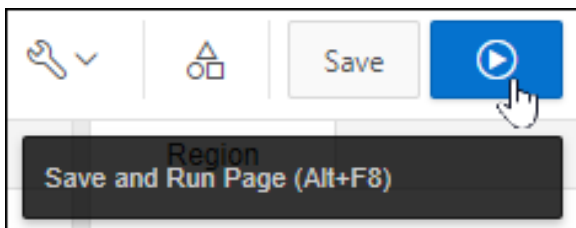
In this practice solution, steps are provided for modifying the items in the GMT application.

Steps

1. Modify the Account Manager item to be a select list with the following query (located in /home/oracle/labs/labs/lab_09_02_01.txt):

```
select LAST_NAME||', '||FIRST_NAME display_value, EMPLOYEE_ID
return_value
from OEHR_EMPLOYEES
where DEPARTMENT_ID=80
order by 1
```

- a. On the GMT Application Home page, click **Page 9 - Customer Details**. **Page 9 - Customer Details** open in Page Designer view.
- b. Click **Save and Run Page**.



- c. You will change the **Account Manager Id** item to a select list and also add a quick pick list. Click the **Edit Page 9** link on the Runtime Developer toolbar,

Customer Details

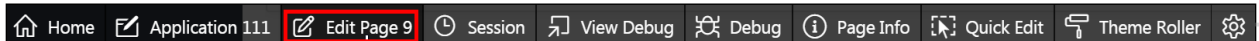
Cust First Name

Cust Last Name

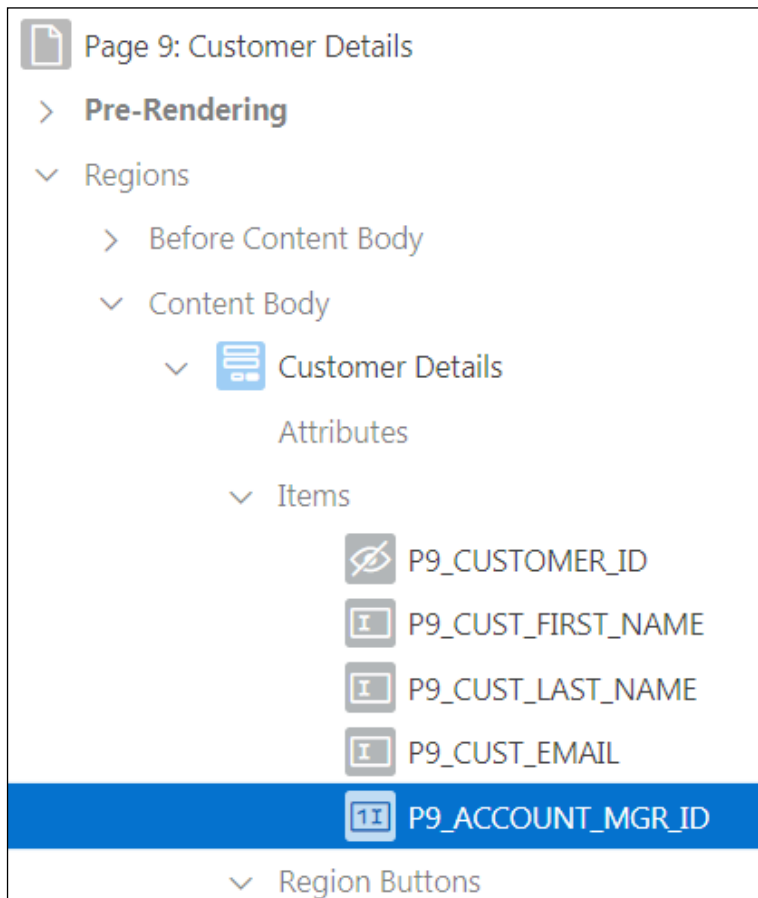
Cust Email

Account Mgr Id

Cancel Create



- d. **Page 9: Customer Details** opens in Page Designer. Select **Regions > Customer Details > Items > P9_ACCOUNT_MGR_ID**.



- e. In the Property Editor (the right pane):
- **Identification > Type:** Select `Select List`
 - **Label > Label:** `Account Manager`
 - **List of Values > Type:** Select **SQL Query** from the drop-down list.
 - **List Of Values > SQL Query:** Enter the following query (located in `/home/oracle/labs/labs/lab_09_02_01.txt`) to display the last name and first name and return `EMPLOYEE_ID`.

```
select LAST_NAME||', '||FIRST_NAME display_value,
EMPLOYEE_ID
return_value
from OEHR_EMPLOYEES
where DEPARTMENT_ID=80
order by 1
```

- **List of Values > Display Null Value:** Click **Yes** (if not selected by default)
- **List of Values > Null Display Value:** Enter `-Select Manager-`

Identification

Name P9_ACCOUNT_MGR_ID

Type **Select List**

Label

Label **Account Manager**

List of Values

Type **SQL Query**

SQL Query

```
select LAST_NAME||', '||FIRST_NAME display_value, EMPLOYEE_ID
return_value
from OEHR_EMPLOYEES
where DEPARTMENT_ID=80
order by 1
```

Display Extra Values Yes No

Display Null Value Yes No

Null Display Value **-Select Manager-**

Null Return Value

f. Click **Save**.

2. Add a quick pick list to the **Account Manager** item with the following labels and values:

Label	Value
Bates, Elizabeth	172
Russell, John	145
Cambrault, Gerald	148

a. In the Property Editor (the right pane), select P9_ACCOUNT_MGR_ID > **Quick Picks** > **Show Quick Picks**: Select **Yes**.

- b. Enter the following labels and values.

Label	Value
Bates, Elizabeth	172
Russell, John	145
Cambraut, Gerald	148

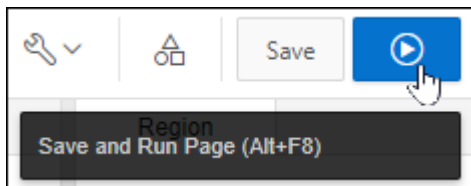
Quick Picks

Show Quick Picks No

Link Attributes

Label 1	Bates, Elizabeth
Value 1	172
Label 2	Russell, John
Value 2	145
Label 3	Cambraut, Gerald
Value 3	148
Label 4	

- c. Click **Save** and then **Save and Run Page**.



- d. Click the **Account Manager** drop-down list to see the list of Account Managers.
e. Click anywhere on the page and then click the **Russell, John** quick pick.

GlobalMart Management Tool

- Home
- Customers
- Products
- Customers List View

Customer Details

Cust First Name

Cust Last Name

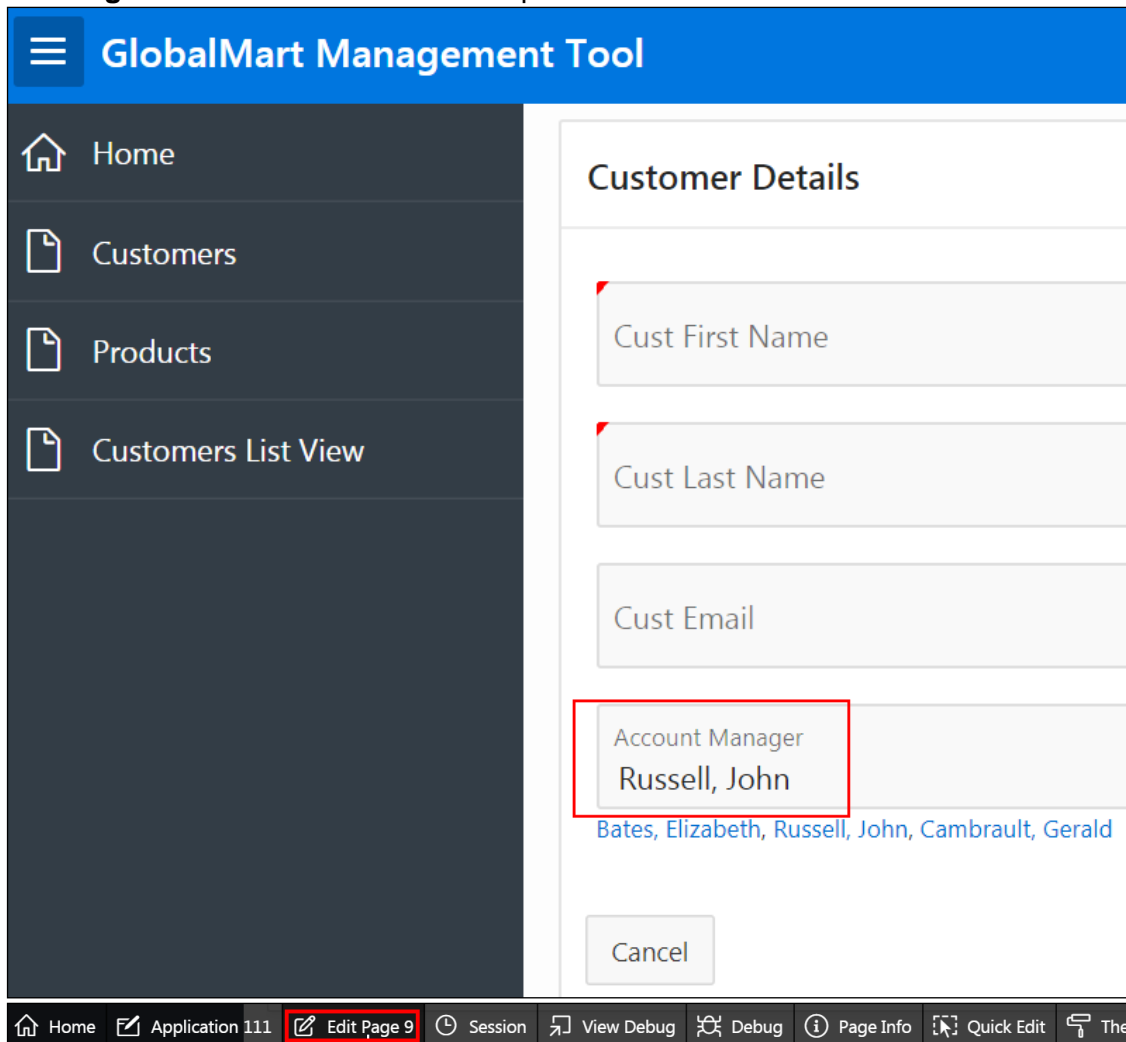
Cust Email

Account Manager
-Select Manager-

[Bates, Elizabeth](#) [Russell, John](#) [Cambrault, Gerald](#)

Cancel

- f. Notice how the name is selected for the **Account Manager** drop-down list. Click the **Edit Page 9** link on the Runtime Developer toolbar.

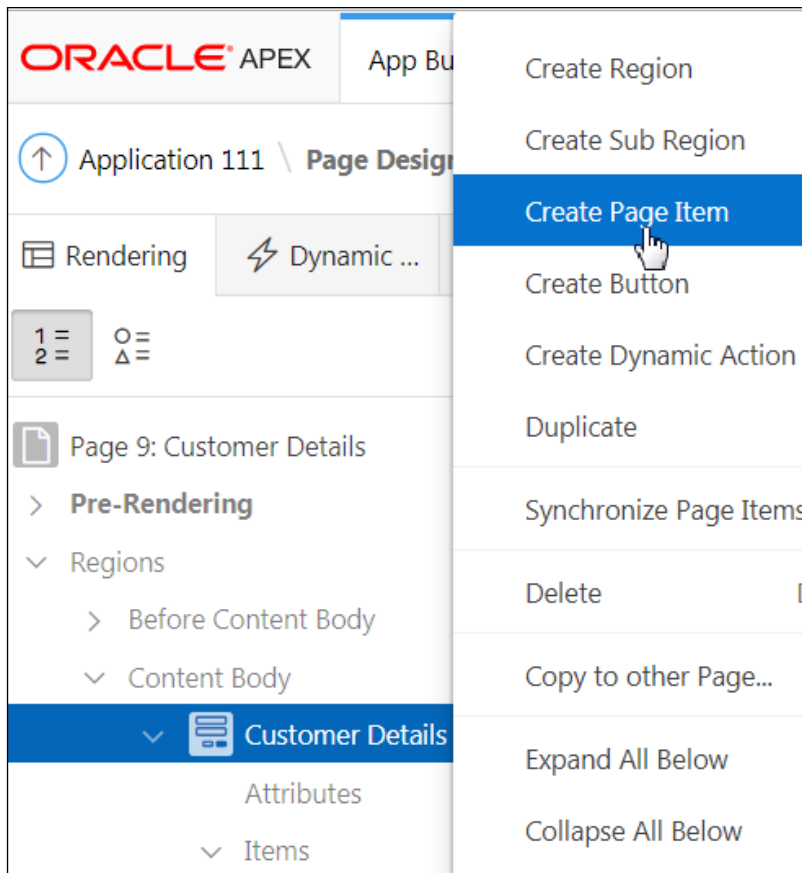


Customer Details page opens in Page Designer.

3. Add a select list item called **Country** that contains the following query (located in `/home/oracle/labs/labs/lab_09_02_02.txt`). This item should allow nulls.

```
select COUNTRY_NAME display_value, COUNTRY_ID return_value
from OEHR_COUNTRIES
order by 1
```

- a. Open Page 9 in Page Designer and go to **Regions > Customer Details**. Right-click **Customer Details** region and select **Create Page Item**.



- b. Click the new Page Item P9_NEW.
- c. In the Property Editor (the right pane):
 - **Identification > Name:** Enter P9_COUNTRY_ID
 - **Identification > Type:** Select **Select List** from the drop-down list
 - **Label > Label:** Enter Country
 - **List of Values > Type:** Select **SQL Query** from the drop-down list
 - **List of Values > SQL Query:** Enter the following query < located in /home/oracle/labs/labs/lab_09_02_02.txt in this field>


```
select COUNTRY_NAME display_value, COUNTRY_ID return_value
from OEHR_COUNTRIES
order by 1
```
 - **List of Values > Null Display Value:** Enter -Select Country-
 - **Source > Type:** Select **Database Column** from the drop-down list

- **Source > Type > Database Column:** Enter COUNTRY_ID

Identification

Name

Type

Label

Label

List of Values

Type

SQL Query

Display Extra Values Yes No

Display Null Value Yes No

Null Display Value

Null Return Value

Source

Form Region

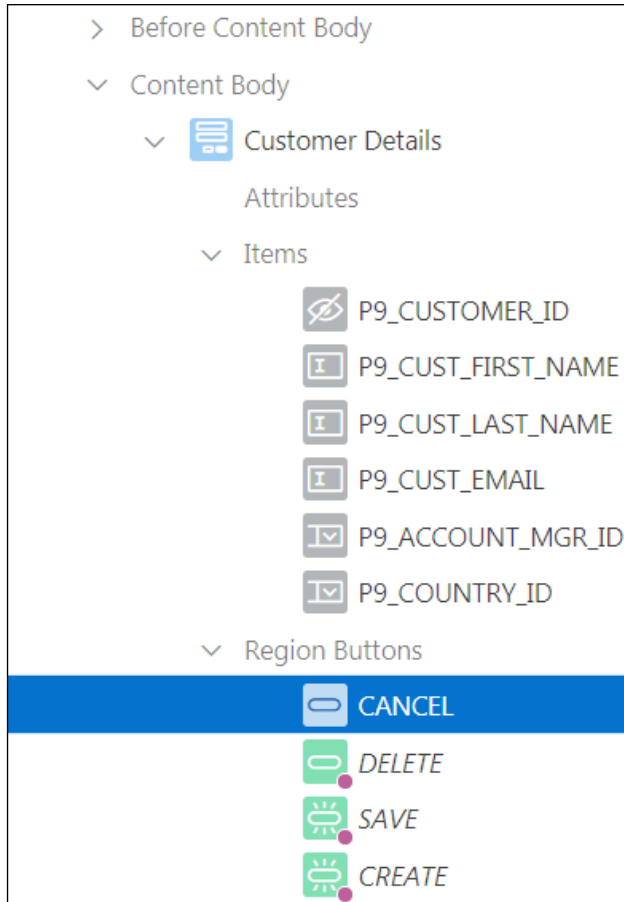
Type

Database Column

Used

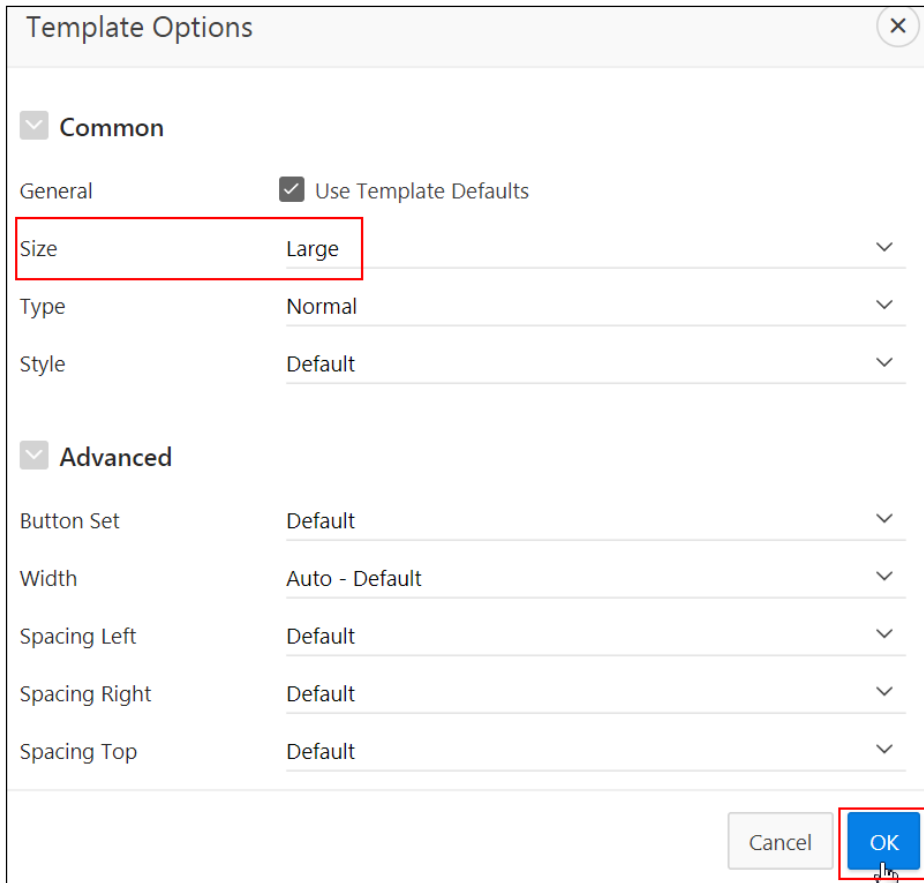
Maintain Session State

- d. Select **Region Buttons > Cancel** on the Rendering tab.

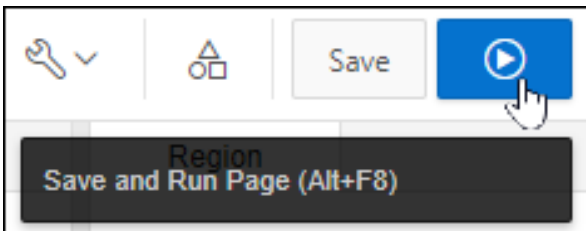


- e. In the Property Editor (the right pane):
- **Appearance > Template Options:** Click **Use Template Default**.

- **Column: Common > Size:** Select **Large** from the drop-down list.
- Click **OK**.



- f. Click **Save** and then **Save and Run Page**.



- g. Notice that the **Country** item shows a select list of country names. Notice also the large size of the **Cancel** button. Click the **Application 111** link on the Runtime Developer toolbar.

Customer Details

Cust First Name

Cust Last Name

Cust Email

Account Manager
-Select Manager-
Bates, Elizabeth, Russell, John, Cambraut, Gerald

Country
-Select Country-

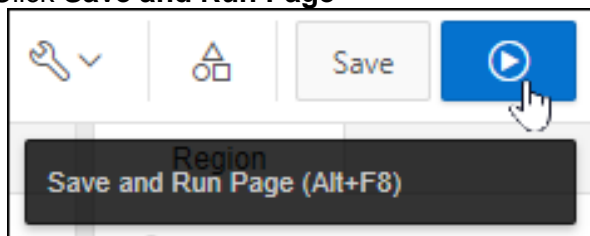
Cancel Create

Home Application 111 Edit Page 9 Session View Debug Debug Page Info Quick Edit Theme Roller

4. Change the Account Manager of an existing customer record.





Note: You must navigate to the customer report (page 4) and edit one of the records.

- a. Open **Page 4: Customers** in Page Designer view.
- b. Click **Save and Run Page**




- c. To modify an existing record, click the **Customers** tab on the left pane.

d. Click the **Edit** icon for one of the rows. The Customer Details page opens.

	Customer Id	First Name	Last Name	Street Address	Postal Code	City	State Province	Country
	222	Cary	Stockwell	7708 City Ave	19151	Philadelphia	PA	US
	223	Cary	Olin	1801 Lititz Pike	17601	Lancaster	PA	US
	224	Clara	Krige	101 E Olney Ave	19120	Philadelphia	PA	US
	225	Clara	Ganesan	612 Jefferson Ave	18510	Scranton	PA	US

e. You want to make one more change on the Customer Details page so that the **Apply Changes** button appears larger. Click **Quick Edit** on the Runtime Developer toolbar

and select the  icon next to **Apply Changes** button.

Customer Details

Cust First Name
Clara

Cust Last Name
Krige

Cust Email
Clara.Krige@WHIMBREL.COM

Account Manager
Zlotkey, Eleni
Bates, Elizabeth, Russell, John, Cambraut, Gerald

Country
-Select Country-

Cancel Delete **Apply Chan** 

- f. The Live Template Options page is displayed.
In **Live Template Options**, for **Common > Size**, select **Large** from the drop-down list.

The image shows a 'Live Template Options' dialog box with a dark background. At the top, there is a title bar with 'Live Template Options' and a close button (X). Below the title bar, there is a 'Common' section with a dropdown arrow. Underneath, there is a 'General' section with a checked 'Use Template Defaults' checkbox. The 'Size' dropdown menu is open, showing 'Large' selected, and this area is highlighted with a red rectangle. Below 'Size' are 'Type' (Normal) and 'Style' (Default) dropdown menus. There is an 'Advanced' section with a dropdown arrow. Underneath, there are several settings: 'Button Set' (Default), 'Width' (Auto - Default), 'Spacing Left' (Default), 'Spacing Right' (Default), 'Spacing Top' (Default), and 'Spacing Bottom' (Default). At the bottom right, there are 'Cancel' and 'Save' buttons.

- g. Click **Save**.

- h. Notice the change in **Apply Changes** button size.

Customer Details

Cust First Name
Bryan

Cust Last Name
Dvrrie

Cust Email
BRYAN.DVRRIE@REDPOLL.COM

Account Manager
Bates, Elizabeth
Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country
-Select Country-

Cancel Delete **Apply Changes**

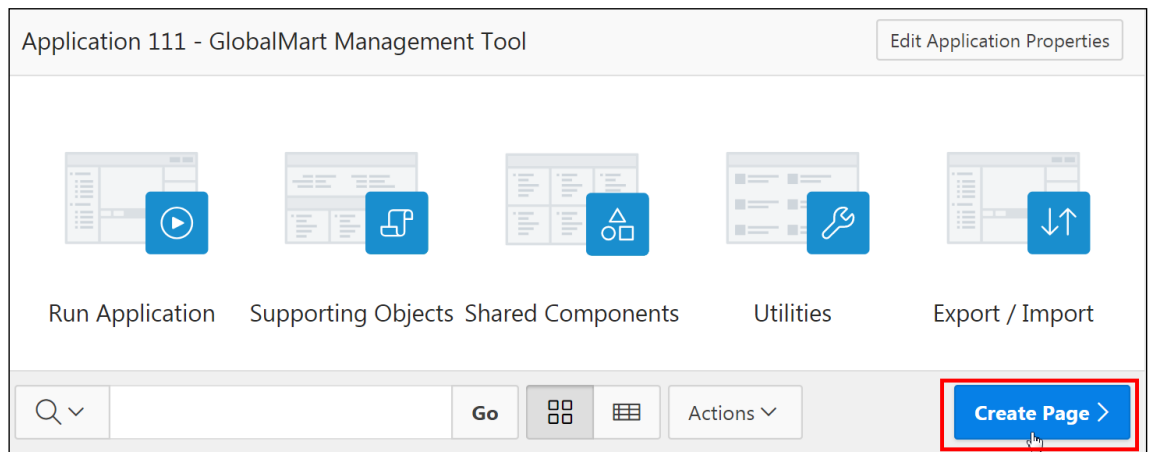
- i. Click the **Application 111** link on the Runtime Developer toolbar.



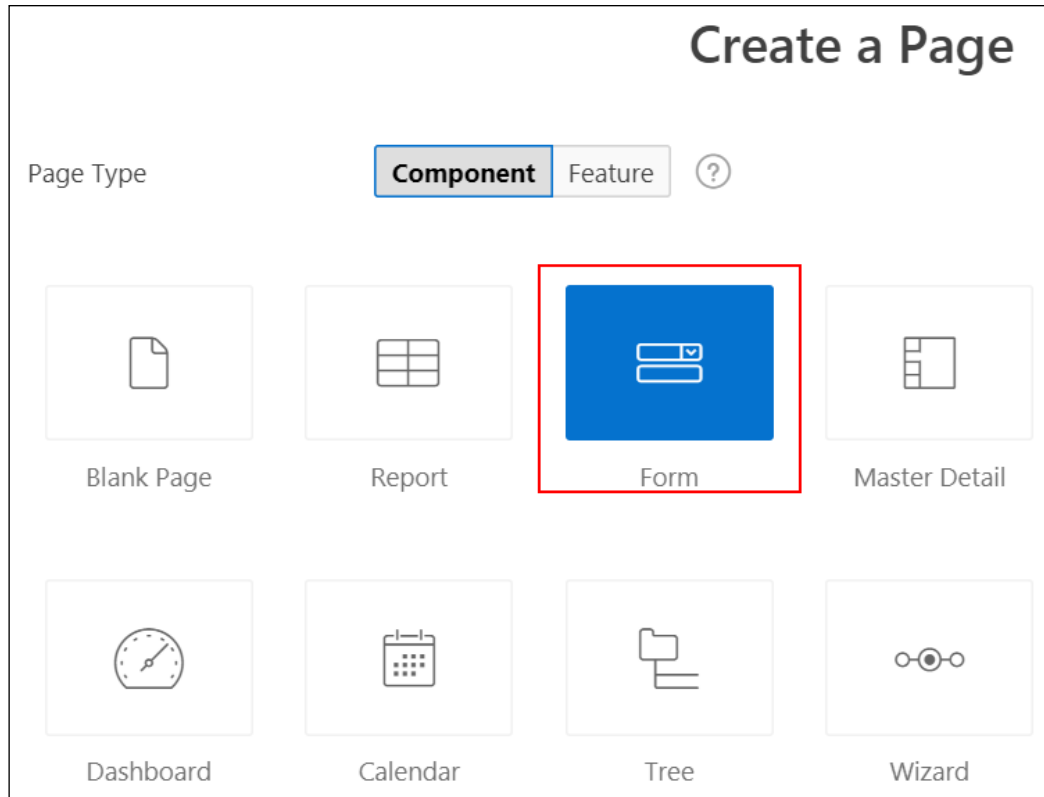
5. Create and modify the **Employee Detail (19 – Employee Detail)** page to take advantage of some of the new HTML5 item types. **Note:** This is mainly for enhancing the user interface. The user creates a subtype for Email, Phone Number, and Manager ID in a select list on a Form page. This ensures that the page uses the appropriate keyboard for email and phone numbers while entering the relevant values in the form.

- a. You will first create a Form Page.

- i. Go to your **Application 111** and click **Create Page**.

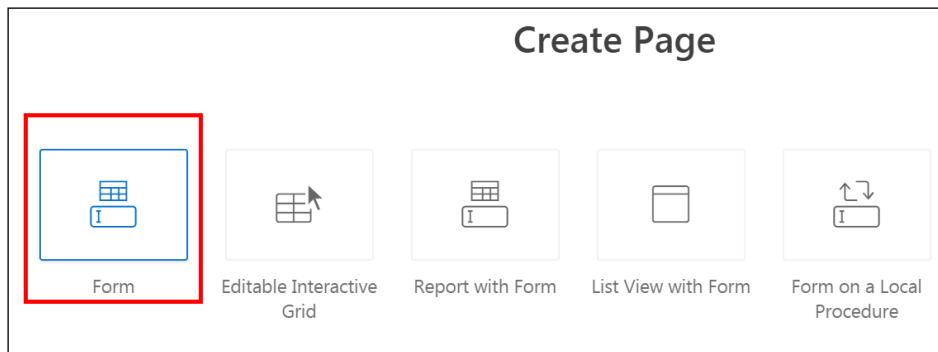


ii. Create **Form**.



iii. Click **Next**.

iv. Select **Form**.



v. Enter the following details and click **Next >**.

- **Page Number:** Enter 19
- **Page Name:** Enter Employee Details
- **Branch Here on Submit:** Select 1
- **Cancel and Go To Page:** Select 1

Create Form

Page Attributes

* Page Number ?

* Page Name ?

Page Mode **Normal** Modal Dialog ?

Page Group ?

* Branch Here on Submit ?

* Cancel and Go To Page ?

Breadcrumb ?

vi. Select default **Navigation Preference** and click **Next >**.

Create Form

Navigation Menu

Navigation Preference **Do not associate this page with a navigation menu entry** ?

Create a new navigation menu entry

Identify an existing navigation menu entry for this page

- vii. For Table/View Owner, select **OEHR** (if not selected by default). For Table/View Name, select **OEHR_EMPLOYEES (table)**. Click **Next**.

Data Source

Data Source: **Local Database** | REST Enabled SQL Service | Web Source

* Source Type: **Table** | SQL Query

* Table / View Owner: OEHR

* Table / View Name: OEHR_EMPLOYEES (table)

- viii. Select **Select Primary Key Column(s)** for **Primary Key Type**. For **Primary Key Column**, select **EMPLOYEE_ID (Number)**. Click **Create**.

Create Form - Columns and Primary Key

* Select Columns to be displayed in the form

- EMPLOYEE_ID (Number)
- FIRST_NAME (Varchar2)
- LAST_NAME (Varchar2)
- EMAIL (Varchar2)
- PHONE_NUMBER (Varchar2)
- HIRE_DATE (Date)
- JOB_ID (Varchar2)
- SALARY (Number)

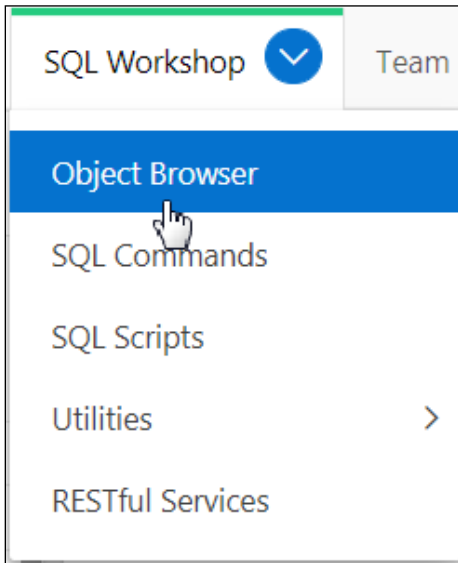
Primary Key Type: Managed by Database (ROWID) | **Select Primary Key Column(s)**

Primary Key Column: EMPLOYEE_ID (Number)

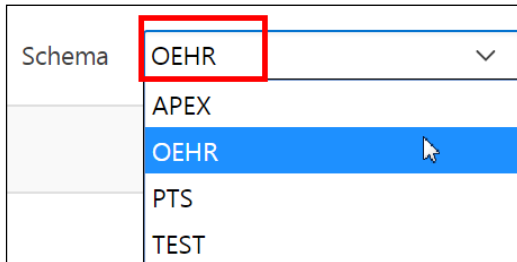
Secondary Key Column: - Select Column -

Create

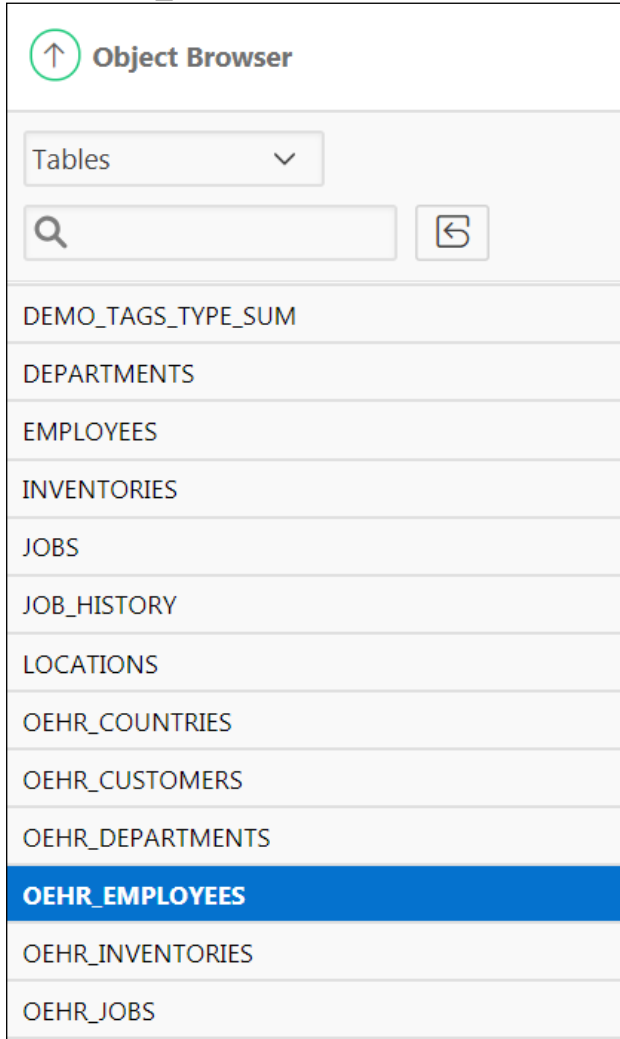
- ix. The form page is created and opens in Page Designer view.
- b. You want to add a new column to the **OEHR_EMPLOYEES** table to store whether an employee is active or not. Select **SQL Workshop > Object Browser**.



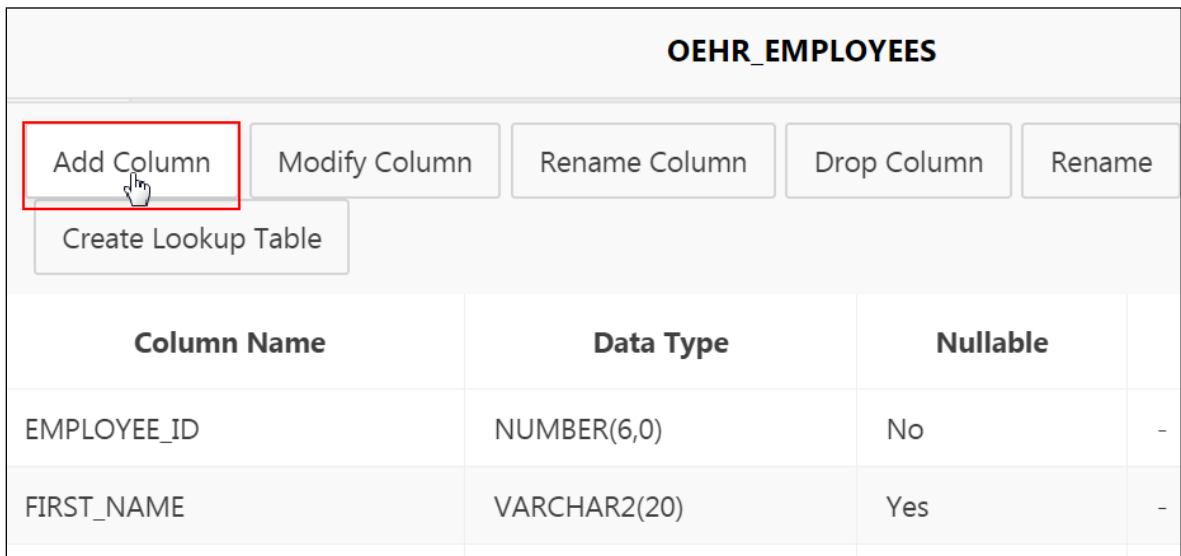
- c. Select the appropriate schema. Here you select OEHR.



d. Select OEHR_EMPLOYEES from the Tables list.



e. Click **Add Column**.



f. Enter the following:

- **Add Column:** Enter `ACTIVE_YN`
- **Type:** Select **VARCHAR2**
- **Length:** Enter 1

OEHR_EMPLOYEES

Add Column

Schema: **OEHR** ⓘ

Table: **OEHR_EMPLOYEES** ⓘ

* Add Column ⓘ

Preserve Case

Type ⓘ

Length ⓘ

- Click **Next**.

g. Click **Finish**.

OEHR_EMPLOYEES +

Confirm your request

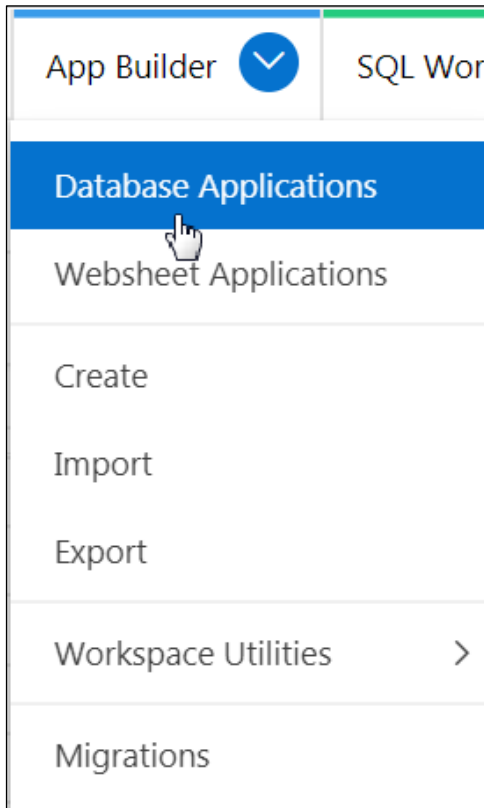
Schema: **OEHR** ⓘ

Object: **OEHR_EMPLOYEES** ⓘ

Action: **Add Column ACTIVE_YN** ⓘ

< Cancel **Finish**

6. Now you can modify the **Employee Detail** form page.
 - a. Click the Application Builder pull-down menu and select **Database Applications**.



- b. Navigate to the GMT application page. Click the **GlobalMart Management Tool** icon.



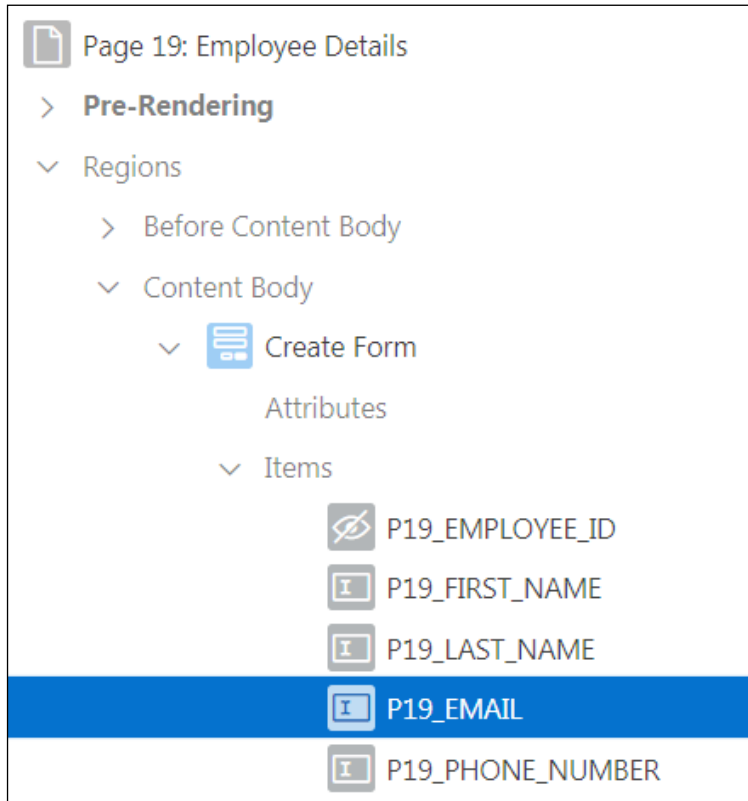
- c. Click the **View Report** icon.



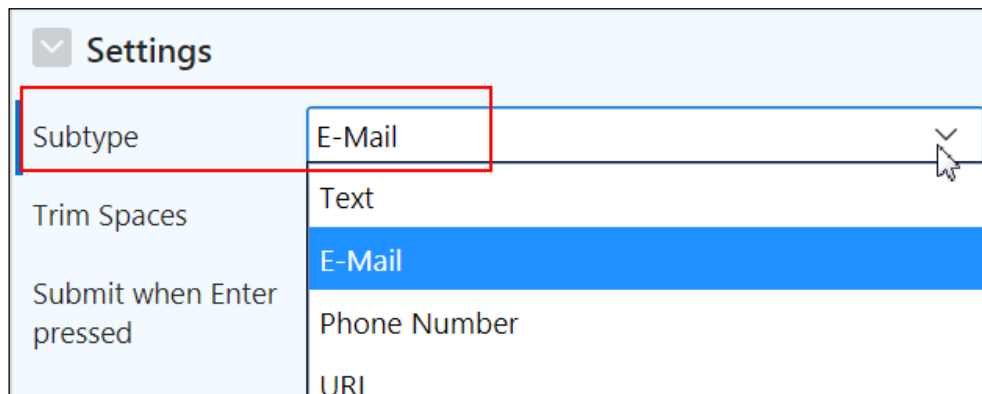
- d. Select **Page 19 - Employee Details**.

Page ↑	Name	Updated	Updated By	Page Type	Group	User Interface	Lock	Run
14	Oehr Orders	19 hours ago	apex_dev	DML Form	Unassigned	Desktop	🔒	
15	Oehr Order Items	19 hours ago	apex_dev	DML Form	Unassigned	Desktop	🔒	
16	Customer Master Information	17 hours ago	apex_dev	Interactive Report	Unassigned	Desktop	🔒	▶
17	Customer Order History	17 hours ago	apex_dev	DML Form	Unassigned	Desktop	🔒	▶
18	Customer Feedback	2 hours ago	apex_dev	Navigation Form	Unassigned	Desktop	🔒	▶
19	Employee Details	14 minutes ago	apex_dev	DML Form	Unassigned	Desktop	🔒	▶
201	Employee List	4 days ago	apex_dev	Static HTML	Unassigned	Desktop	🔒	▶

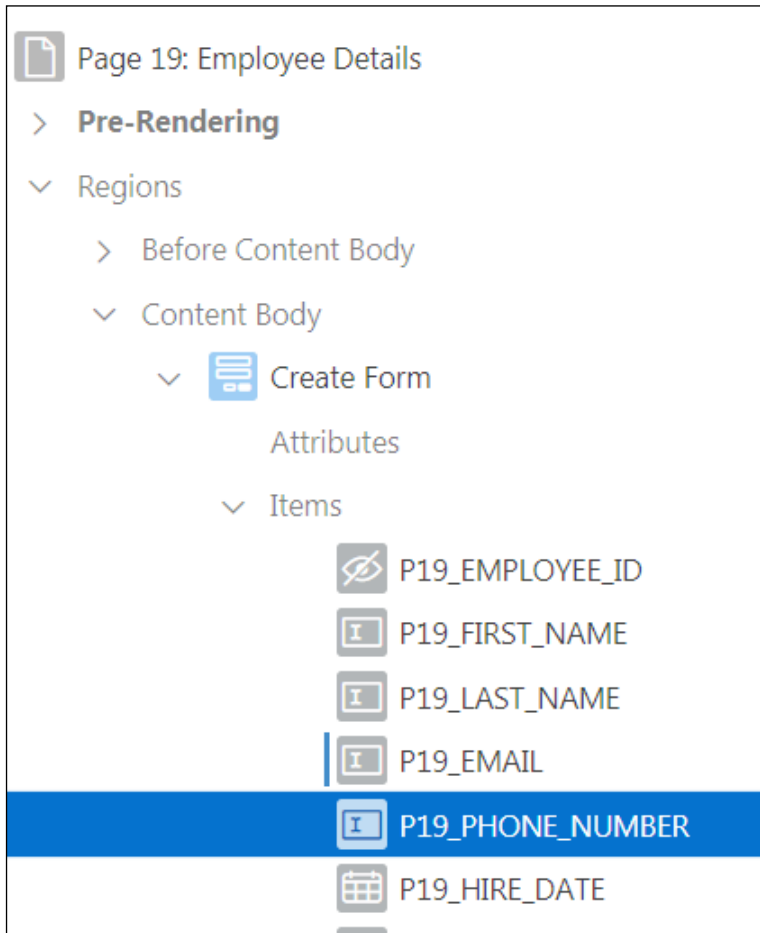
- e. Change the setting for email. In the Rendering tab, select P19_EMAIL.



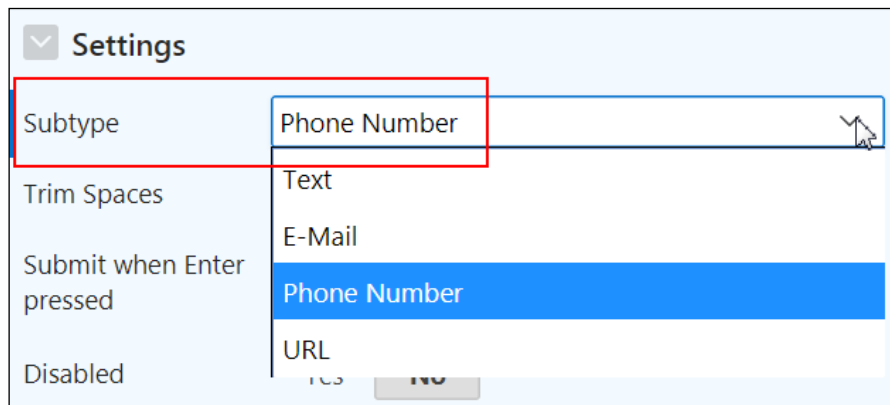
- f. In the Property Editor (the right pane):
- **Settings > Subtype:** Select **E-Mail**



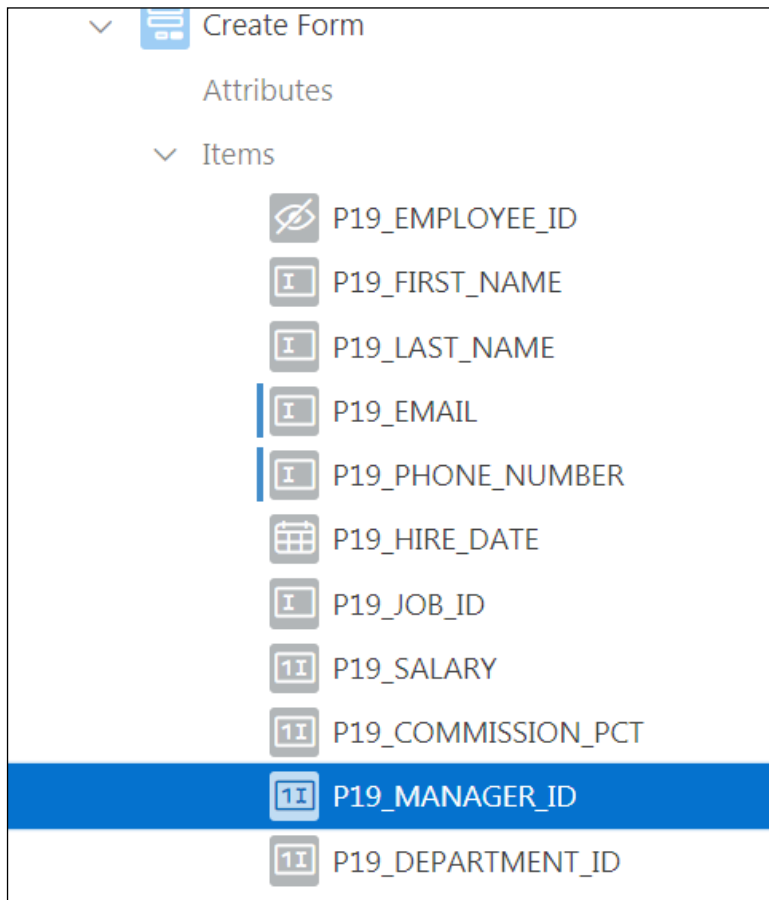
- g. Change the subtype for Phone Number. In the Rendering tab, select P19_PHONE_NUMBER.



- h. In the Property Editor (the right pane):
- **Settings > Subtype:** Select **Phone Number**



- i. Change Manager to show a select list. In the Rendering tab, select P19_MANAGER_ID.



- j. In the Property Editor (the right pane):
- **Identification > Type:** Select **Select List** from the drop-down list
 - **List of Values > Type:** Select **SQL Query** from the drop-down list
 - **List of Values > SQL Query:** Enter the SQL Query <located in /home/oracle/labs/labs/lab_09_02_03.txt in this field>

```
select first_name||' '||last_name d, employee_id r
from oehr_employees
```

Identification

Name

Type

List of Values

Type

SQL Query

Display Extra Values

- k. Create a new page item for the `ACTIVE_YN` column you added to the `EMPLOYEES` table previously.
- i. Select **Create Form** under **Regions > Content Body**, and in the Property Editor **Identification > Title**, enter `Employee Details`.

Page 19: Employee Details

- > Pre-Rendering
- Regions
 - > Before Content Body
 - Content Body
 - Create Form**
 - Attributes
 - Items

Identification

Title	Employee Details
-------	------------------

Type Form ▼ ☰

ii. Right-click **Employee Details** and select **Create Page Item**.

ORACLE APEX App Builder

Application 111 \ Page Designer

Rendering Dynamic ...

1 = 2 =

Page 19: Employee Details

- > Pre-Rendering
- ▼ Regions
 - > Before Content Body
 - ▼ Content Body
 - ▼ **Employee Details**
 - Attributes
 - ▼ Items

Context Menu:

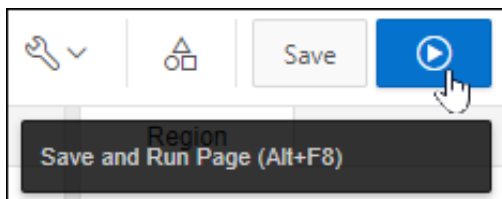
- Create Region
- Create Sub Region
- Create Page Item**
- Create Button
- Create Dynamic Action
- Duplicate
- Synchronize Page Items
- Delete Del
- Copy to other Page...
- Expand All Below
- Collapse All Below

I. In the Property Editor (the right pane):

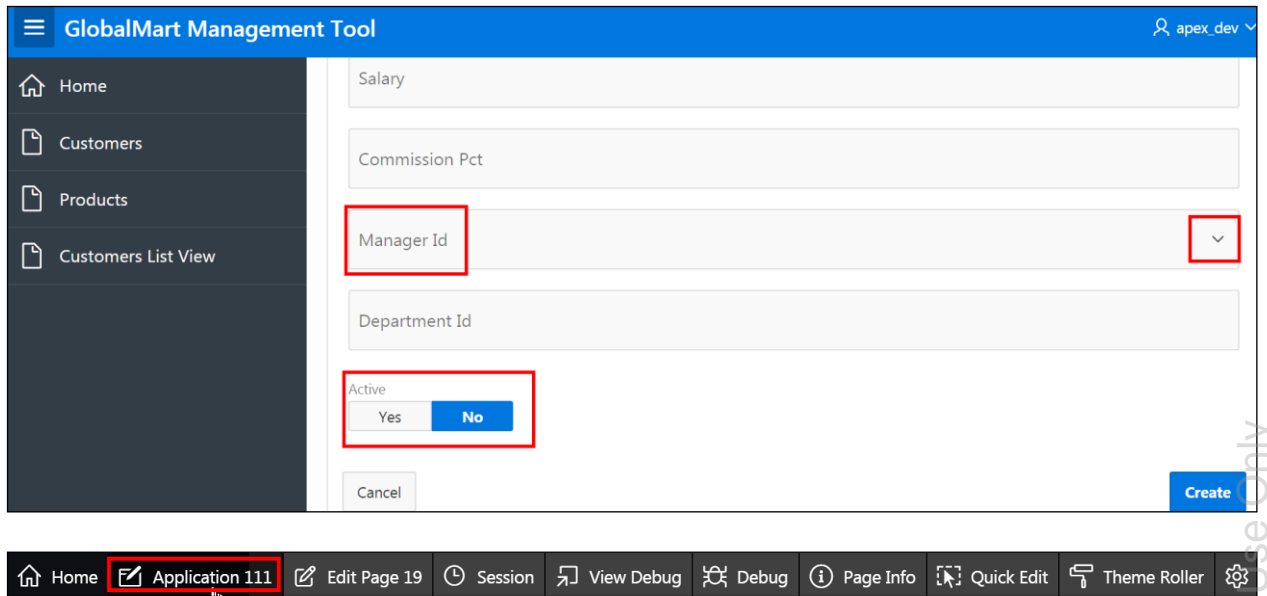
- **Identification > Name:** Enter P19_ACTIVE
- **Identification > Type:** Select **Switch** from the drop-down list
- **Source > Type:** Select **Database Column** from the drop-down list
- **Source > Database Column:** Enter P19_ACTIVE

The screenshot shows the Property Editor interface. The 'Identification' section is expanded, showing 'Name' set to 'P19_ACTIVE' and 'Type' set to 'Switch'. The 'Source' section is also expanded, showing 'Form Region' set to '- Select -', 'Type' set to 'Database Column', 'Database Column' set to 'P19_ACTIVE', 'Used' set to 'Always, replacing any existing value in session', and 'Maintain Session State' set to 'Per Session (Disk)'. Red boxes highlight the 'Name' and 'Type' fields in the Identification section, and the 'Type' and 'Database Column' fields in the Source section.

m. Click **Save** and then **Save and Run Page**.



- n. The Employee Details form displays the Manager Id drop-down list and the **Active** toggle bar. Click the **Application 111** link on the Runtime Developer toolbar.



**Practices for Lesson 10:
Understanding Session State**

Practices for Lesson 10: Overview

Overview

There is one practice for this lesson. In this practice, you examine how session state works in an Application Express application.

Practice 10-1: Understanding Session State

Overview

In this practice, you:

- Modify the Create button on the Customers page of the GlobalMart Management Tool (GMT) application.
- You clear the cache so that when the button is clicked, the Customer Details form is empty.
- You review what is in session URL and then review the change in URL on the Customer Details page, after including a new value.
- Update the title on the Customer Details page to include the customer first name and last name.

Assumptions

You have completed the previous practices.

Note: If you have not completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. On the Customers page in the GlobalMart Management Tool (GMT) application, update the Create button to make it larger by editing Template Options.
2. Save and then run the page and to view the changes.
3. Move your cursor on the Edit option of an existing record and view session URL.
4. Change the Link Column on the Customers report to include the value for the P9_CUST_FIRST_NAME item.
5. On the Customer Details page, change the title of the Customer Details region to use the following (located in /home/oracle/labs/labs/lab_10_01.txt).

```
&P9_CUST_FIRST_NAME. &P9_CUST_LAST_NAME. Customer Details
```

6. Run the page. What do you observe?

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_admin** user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the **apex_dev** user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 10-1**.

If you haven't completed **Practice 9-2**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_09_02.sql` file in the `/home/oracle/labs/solutions` directory and click **Next**.
- e. Click **Next**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Solution 10-1: Understanding Session State

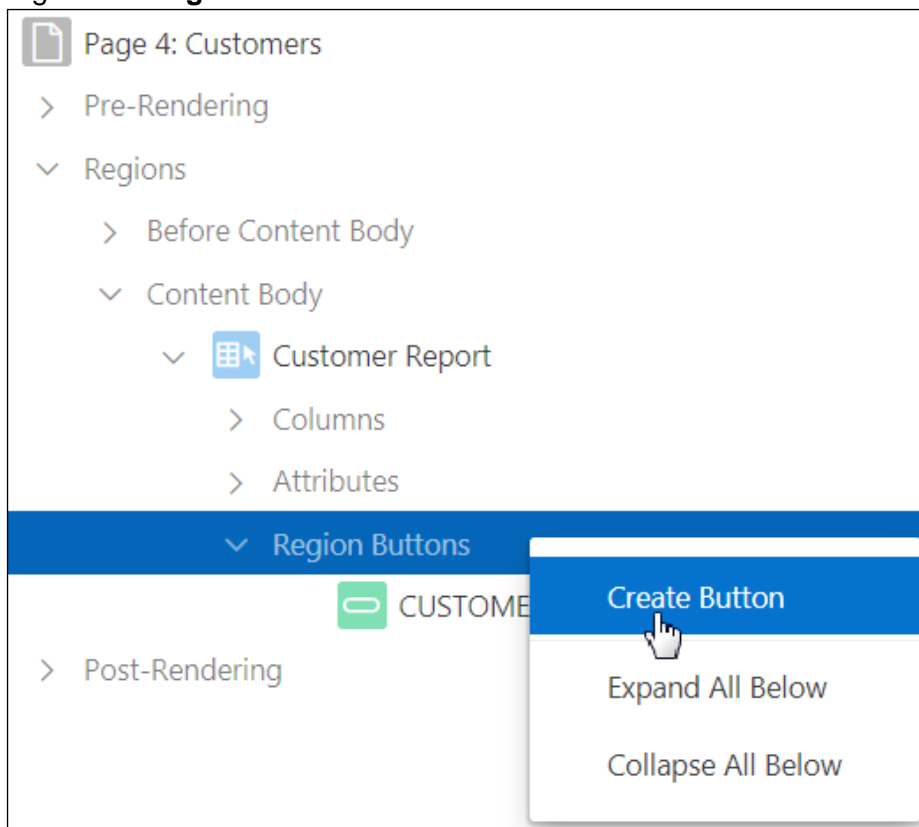
Overview

In this practice solution, steps are provided for:

- Creating and modifying a Create button on the Customers page in the GlobalMart Management Tool (GMT) application
- Reviewing change in session URL on the Customer Details page
- Changing Link Column on the Customers report to include a new value
- Updating the title on the Customer Details page to include the customer first name and last name

Steps

1. On the Customers page in the GMT application, create and edit the **CREATE** button to make it larger.
 - a. On the GMT application homepage, click the **4 - Customers** page. **Page 4 – Customers** opens in Page Designer.
 - b. Right-click **Region Buttons** and click **Create Button**.



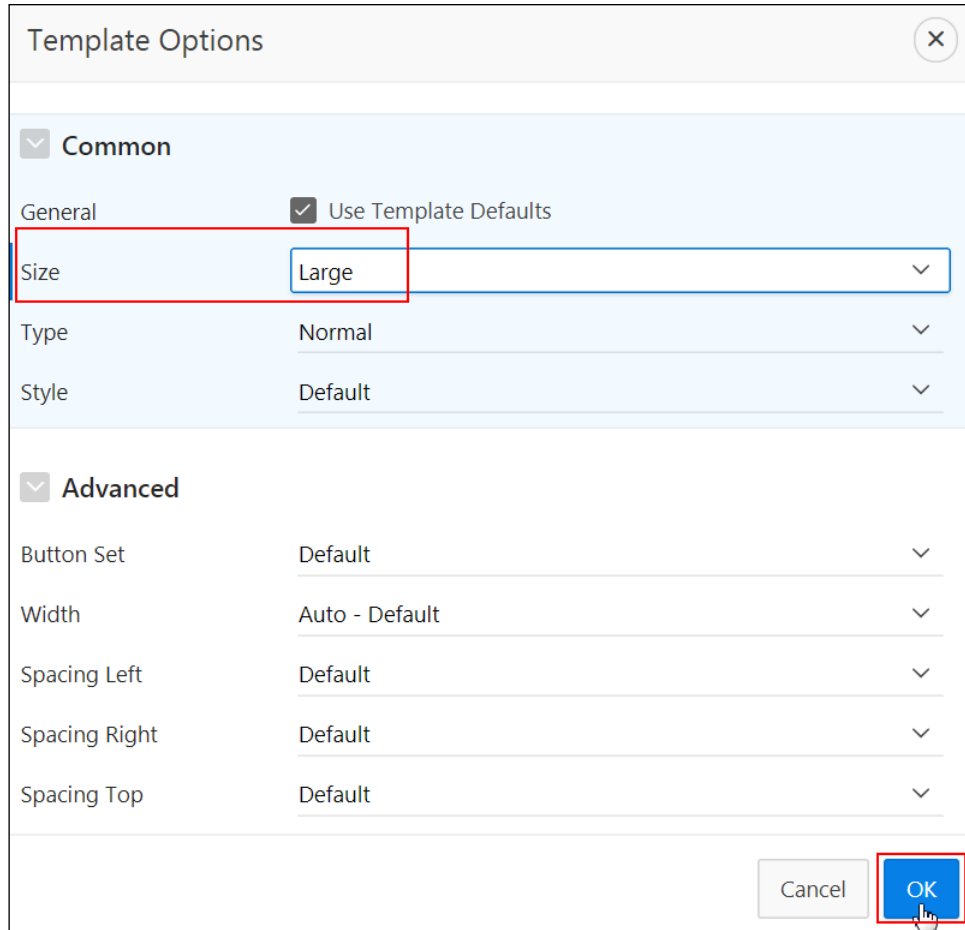
- c. In Property Editor, define the button as follows:
- **Button Name:** Enter `CREATE`
 - **Label:** `Create` (populated by default)
 - **Layout > Region:** Select **Customer Report** (populated by default)
 - **Layout > Button Position:** Select **Right of Interactive Report Search Bar**

The screenshot shows the Property Editor interface. It is divided into two main sections: Identification and Layout. In the Identification section, the 'Button Name' field is set to 'CREATE' and the 'Label' field is set to 'Create'. In the Layout section, the 'Sequence' field is set to '20', the 'Region' dropdown is set to 'Customer Report', and the 'Button Position' dropdown is set to 'Right of Interactive Report Search Bar'. Red boxes highlight the Identification and Layout sections, and a blue box highlights the Button Position dropdown.

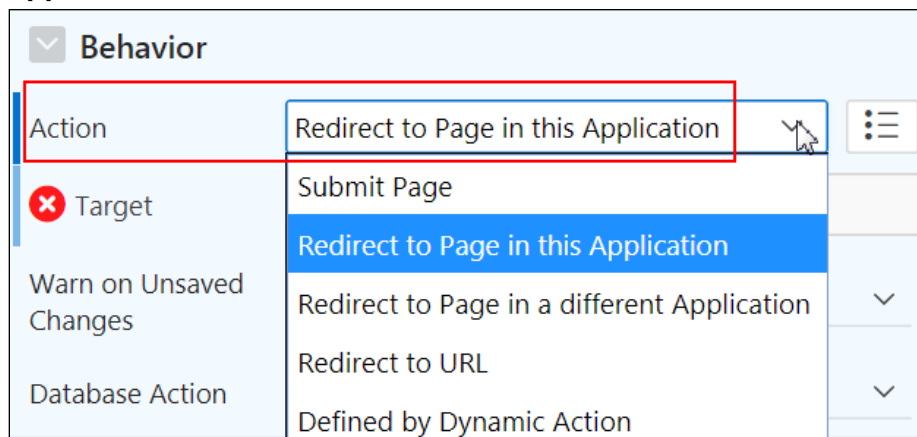
- d. Change the size of the Create button by editing Template Options. In the Property Editor under **Appearance > Template Options**, click the **Use Template Defaults** button.

The screenshot shows the Property Editor interface, specifically the Appearance section. The 'Button Template' dropdown is set to 'Text'. The 'Hot' property has radio buttons for 'Yes' and 'No', with 'No' selected. The 'Template Options' field contains a 'Use Template Defaults' button, which is highlighted with a red box and a mouse cursor. The 'CSS Classes' and 'Icon' fields are also visible but empty.

- e. In the Template Options dialog, for **Common > Size**, select **Large** and click **OK**.

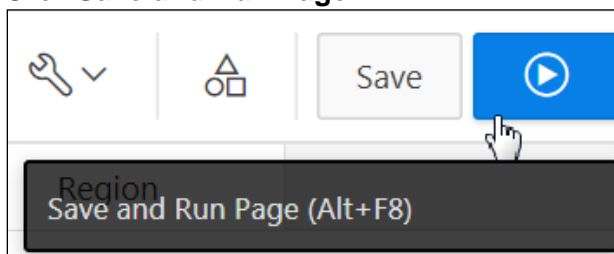


2. Link the button to **Page 9 – Customer Details** and also clear the cache. To do so, select the **Create** button on the Rendering tab and in Property Editor and define the behavior.
 - a. In Property Editor, go to **Behavior > Action** and select **Redirect to Page in this Application**.

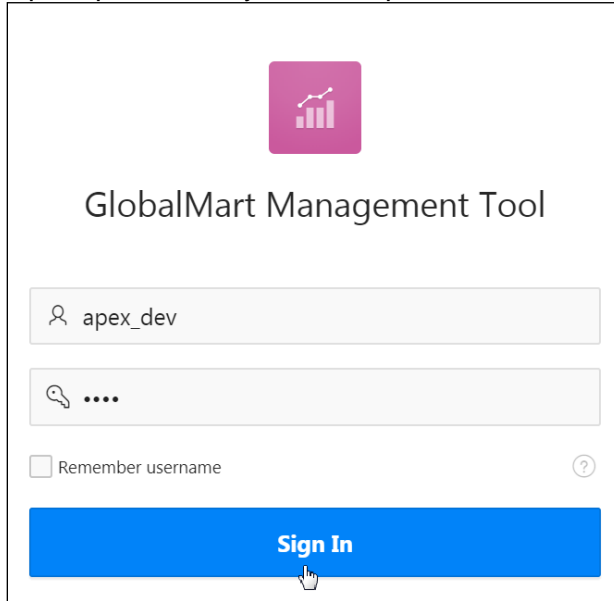


- b. Under **Behavior > Target**, click Link to **Custom Target**. In the **Link Builder - Target** window, for Page select **9**. In the **Clear Cache** field, select page **9**.

- 3. Save and then run the page to view the changes.
 - a. Click **Save and Run Page**.







- b. If prompted, enter your workspace credentials and click **Sign In**.



The screenshot shows the login interface for the GlobalMart Management Tool. At the top center is a purple square icon with a white bar chart. Below the icon is the text "GlobalMart Management Tool". There are two input fields: the first contains the username "apex_dev" and the second contains masked characters "....". Below the input fields is a checkbox labeled "Remember username" with a question mark icon to its right. At the bottom is a large blue button with the text "Sign In" in white. A mouse cursor is pointing at the "Sign In" button.

- c. The report is displayed. Notice that the **Create** button is now displayed next to the Customer Feedback button. Also, when you click any existing entry, it re-directs you to the **Customer Details** form.

	Customer Id	First Name	Last Name	Street Address	Postal Code	City	State Province	Country	Phone Number
	218	Bryan	Dvrrie	3386 Perrysville Ave	15214	Pittsburgh	PA	US	+1 412 123 4740
	219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton	PA	US	+1 717 123 4741
	220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US	+1 215 123 4743
	221	Carol	Bradford	522 Swede St	19401	Norristown	PA	US	+1 610 123 4744

☰ **GlobalMart Management Tool**

- 🏠 Home
- 📄 Customers
- 📄 Products
- 📄 Customers List View

Cust First Name
Carol

Cust Last Name
Jordan

Cust Email
CAROL.JORDAN@TURNSTONE.COM

Account Manager
Zlotkey, Eleni
[Bates, Elizabeth](#), [Russell, John](#), [Cambrault, Gerald](#)

Country
-Select Country-

Cancel

Oracle Internal & Oracle Academy Use Only

- d. Click **Cancel** and go back to the Customer report. Note that, if you click the **Create** button, it is empty. You do not get any data from the cache. You can create your new records here if you want to.

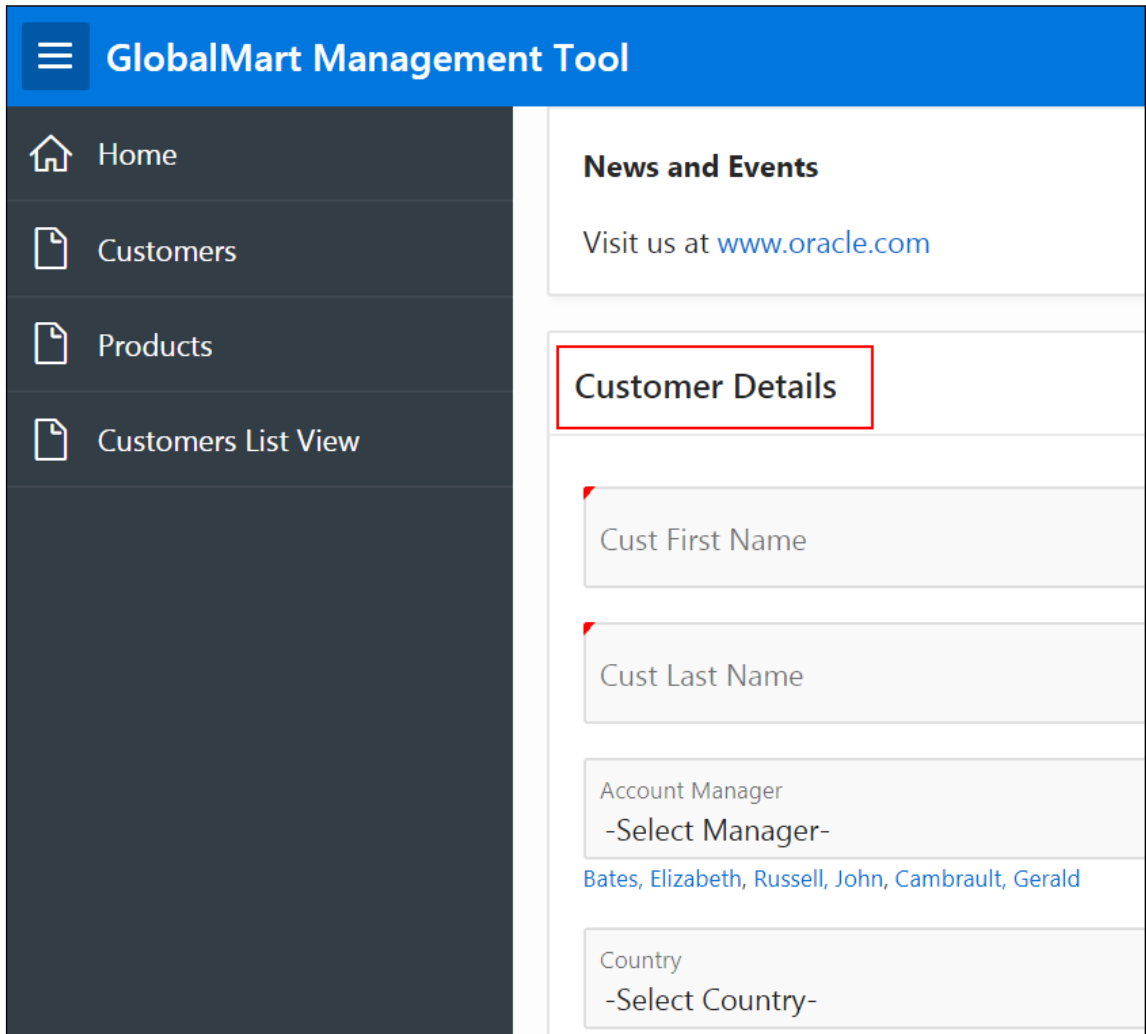
The screenshot shows the 'GlobalMart Management Tool' interface. On the left is a navigation menu with options: Home, Customers, Products, and Customers List View. The main area displays a customer form with the following fields:

- Cust First Name: Carol
- Cust Last Name: Jordan
- Cust Email: CAROL.JORDAN@TURNSTONE.COM
- Account Manager: Zlotkey, Eleni
- Additional Managers: Bates, Elizabeth, Russell, John, Cambrault, Gerald
- Country: -Select Country-

A red box highlights the 'Cancel' button at the bottom of the form.

Search: [] Go Actions [] Customer Feedback [] **Create**

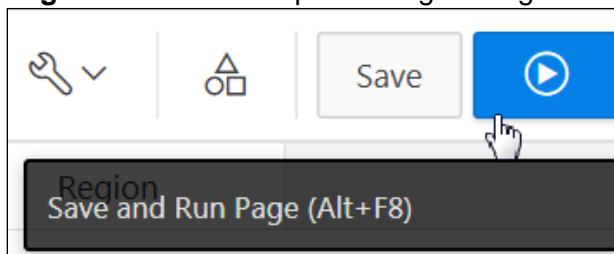
	Customer Id	First Name	Last Name	Street Address	Postal Code	City	State Province	Country	Phone Number
	218	Bryan	Dvrrie	3386 Perrysville Ave	15214	Pittsburgh	PA	US	+1 412 123 4740
	219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton	PA	US	+1 717 123 4741
	220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US	+1 215 123 4743







Click the **Application 111** link on the Runtime Developer toolbar.



4. Move your cursor over the Edit icon of an existing record and view session URL.
 - a. Click **Page 4: Customers**.
 - b. **Page 4: Customers** open in Page Designer view. Click **Save and Run Page**.



- c. Move your cursor over the **Edit** icon for any row in the report. Notice on the browser's status bar below that **CUSTOMER_ID** are being passed in the session URL.

	Customer Id	First Name	Last Name	Street Address
	218	Bryan	Dvrrie	3386 Perrysville Ave
	219	Ajay	Sen	220 Penn Ave # 300
	220	Carol	Jordan	135 S 18Th St # 1
	221	Carol	Bradford	522 Swede St

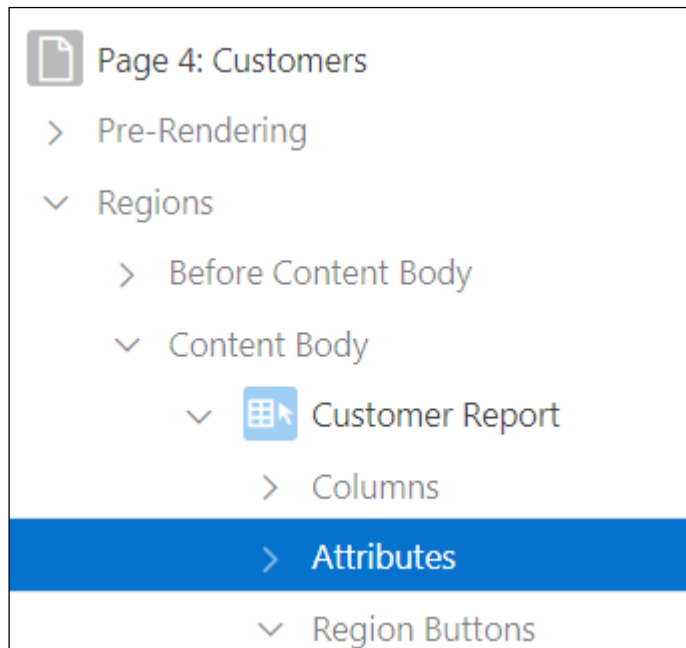
0.237.16.240:8080/apex/f?p=111:9:4999724149756::NO:RP9_CUSTOMER_ID:218::cs=3MRyWSWUKB-SM-9GUgZGvxKzX7xiTFmDK-2GhgcB7htiqrz8R1ow4ShxvT1VyDCGZdw

The values on the Customer Details page are based on the value stored in P9_CUSTOMER_ID. The reason the other values are not displayed in the URL is because they have not been submitted to the page.

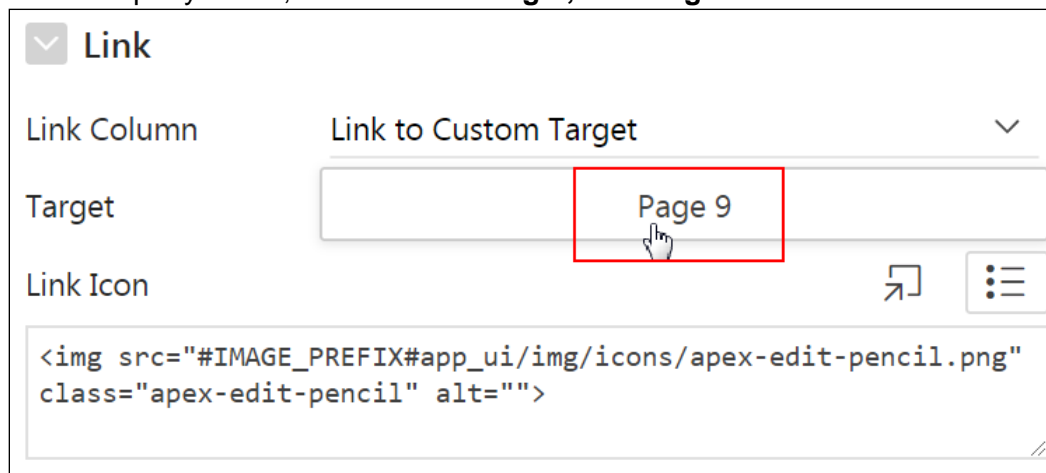
- d. Click **Edit Page 4** on the Runtime Developer toolbar.

Home Application 111 **Edit Page 4** Session View Debug Debug Page Info Quick Edit Theme Roller

5. Change the Link Column on the Customers Report to include the value for the P9_CUST_FIRST_NAME item.
- a. In the Rendering tab, expand **Regions > Content Body > Customer Report** and then select the **Attributes** node.



- b. In the Property Editor, under **Link > Target**, click **Page 9**.



- c. The **Link Builder – Target** dialog appears. Under Set Items, note that the name for the first item is `P9_CUSTOMER_ID` and the value is `#CUSTOMER_ID#`.

Link Builder - Target


Target

Type: Page in this application

Page: 9

Set Items

Name	Value
P9_CUSTOMER_ID	#CUSTOMER_ID#

- d. Add another item name/value. Under **Value**, click the  icon and select the following for Pick Set Items.
- Name: Select **P9_CUST_FIRST_NAME**
 - Value: Select **#CUST_FIRST_NAME#**
- e. Click **OK**.

Link Builder - Target

Target

Type Page in this application

Page 9

Set Items

Name	Value
P9_CUSTOMER_ID	#CUSTOMER_ID#
P9_CUST_FIRST_NAME	#CUST_FIRST_NAME#

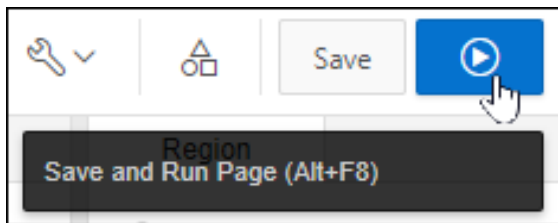
Clear Session State

Clear Cache

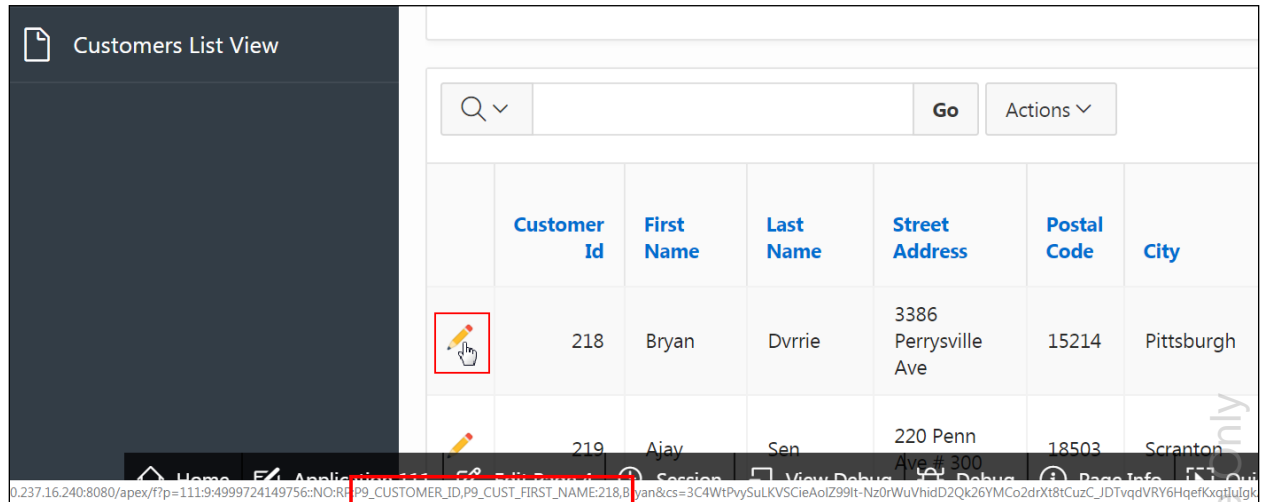
Reset Pagination Yes No

Cancel Clear **OK**

f. Click **Save and Run Page**.



- g. Now again move your cursor over the **Edit** icon for any row in the report. Notice on the browser's status bar that `CUSTOMER_ID` and `CUST_FIRST_NAME` are both being passed in the URL.



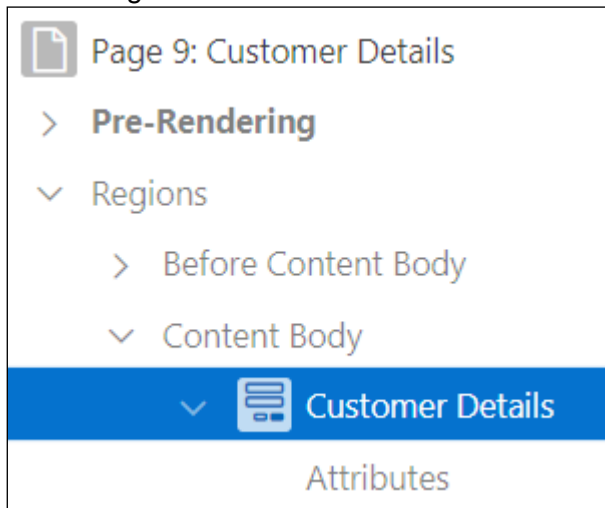
Click **Application 111** on the Runtime Developer toolbar.



6. On **Page 9: Customer Details**, change the title of the Customer Details region to use the following (located in `/home/oracle/labs/labs/lab_10_01.txt`).

`&P9_CUST_FIRST_NAME. &P9_CUST_LAST_NAME. Customer Details`

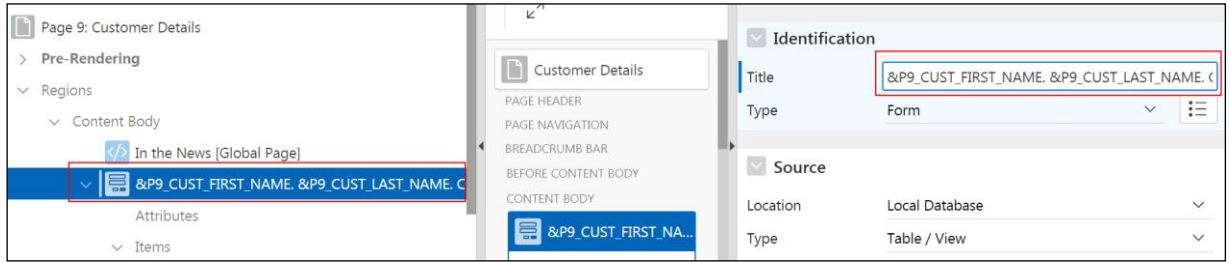
- a. Open **Page 9: Customer Details** in Page Designer view.
- b. In the Rendering tab, under **Regions > Content Body** select the **Customer Details** region.



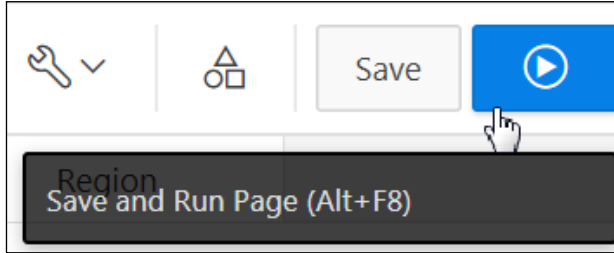
- c. In the Property Editor, change **Identification > Title** from `Customer Details` to the following (located in `/home/oracle/labs/labs/lab_10_01.txt`).

`&P9_CUST_FIRST_NAME. &P9_CUST_LAST_NAME. Customer Details`

Note: In the preceding text, the period (.) at the end of the item name is required.

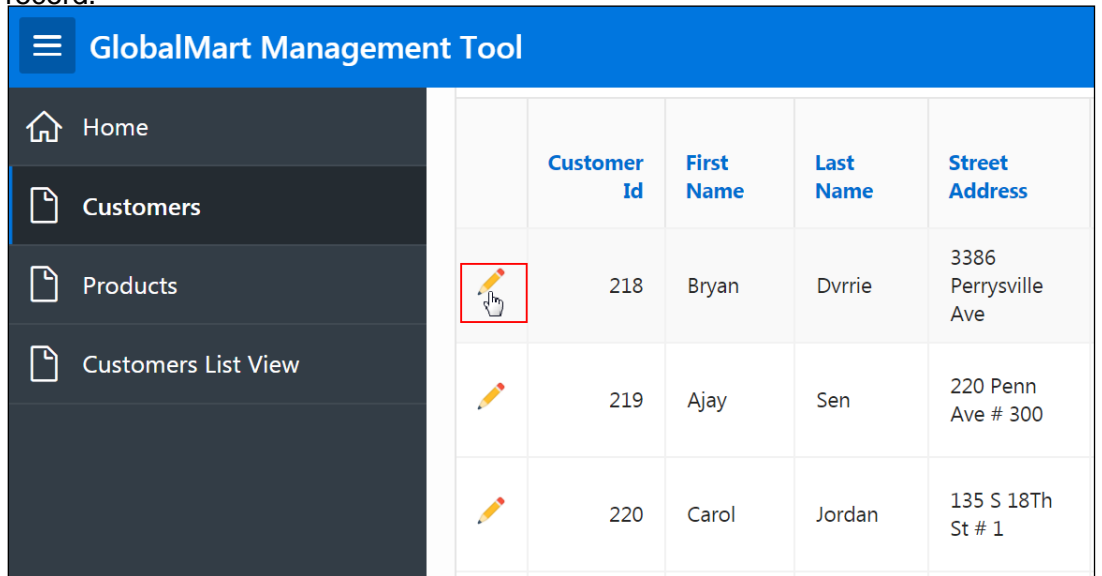





i. Click **Save and Run Page**.

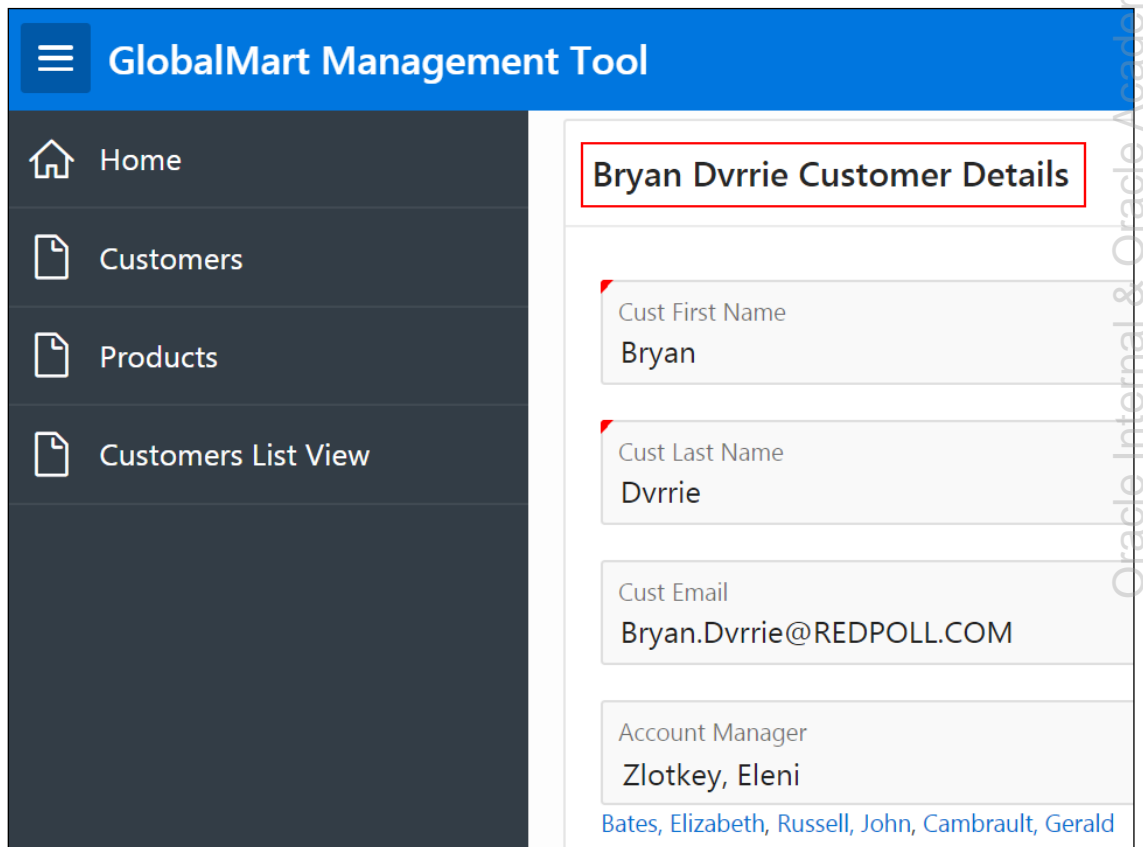


ii. The Customer Details form opens. Click **Cancel** to go to the Customers report page.

- iii. Click the Edit option to open any existing record. What do you observe? Notice that the Customer Name is included in the title for the displayed record.



	Customer Id	First Name	Last Name	Street Address
	218	Bryan	Dvrrie	3386 Perrysville Ave
	219	Ajay	Sen	220 Penn Ave # 300
	220	Carol	Jordan	135 S 18Th St # 1



Bryan Dvrrie Customer Details

Cust First Name
Bryan

Cust Last Name
Dvrrie

Cust Email
Bryan.Dvrrie@REDPOLL.COM

Account Manager
Zlotkey, Eleni

[Bates, Elizabeth, Russell, John, Cambrault, Gerald](#)

- d. Return to the App Builder home page. Click Home on the Runtime Developer toolbar.



**Practices for Lesson 11:
Including Page Processing**

Practices for Lesson 11: Overview

Overview

In this practice, you examine how computations, processes, and validations work.

Practice 11-1: Creating and Manipulating Computations, Processes, and Validations

Overview

In this practice, you create the following computations, processes, and validations on multiple pages in the GlobalMart Management Tool application:

- Create a Page Processing computation that changes an email address to uppercase.
- Create a Page Rendering computation to populate a new item on a page.
- Create an On Submit process to populate an Audit table to track changes to order items.
- Examine the built-in Value Required validation for page items.
- Create a validation to verify that a value is greater than zero.
- Create an item string comparison validation to ensure that there are no spaces in a Cust Email field.

Note: If you do not intend to create the table `OEHR_ORDER_ITEMS_AUDIT` that is part of this practice, then you must run the script `create_table_oehr_order_items_audit.txt` located in `/home/oracle/labs/labs/ create_table_oehr_order_items_audit.txt`

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Page processing computation. Create a page processing computation that changes the email address on the Customer Details page to uppercase after the page is submitted.
2. Page Rendering computation. Create a Page Rendering computation that populates a new item on the Order Details page with the List Price from the `OEHR_PRODUCT_INFORMATION` table.
3. On Submit process. Create an audit table, which tracks changes to order items. To accomplish this, you create a new table by copying the `OEHR_ORDERS_ITEMS` table and adding two new columns, Updated and Updated By. You populate the new Audit table by creating an On Submit process.
4. Examine the **Value Required** validation that exists on some items. Certain items on the Customer Details page are marked as required. This behavior is controlled by the Page Item validation, **Value Required**. Examine the **Value Required** validation that exists on some items on the Customer Details page.
5. Create a validation to verify that a value is greater than zero. On the Order Items page, create a validation on the Quantity field to ensure that it has a value that is greater than zero.

6. Create an item string comparison validation to ensure that there are no spaces in the **Cust Email** field. Create an item string comparison validation to ensure that there are no spaces in the **Cust Email** field on the Customer Details page.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_admin** user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the **apex_dev** user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 11-1**.

If you haven't completed **Practice 10-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the **apex_dev** user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_10_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

Solution 11-1: Creating and Manipulating Computations, Processes, and Validations

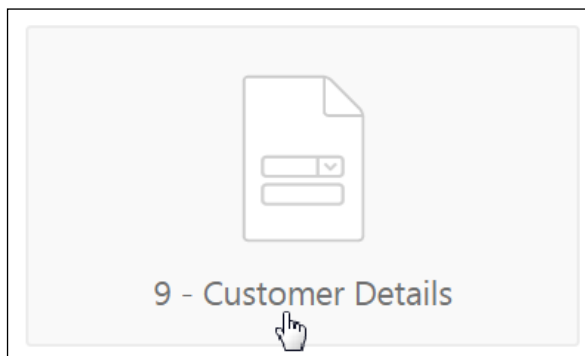
Overview

In this practice solution, steps are provided for creating and manipulating computations, processes, and validations.

Note: If you do not intend to create the table `OEHR_ORDER_ITEMS_AUDIT` that is part of this practice, then you must run the script `create_table_oehr_order_items_audit.txt` located in `/home/oracle/labs/labs/` `create_table_oehr_order_items_audit.txt`

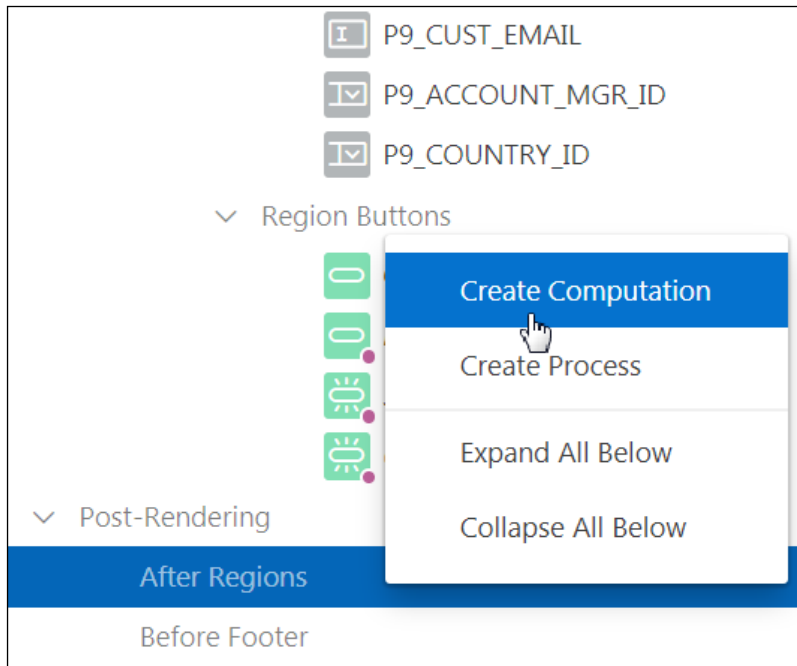
Steps

1. Create a page processing computation that changes the email address on the Customer Details page to uppercase after the page is submitted.
 - a. On the GMT Application home page, select page **9 - Customer Details** page.

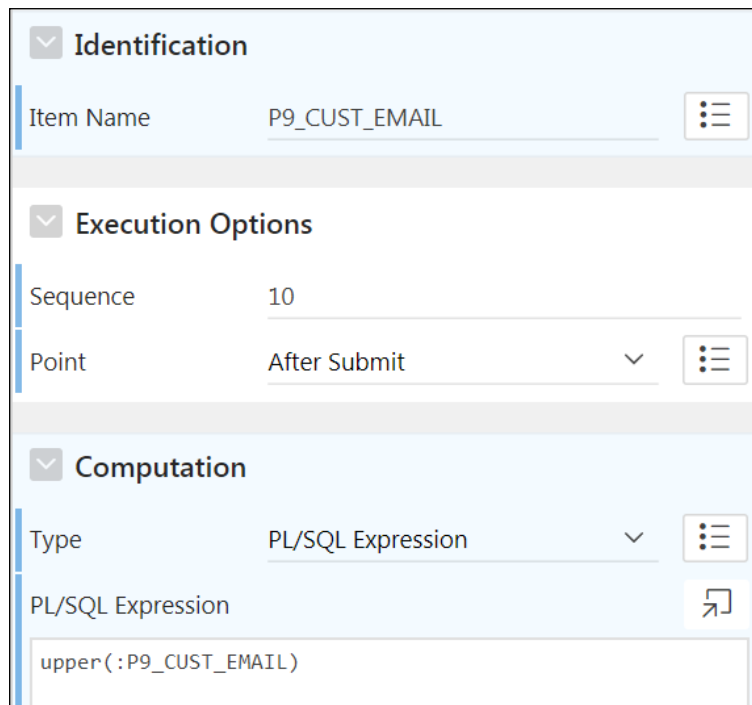


- b. **Page 9 – Customer Details** opens in Page Designer view. In the left pane of Page Designer, click the Rendering tab.

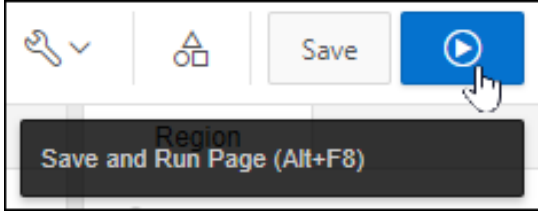
- c. On the Page Rendering tab, scroll down and expand **Post Rendering**. Right-click **After Regions** and select **Create Computation**.



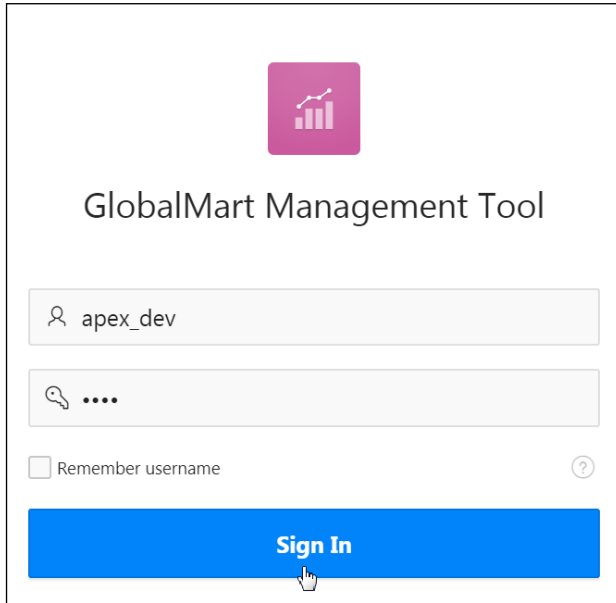
- d. Ensure that the new computation is selected. In the Property Editor, edit the following:
- **Identification > Item Name:** Enter `P9_CUST_EMAIL`.
 - **Execution Options > Point:** Select **After Submit**.
 - **Computation > Type:** Select **PL/SQL Expression**.
 - **Computation > PL/SQL Expression:** Enter `upper (:P9_CUST_EMAIL)`.



e. Click **Save** and then **Save and Run Page**.



- f. If prompted, enter your workspace user credentials and click **Sign In**.



GlobalMart Management Tool

apex_dev

.....

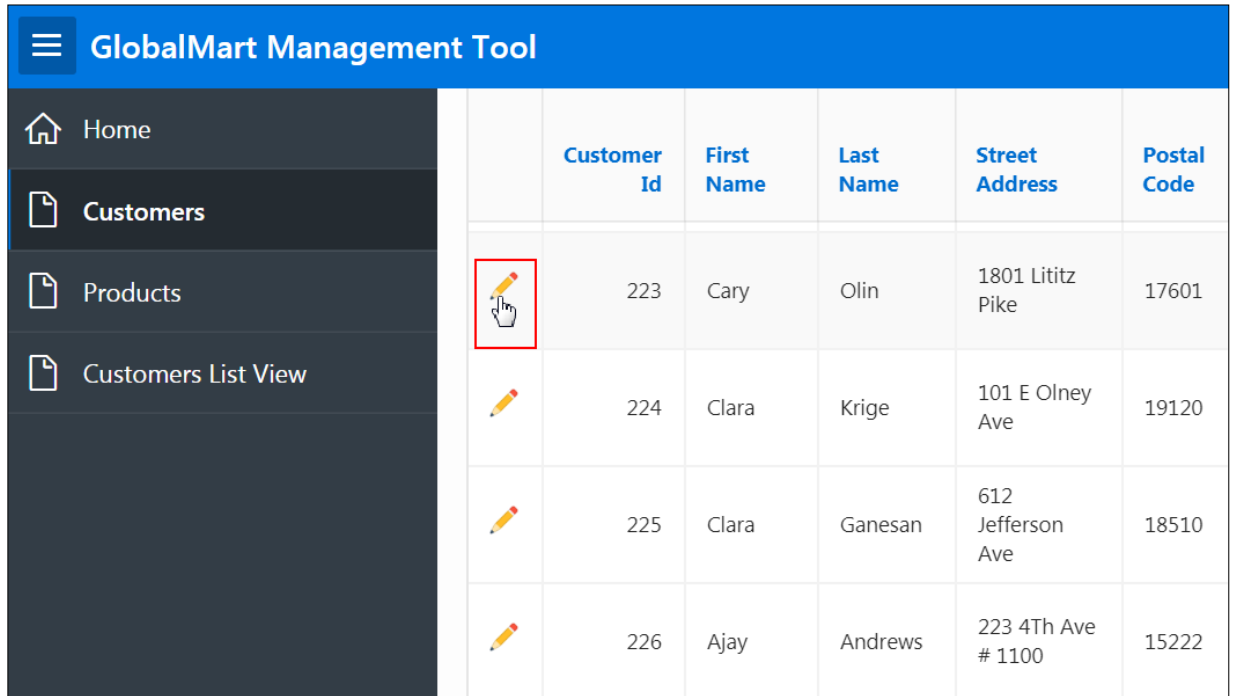
Remember username ?





Sign In

g. Click **Cancel** to return to the Customers report.

The screenshot displays the 'GlobalMart Management Tool' interface. On the left is a dark sidebar with a hamburger menu icon and four navigation items: 'Home', 'Customers', 'Products', and 'Customers List View'. The main content area features a white background with several form fields: 'Cust First Name', 'Cust Last Name', 'Cust Email', 'Account Manager' (with a dropdown menu showing '-Select Manager-' and a list of names including 'Bates, Elizabeth, Russell, John, Cambrault, Gerald'), and 'Country' (with a dropdown menu showing '-Select Country-'). At the bottom of the form, a 'Cancel' button is highlighted with a red rectangular border, and a mouse cursor is positioned over it.

- h. On the Customers page, click the **Edit** icon in a row.



	Customer Id	First Name	Last Name	Street Address	Postal Code
	223	Cary	Olin	1801 Lititz Pike	17601
	224	Clara	Krige	101 E Olney Ave	19120
	225	Clara	Ganesan	612 Jefferson Ave	18510
	226	Ajay	Andrews	223 4Th Ave # 1100	15222

- i. Notice that the email is currently in mixed case format. Click **Apply Changes** to invoke the computation.



Cary Olin Customer Details

Cust First Name
Cary

Cust Last Name
Olin

Cust Email
Cary.Olin@WATERTHRUSH.COM

Account Manager
Zlotkey, Eleni
Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country
-Select Country-

Cancel Delete **Apply Changes**

- j. On the Customer Report, scroll to the right and look at the **Cust Email** column. Notice that the email for the edited record (highlighted in red) now appears in uppercase.

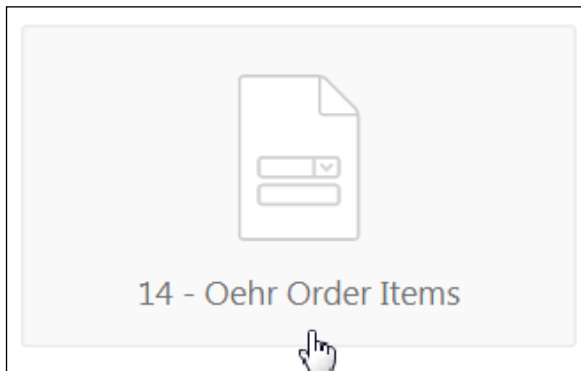
Phone Number	Nls Language	Nls Territory	Credit Limit	Cust Email	Account Manager
+1 717 123 4746	us	AMERICA	2300	CARY.OLIN@WATERTHRUSH.COM	149

- k. Click Application 111 on the Runtime Developer toolbar at the bottom of the window.

	164	Charlotte	Kazan	2122 Campbell Rd	54601	La Crosse	WI	US	+1 608 123 4321
	165	Charlotte	Fonda	3324 N Oakland Ave	53211	Milwaukee	WI	US	+1 414 123 4321
				666 22Nd		Minneapolis	MN	US	+1 612 123 4321

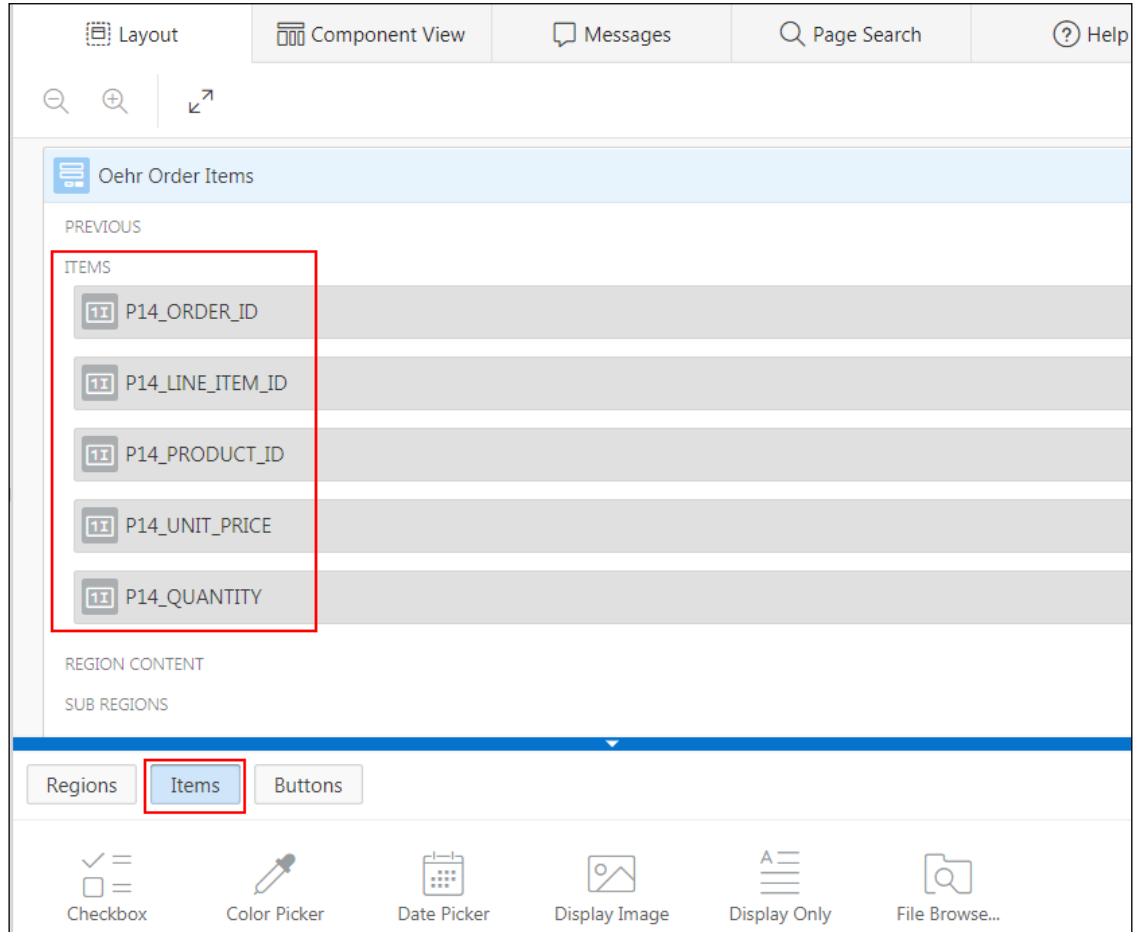
Home Application 111 Edit Page 4 Session View Debug Debug Page Info Quick Edit

2. Create a Page Rendering computation that populates a new item on the Order Details page with the List Price from the OEHR_PRODUCT_INFORMATION table.
- a. On the GMT Application home page, select page **14 – Oehr Order Items**.

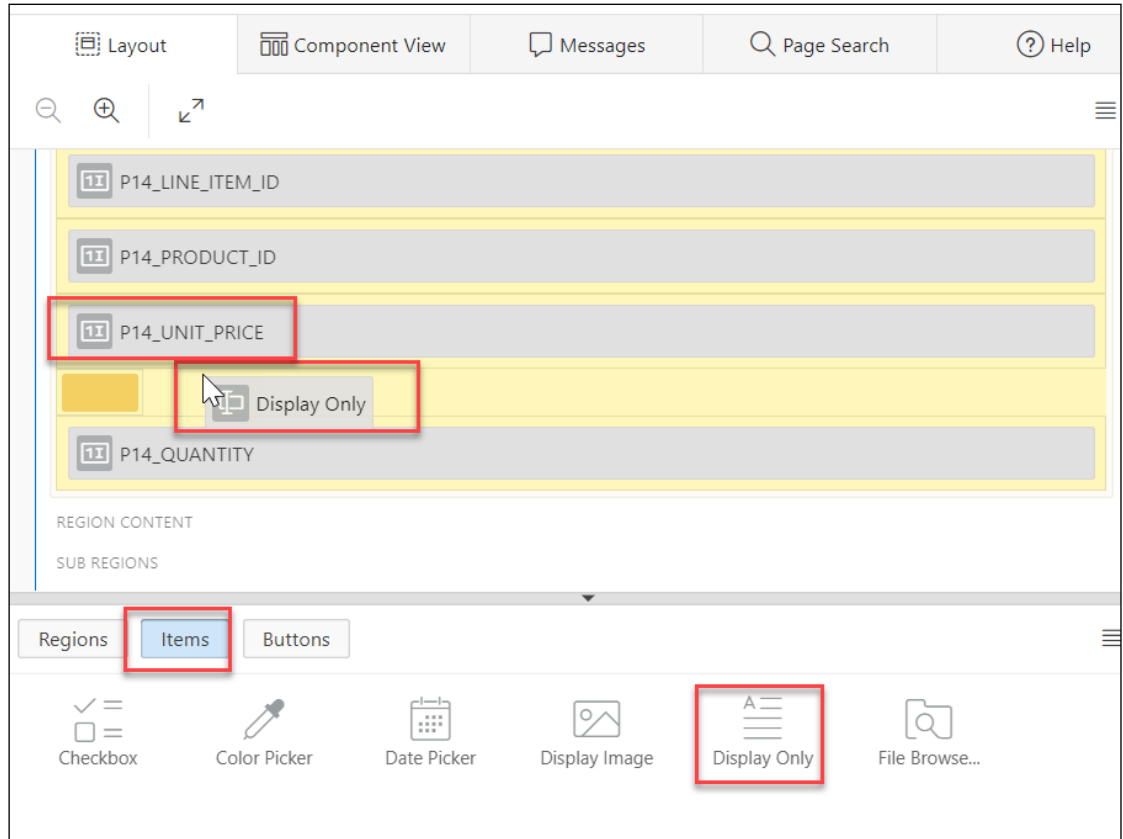


- b. Create a Display Only item:
- i. On the Layout tab, find the **Oehr Order Items** region.

ii. From the Gallery at the bottom of the central pane, select the **Items** tab.



iii. Select **Display Only** and drag it after the P14_UNIT_PRICE.



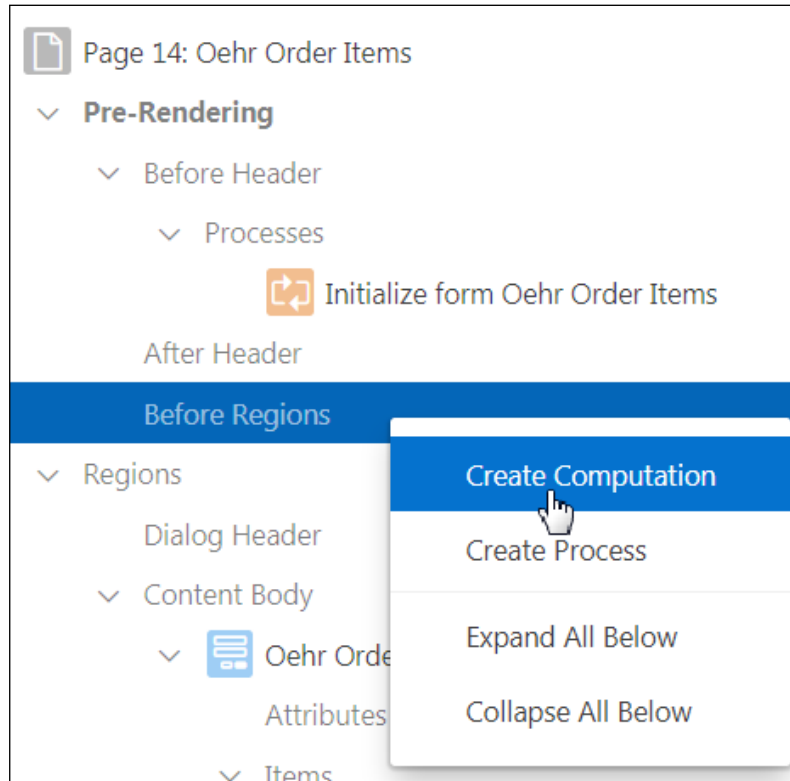
iv. Select **P14_NEW** and enter the following values:

- **Identification > Title:** Enter P14_LIST_PRICE and press Enter.
- **Source > Type:** Select **Null** (if not selected by default).

The screenshot shows the configuration dialog for the P14_NEW component. The 'Identification' section is expanded, and the 'Name' field is set to 'P14_LIST_PRICE'. The 'Type' is set to 'Display Only'. The 'Source' section is also expanded, and the 'Type' is set to 'Null'. Other fields include 'Form Region' (set to '- Select -'), 'Used' (set to 'Only when current value in session state is nul'), and 'Maintain Session State' (set to 'Per Session (Disk)').

c. Create a Pre-Rendering Computation:

- i. On the Rendering tab, expand **Pre-Rendering**.
- ii. Right-click **Before Regions** and select **Create Computation**.



d. In the Property Editor, edit the following:

- i. **Identification > Item Name:** Select `P14_LIST_PRICE`.
- ii. **Computation > Type:** Select **SQL Query** (return single value), if not selected by default.
- iii. **Source > SQL Query:** Copy and paste the following code located in `/home/oracle/labs/labs/lab_11_01_01.txt`.

```
select list_price
from oehr_product_information
where product_id = :P14_PRODUCT_ID
```


Identification

Item Name P14_LIST_PRICE ⋮

Execution Options

Sequence 10

Point Before Regions ⋮

Computation

Type SQL Query (return single value) ⋮

SQL Query ↗

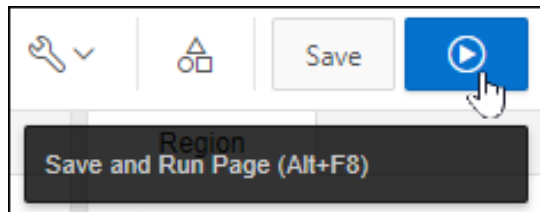
```

select list_price
from oehr_product_information
where product_id = :P14_PRODUCT_ID
                
```

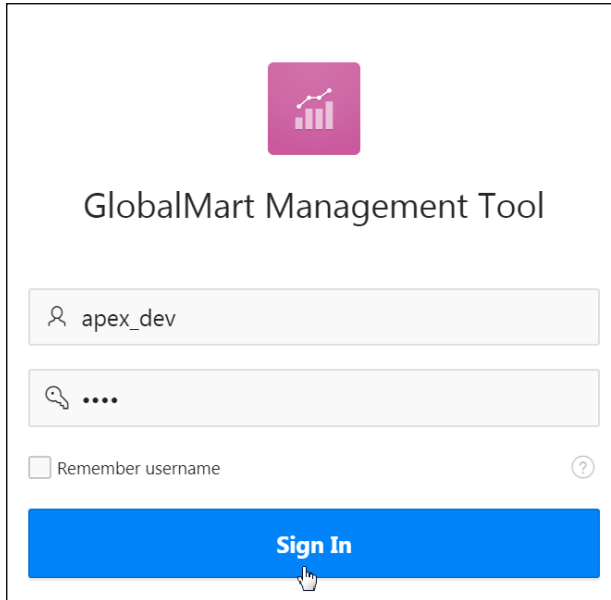
- e. Click **Save**.
- f. Review your changes. Because page **14 – Order Items** is a modal dialog, you cannot run it directly from Page Designer.
 - i. In the Page Selector, in the Page Designer toolbar, enter 12 and click **Go**.



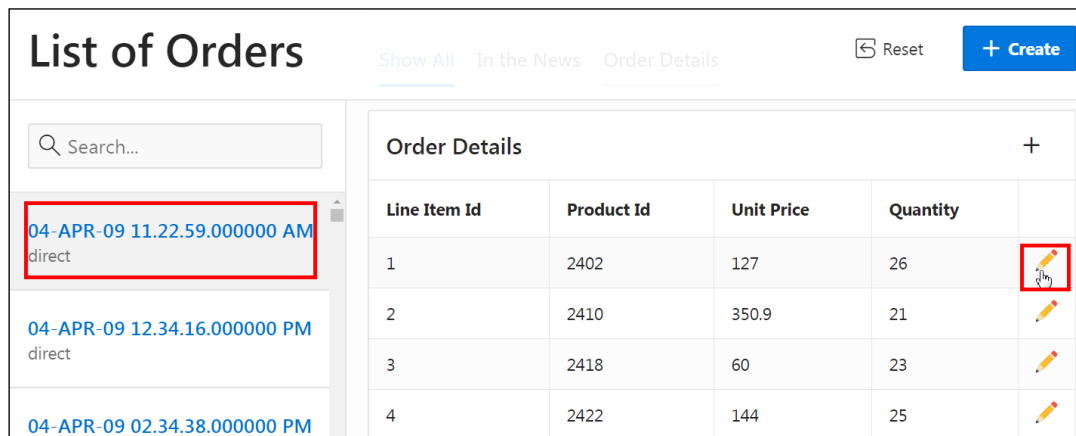
- ii. When page **12: List of Order** appears, click **Save and Run Page**.







- iii. If prompted, enter your workspace user credentials and click **Sign In**.



- iv. On the page 12 - **List of Orders**, select an order in the left, Master Record region.
- v. Scroll down in the right pane. Under **Order Details**, select Line Item by clicking the Edit icon.

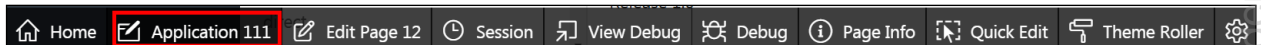


Line Item Id	Product Id	Unit Price	Quantity	
1	2402	127	26	
2	2410	350.9	21	
3	2418	60	23	
4	2422	144	25	

The Order Items dialog box appears. Notice that **List Price** now appears after the **Unit Price**.

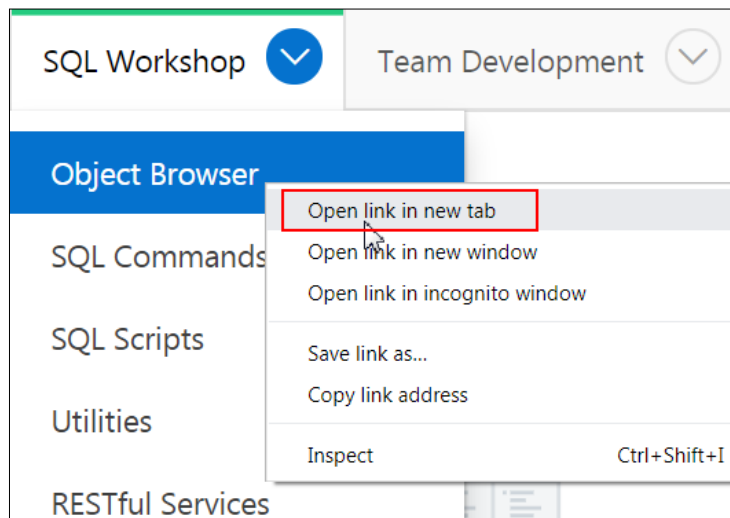
Oehr Order Items	
Line Item Id	1
Product Id	2402
Unit Price	127
List Price	127
Quantity	26

- vi. Click **Cancel** to exit the Order items dialog box.
- g. Click **Application 111** on the Runtime Developer toolbar to return to the Application home page.

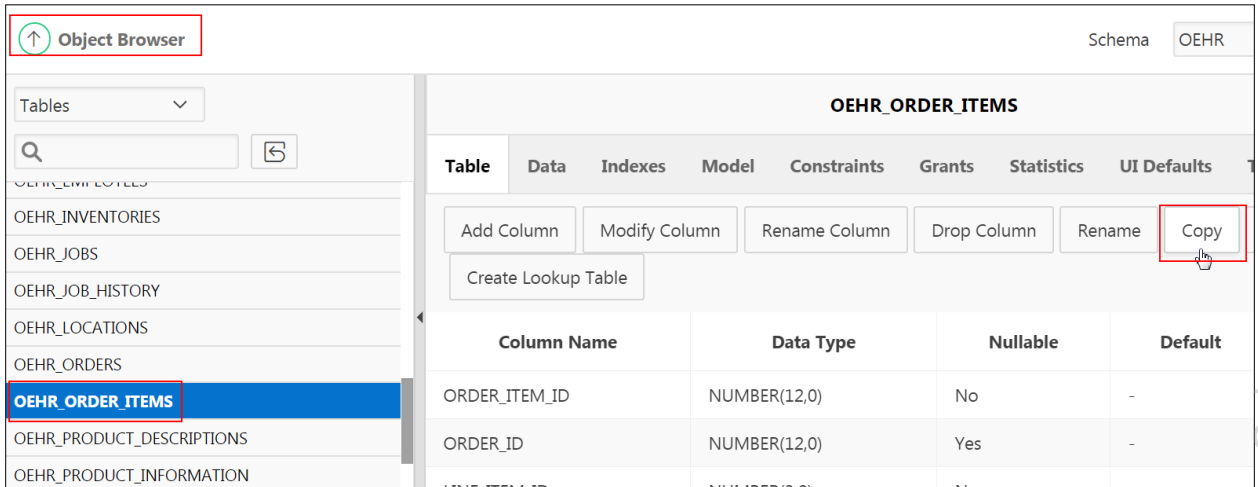


- 3. Create an audit table, which tracks changes to order items. To accomplish this, you create a new table by copying the `OEHR_ORDERS_ITEMS` table and adding two new columns, `UPDATED` and `UPDATED BY`. You populate the new Audit table by creating an On Submit process.

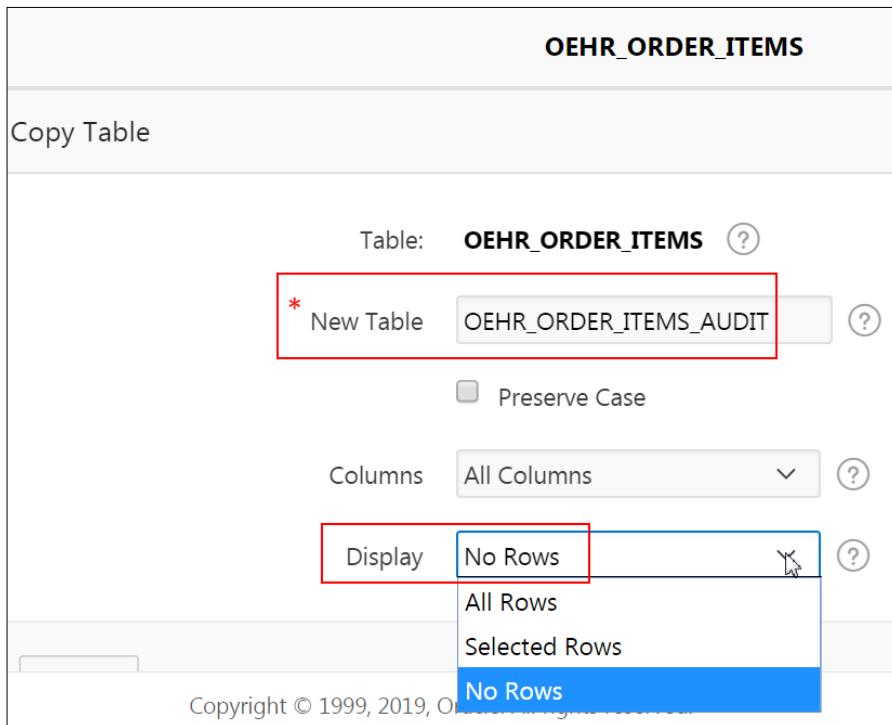
- a. Open **Object Browser** on a new browser tab.
 - i. On the Application home page, find the **SQL Workshop** menu at the top of the page.
 - ii. Click the down arrow next to **SQL Workshop**.
 - iii. Right-click Object Browser and select **Open Link in New Tab**.



- iv. Click the new browser tab, named Object Browser.
- b. Create a copy of the OEHR_ORDER_ITEMS table. In the Object Selection pane, select the OEHR_ORDER_ITEMS table and then click the **Copy** tab in the Details pane.

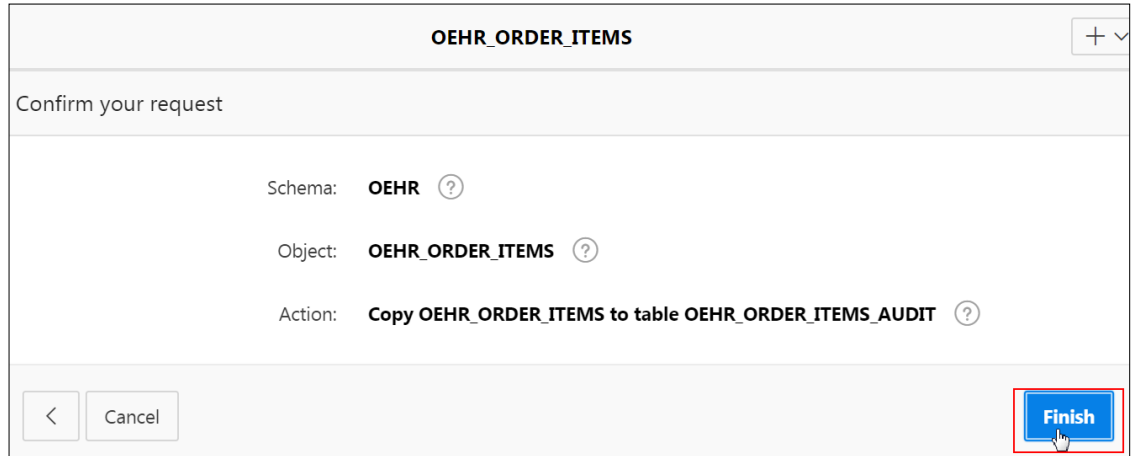


- c. In the Copy Table Wizard:
 - i. **New Table:** Enter OEHR_ORDER_ITEMS_AUDIT.
 - ii. **Display:** Select **No Rows**.
This option ensures that the wizard only creates the structure but does not copy any columns.

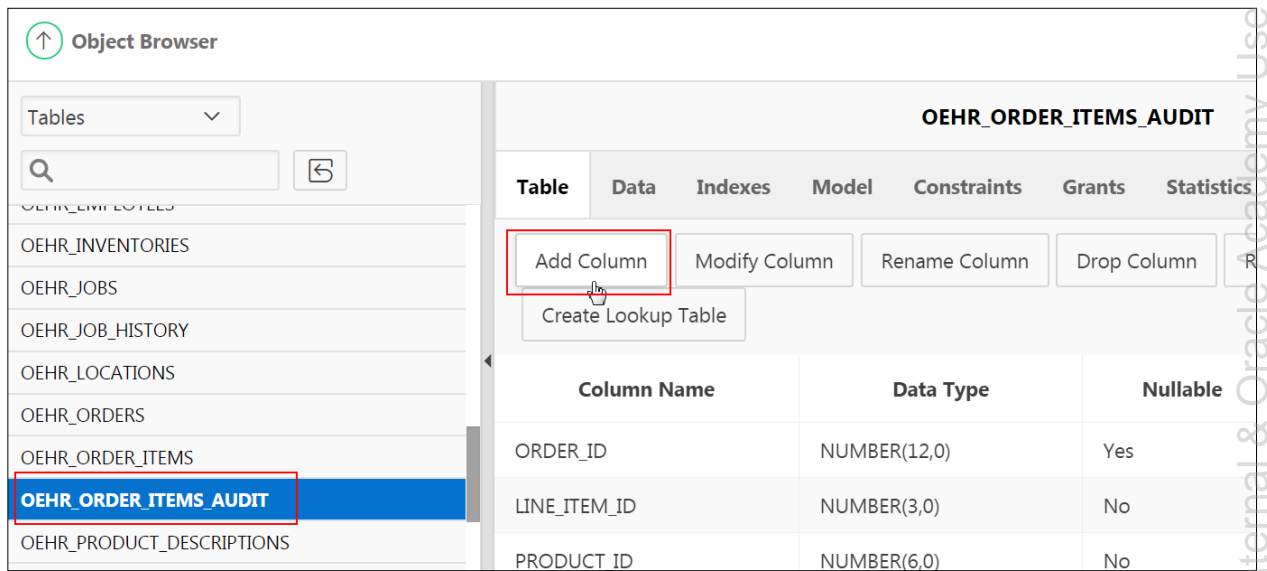


- iii. Click **Next**.

iv. Click **Finish**.



d. Add a column named updated. In the Object Selection pane, select the `OEHR_ORDERS_ITEMS_AUDIT` table and click the **Add Column** tab in the Details pane.



e. In the Add Column Wizard:

i. Add Column: Enter `UPDATED`.

- ii. Type: Select **TIMESTAMP WITH LOCAL TIMEZONE**.

OEHR_ORDER_ITEMS_AUDIT

Add Column

Schema: **OEHR** ?

Table: **OEHR_ORDER_ITEMS_AUDIT** ?

* Add Column **UPDATED** ?

Preserve Case

Type **TIMESTAMP WITH LOCAL TIME ZONE** ?

Length ?

- iii. Click **Next**.

- iv. Click **Finish**.

OEHR_ORDER_ITEMS_AUDIT

Confirm your request

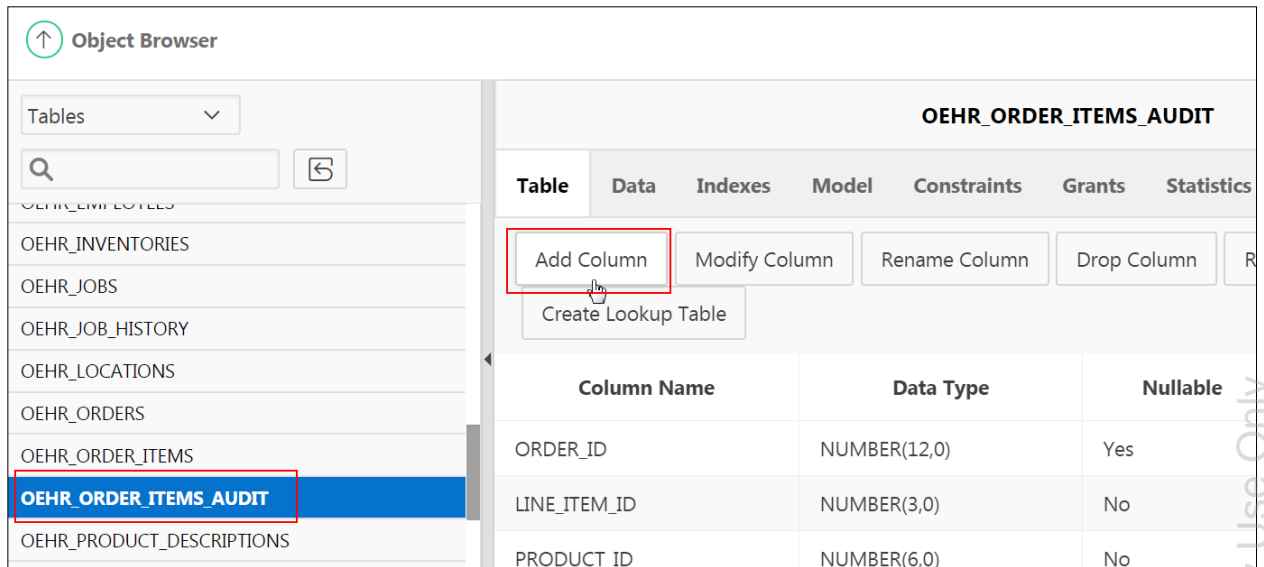
Schema: **OEHR** ?

Object: **OEHR_ORDER_ITEMS_AUDIT** ?

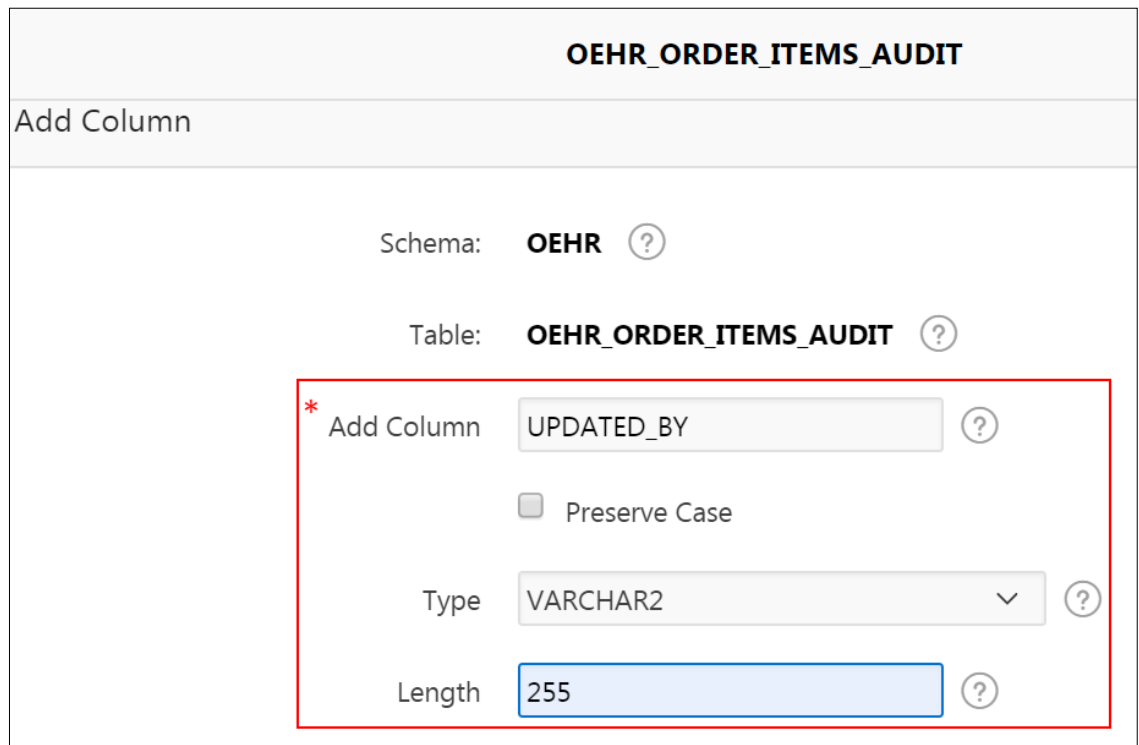
Action: **Add Column UPDATED** ?

< Cancel **Finish**

- f. Add a column named `UPDATED_BY`. In the Object Selection pane, ensure `OEHR_ORDERS_ITEMS_AUDIT` is still selected and click the **Add Column** tab in the Details pane.



- g. In the Add Column Wizard:
- **Add Column:** Enter `UPDATED_BY`.
 - **Type:** Select **VARCHAR2**.
 - **Length:** Enter 255.



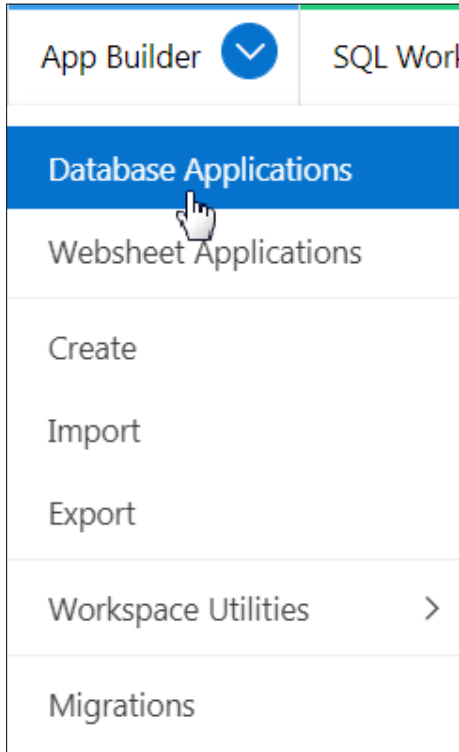
- Click **Next**.
- Click **Finish**.


OEHR_ORDERS_ITEMS_AUDIT now contains two new columns: UPDATED and UPDATED_BY.

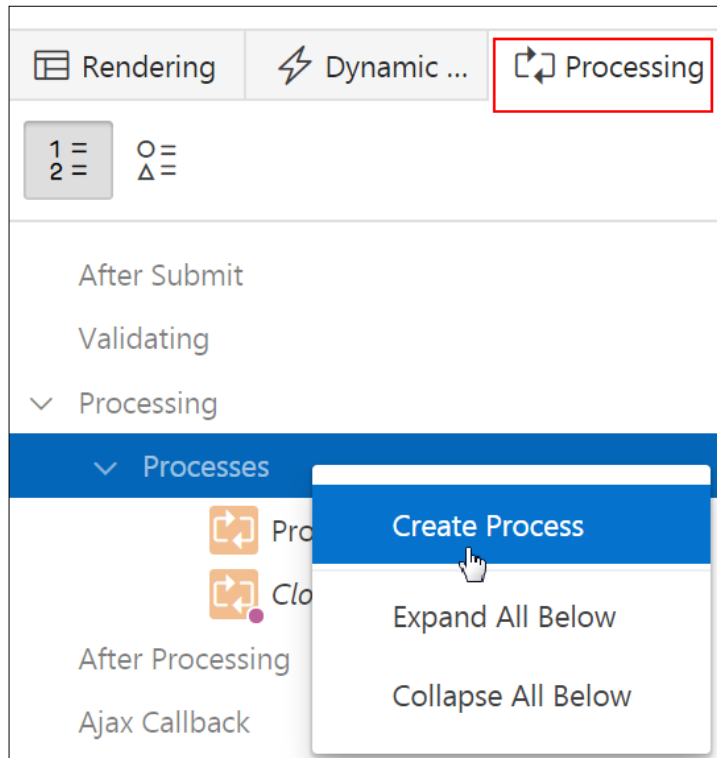
OEHR_ORDER_ITEMS_AUDIT								
Table	Data	Indexes	Model	Constraints	Grants	Statistics	UI Defaults	Triggers
<input type="button" value="Add Column"/> <input type="button" value="Modify Column"/> <input type="button" value="Rename Column"/> <input type="button" value="Drop Column"/> <input type="button" value="Rename"/> <input type="button" value="Copy"/> <input type="button" value="Drop"/>								
Column Name	Data Type							
ORDER_ID	NUMBER(12,0)							
LINE_ITEM_ID	NUMBER(3,0)							
PRODUCT_ID	NUMBER(6,0)							
UNIT_PRICE	NUMBER(8,2)							
QUANTITY	NUMBER(8,0)							
ORDER_ITEM_ID	NUMBER(12,0)							
UPDATED	TIMESTAMP(6) WITH LOCAL TIME ZONE							
UPDATED_BY	VARCHAR2(255)							
Download Print								

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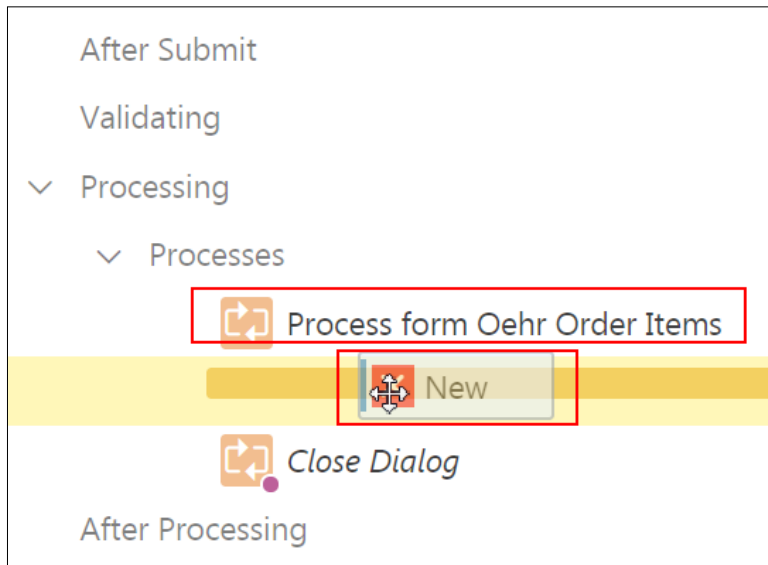
- h. Select **Database Application**; click the GMT application to return to your application.



- i. Click page **14 – Oehr Order Items** to open it in Page Designer.
- j. Create a new process to insert columns into the `OEHR_ORDERS_ITEMS_AUDIT` table:
- In the left pane, click the **Processing** tab .
 - Expand Processing, right-click **Processes**, and select **Create Process**.



- iii. Select the New process and drag it after **Process form OEHR ORDER ITEMS**.



- k. On the Rendering tab, ensure that the **New** process is selected. In the Property Editor, edit the following:
 - i. **Identification > Name:** Enter `Save Audit` and press Enter.
 - ii. **Source > PL/SQL Code:** Click the **Code Editor: PL/SQL Code** icon.

- iii. In the Code Editor, copy and paste the following PL/SQL code (located in /home/oracle/labs/labs/lab_11_01_02.txt) and click **OK**:

```
insert into OEHR_ORDER_ITEMS_AUDIT
(
  order_id
  , order_item_id
  , line_item_id
  , product_id
  , unit_price
  , quantity
  , updated
  , updated_by
)
values
(
  :P14_ORDER_ID
  , :P14_ORDER_ITEM_ID
  , :P14_LINE_ITEM_ID
  , :P14_PRODUCT_ID
  , :P14_UNIT_PRICE
  , :P14_QUANTITY
  , SYSDATE
  , :APP_USER
);
```

Identification

Name: Save Audit

Type: PL/SQL Code

Editable Region: - Select -

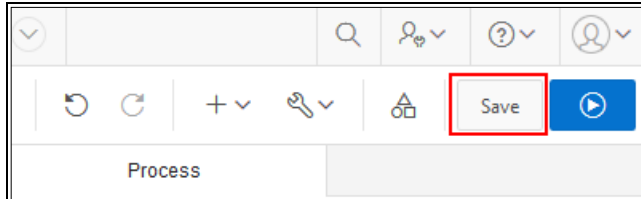
Source

Location: Local Database

PL/SQL Code

```
insert into OEHR_ORDER_ITEMS_AUDIT
(
  order_id
  , order_item_id
  , line_item_id
  , product_id
  , unit_price
  , quantity
  , updated
  , updated_by
)
values
```

- I. Click **Save**.

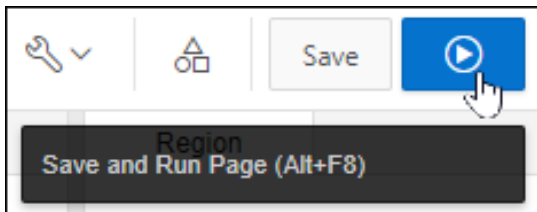


3. Test your changes. Because **Page 15 – Oehr Order Items** is a modal dialog, you cannot run it directly from Page Designer. Navigate to and then run page 12.

- a. In the Page Selector, in the Page Designer toolbar, enter 12 and click **Go**.



- b. When **Page 12: List of Order** appears, click **Save and Run Page**.



- c. If prompted, enter your workspace user credentials and click **Sign In**.

On the **List of Orders** page, select an order in the left, Master Record region.

- d. Scroll down in the right pane. Under **Order Details**, select Line Item by clicking the Edit icon.

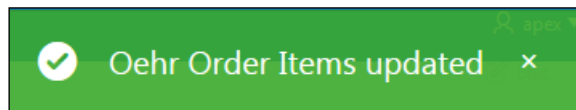
A screenshot of the 'List of Orders' page. The page has a search bar and a list of orders on the left. The right pane shows the 'Order Details' table. The edit icon (a pencil) for the first line item is highlighted with a red box.

Line Item Id	Product Id	Unit Price	Quantity	
1	2402	200	70	
2	2410	350.9	21	
3	2418	60	23	
4	2422	144	25	
5	2430	173	28	

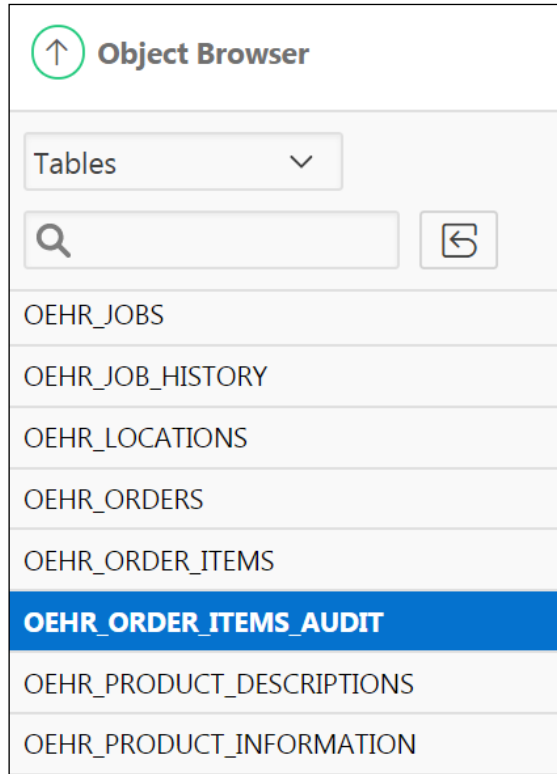
- e. Edit the price and quantity for an order in the Order Items dialog box (for Product ID 2402):
- Unit Price: Change to 300.
 - Quantity: Change to 50.
 - Click **Apply Changes**.

The screenshot shows a dialog box titled "Oehr Order Items" with a close button (X) in the top right corner. The dialog contains several input fields: "Line Item Id" with the value 1, "Product Id" with the value 2402, "Unit Price" with the value 300, "List Price" with the value 127, and "Quantity" with the value 50. The "Unit Price" and "Quantity" fields are highlighted with red boxes. At the bottom of the dialog, there are three buttons: "Cancel", "Delete", and "Apply Changes". The "Apply Changes" button is highlighted with a red box and a mouse cursor is pointing at it.

The message "Oehr Order items updated" appears.



- f. View the `OEHR_ORDERS_ITEMS_AUDIT` table in Object Browser and see if the new table records the change.
 - i. Navigate to **Object Browser**.
 - ii. In the Object Selection pane, select the **OEHR_ORDERS_ITEMS_AUDIT** table.



- iii. In the **Details** pane, click the **Data** tab.

The screenshot shows the 'Details' pane for the `OEHR_ORDER_ITEMS_AUDIT` table. The 'Data' tab is selected, and the table contains one row of data. The columns are: ORDER_ID, LINE_ITEM_ID, PRODUCT_ID, UNIT_PRICE, QUANTITY, ORDER_ITEM_ID, UPDATED, and UPDATED_BY. The values in the row are: 2442, 1, 2402, 300, 50, 1089, 08-MAY-19 05.15.27.000000 PM, and APEX_DEV. The columns UNIT_PRICE, QUANTITY, UPDATED, and UPDATED_BY are highlighted with a red box.

ORDER_ID	LINE_ITEM_ID	PRODUCT_ID	UNIT_PRICE	QUANTITY	ORDER_ITEM_ID	UPDATED	UPDATED_BY
2442	1	2402	300	50	1089	08-MAY-19 05.15.27.000000 PM	APEX_DEV

Notice that the changes you just made in the Order Details dialog box appear. Also, notice the **Updated** and **Updated By** columns are populated.

- g. Exit Object Browser and return to your running application.
- h. Click **Application 111** on the Runtime Developer toolbar to return to the Application home page.



- 4. Certain items on the Customer Details page are marked as required. You can enable or disable this behavior by configuring the Page Item validation, **Value Required**. Examine the Value Required validation that exists on some items on the **9 - Customer Details** page.
 - a. Open page **4 - Customers** in Page Designer view.
 - b. Click **Save and Run Page**.
 - c. On the Customers interactive report, click the **Edit** icon to view the Customer Details page.

	Customer Id	First Name	Last Name	Street Address	Postal Code	City	State Province	Country
	218	Bryan	Dvrrie	3386 Perrysville Ave	15214	Pittsburgh	PA	US
	219	Ajay	Sen	220 Penn Ave # 300	18503	Scranton	PA	US
	220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US

- d. Notice that **Cust First Name** and **Cust Last Name** fields are marked with a red triangle in the upper-left corner. This red triangle means that the items must have a value.

Bryan Dvrrie Customer Details

▲ Cust First Name
 Bryan

▲ Cust Last Name
 Dvrrie

Cust Email
 BRYAN.DVRRIE@REDPOLL.COM

Account Manager
 Bates, Elizabeth
Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country
 -Select Country-

- e. Delete the value in the **Cust First Name** field and click **Apply Changes**.
- f. An error message appears stating that you must fill out the field. You can enable or disable this validation by editing the attributes for the item.

▲ Cust First Name
Please fill out this field.

▲ Cust Last Name
 Dvrrie

Cust Email
 BRYAN.DVRRIE@REDPOLL.COM

Account Manager
 Bates, Elizabeth
Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country
 -Select Country-

Cancel
Delete
Apply Changes

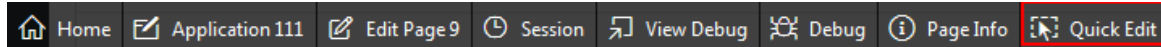
✕

Correct errors before saving.

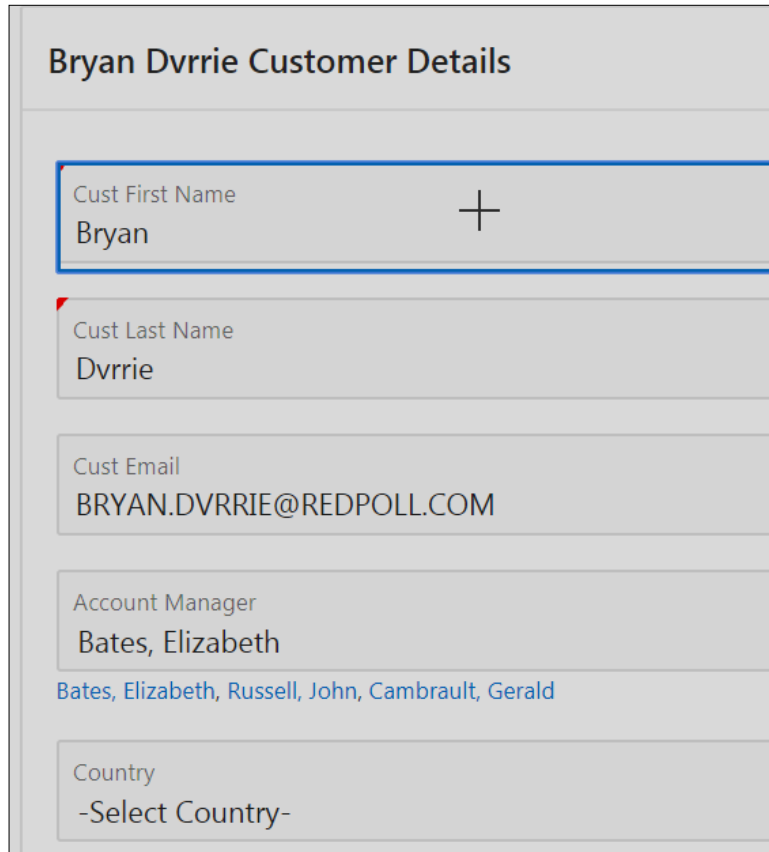
OK

- g. Click **OK** to exit the error message.
- h. Review the attributes that define the Cust Last Name and control this validation.

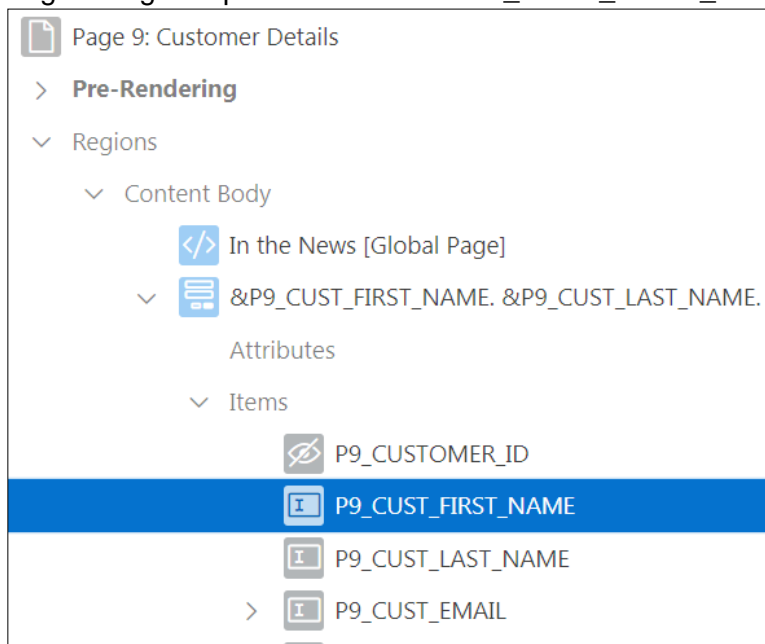
- i. Click the **Quick Edit** link on the Runtime Developer toolbar.



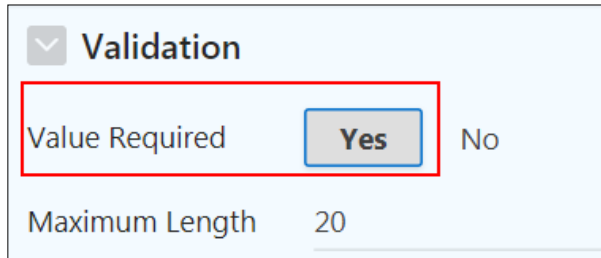
- ii. Select the **Cust First Name** field.



- i. Page Designer opens with the item **P9_CUST_FIRST_NAME** selected.



- j. In the Property Editor, find the attribute **Validation > Value Required**.




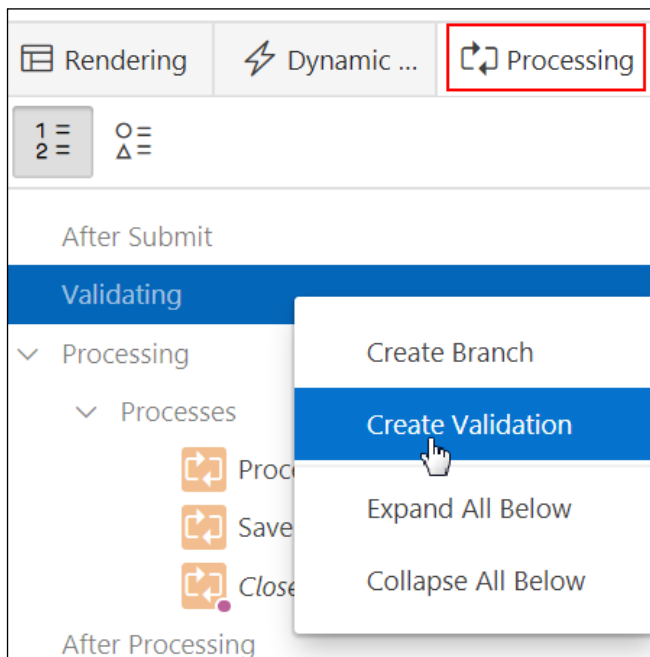
Note that **Value Required** is set to **Yes**.

Note: As an alternative, you could set **Value Required** to **No** and manually create a Not Null validation on this item. The advantage of this approach is that you can then create and custom the error message.

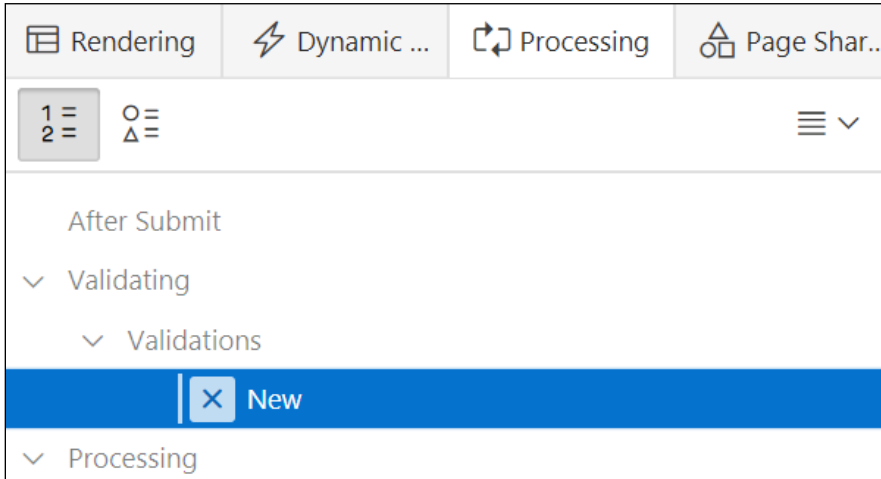
- k. Click the **Application 111** breadcrumb to return to the Application home page.



5. On the Order Items page, create a validation on the Quantity field to ensure that it has a value that is greater than zero.
- On the Application home page, select page **14 – Oehr Order Items**.
 - In the left pane of Page Designer, click the **Processing** tab .
 - Right-click **Validating** and select **Create Validation**.

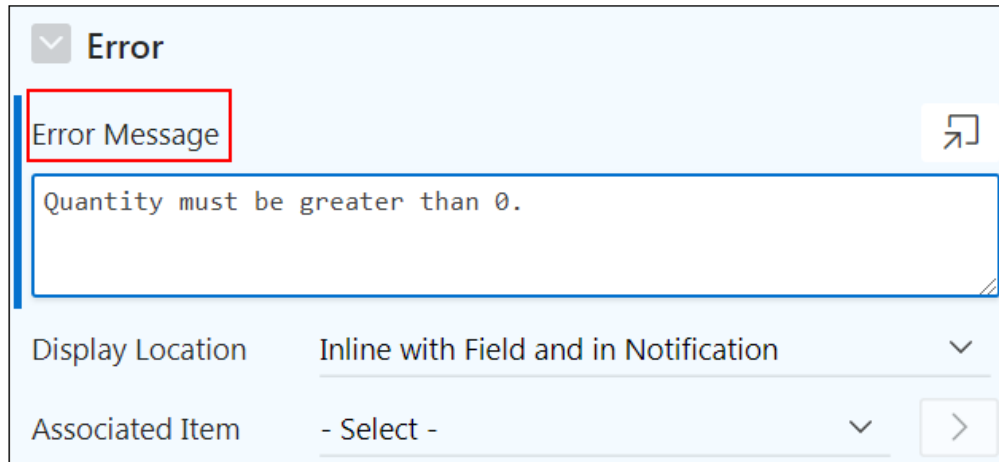


d. On the Processing tab, ensure that the newly created validation is selected.



e. In the Property Editor, edit the following:

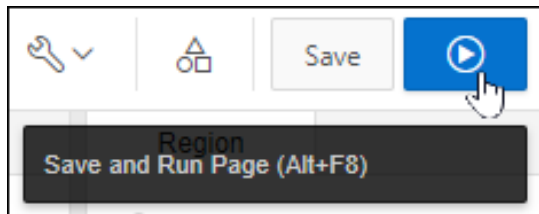
- **Identification > Name:** Enter `Quantity Validation`.
- **Validation > Type:** Select **Item is NOT NULL or zero**.
- **Validation > Item:** Select `P14_QUANTITY`.
- **Error > Error Message:** Enter `Quantity must be greater than 0.`



- Click **Save**.
- f. See how the validation works by running the page.
- i. In Page Selector, in the Page Designer toolbar, enter 12 and click **Go**.



- ii. When page 12: List of Order appears, click **Save and Run Page**.



- iii. If prompted, enter your workspace user credentials and click **Sign In**.

- iv. On the **List of Orders** page, select an order in the left, Master Record region.
- v. Scroll down in the right pane. Under Order Details, select a Line Item by clicking the Edit icon.

List of Orders

Order Total: 52471.9 Reset + Create

Sales Rep: 154

Search...

28-JAN-09 11.22.59.000000 AM direct

28-JAN-09 12.34.16.000000 PM direct

28-JAN-09 02.34.38.000000 PM direct

Show All In the News Order Details

Order Details

Line Item Id	Product Id	Unit Price	Quantity	
1	2402	300	50	
2	2410	350.9	21	
3	2418	60	23	
4	2422	144	25	

- vi. In the Quantity field in the Order Items dialog box, enter 0 and click **Apply Changes**. An error message appears that reads `Quantity must be greater than 0`.

Oehr Order Items

Order Id

Line Item Id

Product Id: 2402

Unit Price: 300

List Price: 127

Quantity: 0


Quantity must be greater than 0.

Cancel Delete Apply Changes

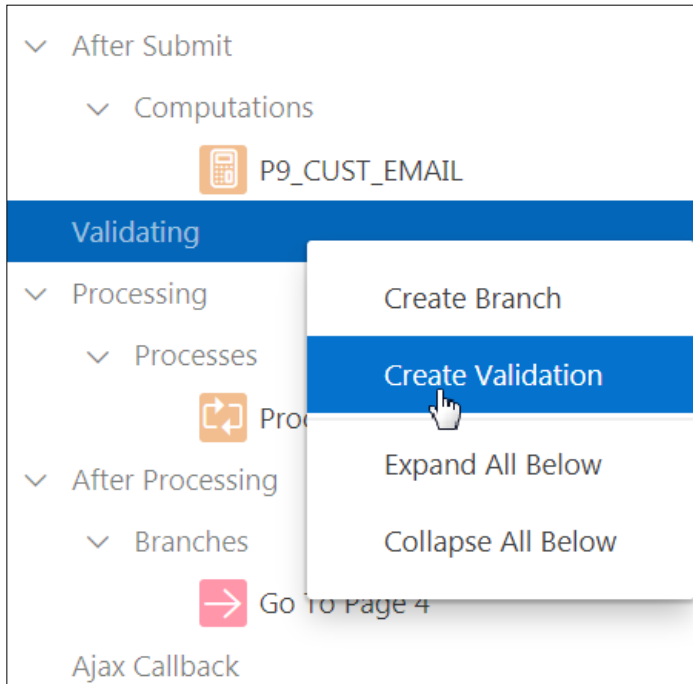
1 error has occurred


- Quantity must be greater than 0.

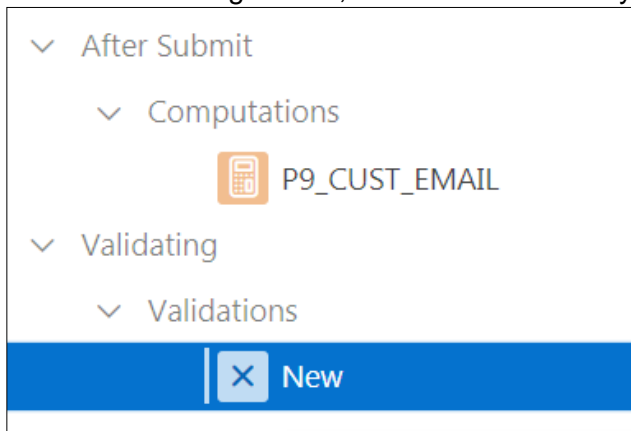
- vii. Click **Cancel** to exit the Order Items dialog box.
- viii. Click **Application 111** on the Runtime Developer toolbar to return to the Application home page.

6. Create an item string comparison validation to ensure that there are no spaces in the **Cust Email** field on the Customer Details page.
 - a. On the Application home page, select the page, **9 - Customer Details**.
 - b. In the left pane of Page Designer, click the **Processing** tab .

Note: The Processing tab should already be selected.
 - c. Right-click **Validating** and select **Create Validation**.



- d. On the Processing tab , ensure that the newly created validation is selected.



- e. In the Property Editor, edit the following:
 - **Identification > Name:** Enter `Email Validation`.
 - **Validation > Type:** Select **Item contains no spaces**.
 - **Validation > Item:** Select `P9_CUST_EMAIL`.

- **Error > Error Message:** Enter Email must not contain spaces.
- **Error > Display Location:** Selected by default: **Inline with Field and in Notification**

<input type="checkbox"/> Identification	
Name	Email Validation
<input type="checkbox"/> Execution Options	
Sequence	10
<input type="checkbox"/> Validation	
Editable Region	- Select -
Type	Item contains no spaces
Item	P9_CUST_EMAIL
Always Execute	Yes <input type="button" value="No"/>
<input type="checkbox"/> Error	
Error Message	Email must not contain spaces.
Display Location	Inline with Field and in Notification
Associated Item	- Select -

- **Server Side Condition > Type:** Select **Item is NOT NULL**.
Note: You want this validation to fire only when the item is not null.

- **Server-side Condition > Item:** Select P9_CUST_EMAIL.

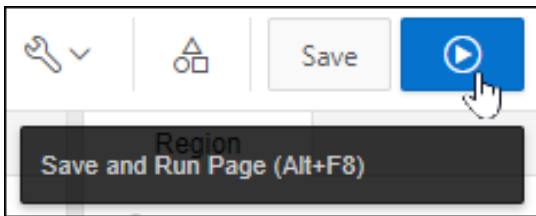
Server-side Condition

When Button Pressed: - Select -

Type: Item is NOT NULL

Item: P9_CUST_EMAIL

- f. See how the validation works. Click **Save and Run Page**.



- l. Click Cancel to go to the **4 - Customers** page.
- m. Click the Edit button next to any record.
- n. Edit the Cust Email field by adding a space to the email address and click **Apply Changes**.

GlobalMart Management Tool

Eddie Boyer Customer Details

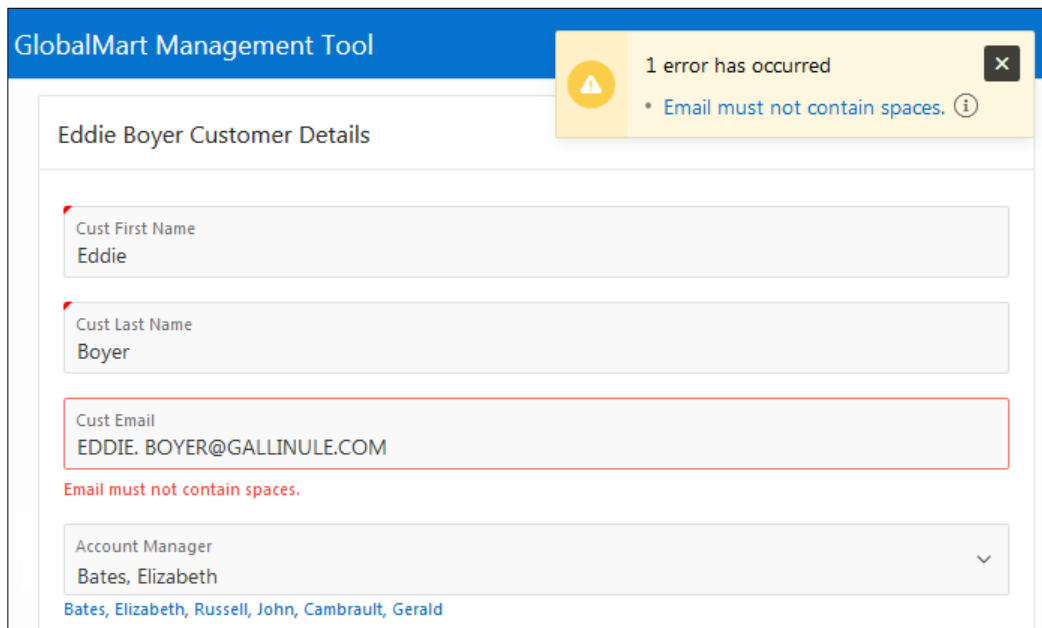
Cust First Name: Eddie

Cust Last Name: Boyer

Cust Email: EDDIE.BOYER@GALLINULE.COM

Account Manager: Bates, Elizabeth
[Bates, Elizabeth, Russell, John, Cambrault, Gerald](#)

An error message is displayed inline and also at the top of the page.



- o. Remove the space you added in the Cust Email field and click **Apply Changes** again. The Customers interactive report displays again without the error messages. Note that if you have added Email as Subtype for the Email item, then it also runs this validation check in case you enter an invalid character (for example “space”) while entering the customer email address in the Customer Details form.
- p. Click **Cancel** to exit the Customer Details page.
- q. Click **Application 111** on the Runtime Developer toolbar.



Practices for Lesson 12: Using Dynamic Actions and Plug-Ins

Practices for Lesson 12: Overview

Practices Overview

In these practices, you examine how dynamic actions and plug-ins work.

Practice 12-1: Using Dynamic Actions on Your Page

Overview

In this practice, you create dynamic actions in the GlobalMart Management Tool application.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. **Show Item when another item is Not Null:** On the Customer Details page, show `P9_CUST_EMAIL` only if the `P9_CUST_FIRST_NAME` is not null.
2. **Refresh report data using custom filters:** On the Customers page, create a Quick Filter region with two select list items `P4_CUSTOMER_ID` and `P4_CITY_ID`. Create a dynamic action on the select lists to refresh the report when the values of the select list change.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 12-1**.

If you haven't completed **Practice 11-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_11_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).

h. Wait for the application to successfully install.

Practice 12-2: Importing and Using Plug-Ins on Your Page

Overview

In this practice, you import and use an item type plug-in and a dynamic action plug-in.

Note: The solution script generated at the end of this practice does not contain the **Rating** column.

Assumptions

You have completed the previous practices.

Note: If you haven't completed the previous practices, execute the steps mentioned in the Catch Up section of this practice.

Tasks

1. Add a rating column to the `CUSTOMERS` table.
2. Import the Modern Star Rating Item plug-in.
3. Add the Modern Star Rating plug-in to your Customer Details page.

Catch Up

If you haven't completed **Practice 2-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_admin` user.
- b. Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- c. Click the **Upload >** button.
- d. Browse and upload the `sol_02_01.sql` file in the `/home/oracle/labs/solutions` directory.
- e. Run the script by clicking the **Run** icon.
- f. Click **Run Now**.
- g. Make sure that the script executed successfully and the `apex_dev` user is created.

If you haven't completed **Practice 2-3: Installing a Sample Dataset**, perform the steps to install a sample dataset before you start with **Practice 12-2**.

If you haven't completed **Practice 12-1**, perform the following steps:

- a. Sign in to the Application Express workspace as the `apex_dev` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_12_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 111 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Wait for the application to successfully install.

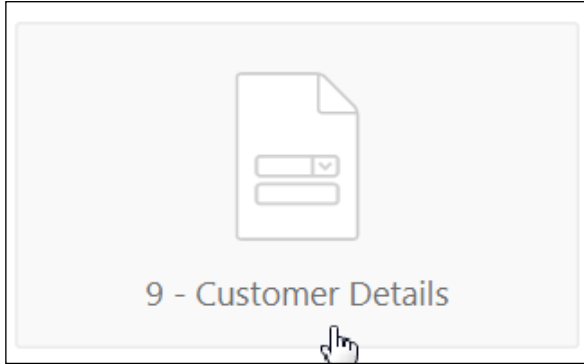
Solution 12-1: Using Dynamic Actions on Your Page

Overview

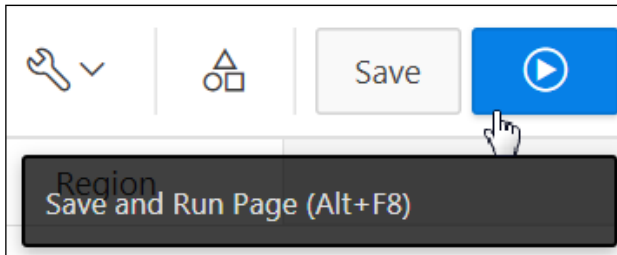
In this practice, you create various dynamic actions on the Customer Details page.

Steps

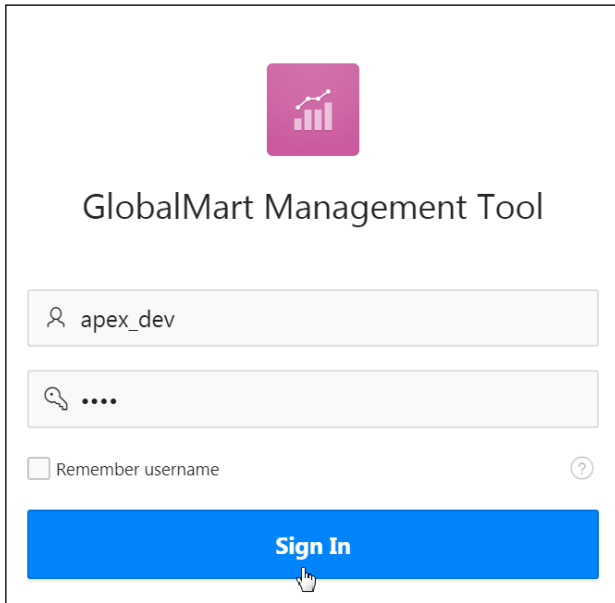
1. **Show Item when another item is Not Null:** On the Customer Details page, show P9_CUST_EMAIL only if the P9_CUST_FIRST_NAME is not null.
 - a. On the Application home page, select **9 - Customer Details** page.



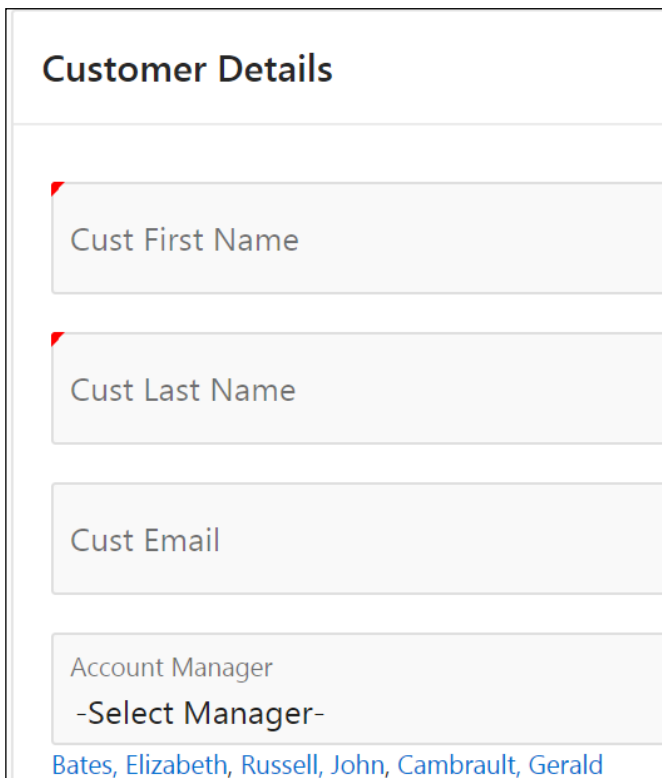
- b. Page Designer appears, displaying **Page 9: Customer Details**. Click **Save and Run Page**.



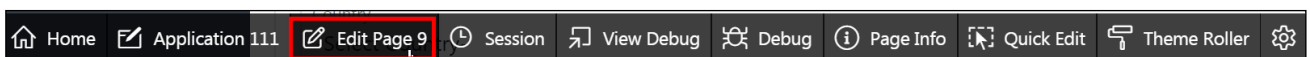
- c. If you are prompted to sign in, enter your workspace credentials and click **Sign In**.



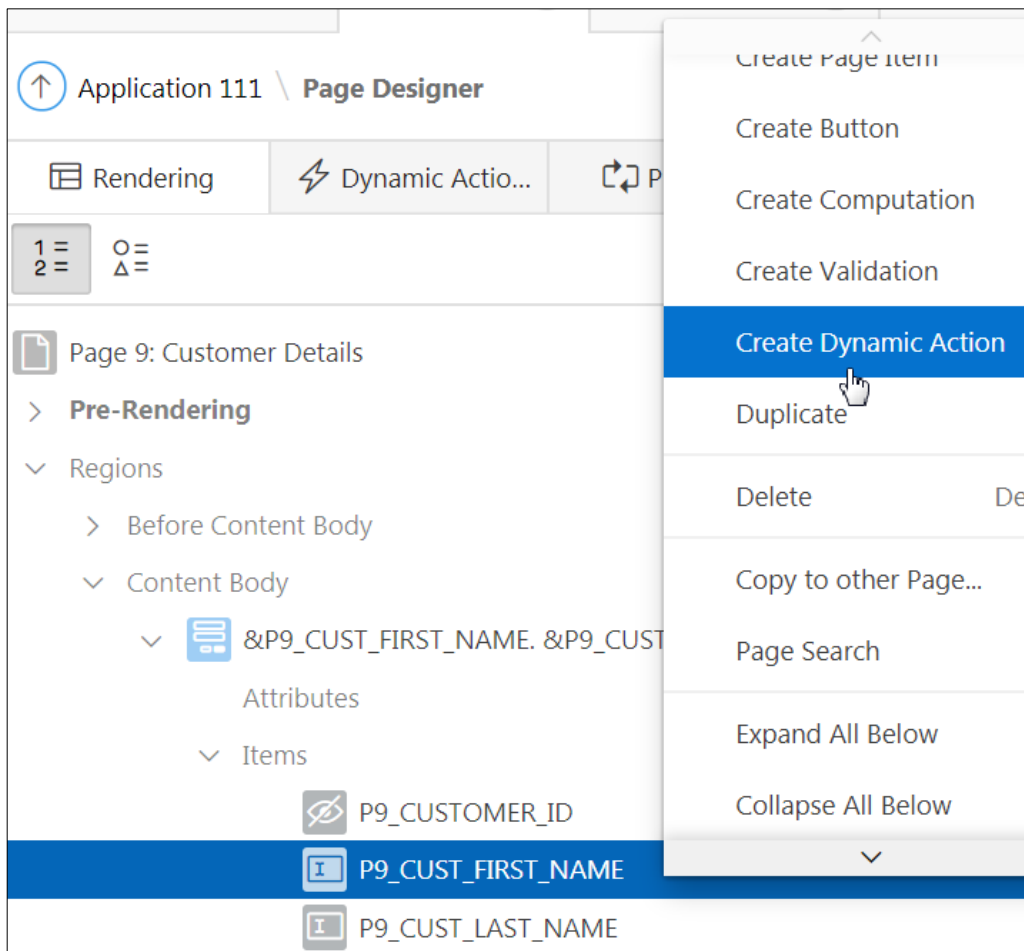
- d. The Customer Details page appears. Add a dynamic action that shows the **Cust Email** field only if the user enters a value in **Cust First Name**.



- e. Click the **Edit Page 9** icon on the Runtime Developer toolbar.








- f. On the Rendering tab, right-click `P9_CUST_FIRST_NAME` and select **Create Dynamic Action**.



A new dynamic action appears on the Rendering tab under `P9_CUST_FIRST_NAME`.

Page 9: Customer Details

- > **Pre-Rendering**
- ∨ Regions
 - > Before Content Body
 - ∨ Content Body
 - ∨  &P9_CUST_FIRST_NAME. &P9_CUST_LAST_NAME. Customer Details
 - Attributes
 - ∨ Items
 -  P9_CUSTOMER_ID
 - ∨  P9_CUST_FIRST_NAME
 - ∨ Dynamic Actions
 - ∨  **New**
 - ∨ True
 - ∨  **Show**

- g. Select the **New** dynamic action. In the Property Editor (right pane), enter the following:
- **Identification > Name:** Enter `Show Email`.
 - **Client Side Condition > Type:** Select **Item is not null**.

<input checked="" type="checkbox"/> Identification			
Name	Show Email		
<input checked="" type="checkbox"/> Execution Options			
Sequence	10		
<input checked="" type="checkbox"/> When			
Event	Change	▼	☰
Selection Type	Item(s)	▼	☰
Item(s)	P9_CUST_FIRST_NAME		☰
<input checked="" type="checkbox"/> Client-side Condition			
Type	Item is not null	▼	☰
Item	P9_CUST_FIRST_NAME		☰

h. On the Rendering tab (left pane), select **Show Email > True > Show**.

The screenshot shows the Oracle APEX Rendering tab for 'Page 9: Customer Details'. The tree structure is as follows:

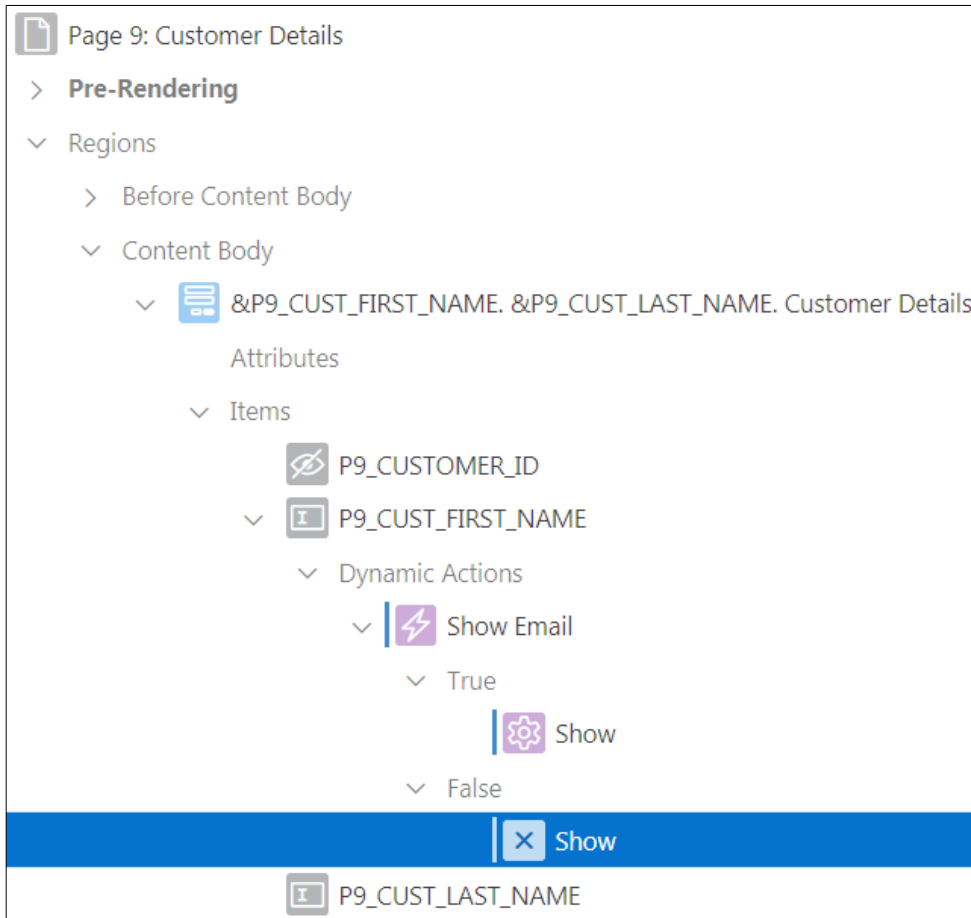
- Page 9: Customer Details
 - > Pre-Rendering
 - ∨ Regions
 - > Before Content Body
 - ∨ Content Body
 - ∨ [List Icon] &P9_CUST_FIRST_NAME. &P9_CUST_LAST_NAME. Customer Details
 - Attributes
 - ∨ Items
 - P9_CUSTOMER_ID
 - ∨ [Text Icon] P9_CUST_FIRST_NAME
 - ∨ Dynamic Actions
 - ∨ [Lightning Bolt Icon] Show Email
 - ∨ True
 - Show** (highlighted)
 - False

- i. In the Property Editor (right pane), enter the following:
- **Identification > Action:** Select **Show** (selected by default).
 - **Affected Elements > Selection Type:** Select **Item(s)**. (selected by default)
 - **Affected Elements > Item(s):** Select `P9_CUST_EMAIL`.

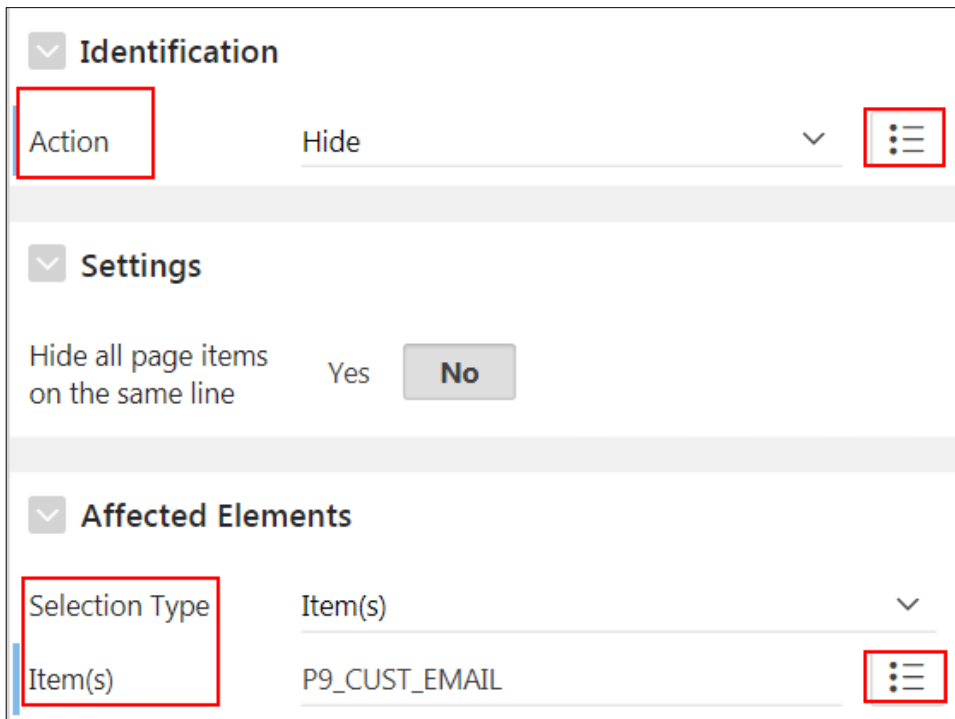
The screenshot displays the Property Editor interface with three main sections:

- Identification:** The 'Action' dropdown is set to 'Show'. A red box highlights the 'Action' label.
- Settings:** The 'Show all on the same line' option is set to 'No'.
- Affected Elements:** The 'Selection Type' dropdown is set to 'Item(s)' and the 'Item(s)' dropdown is set to 'P9_CUST_EMAIL'. Red boxes highlight the 'Selection Type' label, the 'Item(s)' label, and the 'Item(s)' dropdown menu.

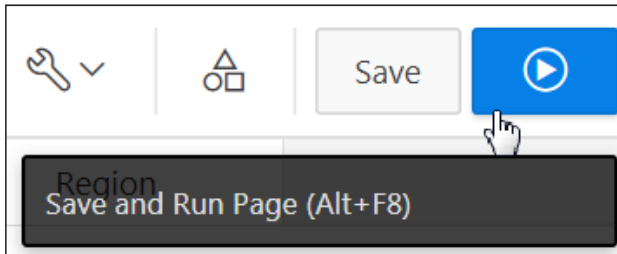
- k. Ensure that **Show Email > False > Show** is selected on the Rendering tab.



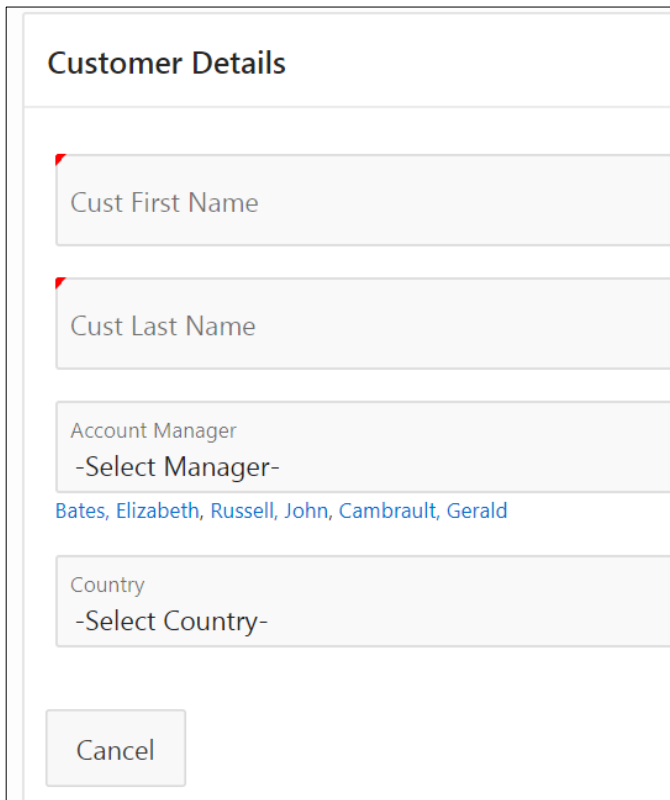
- l. In the Property Editor, enter the following:
- **Identification > Action:** Select **Hide**.
 - **Affected Elements > Selection Type:** Select **Item(s)** (selected by default).
 - **Affected Elements > Item(s):** Select `P9_CUST_EMAIL`.



- m. Click **Save** and then the **Save and Run Page**.

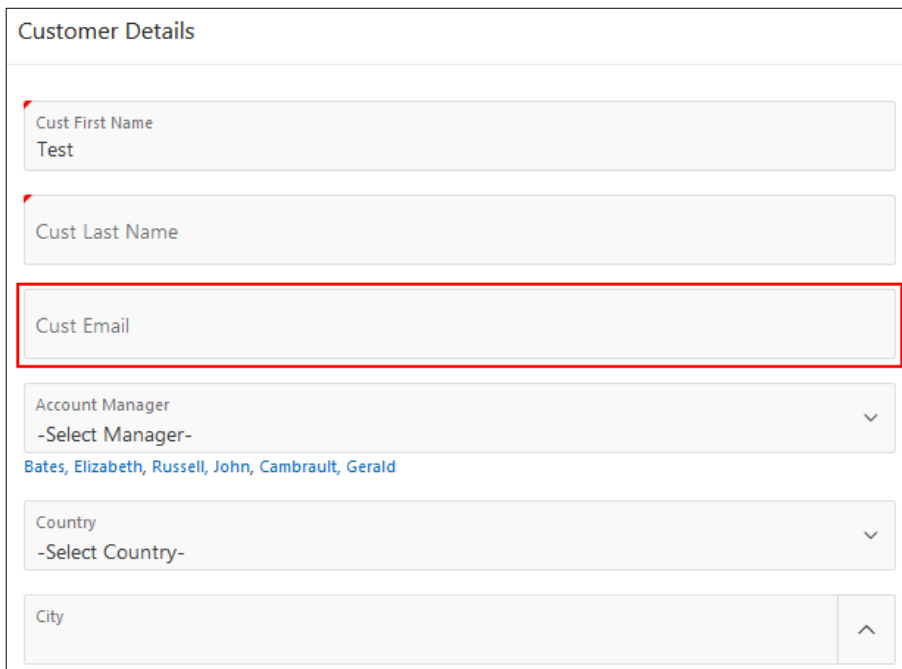


Notice that when you first run the page, and there is no value in the **Cust First Name** field, the **Cust Email** field is no longer displayed. This is because of the dynamic action you just created.



The screenshot shows a form titled "Customer Details". It contains several input fields: "Cust First Name" (empty), "Cust Last Name" (empty), "Account Manager" (a dropdown menu with "-Select Manager-" selected and a list of names below it: "Bates, Elizabeth, Russell, John, Cambrault, Gerald"), and "Country" (a dropdown menu with "-Select Country-" selected). A "Cancel" button is located at the bottom left. The "Cust Email" field is not visible.

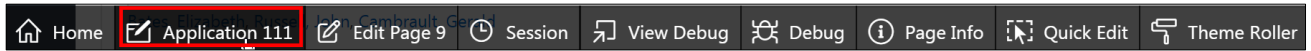
- n. Enter `Test` in the **Cust First Name** field and then click outside the field. Notice that the **Cust Email** field reappears.



The screenshot shows the same "Customer Details" form. The "Cust First Name" field now contains the text "Test". The "Cust Email" field is now visible and is highlighted with a red border. The other fields and the "Cancel" button remain the same.

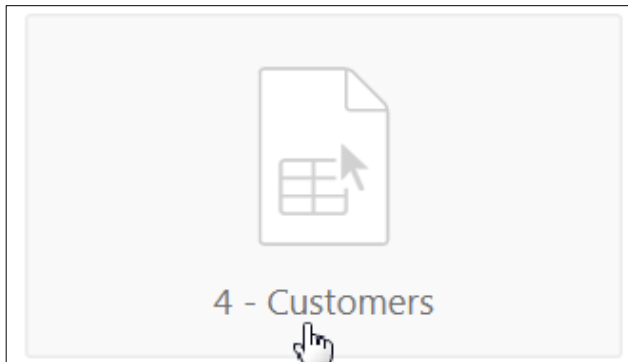
Delete your entry in the **Cust First Name** field and click outside the field. Notice that the **Cust Email** field disappears.

- o. Click the **Application 111** link on the Runtime Developer toolbar.

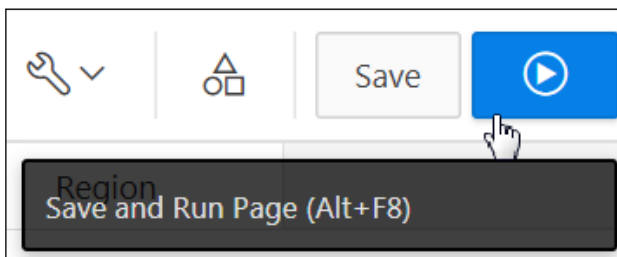


- 2. **Refresh report data using custom filters:** On the Customers page, create a Quick Filter region with two select list items P4_CUSTOMER_ID and P4_CITY_ID. Create a dynamic action on the select lists to refresh the report when the values of the select list change.

- a. On the Application home page, select the **Customers** page.



- b. Click the **Save and Run Page**.



- c. On the Customers report, change the columns that display in the report.
 - i. Click the **Actions** menu and select **Columns**.

	Customer Id	First Name	Last Name	Street Address
	218	Bryan	Dvrrie	3386 Perrysville Ave
	219	Ajay	Sen	220 Penn Ave # 300
	220	Carol	Jordan	135 S 18TH St # 1
	221	Carol	Bradford	522 Swede St
	222	Carv	Stockwell	7708 City

Actions ▾

- Columns
- Filter
- Data >
- Format >
- Chart
- Group By
- Pivot
- Report >
- Download

- ii. In the **Select Columns** dialog box, select **Customer Id**, click **Remove** (<), and then click **Apply**.

Select Columns ✕

Do Not Display

Customer Id

↶

➤➤

➤

<

↶↶

Display in Report

First Name

Last Name

Street Address

Postal Code

City

State Province

Country

Phone Number

Nls Language

Nls Territory

Credit Limit

↑

↑

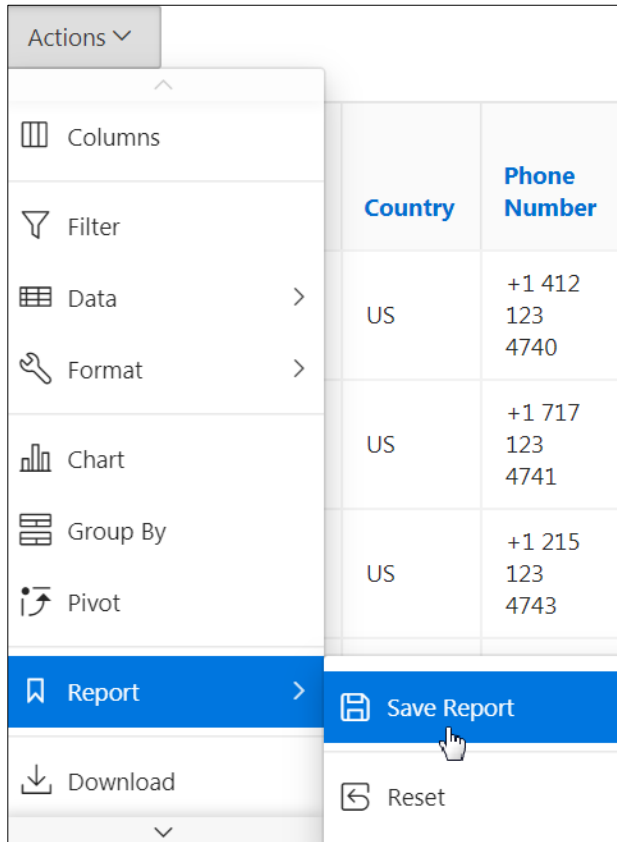
↓

↓

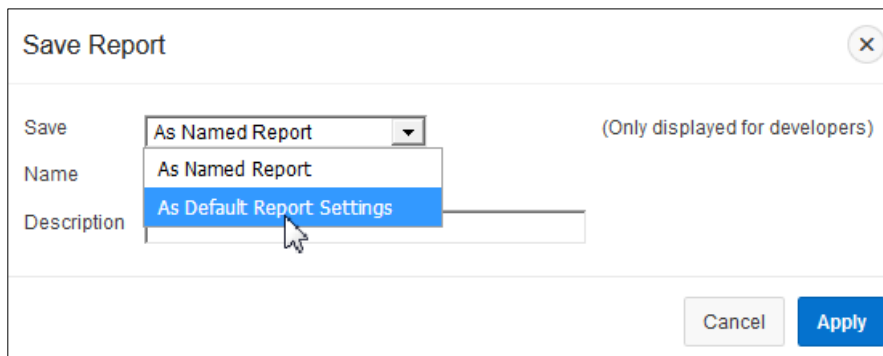
Cancel
Apply

d. Save a new Primary, Default Report.

i. Click the **Actions** menu and then select **Report** and **Save Report**.



ii. The Save Report dialog box appears. From **Save**, select **As Default Report Settings**.



iii. The Save Default Report dialog box appears. Select **Primary** and click **Apply**.

Save Default Report ✕

The current report settings will be used as the default for all users.

Default Report Type Primary Alternative

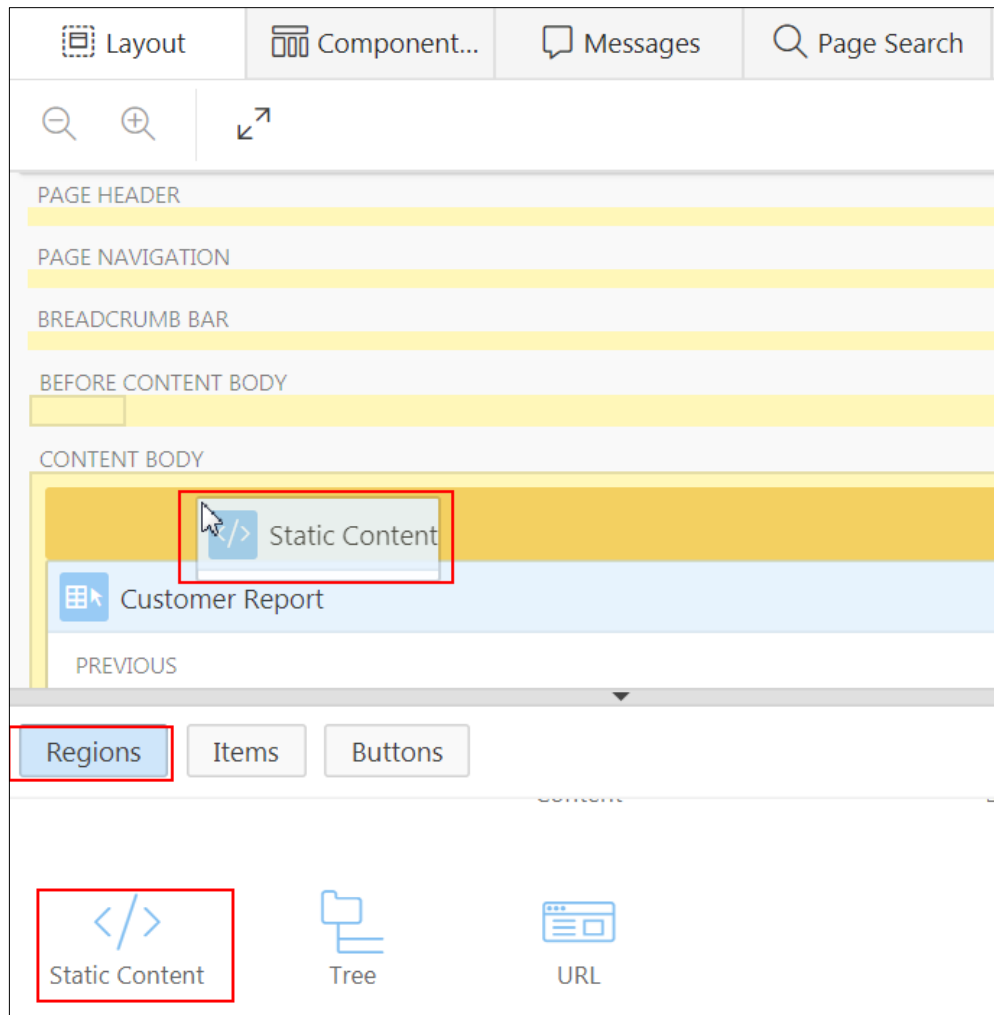
Cancel
Apply

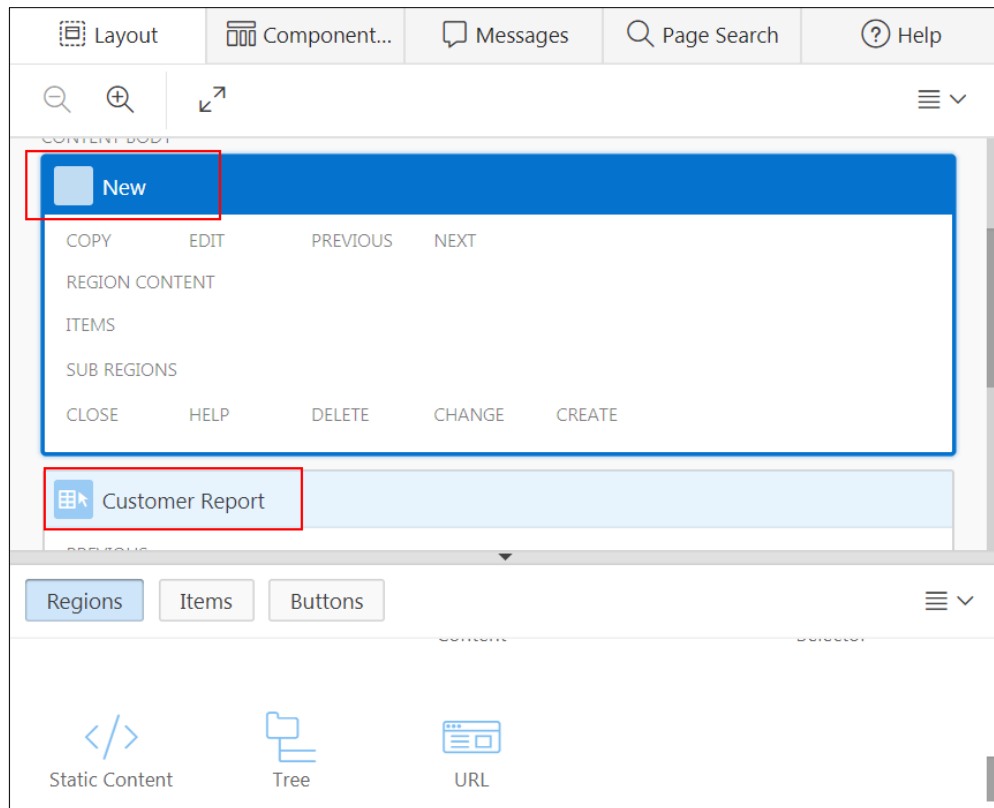
- e. The report settings are saved. Click the **Edit Page 4** link on the Run Developer toolbar.

	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number	Nls Language
	Eddie	Boyer	411 E Wisconsin Ave # 2550	53202	Seattle	WI	US	+1 414 123 4369	us
	Eddie	Stern	808 3Rd St #100	54403	Wausau	WI	US	+1 715 123 4372	us
	Ernest	Weaver	300 Crooks St	54301	Green Bay	WI	US	+1 414 123 4373	us
	Ernest	George	122 E Dayton St	53703	Madison	WI	US	+1 608 123 4374	us

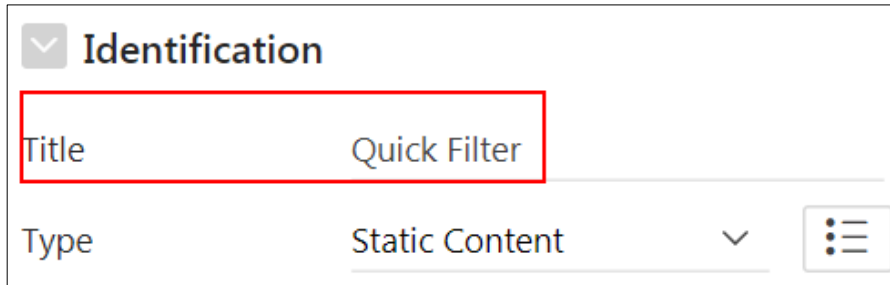
Home Application 111 Edit Page 4 Session View Debug Debug Page Info Quick Edit

- f. On Page 4: Customers, create the region to contain the filtered item.
- i. From the Gallery at the bottom of the central pane, select the **Regions** tab.
 - ii. Find the **Static Content** region. Select **Static Content** and drag it above the **Customer Report** region.

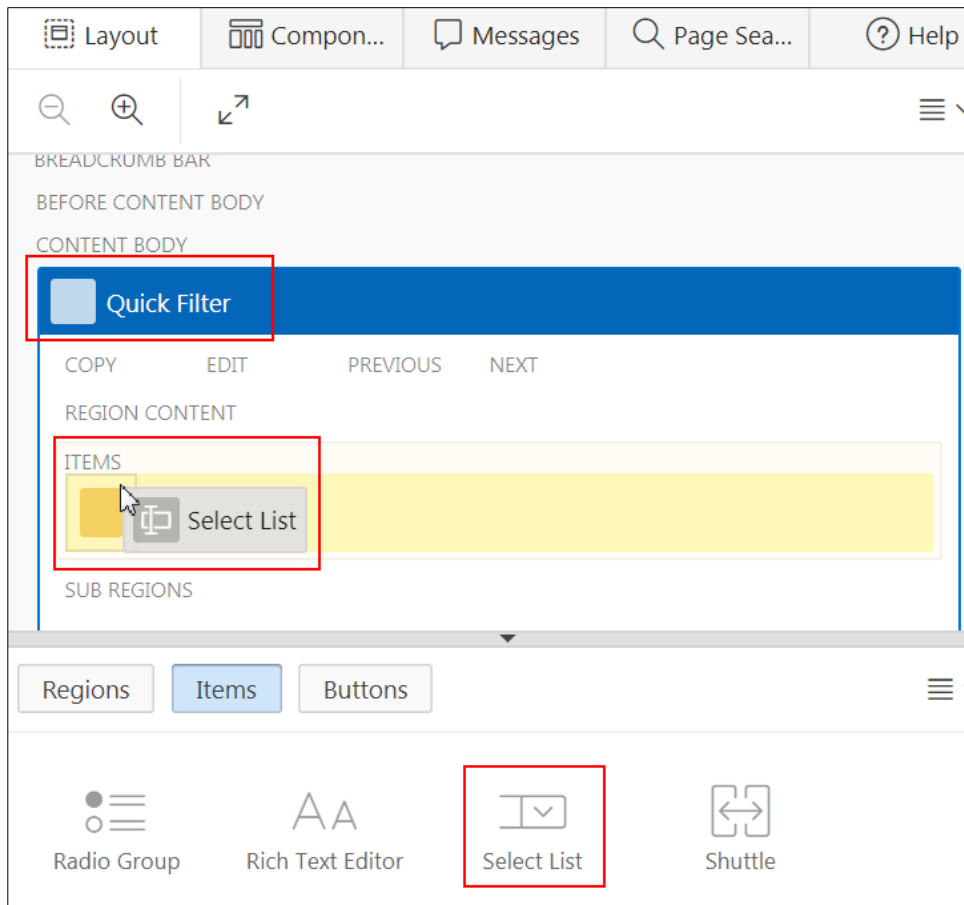




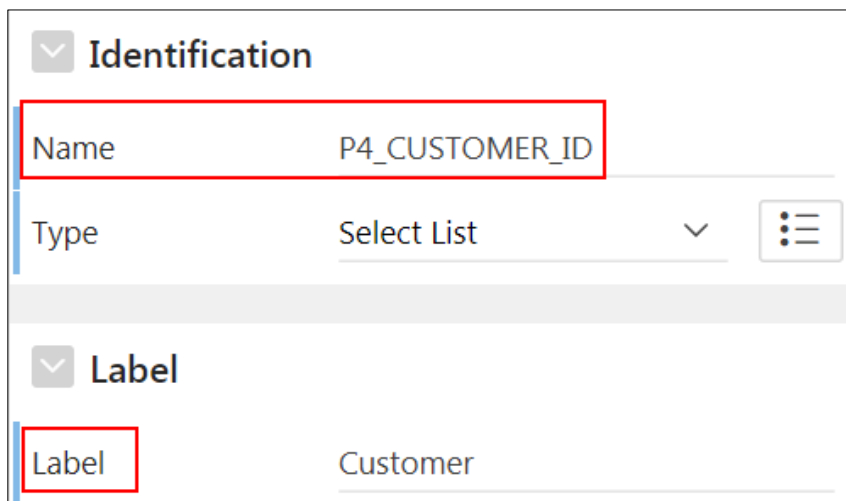
- g. On the Rendering tab, select the new region. In the Property Editor, in **Identification > Title** enter `Quick Filter`.



- h. In the Quick Filter region, create two filter items: `P4_CUSTOMER_ID` and `P4_CITY` to filter the report. Create an item for `P4_CUSTOMER_ID`:
- From the Gallery at the bottom of the central pane, select the **Items** tab.
 - Select **Select List** and drag it to **ITEMS** in the Quick Filter region.



- i. On the Rendering tab, select the new item.
- j. In the Property Editor, edit the following:
 - **Identification > Name:** Enter P4_CUSTOMER_ID.
 - **Label > Label:** Enter Customer.



- **List of Values > Type:** Select SQL Query.
- **SQL Query:** Enter the query, which is provided in /home/oracle/labs/labs/lab_12_01_01.txt.

```
select cust_first_name||' '||cust_last_name d, customer_id r
from oehr_customers
order by 1
```

- **List of Values > Display Null Value:** Select **Yes**.
- **List of Values > Null Display Value:** Enter - Show All -.

List of Values

Type: SQL Query

SQL Query: select cust_first_name||' '||cust_last_name d, customer_id r
from oehr_customers
order by 1

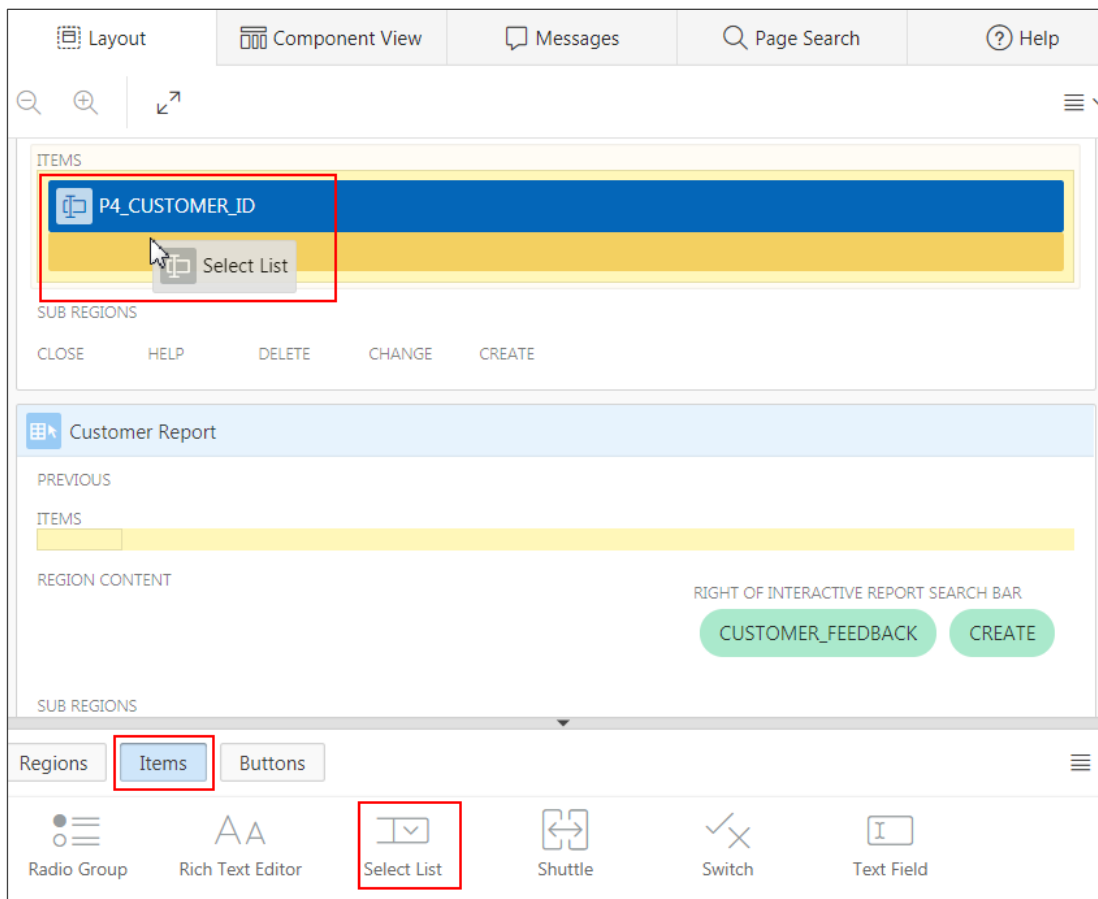
Display Extra Values: Yes No

Display Null Value: Yes No

Null Display Value: - Show All -

Null Return Value:

- k. Create an item for P4_CITY:
 - i. From the Gallery at the bottom of the central pane, select the **Items** tab.
 - ii. Select **Select List** and drag it to the Quick Filter region below the P4_CUSTOMER_ID item.



- i. On the Rendering tab, select the new item.
- m. In the Property Editor, edit the following:
 - **Identification > Name:** Enter P4_CITY.
 - **Label > Label:** City (populated by default).
 - **Layout > Start New Row:** Select **No** (if not selected by default).
 - **Layout > New Column:** Select **Yes**.

Identification

Name: P4_CITY

Type: Select List

Label

Label: City

Layout

Sequence: 20

Region: Quick Filter

Start New Row: Yes **No**

Column: Automatic

New Column: **Yes** No

Column Span: Automatic

- **List of Values > Type:** Select SQL Query.
- **List of Values > SQL Query:** Enter the query that is provided in /home/oracle/labs/labs/lab_12_01_02.txt.

```
select distinct city d, city r
from oehr_customers
order by 1
```

- **List of Values > Display Null Value:** Select **Yes** (if not selected by default).
- **Null Display Value:** Enter - Show All -.

List of Values

Type SQL Query ▼

SQL Query ↻

```
select distinct city d, city r
from oehr_customers
order by 1
```

Display Extra Values Yes No

Display Null Value Yes No

Null Display Value - Show All -

Null Return Value

- Click **Save**.
- n. In the left pane, click the **Dynamic Actions** tab.

Rendering
⚡ Dynamic Actio...
Processing

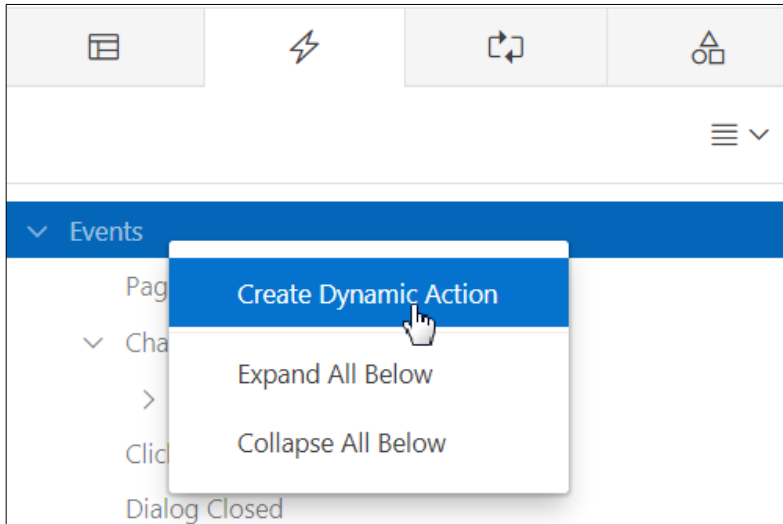
1 = ○ =

2 = △ =

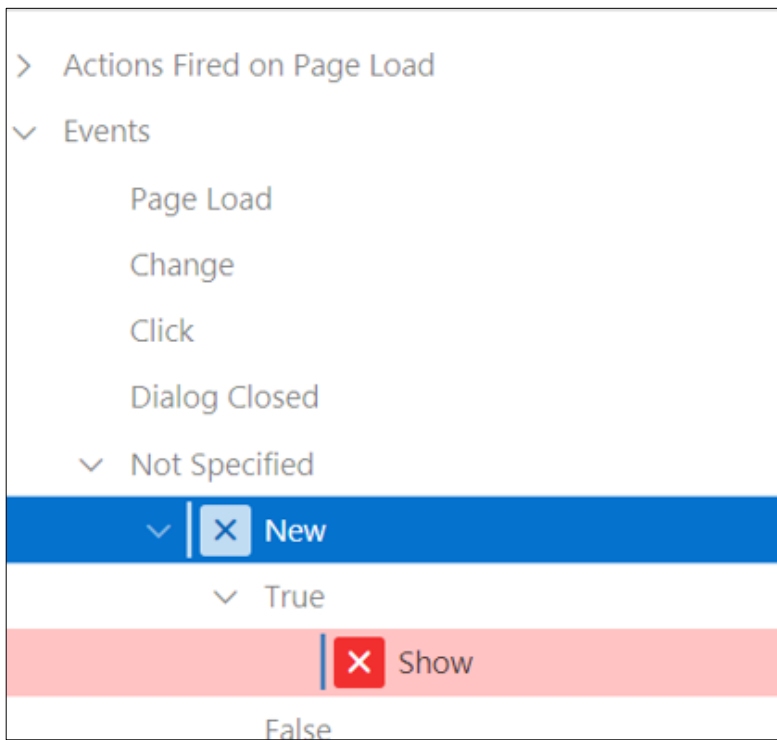
Page 4: Customers

- > Pre-Rendering
- ▼ Regions
 - > Before Content Body
 - ▼ Content Body
 - ▼ </> Quick Filter
 - Attributes
 - ▼ Items
 - P4_CUSTOMER_ID
 - P4_CITY

- o. Right-click **Events** and select **Create Dynamic Action**.



- p. On the Dynamic Actions tab, select the new dynamic action.

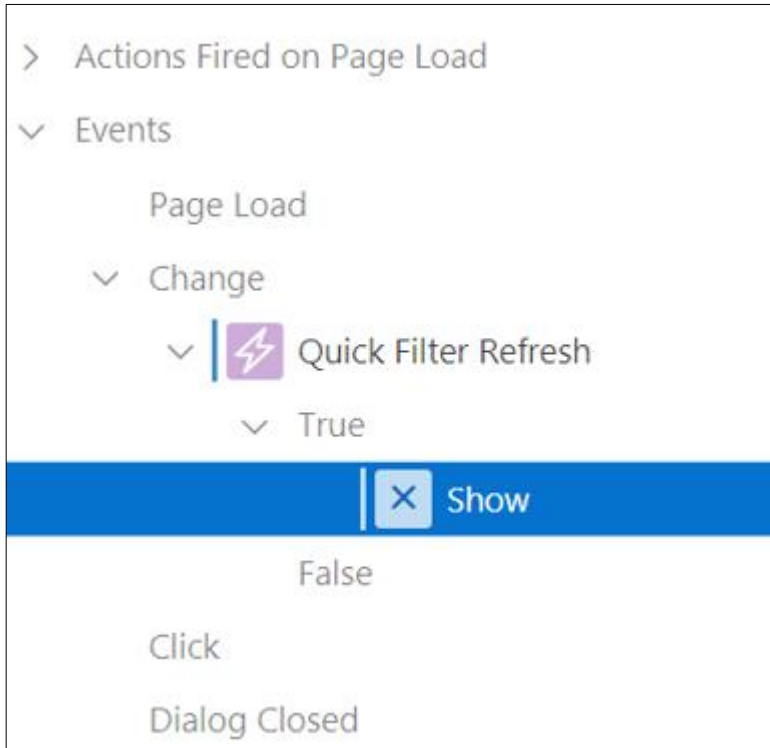


- q. In the Property Editor, edit the following:
- **Identification > Name:** Enter `Quick Filter Refresh`.
 - **When > Event:** Select **Change**.
 - **When > Selection Type:** Select **Item(s)**.
 - **When > Item(s):** Select `P4_CUSTOMER_ID, P4_CITY`.

The screenshot shows the Property Editor interface with three main sections: Identification, Execution Options, and When. The 'Name' field in the Identification section is highlighted with a red box and contains the text 'Quick Filter Refresh'. The 'When' section is also highlighted with a red box and contains three rows: 'Event' with the value 'Change', 'Selection Type' with the value 'Item(s)', and 'Item(s)' with the value 'P4_CUSTOMER_ID,P4_CITY'. Each of these three rows has a red box around its corresponding menu icon on the right.

Section	Property	Value
Identification	Name	Quick Filter Refresh
Execution Options	Sequence	10
When	Event	Change
	Selection Type	Item(s)
	Item(s)	P4_CUSTOMER_ID,P4_CITY

- r. On the Dynamic Actions tab, select **Quick Filter Refresh > True > Show**.



- s. In the Property Editor, enter the following:
- **Identification > Action:** Select **Refresh**.
 - **Affected Elements > Selection Type:** Select **Region**.
 - **Affected Elements > Region:** Select **Customer Report**
 - **Execution Options > Fire on Initialization:** Select **No** (if not selected by default).

Identification

Action Refresh

Affected Elements

Selection Type Region

Region Customer Report

Execution Options

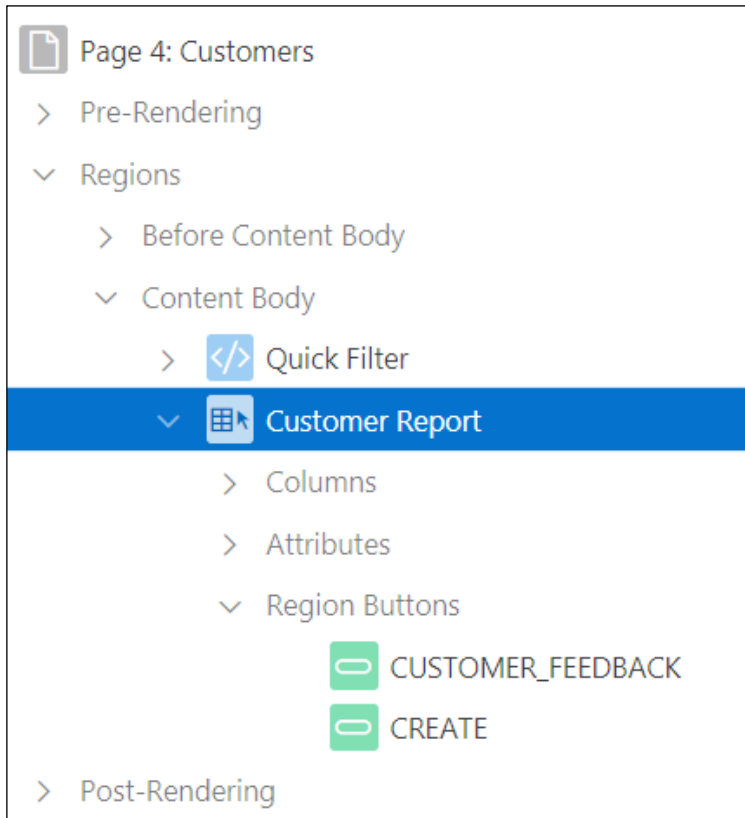
Sequence 10

Event Quick Filter Refresh

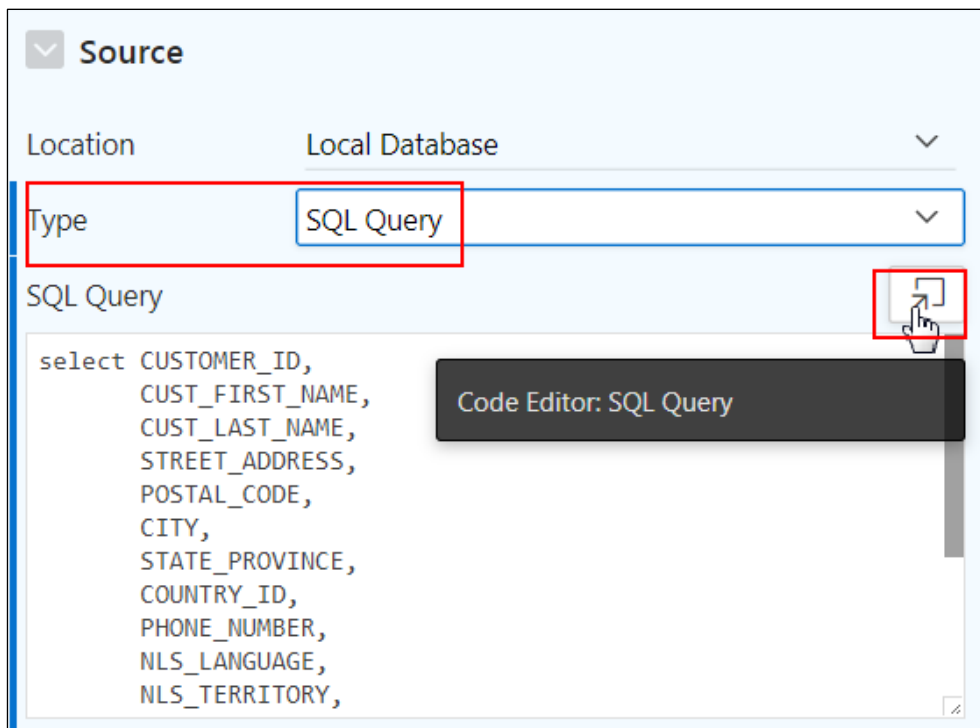
Fire When Event Result Is True

Fire on Initialization Yes

- t. On the Rendering tab, under **Regions > Content Body**, collapse **Quick Filter**. Select **Customer Report**.



- u. On the Property Editor tab, edit the following:
- **Source > Type: Select SQL Query**
 - **Source > SQL Query:** Click the **Code Editor** icon.



- In the Code Editor, add the following WHERE clause (located in the /home/oracle/labs/labs/lab_12_01_03.txt file) to the end of the SELECT statement and click **OK**.

```
where customer_id = nvl(:P4_CUSTOMER_ID, CUSTOMER_ID)
and city = nvl(:P4_CITY, CITY)
```

Code Editor - SQL Query

Validation successful

```

9      SECURITY_ID,
10     PHONE_NUMBER,
11     NLS_LANGUAGE,
12     NLS_TERRITORY,
13     CREDIT_LIMIT,
14     CUST_EMAIL,
15     ACCOUNT_MGR_ID,
16     FILENAME,
17     MIMETYPE,
18     LAST_UPDATE_DATE
19 from OEHR_CUSTOMERS
20 where customer_id = nvl(:P4_CUSTOMER_ID, CUSTOMER_ID)
21 and city = nvl(:P4_CITY, CITY)

```

Cancel OK

- In **Source > Page Items to Submit**, select P4_CUSTOMER_ID, P4_CITY.

Source

Location Local Database

Type SQL Query

SQL Query

```

NLS_TERRITORY,
CREDIT_LIMIT,
CUST_EMAIL,
ACCOUNT_MGR_ID,
FILENAME,
MIMETYPE,
LAST_UPDATE_DATE
from OEHR_CUSTOMERS
where customer_id = nvl(:P4_CUSTOMER_ID, CUSTOMER_ID)
and city = nvl(:P4_CITY, CITY)

```

Page Items to Submit P4_CUSTOMER_ID,P4_CITY

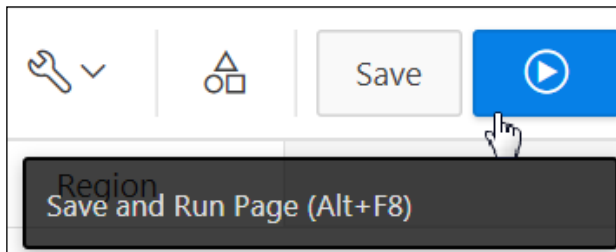
Optimizer Hint

- From **Layout > Start New Row**, select **Yes**.

The screenshot shows a configuration panel titled 'Layout'. It contains several settings:

- Sequence: 20
- Parent Region: - Select -
- Position: Content Body
- Start New Row: Yes** (highlighted with a red box)
- Column: Automatic
- Column Span: Automatic

- v. Click the **Save and Run Page**.



- w. If you are prompted to sign in, enter your workspace credentials and click **Sign In**.
- x. The Customers report appears. Review the revised report.
 - i. Note that when both the Customer and City filters are set to **- Show All -** all the records display.

Quick Filter

Customer: - Show All - City: - Show All -

Go Actions **Create** Customer Feedback

	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number	Nls Language
	Eddie	Boyer	411 E Wisconsin Ave # 2550	53202	Seattle	WI	US	+1 414 123 4369	us
	Eddie	Stern	808 3Rd St # 100	54403	Wausau	WI	US	+1 715 123 4372	us
	Ernest	Weaver	300 Crooks St	54301	Green Bay	WI	US	+1 414 123 4373	us

ii. From the Customer filter, select a customer from the list. What do you observe?

Quick Filter

Customer
- Show All -

City
- Show All -

Ajay Andrews

Ajay Sen

Alain Barkin

Alain Dreyfuss

Alain Siegel

Alan Hunter

Alan Minnelli

Albert Bel Geddes

Albert Dutt

Albert Spacek

Alec Idle

Country	Phone Number
	+1 412 123 4740
	+1 717 123 4741
	+1 215 123 4742

The revised report appears, displaying the customer.

Quick Filter

Customer: Ajay Andrews City: - Show All -

Q Go Actions

	First Name	Last Name	Street Address	Postal Code	City	State Province	Country	Phone Number	Nls Language
	Ajay	Andrews	223 4Th Ave # 1100	15222	Pittsburgh	PA	US	+1 412 123 4763	us

iii. From the Customer filter, select **-Show All-**. From the **City** filter, select **Albany**.




Quick Filter

Customer: - Show All - City: Albany

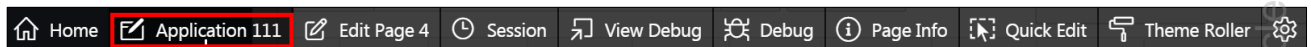
Q Go Action

	First Name	Last Name	Street Address	Postal Code	City
	Bryan	Dvrrie	3386 Perrysville	15214	Pitts

The revised report appears, displaying the customers in the selected city.

	First Name	Last Name	Street Address	Postal Code	City	State Province	Country	Phone Number	Nls Language
	Dom	McQueen	8 Automation Ln	12205	Albany	NY	US	+1 518 123 4532	us
	Gerhard	Seignier	49 N Pine Ave	12203	Albany	NY	US	+1 518 123 4459	us
	Harry dean	Forrest	137 Lark St	12210	Albany	NY	US	+1 518 123 4474	us

iv. Click the **Application 111** link on the Runtime Developer toolbar.



Solution 12-2: Importing and Using Plug-Ins on Your Page

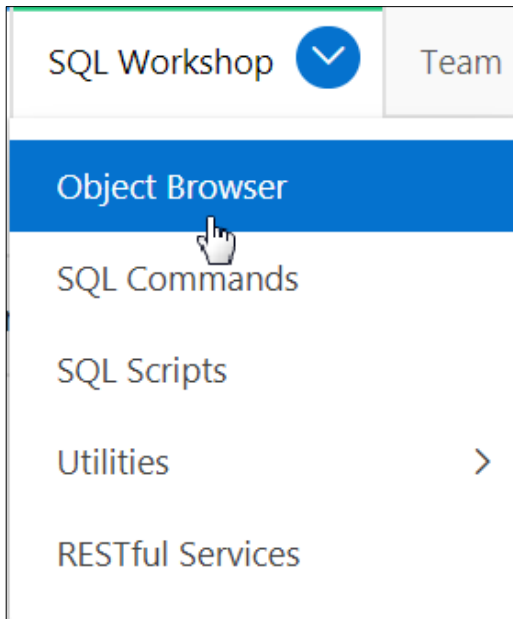
Overview

In this solution, you import and use an item type plug-in and a dynamic action plug-in.


Note: The solution script generated at the end of this practice does not contain the **Rating** column.


Steps



1. Add a rating column to the `CUSTOMERS` table.
 - a. On the Workspace home page, select the **SQL Workshop** menu and then select **Object Browser**.



- b. In Object Browser:
 - i. For **Schema** at the top right of the window, select **OEHR**.
 - ii. In the Object Selection pane (left pane), select `OEHR_CUSTOMERS`.

 **Object Browser**

Tables 

INVENTORIES

JOBS

JOB_HISTORY

LOCATIONS

OEHR_COUNTRIES

OEHR_CUSTOMERS

OEHR_DEPARTMENTS

OEHR_EMPLOYEES

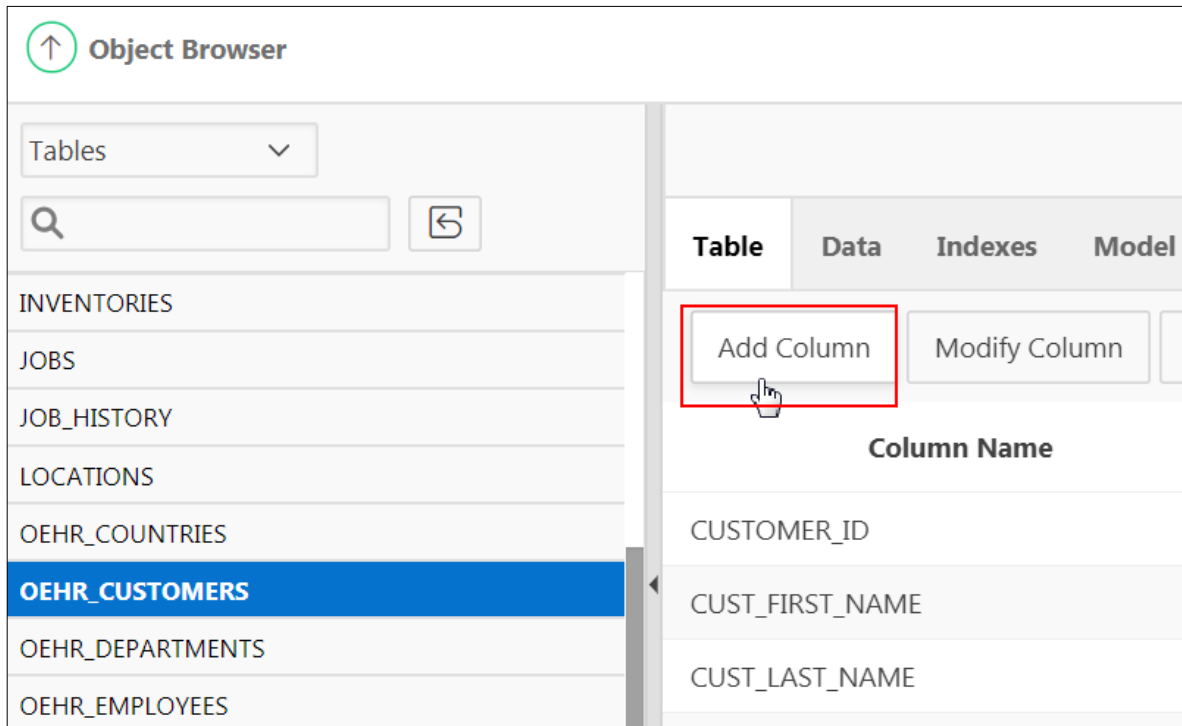
OEHR_INVENTORIES

OEHR_JOBS

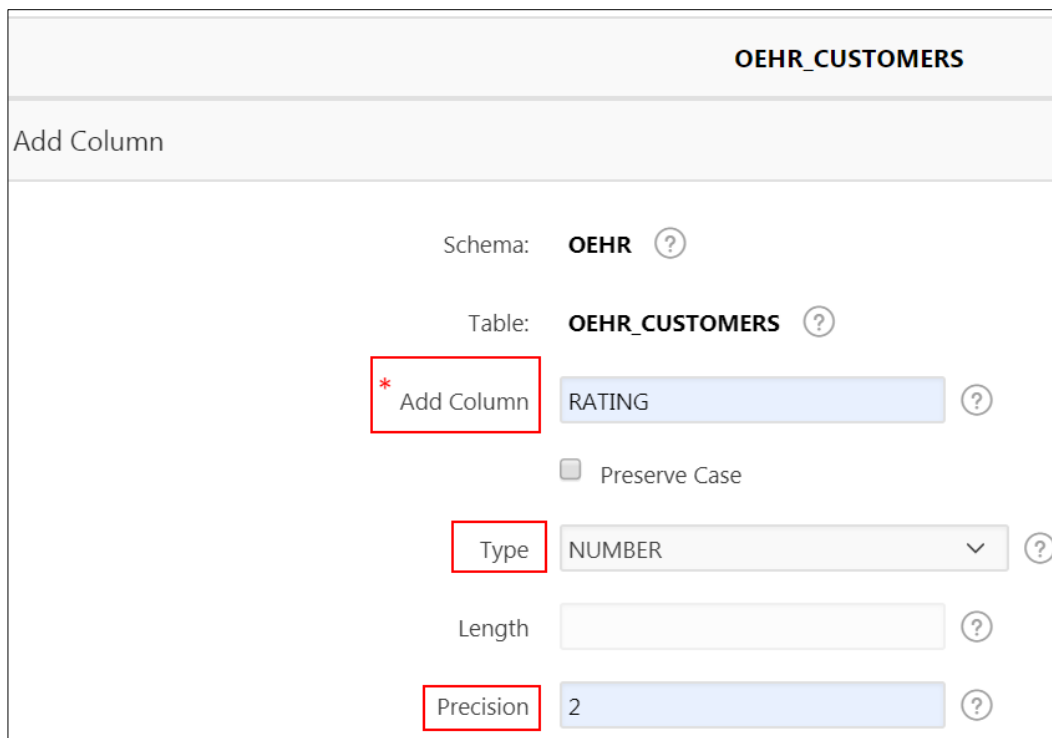
OEHR_JOB_HISTORY

OEHR_LOCATIONS

- c. In the Detail pane (right pane), click the **Add Column** button.



- d. On Add Column:
 - **Add Column:** Enter `RATING`.
 - **Type:** Select **Number**.
 - **Precision:** Enter `2`.

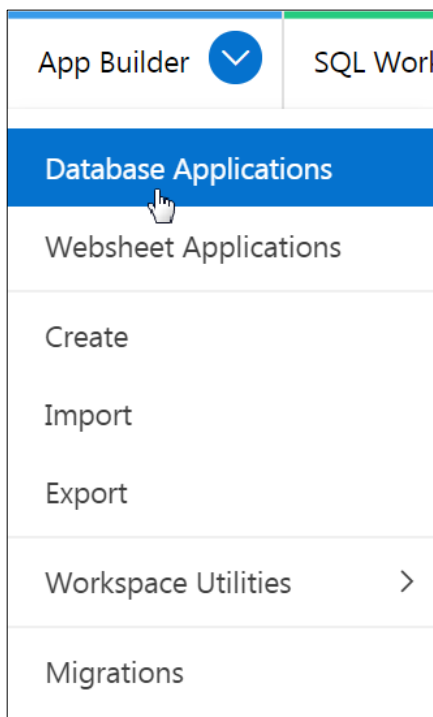


- Click **Next >**.

- Click **Finish**. The column is added.

Tables	OEHR_CUSTOMERS		
NLS_TERRITORY	VARCHAR2(30)	Yes	
CREDIT_LIMIT	NUMBER(9,2)	Yes	
CUST_EMAIL	VARCHAR2(30)	Yes	
ACCOUNT_MGR_ID	NUMBER(6,0)	Yes	
FILENAME	VARCHAR2(255)	Yes	
MIMETYPE	VARCHAR2(255)	Yes	
LAST_UPDATE_DATE	DATE	Yes	
RATING	NUMBER(2,0)	Yes	

- e. Click the **App Builder** menu and select **Database Applications**.

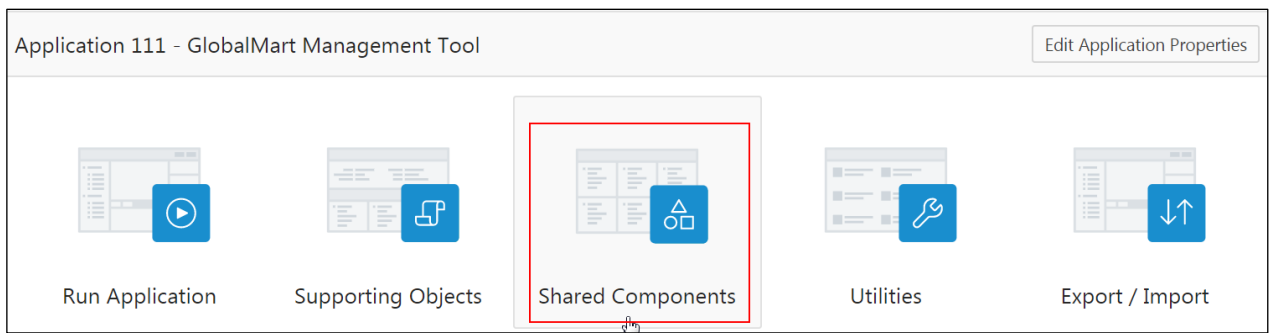


2. Import the Modern Star Rating Item plug-in.

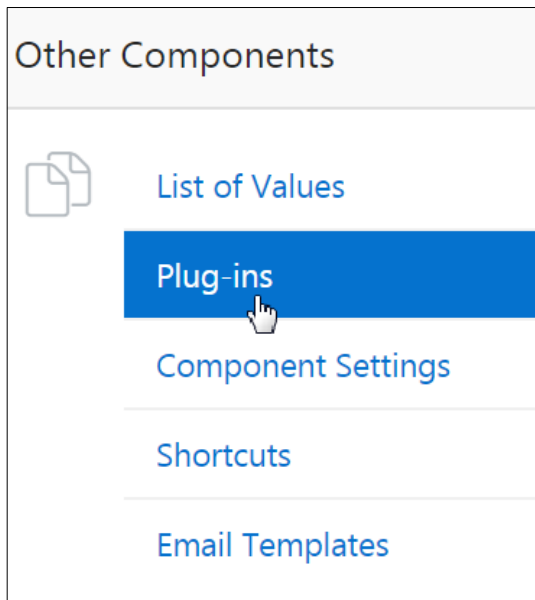
- a. On the App Builder Home page, select the **GlobalMart Management Tool** application.



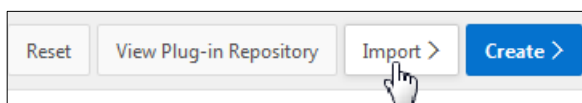
- b. Click **Shared Components**.



- c. Under **Other Components**, select **Plug-Ins**.



- d. On the Plug-ins page, click **Import >**.



- e. On the Import page, click **Browse** and select `/home/oracle/labs/labs/item_type_plugin_com_oracle_apex_starrating_modern.sql`. On the Import page, click **Next >**.

Import

Select the file you wish to import to the export repository. Once imported, you can install your file.

If the imported file is a productivity or sample application export, the installation wizard will allow you to run the app installation scripts after installing the application definition.

* Import file item_type_pl..._modern.sql

* File Type:

- Database Application, Page or Component Export
- Worksheet Application Export
- Plug-in**
- Theme Export
- User Interface Defaults
- Team Development Feedback
- CSS Export [Deprecated]
- Image Export [Deprecated]
- File Export [Deprecated]

File Character Set

- f. After the file is imported, the File Import Confirmation dialog box appears. Click **Next >** to install it.

Import

File Import Confirmation

The export file has been imported successfully.

If you wish to install now, click the **Next** button. You can also install this file at a later time by navigating to the Export Repository.

> **Tasks**

- g. The Install Plug-in window appears. For **Install Into Application**, verify that the GlobalMart Management Tool application is selected and click **Install Plug-in**.

Note that if the plug-in already exists, it will be replaced.

Install Plug-in

When you install a plug-in into the current application, the new plug-in will overwrite an existing plug-in having the same plug-in name. If the installation succeeds, the installation of the plug-in becomes permanent. If any errors are encountered, the actions are rolled back, resulting in no permanent changes.

Export File Version: **2018.05.24** ⓘ

Name: **Modern Star Rating** ⓘ

Internal Name: **COM.ORACLE.APEX.STARRATING_MODERN** ⓘ

Install Into Application: **111 GlobalMart Management Tool** ⓘ

Action: **New plug-in will be created in application 111.** ⓘ

Cancel **Install Plug-in**

- h. The plug-in is installed. Accept the default Component Settings and click **Apply Changes**.

ORACLE APEX App Builder SQL Workshop Team Development App Gallery

Application 111 \ Shared Components \ Component Settings \ Edit

Component Settings

Use Component Settings to set application level values for built-in Application Express components and installed plug-ins.

Name: **Modern Star Rating [Plug-in]**

Clear Tooltip: Clear Rating

Active Star Color: red

Inactive Star Color: lightgray

Default icon: fa-star

Cancel **Apply Changes**

Plug-in installed.

Application 111 \ Shared Components \ **Component Settings**

Component Settings changed.

Component Settings History

Search: | Go

Name ↑

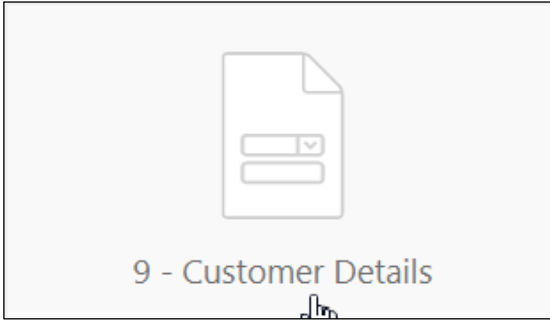
- Calendar
- Color Picker
- Interactive Grid
- Interactive Report
- Modern Star Rating [Plug-in]**
- Region Display Selector
- Rich Text Editor

Oracle Internal & Oracle Academy Use Only

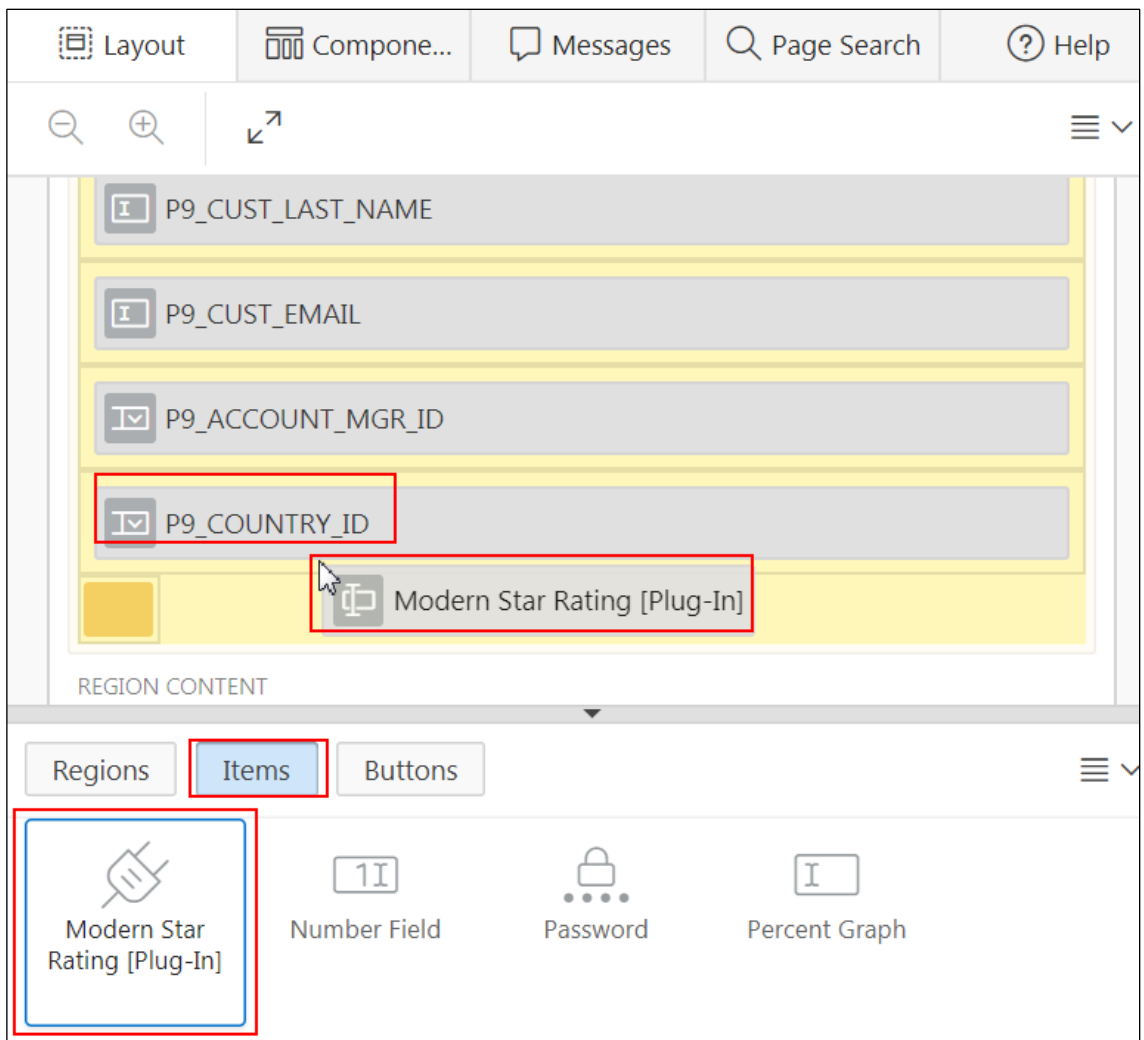
3. Add the Modern Star Rating plug-in to your Customer Details page.
 - a. Click **Application 111** breadcrumb to return to your application.



- b. On the Application home page, select the **9 - Customer Details** page.



- c. Page Designer appears, displaying **Page 9: Customer Details**.
 - d. In the Gallery at the bottom of the central pane, select the **Items** tab and find the **Star Rating [Plug-In]**. Select the **Modern Star Rating [Plug-In]** and then drag and drop it to after P9_COUNTRY_ID in the Layout pane.



- e. On the Rendering tab, verify the newly added plug-in is selected.
- f. In the Property Editor, edit the following:
 - **Identification > Name:** Enter P9_RATING.
 - **Settings > Number of Stars:** Enter 5.

Identification

Name

Type ⋮

Label

Label

Settings

Number of Stars

Use Component Defaults Yes No

Tooltip Template

- **Appearance > Template:** Select **Optional - Above**.

Appearance

Template ⋮

Template Options

CSS Classes ⋮

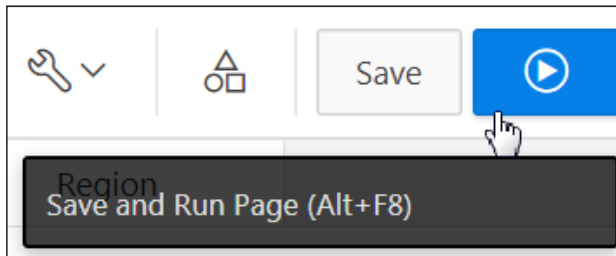
Icon ⋮

Format Mask ⋮

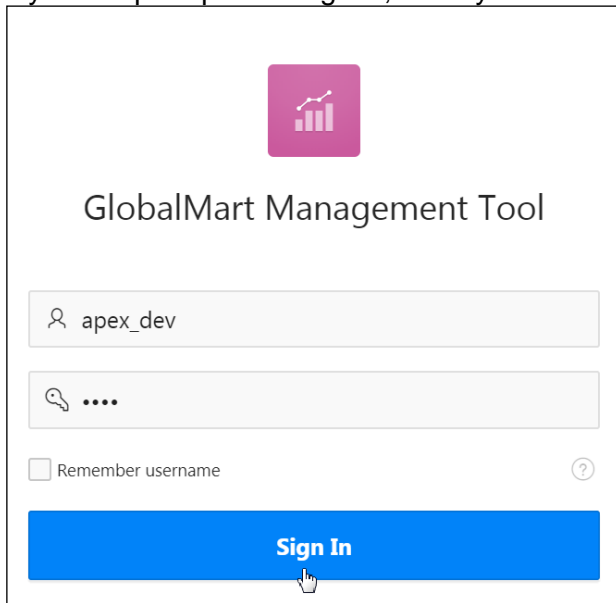
- **Source > Type:** Select **Database Column**.
- For **Source > Database Column:** Enter RATING.

Source	
Form Region	- Select -
Type	Database Column
Database Column	RATING
Used	Always, replacing any exist
Maintain Session State	Per Session (Disk)

g. Click the **Save and Run Page**.



- h. If you are prompted to sign in, enter your workspace credentials and click **Sign In**.



The screenshot shows the sign-in interface for the GlobalMart Management Tool. At the top center is a purple square icon with a white bar chart. Below the icon is the title "GlobalMart Management Tool". There are two input fields: the first contains the username "apex_dev" and the second contains masked characters "....". Below the input fields is a checkbox labeled "Remember username" and a help icon (a question mark in a circle). At the bottom is a large blue button with the text "Sign In" in white, and a mouse cursor is pointing at the button.

- i. Notice that a Rating item now appears at the bottom of the page. Click **Rating**.

The screenshot displays the 'GlobalMart Management Tool' interface. On the left is a dark sidebar with navigation options: Home, Customers, Products, and Customers List View. The main content area is titled 'Customer Details' and contains several input fields: 'Cust First Name', 'Cust Last Name', 'Account Manager' (with a dropdown menu showing '-Select Manager-' and a list of names: Bates, Elizabeth, Russell, John, Cambrault, Gerald), and 'Country' (with a dropdown menu showing '-Select Country-'). At the bottom of the form, there is a 'Rating' field with a circular icon containing a key symbol, which is highlighted with a red square. Below the Rating field is a 'Cancel' button.

- j. Click each rating and note the Tooltips that are displayed.

The screenshot shows the 'GlobalMart Management Tool' interface. On the left is a dark sidebar with navigation links: Home, Customers, Products, and Customers List View. The main content area is titled 'Customer Details' and contains several form fields: 'Cust First Name', 'Cust Last Name', 'Account Manager' (with a dropdown menu showing '-Select Manager-' and a list of names: Bates, Elizabeth, Russell, John, Cambraut, Gerald), and 'Country' (with a dropdown menu showing '-Select Country-'). At the bottom of the form is a 'Rating' widget. The widget is highlighted with a red box and contains a close button (X), a row of five stars (the first four are red, the fifth is grey), and a tooltip that says 'Rating: 4'. Below the rating widget is a 'Cancel' button.

- k. Click the **Application 111** link on the Runtime Developer toolbar.



