



**Hardware and Software**  
Engineered to Work Together

# Oracle Application Express Workshop I

Activity Guide – Volume I

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## Course Practice Environment: Security Credentials

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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   | apex     |
| Workspace Developer User     | apex         | 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 precreated. You will be creating all the other users during the practices.



## **Practices for Lesson 1: Course Overview**

### **Chapter 1**

## Practices for Lesson 1: Overview

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### Practices 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.
- Practices 3-2 and 3-3 are optional practices and do not have a solution script.

## **Practices for Lesson 2: Introducing Oracle Application Express**

**Chapter 2**

## Practices for Lesson 2: Overview

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### Practices Overview

There are two practices for this lesson. In these practices, you log 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

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### 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 log in to Oracle APEX as a Workspace Administrator and create a new user, Developer.

### Assumptions

None

### Tasks

1. Log 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
  - Password: <mentioned in the password document>
  - Email: apex@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:

- Log 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. Log in to Oracle Application Express with the following details:
  - Workspace: APEX
  - Username: apex
  - Password: <mentioned in the password document>
2. Run the sample database application. You 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. Log 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` 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.

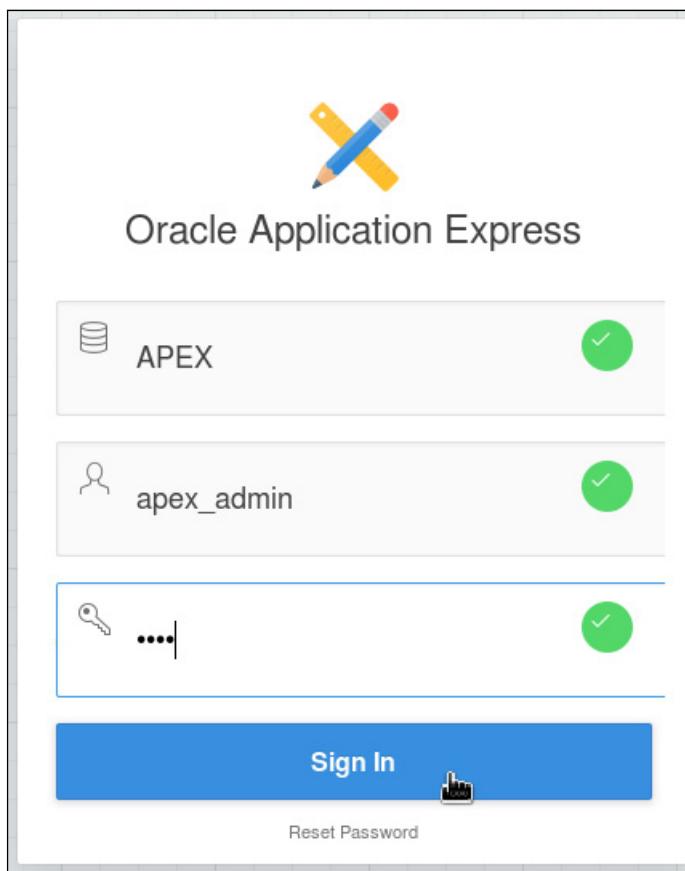
### Steps

1. Log in to Oracle Application Express with the following details:
  - Workspace: apex
  - Username: 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/
```



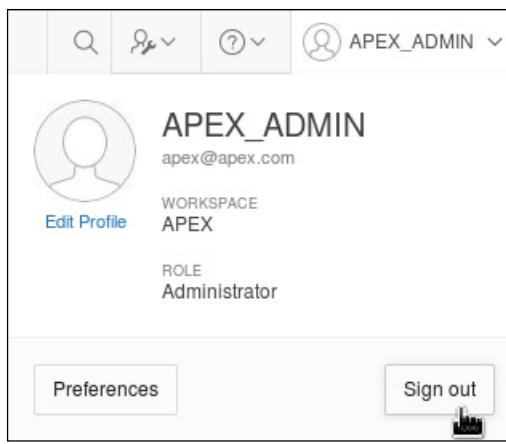
- b. On the Login page, enter APEX for **Workspace**, apex\_admin for **Username** and the password (as mentioned in the password document). Click **Sign In**.



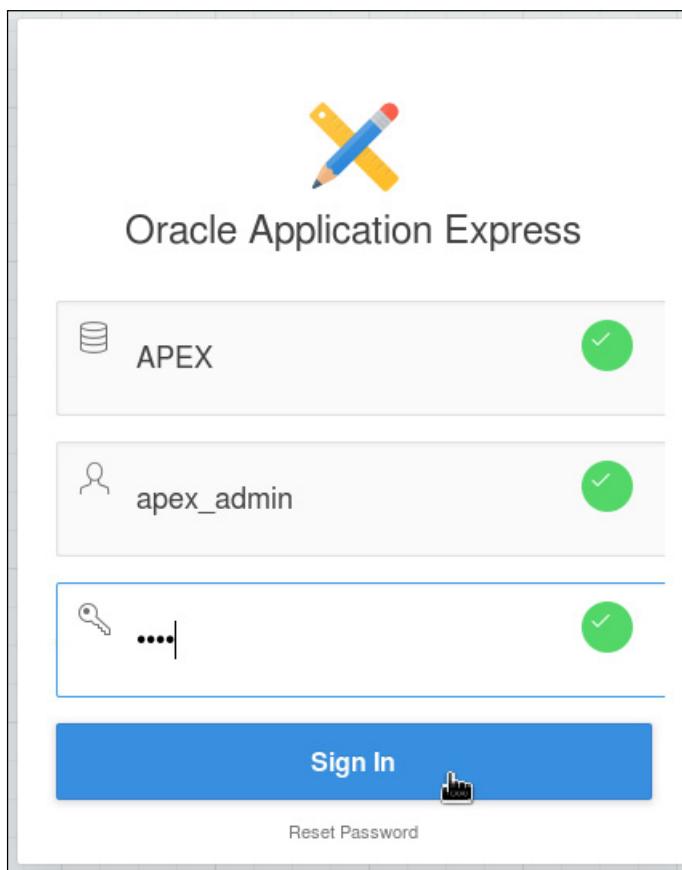
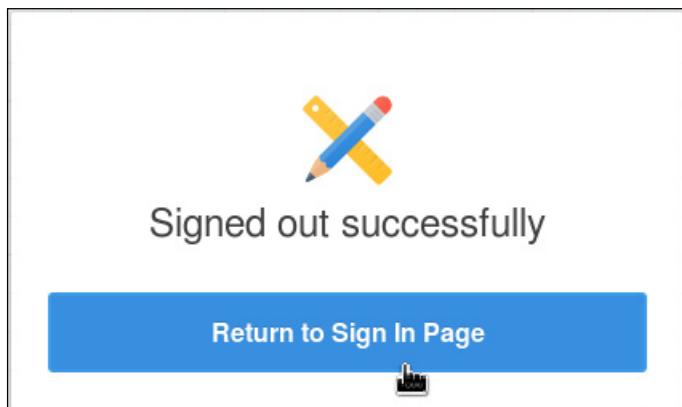
- c. On your first login, you will be prompted to change your password. Enter the current password and new password and click **Apply Changes**.

The screenshot shows the 'Change Password' page. At the top is a logo of a yellow pencil and a blue pen forming an 'X'. Below it is the title 'Change Password'. There are three input fields for entering a password. The first field contains 'apex\_admin'. The second and third fields both contain '.....'. The third field has a blue border around its input area. Below these fields is a large blue button labeled 'Apply Changes' with a hand cursor icon over it. At the bottom is a grey button labeled 'Return to Sign In Page'.

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

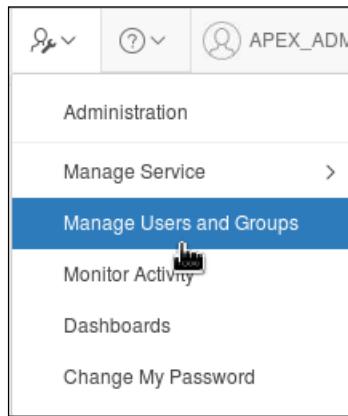


Click the **Return to Sign In Page** button and login again.

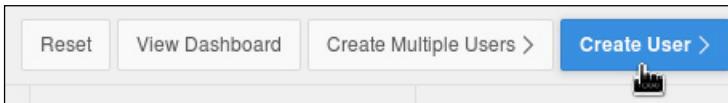


2. Create a developer user with the following details:
  - Username: apex
  - Password: <mentioned in the password document>
  - Email: apex@oracle.com

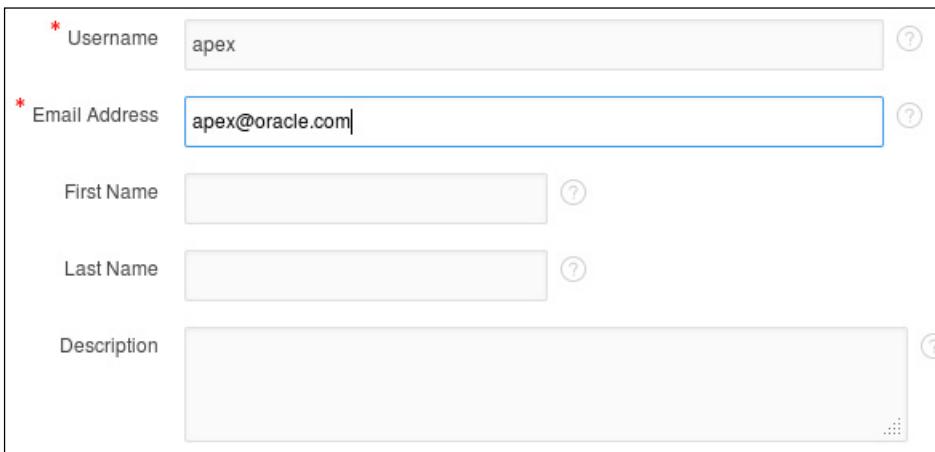
- a. Click the **Administration** icon  present in the top-right corner of the page, and select **Manage Users and Groups** from the drop-down menu.



- b. Click **Create User >**.



- c. Enter apex in the **Username** field and apex@oracle.com for **Email Address**.



A screenshot of the 'Create User' form. It contains five input fields: 'Username' (containing 'apex'), 'Email Address' (containing 'apex@oracle.com'), 'First Name' (empty), 'Last Name' (empty), and 'Description' (empty). Each field has a small question mark icon to its right. The 'Email Address' field is currently active, indicated by a blue border around the input box.

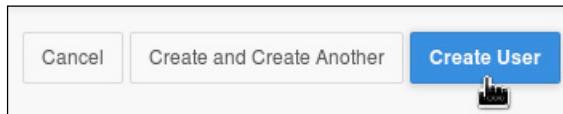
- d. Scroll down and set the **Default Schema** to **OEHR**. Remove text from the **Accessible Schemas** field to make it null. Ensure that **User is a workspace administrator** is set to **No** and **User is a developer** is set to **Yes**.

The screenshot shows the configuration page for a user profile. The 'Default Schema' is set to 'OEHR'. The 'Accessible Schemas' field is empty. Under 'User is a workspace administrator', the 'No' radio button is selected. Under 'User is a developer', the 'Yes' radio button is selected. Other settings include 'Application Builder Access' (Yes), 'SQL Workshop Access' (Yes), 'Team Development Access' (Yes), and 'Set Account Availability' (Unlocked).

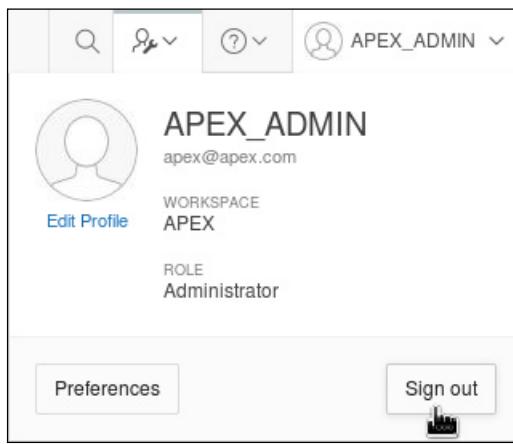
- e. Scroll down and enter the password for the apex user as mentioned in the password document. Enter the same password in the **Confirm Password** field. Select **No** for **Require Change of Password on First Use**.

The screenshot shows the password creation section. It includes fields for 'Password' and 'Confirm Password', both containing three dots as placeholder. A note says 'Passwords are case sensitive'. Below is a dropdown for 'Require Change of Password on First Use' with 'No' selected.

- f. Go to the top of the page and click **Create User**.



- g. 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 logging in to the Oracle Application Express workspace as a workspace administrator.

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

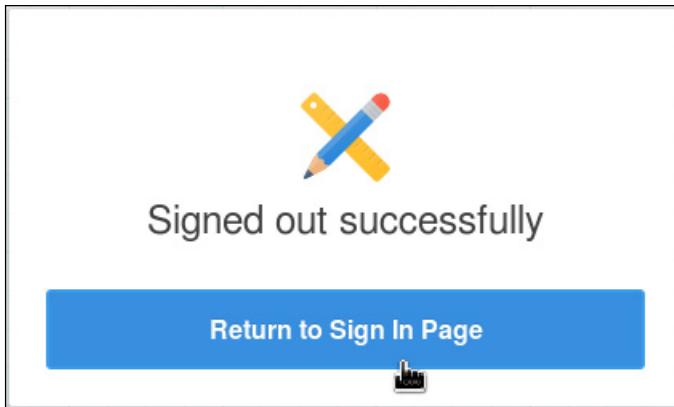
### Overview

In this practice solution, steps are provided to:

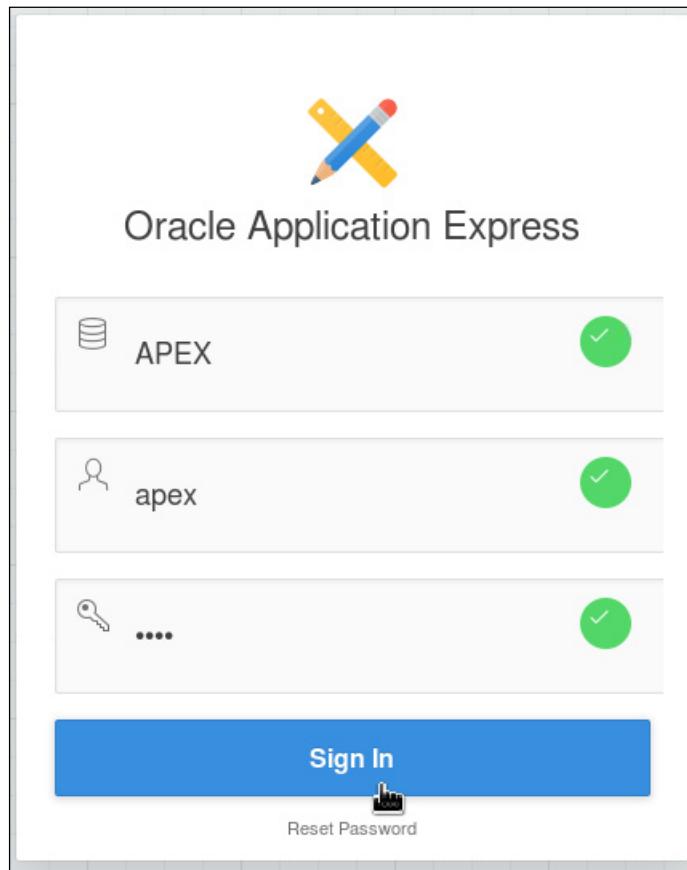
- Log in to Oracle Application Express as a developer user
- Run the sample database application
- Install a packaged application and use it
- Remove the packaged application from the workspace

### Steps

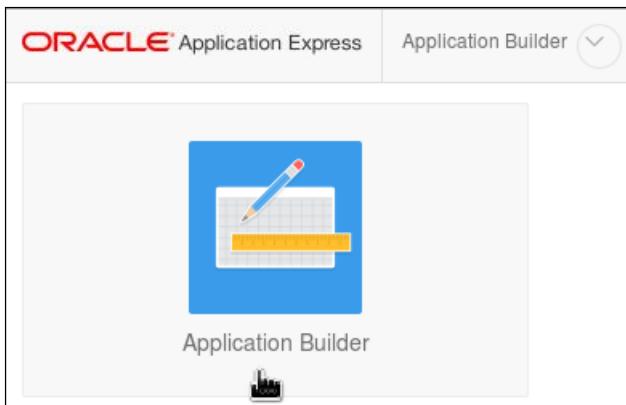
1. Log in to Oracle Application Express with the following details:
  - Workspace: APEX
  - Username: apex
  - Password: <mentioned in the password document>
  - a. Click the **Return to Sign In Page** button.



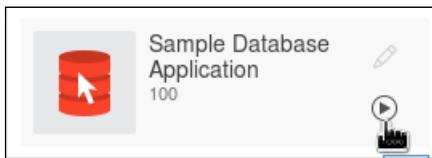
- b. Enter APEX for **Workspace** and enter the `apex` user credentials. Click **Sign In**.



2. Run the sample database application. You run the **Sample Database Application**, which is already available in your workspace.
- a. Click the **Application Builder** icon on the Oracle Application Express home page.



- b. Move the cursor over the **Sample Database Application** and click the **Run** icon.



- c. You will be prompted to enter your login credentials to log in to the application. Enter your Application Express Developer Username and Password and click **Sign In**.

The screenshot shows a sign-in page for the "Sample Database Application". At the top center is a red cylinder icon with a white cursor arrow pointing at it. Below the icon, the text "Sample Database Application" is centered. There are two input fields: the first is for the username, showing "apex" with a green checkmark; the second is for the password, showing "....." with a green checkmark. Below the fields is a message: "To sign in to the Sample Database application, please use your Application Express Workspace username and password." Further down, another message reads: "For further information, please refer to "Utilizing Packaged Applications" in the Oracle Application Express Application Builder User's Guide." At the bottom is a large blue "Sign In" button with a white hand cursor icon pointing to it.

- d. The Sample Database Application is displayed. Click the various tabs and understand what the application does.

The screenshot shows the Oracle Apex Sample Database Application. The dashboard provides a high-level overview of the database. Below the dashboard, there are two tables: "Top Customers" and "Top Products".

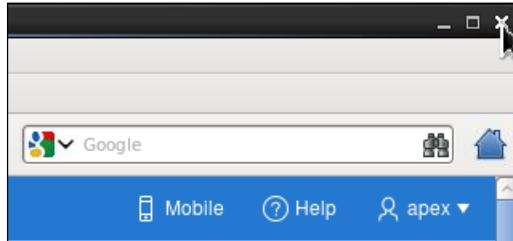
**Top Customers:**

| Customer Name       | Total Sales |
|---------------------|-------------|
| Bradley, Eugene     | \$2,760.00  |
| Logan, Edward       | \$2,420.00  |
| Dulles, John        | \$2,380.00  |
| Hartsfield, William | \$2,370.00  |
| LaGuardia, Fiorello | \$1,090.00  |
| OHare, Frank        | \$1,060.00  |
| Lambert, Albert     | \$950.00    |

**Top Products:**

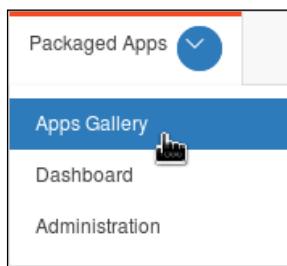
| Product Details  | Value              |
|------------------|--------------------|
| Number of Orders | 2                  |
| Address          | Schoephoester Road |
| City             | Windsor Locks      |
| State            | CT                 |
| Postal Code      | 06096              |
| Email            |                    |
| Phone Number     | 860-555-1835       |
| Credit Limit     | 1000               |
| Tags             | REPEAT CUSTOMER    |

- e. After you have explored the application, close the browser.

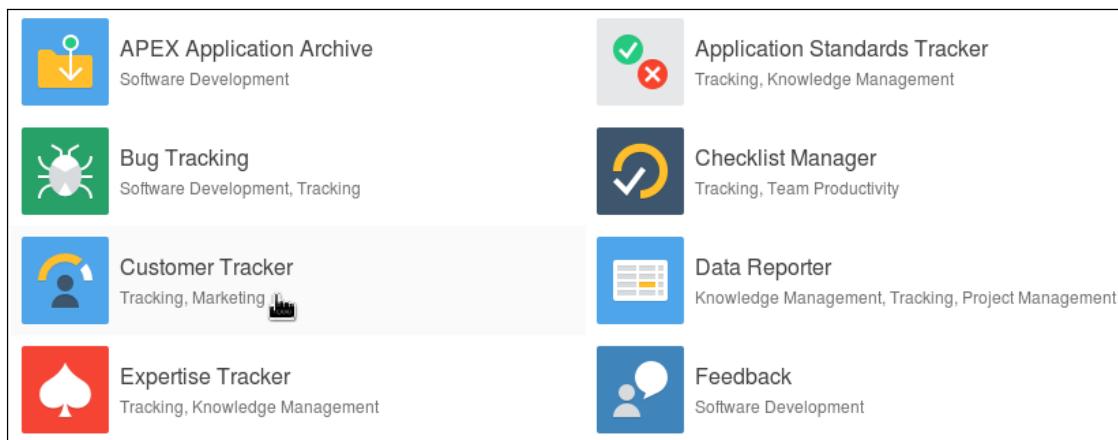


You have successfully run the sample database application.

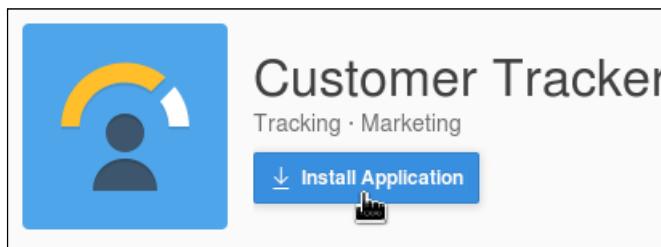
3. Install and use a packaged application. You install and use **Customer Tracker** available under packaged applications in your workspace.
- a. Click the arrow next to **Packaged Apps** in the navigation bar and select **Apps Gallery**.



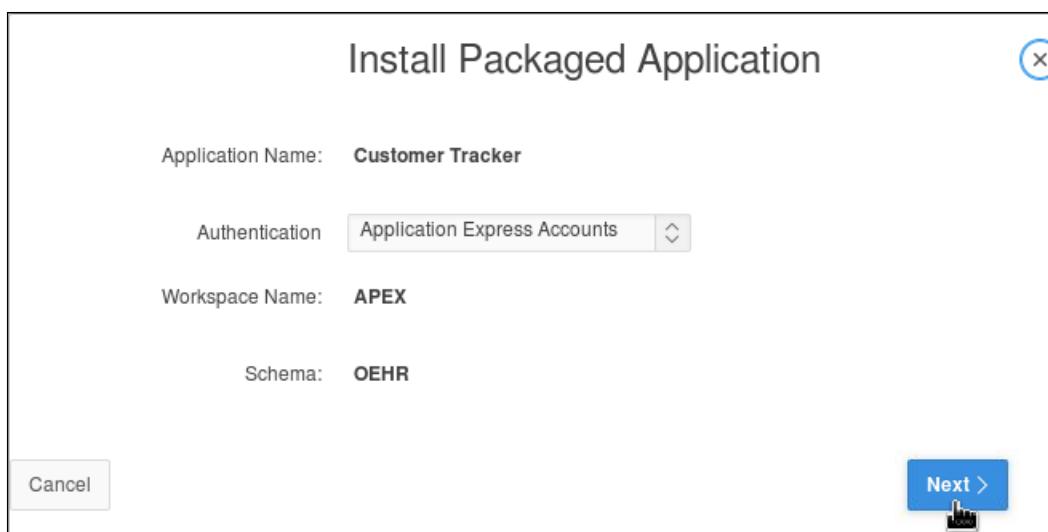
- b. You find a set of packaged applications that are available for you to install. In this activity, you install the Customer Tracker application. Click **Customer Tracker**.



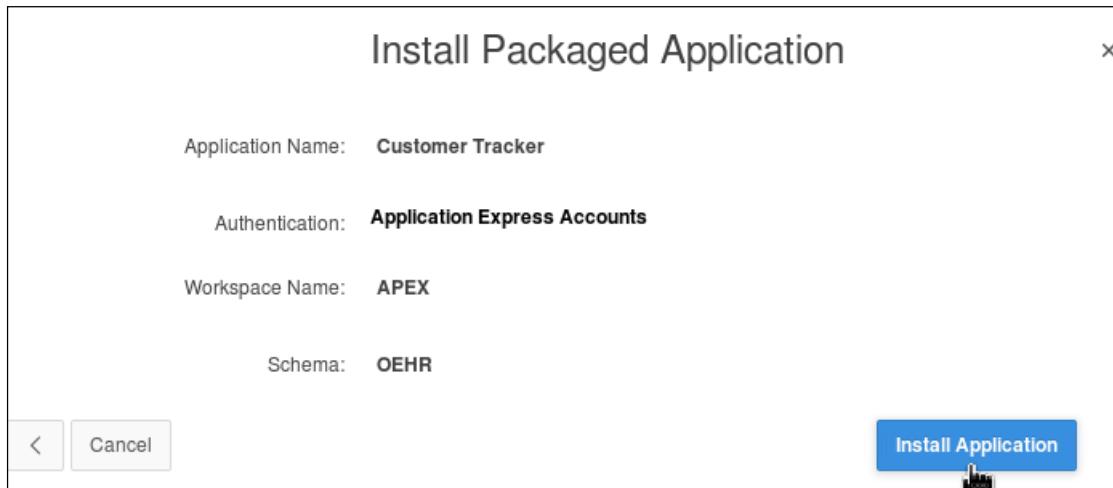
- c. A description about the application is available. Read the description and click **Install Application**.



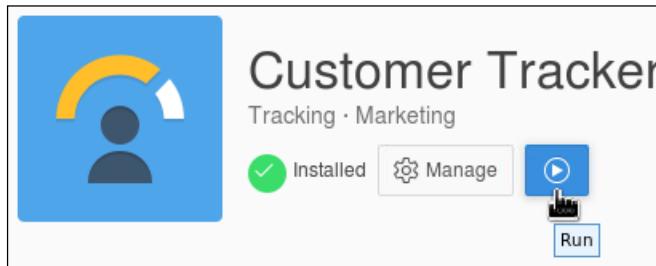
- d. Retain the default authentication and click **Next >**.



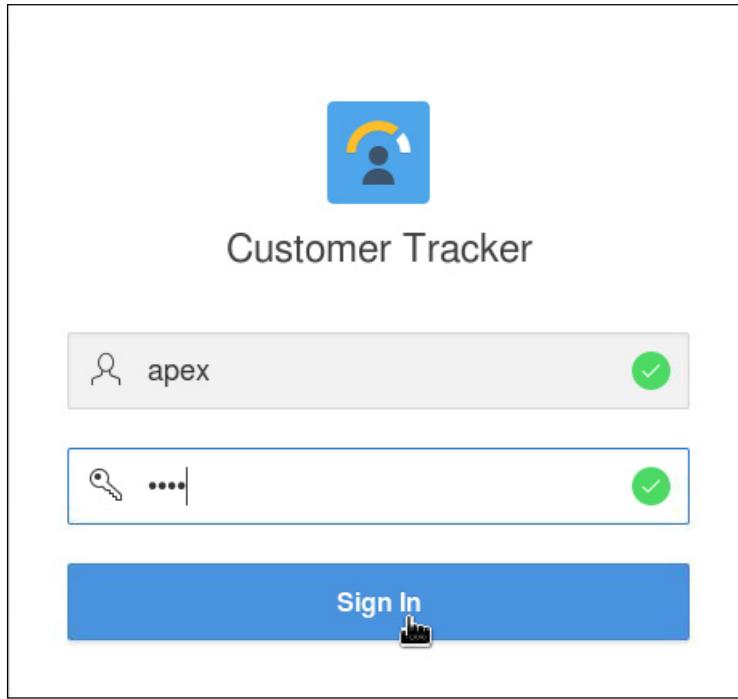
- e. Click **Install Application**.



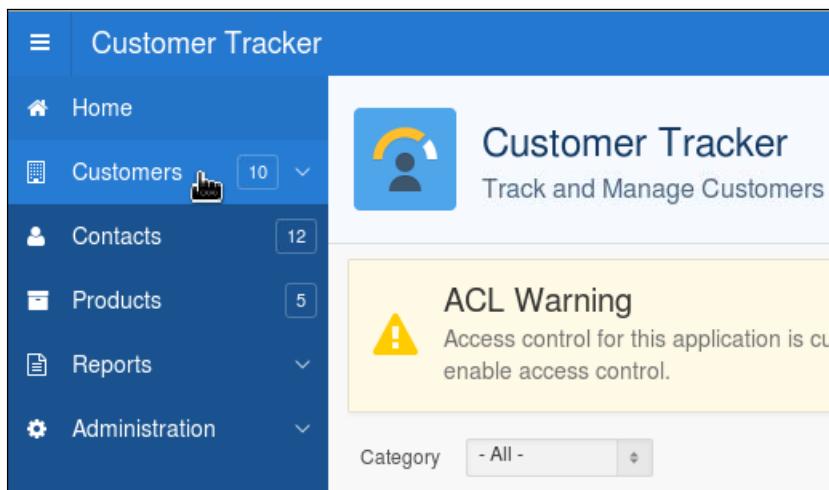
- f. After installing the application, click the **Run** icon .



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



- h. You are taken to the Home page of the application. You can click the navigation tabs to understand how the application works. Click **Customers**.



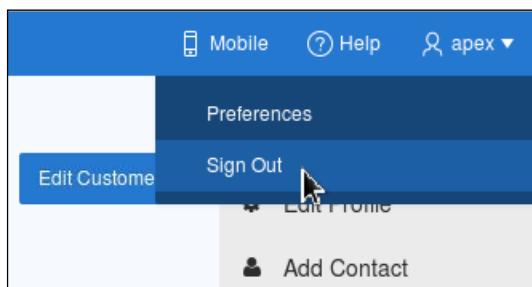
- i. Click **Add Customer** to add the customer data.



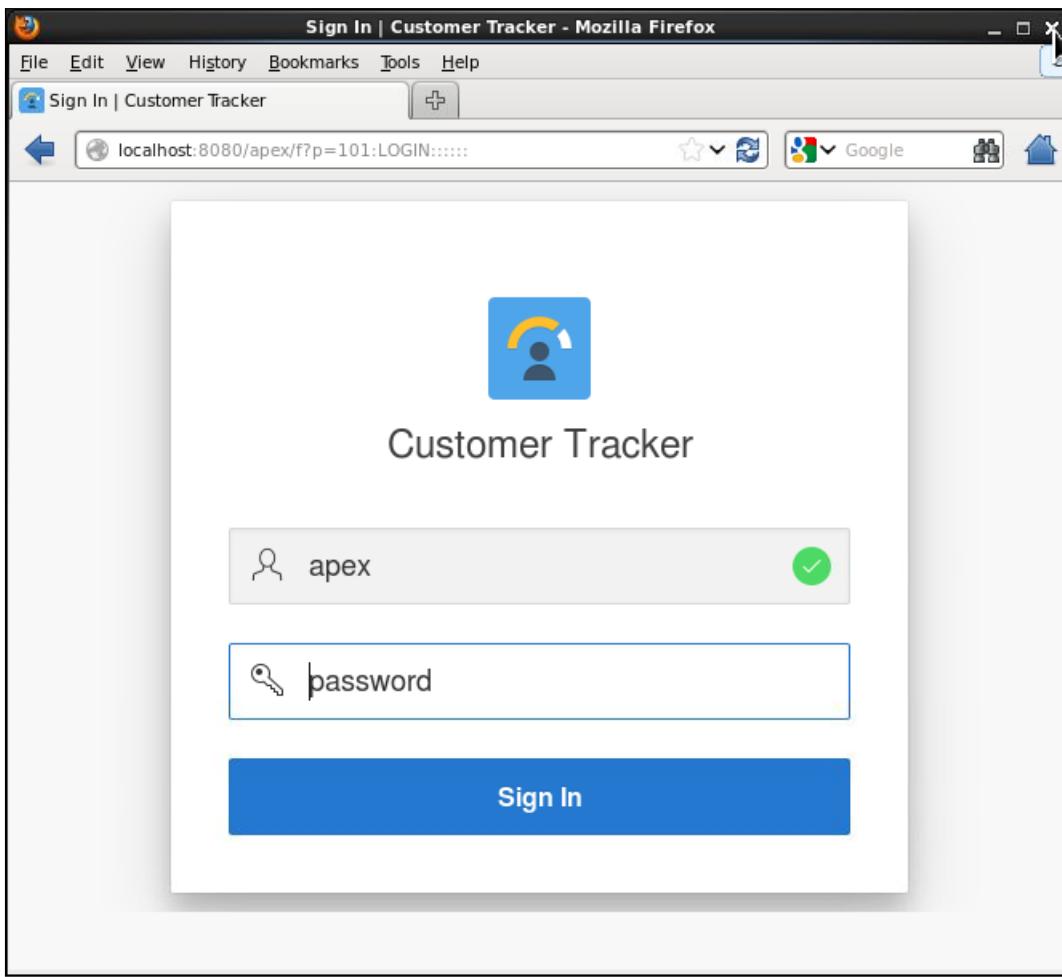
- j. Provide some information in the form input fields and click **Add Customer** at the top of the page. This will add the customer data into the database.

|                  |                                    |     |
|------------------|------------------------------------|-----|
| Customer Name *  | Customer A                         | (?) |
| Status           | Customer                           | (?) |
| Category         | n/a                                | (?) |
| Marquee Customer | No                                 | (?) |
| Sales Channel    | - none specified -                 |     |
| Tags             | Enter tags separated by commas (?) |     |
| Summary          |                                    |     |

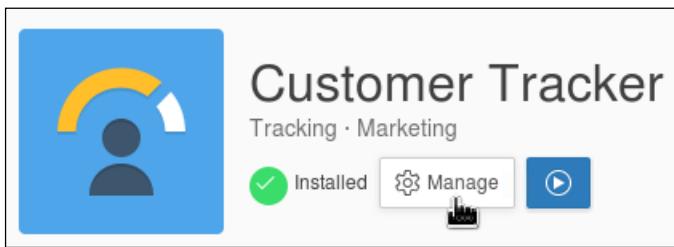
- k. You can try similar activities with the different navigation tabs available. Click the apex user icon on the navigation bar and click **Sign Out** to log out of the application.



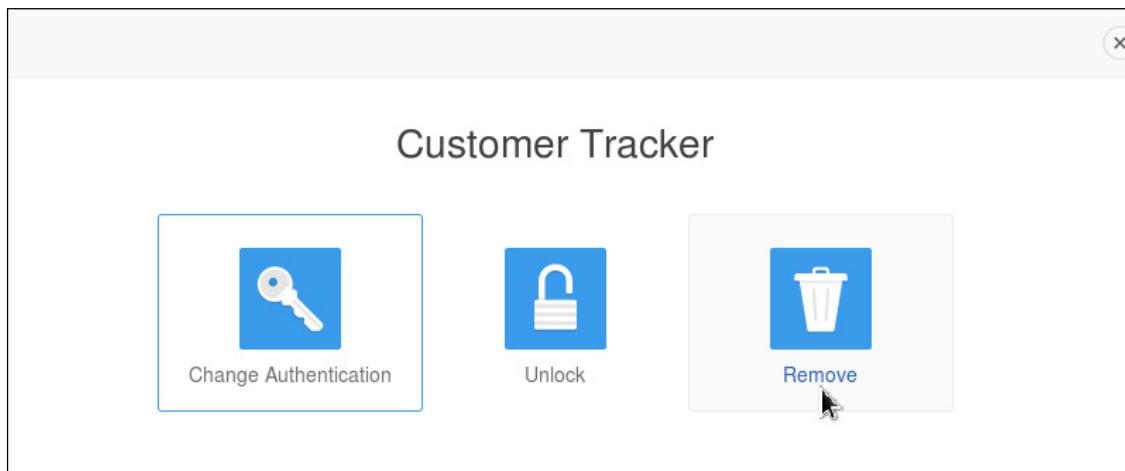
- I. Close the browser.



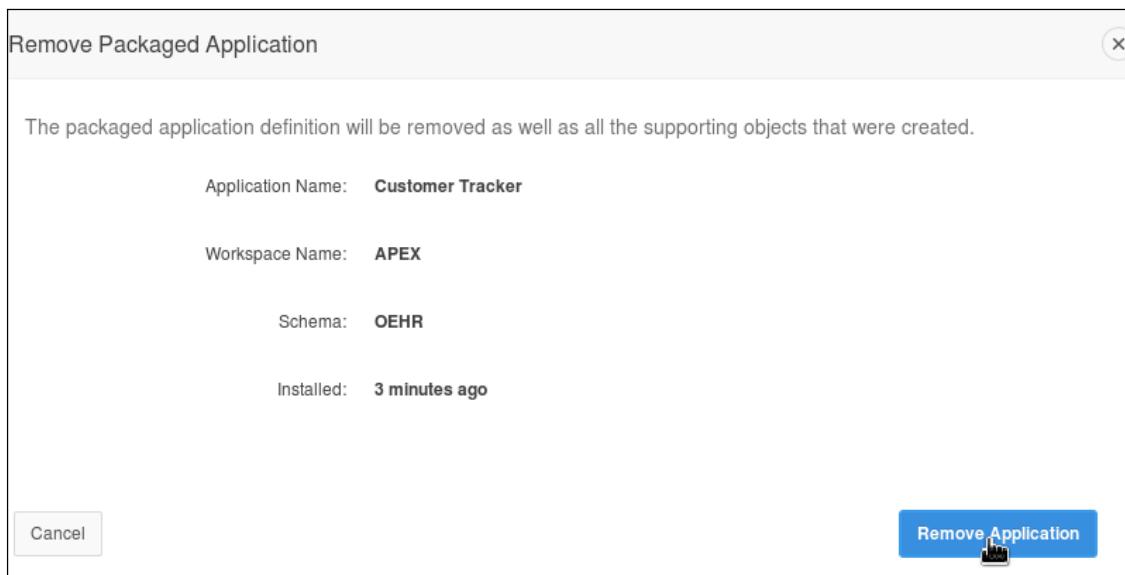
4. Remove the **Customer Tracker** packaged application from your workspace.
  - a. Click **Manage**.



- b. Click **Remove**.



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



Wait until the application is removed completely.



# **Practices for Lesson 3: Creating a Desktop and Mobile Database Application**

## **Chapter 3**

## Practices for Lesson 3: Overview

---

### Practices Overview

There are three practices in this lesson. In these practices, you create a database application with Desktop Interface and then add a Mobile Interface to it. You also create database application by using a spreadsheet and a stand-alone Mobile Database Application.

## Practice 3-1: Creating Database Applications

---

### Overview

In this practice, you create GlobalMart Management Tool (GMT) as a Desktop as well as a Mobile 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. Create a database desktop 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.
2. Add a mobile user interface to the GMT desktop application.

### Catch Up

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

- a. Log 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` user is created.

## Practice 3-2: Creating a Database Application from a Spreadsheet

### Overview

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

### 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 spreadsheet. 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. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 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 3-3: Creating a Mobile Database Application

---

### Overview

In this practice, you create a stand-alone Mobile Database 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. Create a database mobile application.

### Catch Up

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

- a. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 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.

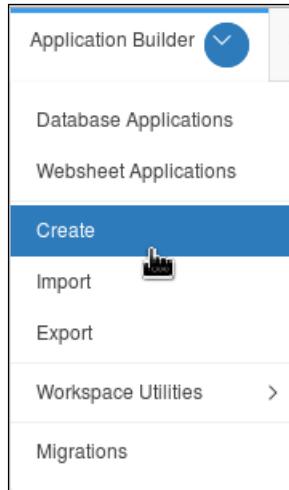
## Solution 3-1: Creating Database Applications

### Overview

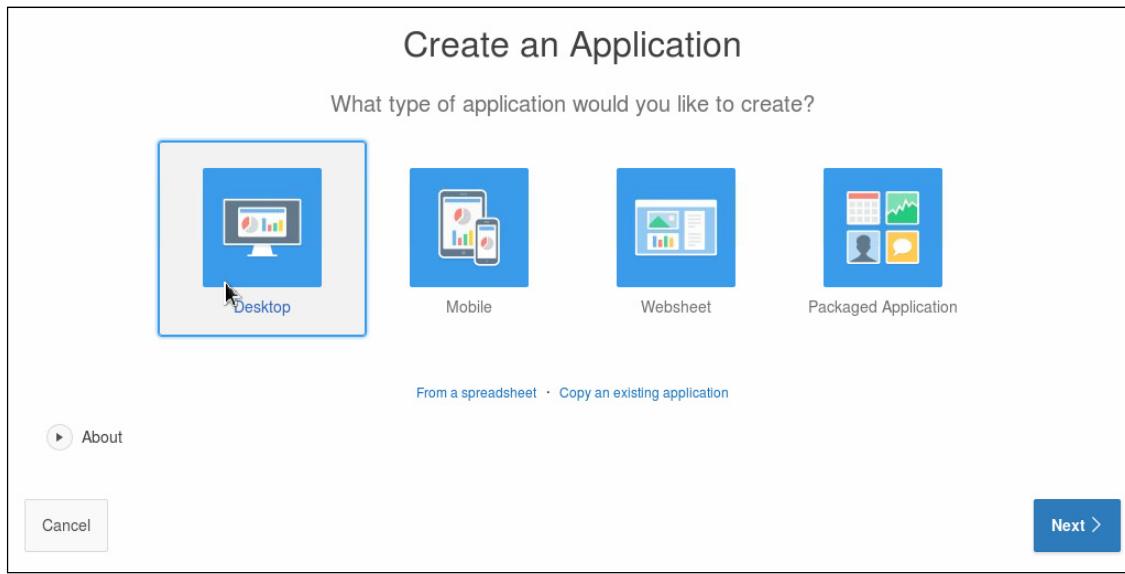
In this practice solution, steps are provided for creating the GlobalMart Management Tool application as a Desktop as well as a Mobile Application.

### Steps

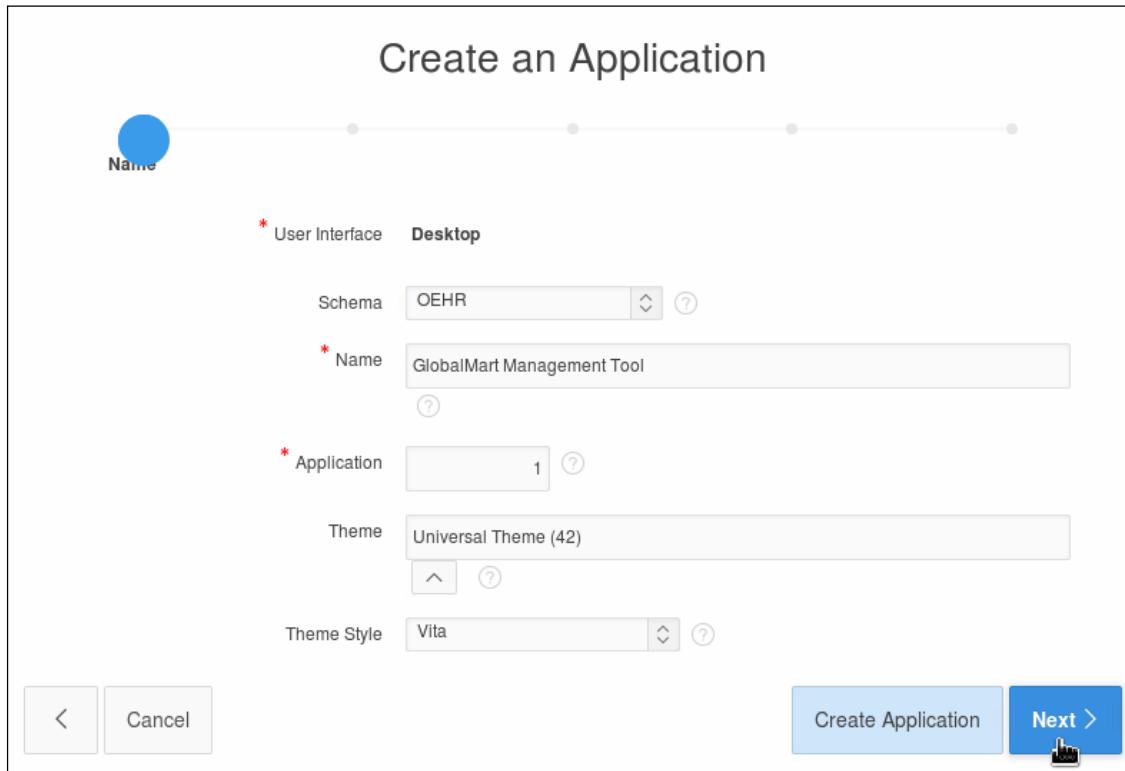
1. Create a database desktop application named **GlobalMart Management Tool**. In the rest of the practices in this course, you will enhance and complete this application by creating pages, regions, processes, and so on.
  - a. Select the **Application Builder** pull-down menu and click **Create**.



- b. In the Create Application Wizard, select **Desktop**.



- c. Ensure that **OEHR** is selected for **Schema**. Enter GlobalMart Management Tool for **Name**, and provide an **Application** number, and click **Next >**.  
**Note:** Throughout this guide, the application number **1** is used for the GlobalMart Management Tool application.



**Create an Application**

User Interface: Desktop

Schema: OEHR

Name: GlobalMart Management Tool

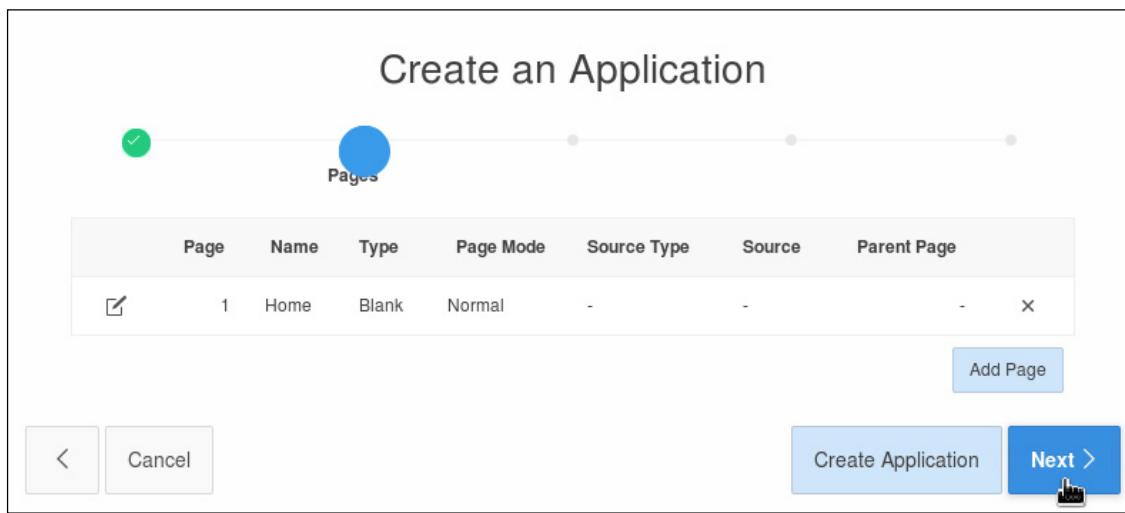
Application: 1

Theme: Universal Theme (42)

Theme Style: Vita

< Cancel Create Application Next >

- d. Notice that a Home Page is created. Click **Next >**.



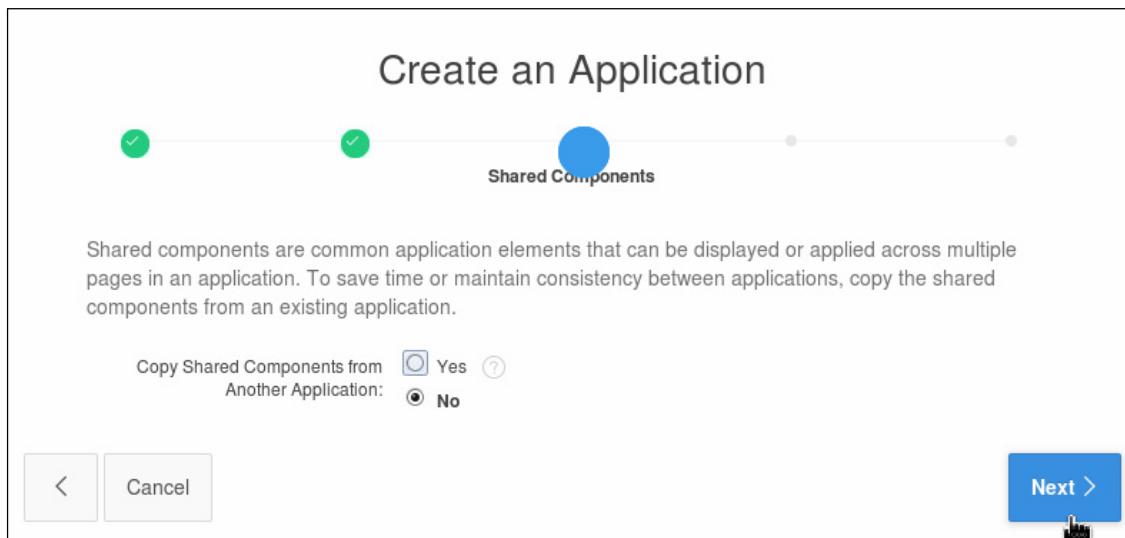
**Create an Application**

Pages

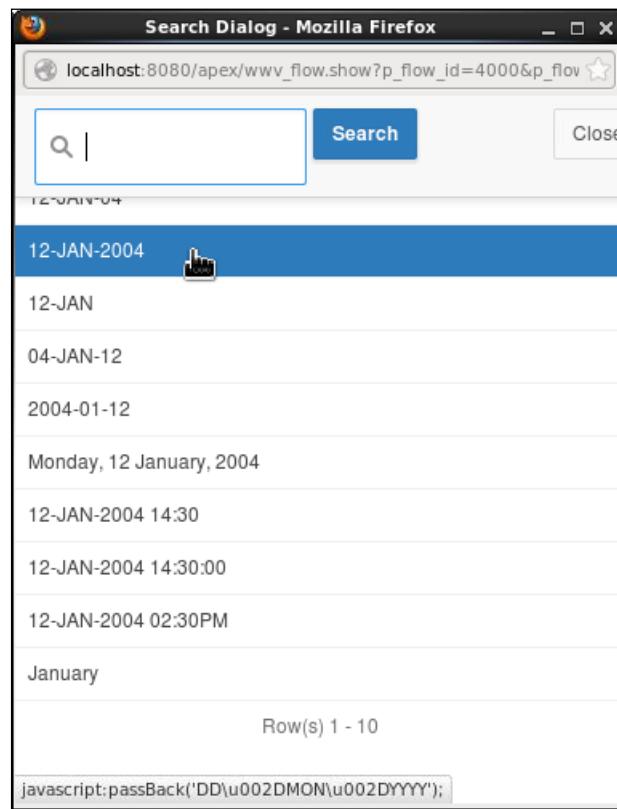
| Page                                | Name | Type | Page Mode | Source Type | Source | Parent Page |   |
|-------------------------------------|------|------|-----------|-------------|--------|-------------|---|
| <input checked="" type="checkbox"/> | 1    | Home | Blank     | Normal      | -      | -           | x |

Add Page < Cancel Create Application Next >

- e. Accept the default and click **Next >**.



- f. Select **DD-MON-YYYY** for **Date Format** by clicking the up arrow to the right, and click **Next >**.



### Create an Application

Attributes

|                                       |                              |
|---------------------------------------|------------------------------|
| Authentication Scheme                 | Application Express Accounts |
| Language                              | English (en)                 |
| User Language Preference Derived From | Application Primary Language |
| Date Format                           | dd-MON-YYYY                  |
| Date Time Format                      |                              |
| Timestamp Format                      |                              |
| Timestamp Time Zone Format            |                              |

< Cancel Next >

g. Click **Create Application**.

### Create an Application

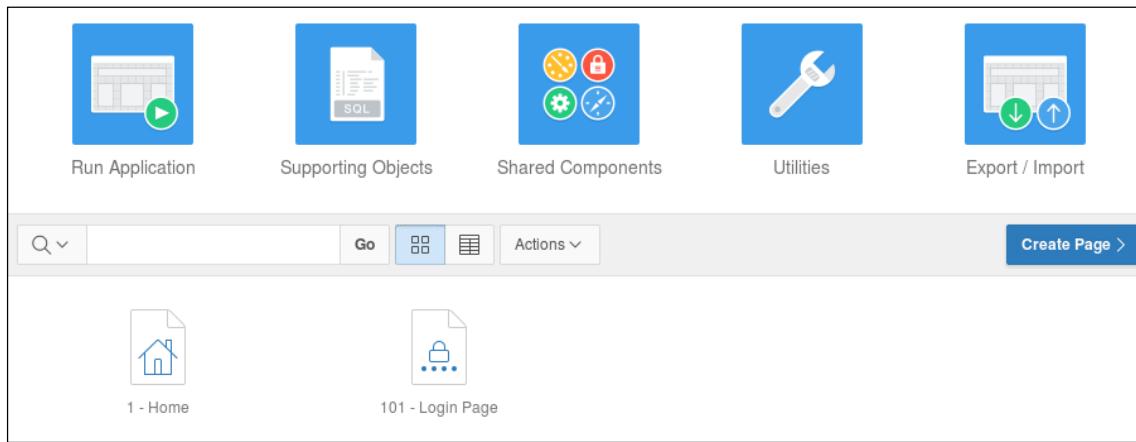
Confirm

You have requested to create an application with the following attributes. Please confirm your selections.

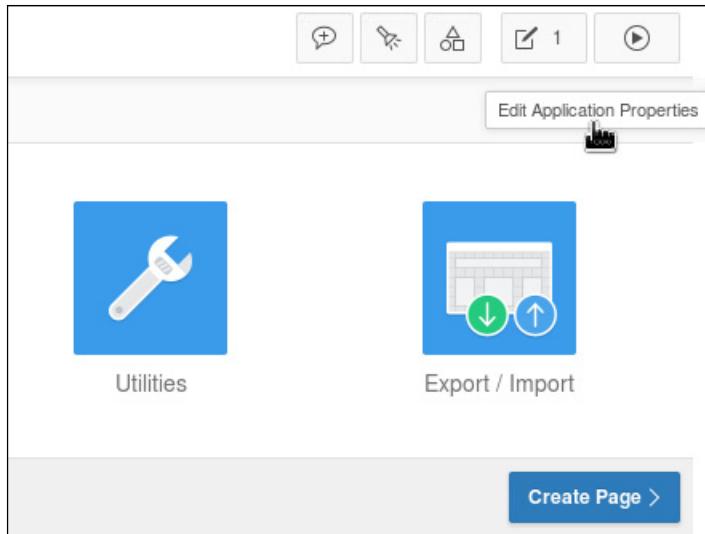
|                               |                                    |
|-------------------------------|------------------------------------|
| Application                   | 1                                  |
| Name                          | GlobalMart Management Tool         |
| Parsing Schema                | OEHR                               |
| Default Language              | en                                 |
| Navigation                    | Navigation Menu List               |
| Default Authentication Scheme | Application Express Authentication |
| Theme Type                    | Standard                           |
| Theme                         | Universal Theme                    |
| Subscribe Theme               | No                                 |

< Cancel Create Application >

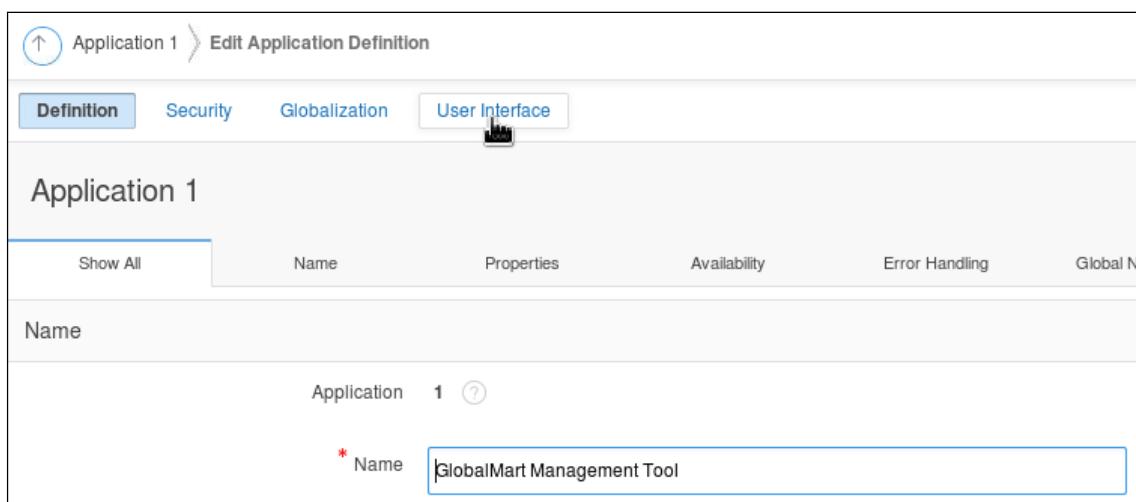
- h. An application with an empty Home page and the default Application Express Authentication Login page is created. You will complete this application in the rest of the practices in this course.



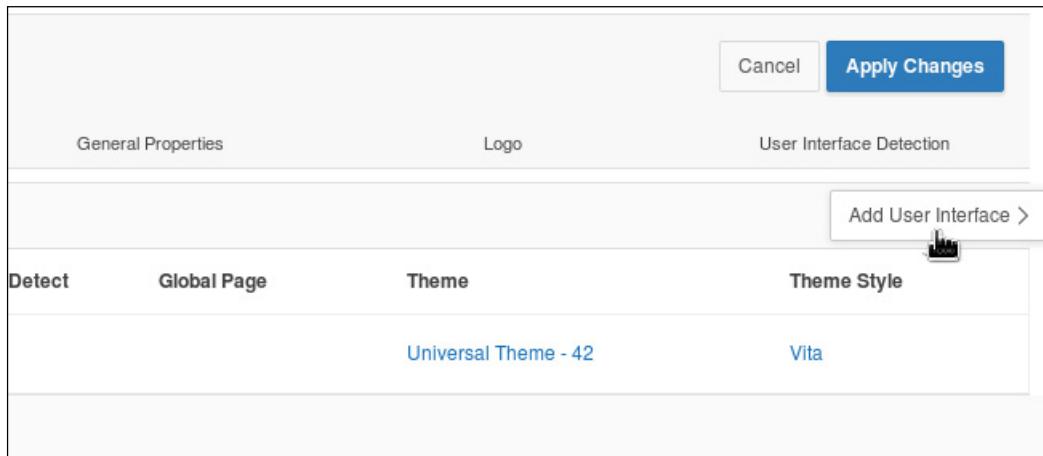
2. Add a mobile user interface to the GMT desktop application.  
a. Click **Edit Application Properties**.



- b. Click the **User Interface** tab.



- c. Click **Add User Interface >**.



- d. For **Type**, select **Mobile** and click **Next >**.

The screenshot shows a 'User Interface' creation screen. At the top center is the title 'User Interface'. Below it is a progress bar with a green circle at the start and a blue circle over the word 'User Interface'. The main form fields are:

- \* User Interface: Add User Interface [?](#)
- \* Type: Mobile [?](#)
- Display Name: Mobile [?](#)
- Sequence: 20 [?](#)
- Auto Detect: Yes [?](#)
- Home URL: f?p=&APP\_ID.:HOME\_JQM\_SMARTPHONE:&SESSION. [?](#) >
- Login URL: f?p=&APP\_ID.:LOGIN\_JQM\_SMARTPHONE:&SESSION. [?](#) >

At the bottom left are '<' and 'Cancel' buttons. At the bottom right is a large 'Next >' button with a mouse cursor icon.

- e. Ensure that **Mobile (Theme 51)** is selected for **Theme** and click **Next >**.

The screenshot shows the 'Create Theme' wizard. Step 1 is titled 'Identify Theme'. It has three green checkmarks on a progress bar. The 'Theme Type' dropdown is set to 'Standard Themes'. The 'Theme' dropdown is set to 'Mobile (Theme 51)'. Below the dropdowns are 'Back' and 'Cancel' buttons, and a large blue 'Next >' button with a cursor icon.

- f. Click **Create**.

The screenshot shows the 'Create Theme' wizard. Step 2 is titled 'Confirm'. It has three green checkmarks on a progress bar. The 'Theme' dropdown is set to 'Mobile (51)'. Below the dropdown are 'Back' and 'Cancel' buttons, and a large blue 'Create' button with a cursor icon.

- g. This will add a new set of mobile pages to the application. Each user interface has its own Home page. When running the application on a desktop and mobile, the respective Home page will be displayed. This capability will be discussed in later lessons in the class.

The screenshot shows the GlobalMart Management Tool interface. At the top, there are five main navigation icons: Run Application, Supporting Objects, Shared Components, Utilities, and Export / Import. Below the navigation bar is a search bar and a toolbar with 'Actions' and 'Create Page >'. A grid of five mobile pages is displayed: 0 - Global Page - Mobile, 1 - Home, 2 - Home, 101 - Login Page, and 1001 - Login Page. Each page icon includes a green checkmark indicating it is a mobile page.

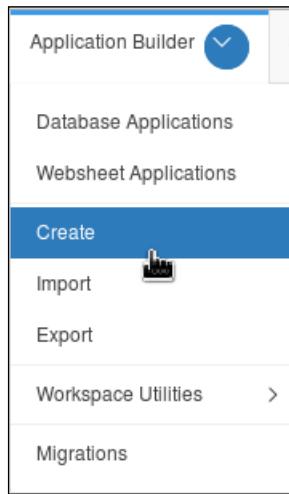
## Solution 3-2: Creating a Database Application from a Spreadsheet

### Overview

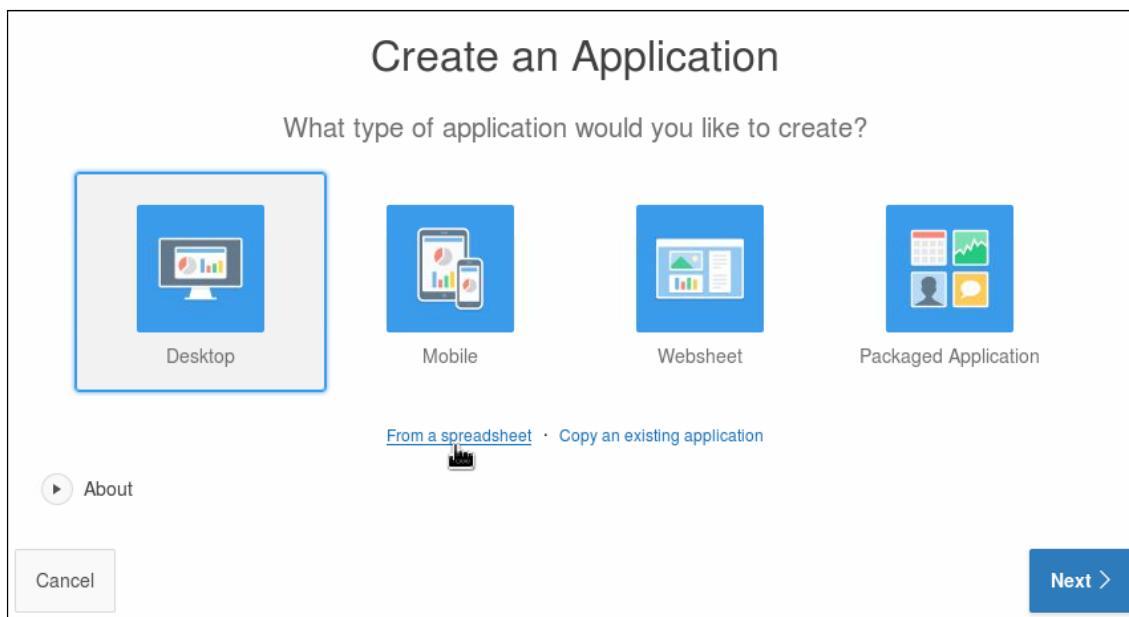
In this practice solution, steps are provided for creating a database application from a spreadsheet.

### Steps

1. Create a database application from a spreadsheet. 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 **Application Builder** pull-down menu and click **Create**.



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



- c. Select **Upload file, comma separated (\*.csv) or tab delimited** and click **Next >**.

### Create Application From Spreadsheet

Load Method

Create an application from spreadsheet data. Upload or paste spreadsheet data to create a table. The resulting application will feature query, insert, update, and analysis capabilities on the newly created table.

Import From:  Upload file, comma separated (\*.csv) or tab delimited [?](#)  
 Copy and paste

< Cancel **Next >**

- d. Click the **Browse...** button in the Text File field.

### Create Application From Spreadsheet

Data

The file to be uploaded must be text-based. To upload a .XLS file, first save it as CSV.

\* Text File  No file selected. [?](#)

\* Separator  [?](#)

Optionally Enclosed By  [?](#)

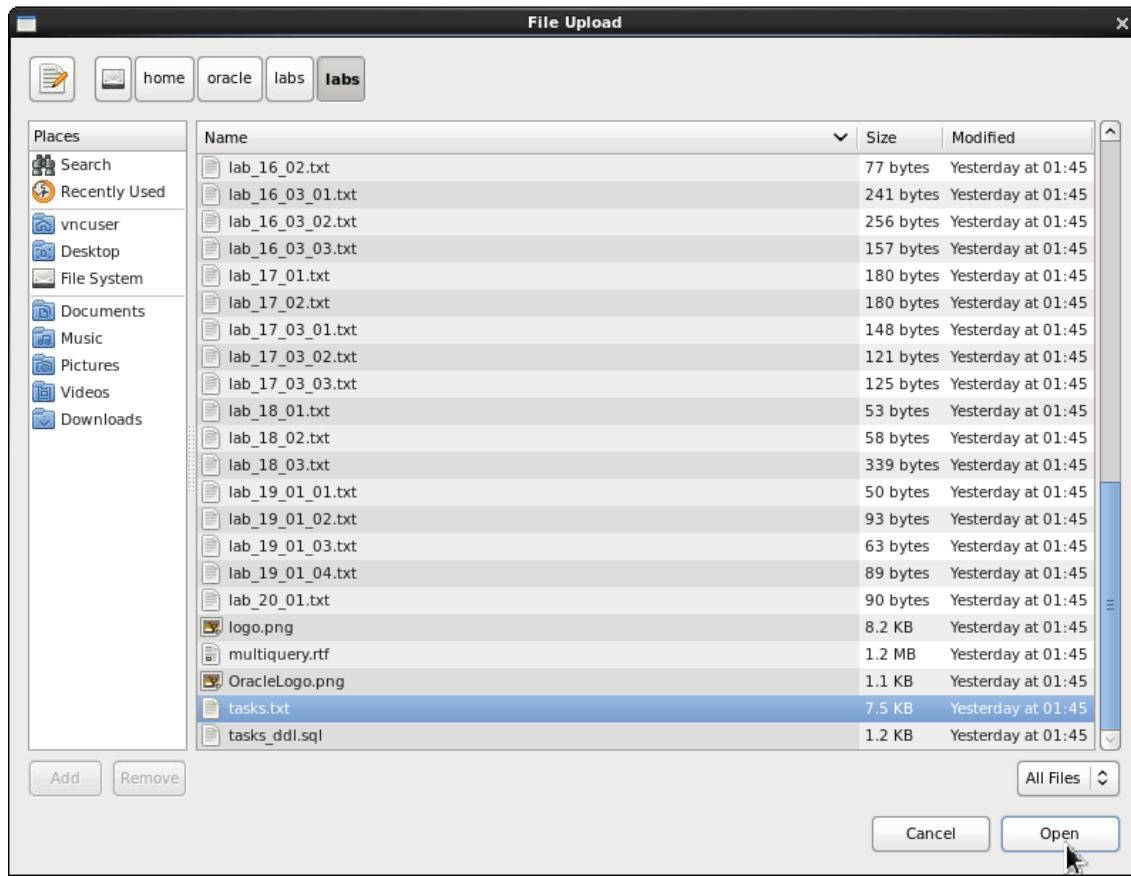
First row contains column names. [?](#)

File Character Set  [?](#)

> Globalization

< Cancel **Next >**

- e. Select the **tasks.txt** file from the `/home/oracle/labs/labs/` folder and click **Open**.



- f. To specify that the data is tab delimited, enter `\t` in the **Separator** field. Ensure that the **First row contains column names** check box is selected and click **Next >**.

### Create Application From Spreadsheet

The file to be uploaded must be text-based. To upload a .XLS file, first save it as CSV.

\* Text File  tasks.txt

\* Separator

Optionally Enclosed By

First row contains column names.

File Character Set

> Globalization

- g. For **Table Name**, enter TASKS. Note that you can see all the data sorted as rows and columns. Click **Next >**.

### Create Application From Spreadsheet

This page previews how your table will look. You can modify the suggested table name, change the column names or datatypes, or specify which columns to include.

|  |       |                                  |
|--|-------|----------------------------------|
| * Schema                               | APEX  | <input type="button" value="?"/> |
| * Table Name                           | TASKS | <input type="button" value="?"/> |
| <input type="checkbox"/> Preserve Case |       |                                  |

**Set Table Properties**

| Column Names  | PROJECT                  | TASK_NAME                                 | START_DATE |
|---------------|--------------------------|---|------------|
| Data Type     | VARCHAR2                 | VARCHAR2                                  | DATE       |
| Format        |                          |   |            |
| Column Length | 30                       | 255                                       | 7          |
| Upload        | Yes                      | Yes                                       | Yes        |
| Row 1         | Maintain Support Systems | HR software upgrades                      | 1-Jan-1    |
| Row 2         | Maintain Support Systems | Apply Billing System updates              | 1-Jan-1    |
| Row 3         | Maintain Support Systems | Investigate new Virus Protection software | 15-Feb-1   |
| Row 4         | Maintain Support Systems | Arrange for holiday coverage              | 10-Jan-1   |
| Row 5         | Email Integration        | Complete plan                             | 8-Feb-1    |
| Row 6         | Email Integration        | Check software licenses                   | 12-Feb-1   |

- h. Ensure that **Plural Name** is **Tasks** and accept all other default values. Click **Next >**.

Create Application From Spreadsheet

User Interface Defaults

Schema: APEX (?)

Table Name: TASKS (?)

\* Singular Name Tasks (?)

\* Plural Name Tasks (?)

Column User Interface Defaults

| Column      | Label       |
|-------------|-------------|
| PROJECT     | Project     |
| TASK_NAME   | Task Name   |
| START_DATE  | Start Date  |
| END_DATE    | End Date    |
| STATUS      | Status      |
| ASSIGNED_TO | Assigned To |
| COST        | Cost        |
| BUDGET      | Budget      |

< Cancel Next > 

- i. Ensure that **Application Name** is **TASKS**, **Create Mode** is **Read and Write**, and **Report Implementation** is **Interactive**. Click **Next >**.

### Create Application From Spreadsheet

Application Options

Schema: APEX [?](#)

Table Name: TASKS [?](#)

\* Application Name:  [?](#)

Create Mode:  Read Only [?](#)  Read and Write [?](#)

Report Type: Interactive [?](#)

[<](#) [Cancel](#) [Next >](#) 

- j. Ensure that the **Universal Theme (42)** is selected and click **Next >**.

### Create Application From Spreadsheet

User Interface Theme

Show: Standard Themes [?](#)

Select a theme: Universal Theme (42) [?](#)

Theme Style: Vita [?](#)

[<](#) [Cancel](#) [Next >](#) 

- k. Click **Create Application**.

Create Application From Spreadsheet

Owner: APEX [?](#)

Table: TASKS [?](#)

Application Name: TASKS [?](#)

Theme: Universal Theme (42) [?](#)

< Cancel Create Application

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

Application 109 - TASKS

Run Application

Supporting Objects

Shared Components

Q Go Actions

1 - Report Page 2 - Insert Form 3 - Update Form

- m. Enter the developer user credentials and click **Log In**.

Log In

Username

Password

Log In

- n. The home page of the TASKS application is displayed. It displays an interactive report by using the data from the flat file. Click **Home** on the Developer toolbar to return to the development environment.

The screenshot shows a Firefox browser window titled "Report Page - Mozilla Firefox". The URL in the address bar is "localhost:8080/apex/f?p=109:1:16450128224028::::". The page itself is titled "TASKS" and "Home". It features a search bar with a magnifying glass icon, a "Go" button, and an "Actions" dropdown menu. A "Create" button is located in the top right corner of the grid. Below the header is a table with the following columns: Project, Task Name, Start Date, End Date, Status, Assigned To, Cost, and Budget. The table contains 12 rows of task data. At the bottom of the page is a toolbar with various buttons like "Application Home Page", "Edit Page 1", "Session", "View Debug", "Debug", "Show Grid", "Quick Edit", "Theme Roller", and "Print".

|    | Project                        | Task Name  | Start Date | End Date  | Status  | Assigned To   | Cost | Budget |
|----|--------------------------------|--|------------|-----------|---------|---------------|------|--------|
| 1  | Maintain Support Systems       | HR software upgrades                               | 01-JAN-10  | 27-FEB-10 | Closed  | Pam King      | 8000 | 7000   |
| 2  | Maintain Support Systems       | Apply Billing System updates                       | 01-JAN-10  | 28-FEB-10 | closed  | Russ Sanders  | 5000 | 7000   |
| 3  | Maintain Support Systems       | Investigate new Virus Protection software          | 15-FEB-10  | 23-MAR-10 | Open    | Pam King      | 1700 | 1500   |
| 4  | Maintain Support Systems       | Arrange for holiday coverage                       | 10-JAN-10  | 12-JAN-10 | Closed  | Al Bines      | 300  | 500    |
| 5  | Email Integration              | Complete plan                                      | 08-FEB-10  | 14-FEB-10 | Closed  | Mark Nile     | 500  | 750    |
| 6  | Email Integration              | Check software licenses                            | 12-FEB-10  | 13-FEB-10 | Closed  | Mark Nile     | 200  | 200    |
| 7  | Email Integration              | Get RFPs for new server                            | 19-FEB-10  | 03-MAY-10 | Open    | Mark Nile     | 4000 | 1000   |
| 8  | Email Integration              | Purchase backup server                             | 12-MAY-10  | 07-JUL-10 | Pending | Al Bines      | 3200 | 3000   |
| 9  | APEX Environment Configuration | Identify server requirements                       | 19-FEB-10  | 20-FEB-10 | Pending | John Watson   | 100  | 200    |
| 10 | APEX Environment Configuration | Specify security authentication scheme(s)          | 20-FEB-10  | 22-FEB-10 | Pending | Scott Spencer | 200  | 300    |
| 11 | APEX Environment Configuration | Determine Web listener configuration(s)            | 20-FEB-10  | 20-FEB-10 | On-Hold | James Cassidy | 100  | 100    |
| 12 | APEX Environment Configuration | "Select servers for Development, Test, Production" | 21-FEB-10  | 24-FEB-10 | Pending | Al Bines      | 200  | 600    |
| 13 | APEX Environment Configuration | Run installation                                   | 28-FEB-10  | 01-MAR-10 | Pending | John Watson   | 100  | 100    |

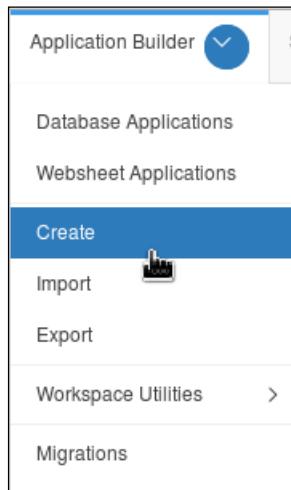
## Solution 3-3: Creating a Mobile Database Application

### Overview

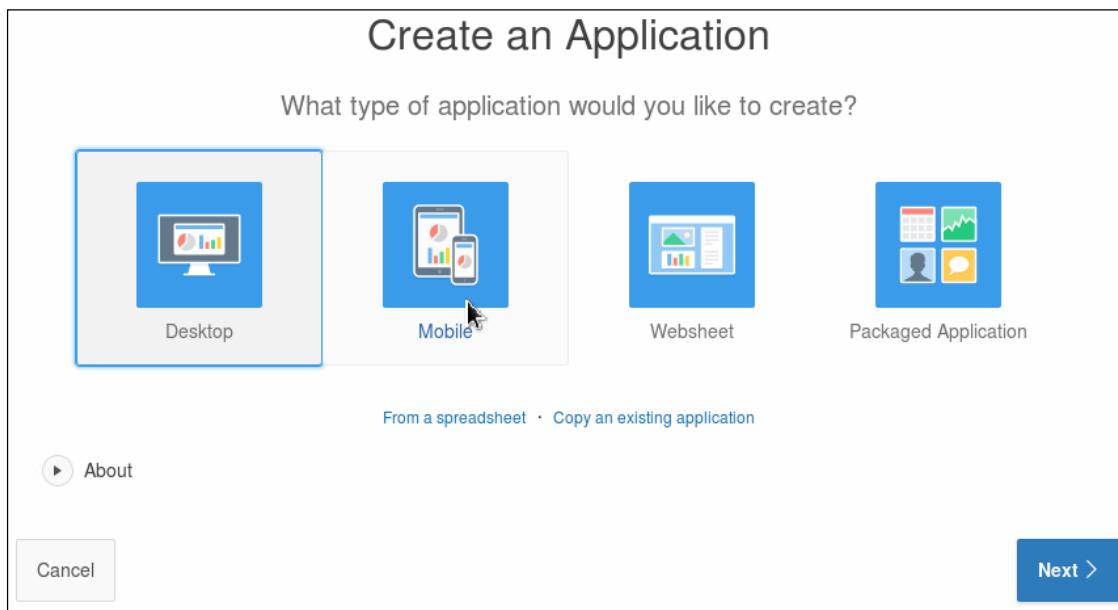
In this practice solution, steps are provided for creating a stand-alone Mobile Database Application.

### Steps

1. Create a database mobile application.
  - a. Select the **Application Builder** pull-down menu and click **Create**.



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



- c. Ensure that **OEHR** is selected for **Schema**. Enter **Standalone Mobile Application** for **Name** and click **Next >**.

**Create an Application**

1. **Name**

User Interface   **Mobile**

Schema: **OEHR**

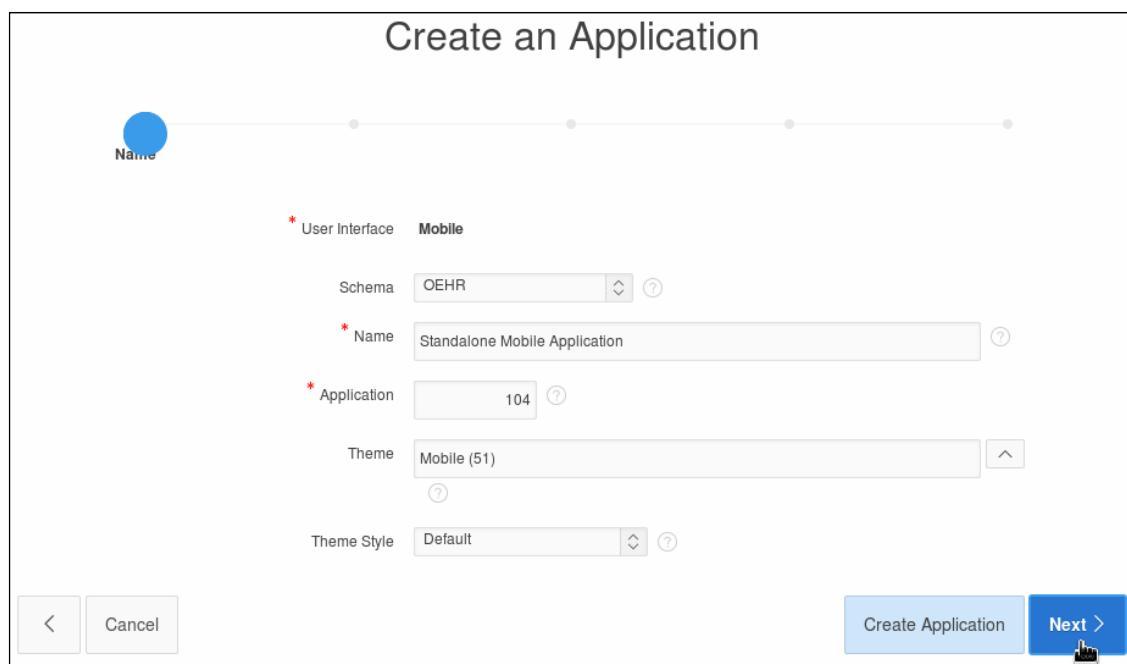
\* Name: **Standalone Mobile Application**

\* Application: **104**

Theme: **Mobile (51)**

Theme Style: **Default**

<   Cancel   Create Application   **Next >**



- d. Notice that a Home Page is created. Click **Next >**.

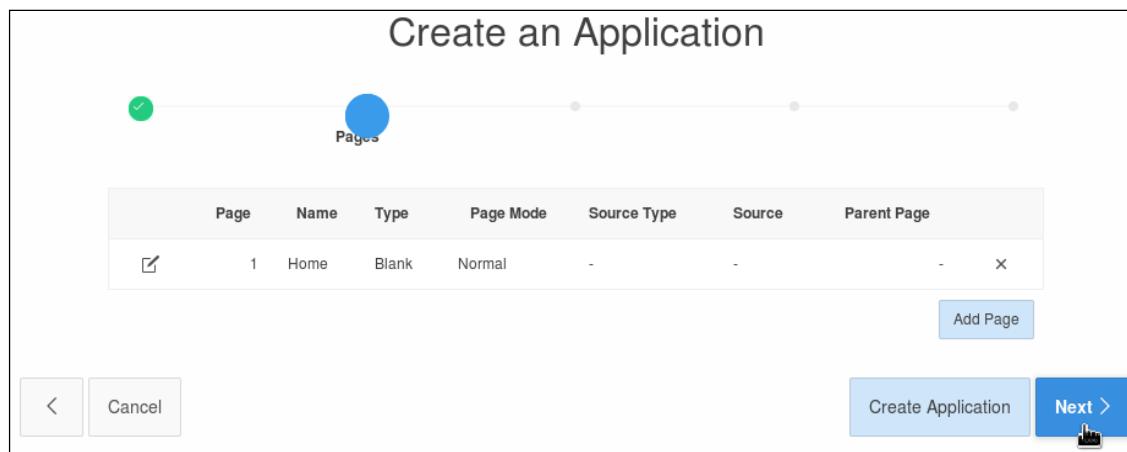
**Create an Application**

2. **Pages**

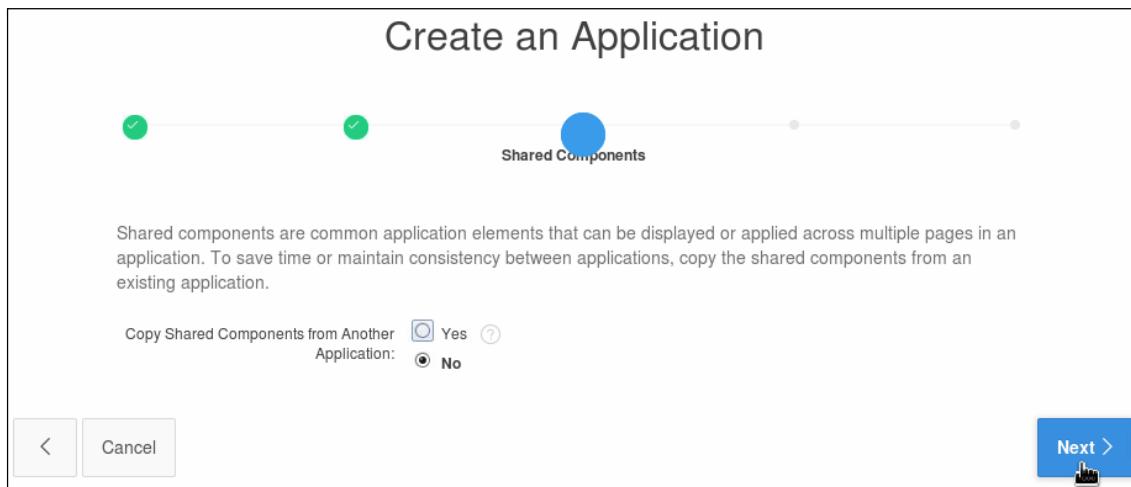
| Page                                | Name | Type | Page Mode | Source Type | Source | Parent Page |
|-------------------------------------|------|------|-----------|-------------|--------|-------------|
| <input checked="" type="checkbox"/> | 1    | Home | Blank     | Normal      | -      | -           |

Add Page

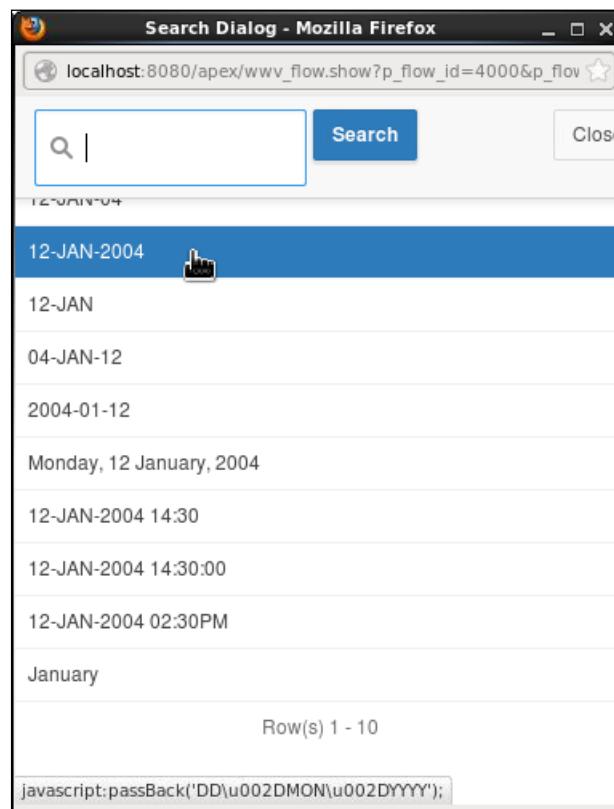
<   Cancel   Create Application   **Next >**



- e. Accept the default and click **Next >**.



- f. Select **DD-MON-YYYY** for **Date Format** by clicking the up arrow to the right, and click **Next >**.



### Create an Application

Attributes

|                                       |                              |   |
|---------------------------------------|------------------------------|---|
| Authentication Scheme                 | Application Express Accounts | <input type="button" value="?"/>                                  |
| Language                              | English (en)                 | <input type="button" value="?"/>                                  |
| User Language Preference Derived From | Application Primary Language | <input type="button" value="?"/>                                  |
| Date Format                           | DD-MON-YYYY                  | <input type="button" value="^"/> <input type="button" value="?"/> |
| Date Time Format                      |                              | <input type="button" value="^"/> <input type="button" value="?"/> |
| Timestamp Format                      |                              | <input type="button" value="^"/> <input type="button" value="?"/> |
| Timestamp Time Zone Format            |                              | <input type="button" value="^"/> <input type="button" value="?"/> |

- g. Click **Create Application**.

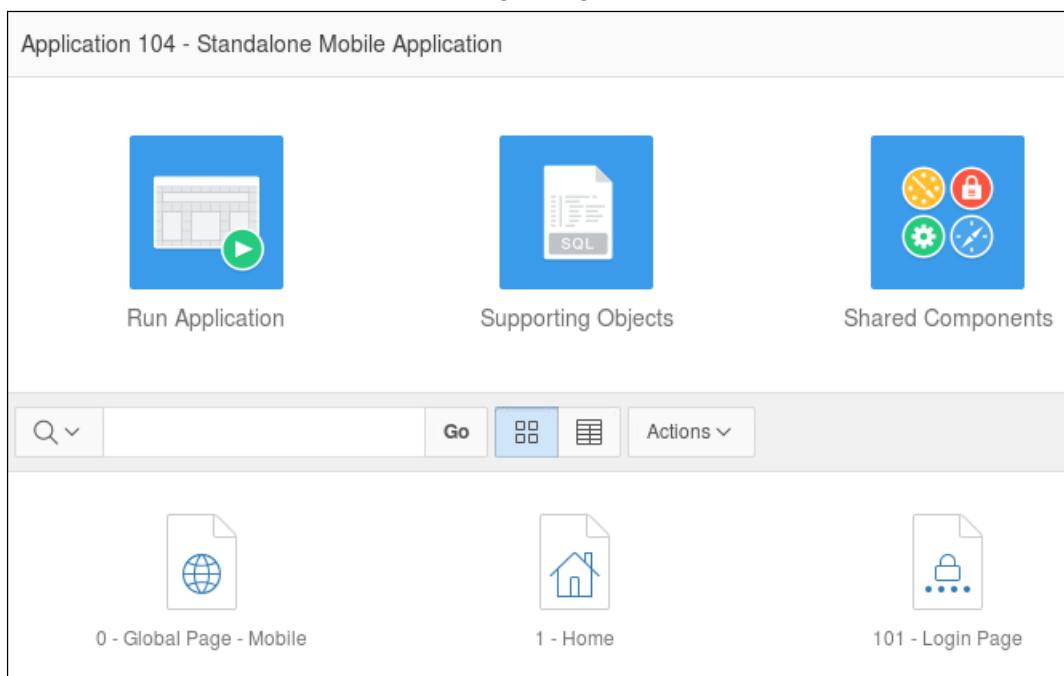
### Create an Application

Confirm

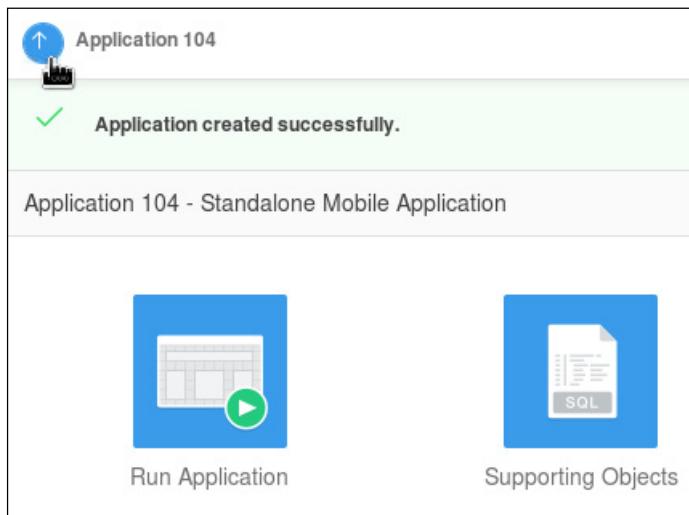
You have requested to create an application with the following attributes. Please confirm your selections.

|                               |                                    |
|-------------------------------|------------------------------------|
| Application                   | 104                                |
| Name                          | Standalone Mobile Application      |
| Parsing Schema                | OEHR                               |
| Default Language              | en                                 |
| Navigation                    | Navigation Menu List               |
| Default Authentication Scheme | Application Express Authentication |
| Theme Type                    | Standard                           |
| Theme                         | Mobile                             |
| Subscribe Theme               | No                                 |

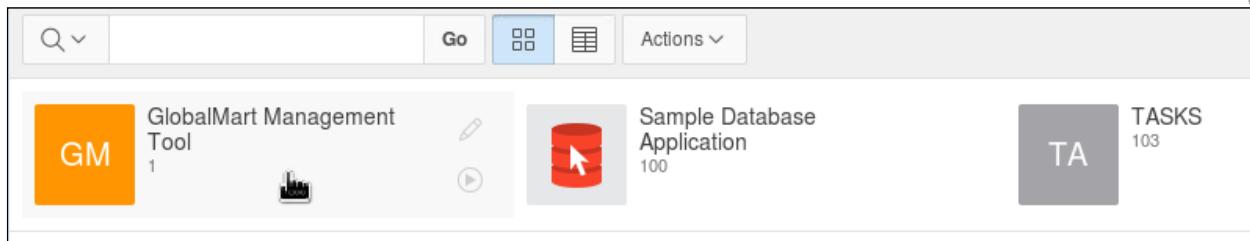
- h. An application with an empty Home page, Global Page for Mobile, and the default Application Express Authentication Login page is created.



- i. Click the up arrow next to the **Application <n>** breadcrumb.



- j. Click **GlobalMart Management Tool** application.





## **Practices for Lesson 4: Working with Reports for Desktop Applications**

**Chapter 4**

## Practices for Lesson 4: Overview

---

### Practices Overview

There are three practices in this lesson. In these practices, you create a Classic Report with search enabled, an Interactive Report and manipulate it, and customize the Interactive 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 using 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 in the GMT application, create a Classic report by using a SQL query. Name the new page and the report as **Top Tier Salary**. The report should display the last name, email, and salary of employees who earn between \$5000 and \$12000 from the EMPLOYEES table. The report should contain a search bar.
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 CUSTOMERS table.
3. Modify the Customer Address List report with the following requirements:
  - 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 haven't completed **Practice 2-1**, perform the following steps:

- a. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 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 4-2: Building and Manipulating an Interactive Report

### Overview

In this practice, you create and manipulate two reports (Customer Report and Employee Commissions) for GMT application. These two reports will provide flexibility for customization from users' end.

### 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 `CUSTOMERS` table on a new page in the GMT application. Name the page **Customers** and the region **Customer Report**. 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.
  - Display only the Customer ID, Customer Name, Address, Phone Number, and Credit Limit.
  - Delete the filter that you created first.
  - Display the rows in ascending order by State.
  - Display only five rows to see how pagination works.
  - Create a **Group By** report to display the number of customers in a particular province or state. Change the pagination to display all rows.
  - Save the report as a private report called **My Report**.
  - Reset the Primary Report to its original state.
  - Display a single row view.
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 `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. Log 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` user is created.

If you haven't completed **Practice 4-1**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_04_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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 4-3: 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 APEX.

### 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.
- Remove the Single Row View icon for each row in the report.
- 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. Log 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` user is created.

If you haven't completed **Practice 4-2**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_04_02.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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.

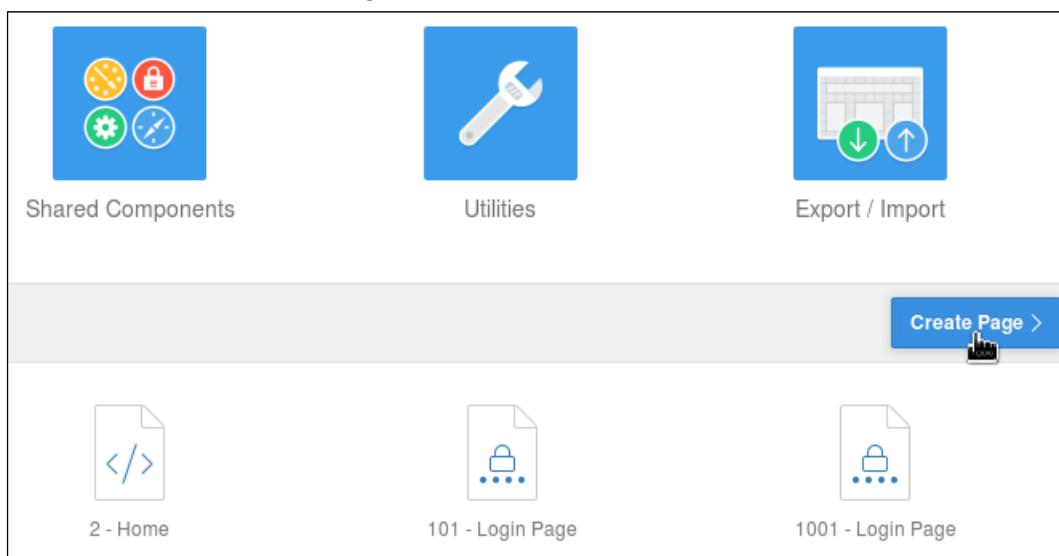
## Solution 4-1: Creating Classic Reports

### Overview

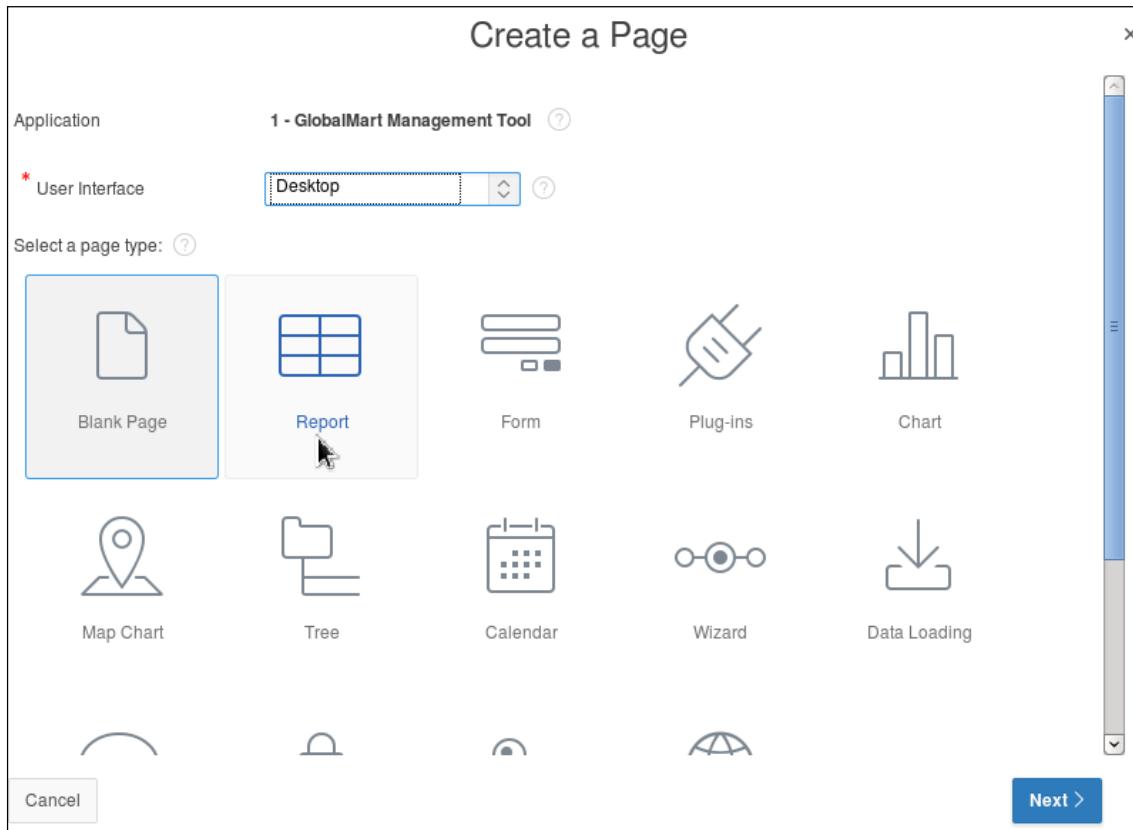
In this practice solution, steps are provided to create Classic reports for the GMT application.

### Steps

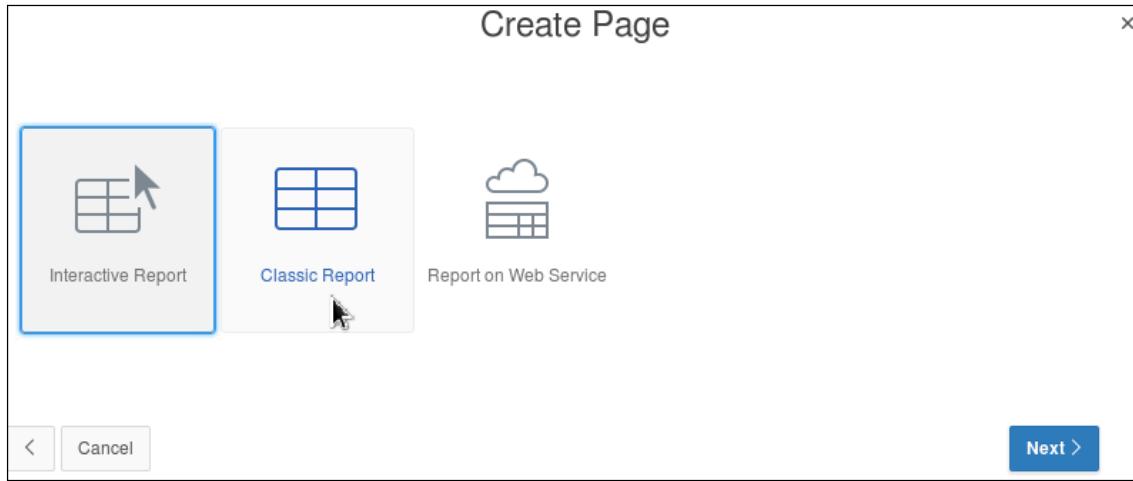
1. On a new page in the GMT application, create a Classic report by using a SQL query. Name the new page and the report **Top Tier Salary**. The report should display the last name, email, and salary of employees who earn between \$5000 and \$12000 from the EMPLOYEES table. The report should contain a search bar.
  - a. Navigate to the GlobalMart Management Tool application page in the Application Builder and click **Create Page >**.



b. Select **Report**.



c. Select **Classic Report**.



- d. Enter Page Number as 3 and Top Tier Salary for both **Page Name** and **Region Name**. Click **Next >**.

**Note:** The Region Name automatically gets populated when the Page Name is entered.

Create Classic Report

Page Attributes

\* Page Number: 3

\* Page Name: Top Tier Salary

\* Page Mode: Normal

\* Region Name: Top Tier Salary

Region Template: Standard

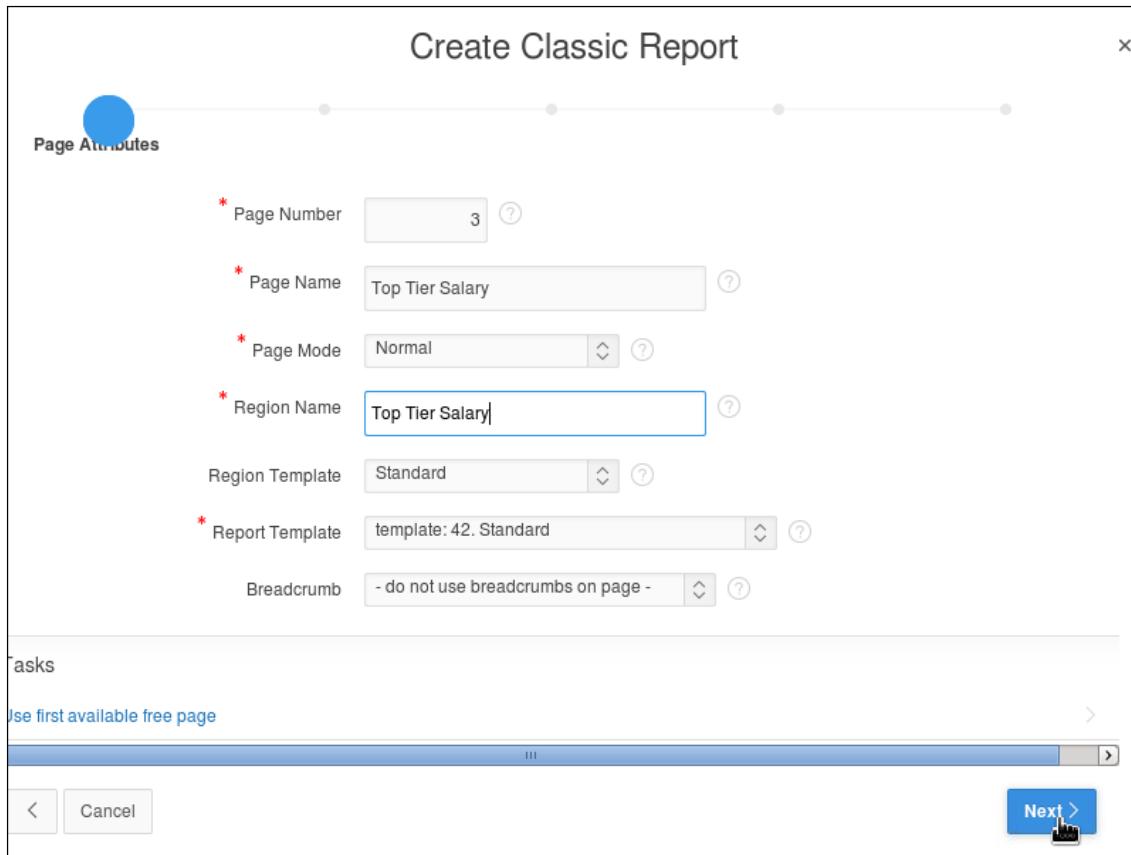
\* Report Template: template: 42. Standard

Breadcrumb: - do not use breadcrumbs on page -

Tasks

Use first available free page

< Cancel Next >



- e. Accept the default and click **Next >**.

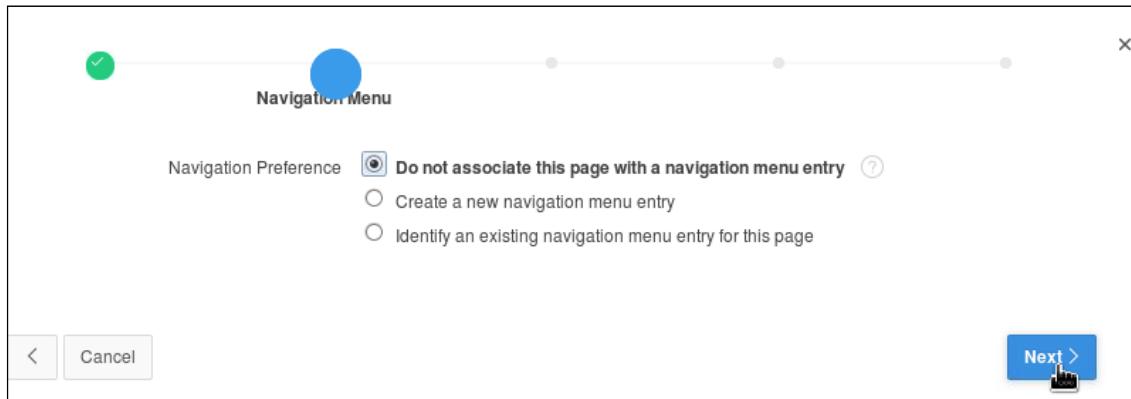
Navigation Menu

Navigation Preference:  Do not associate this page with a navigation menu entry [?](#)

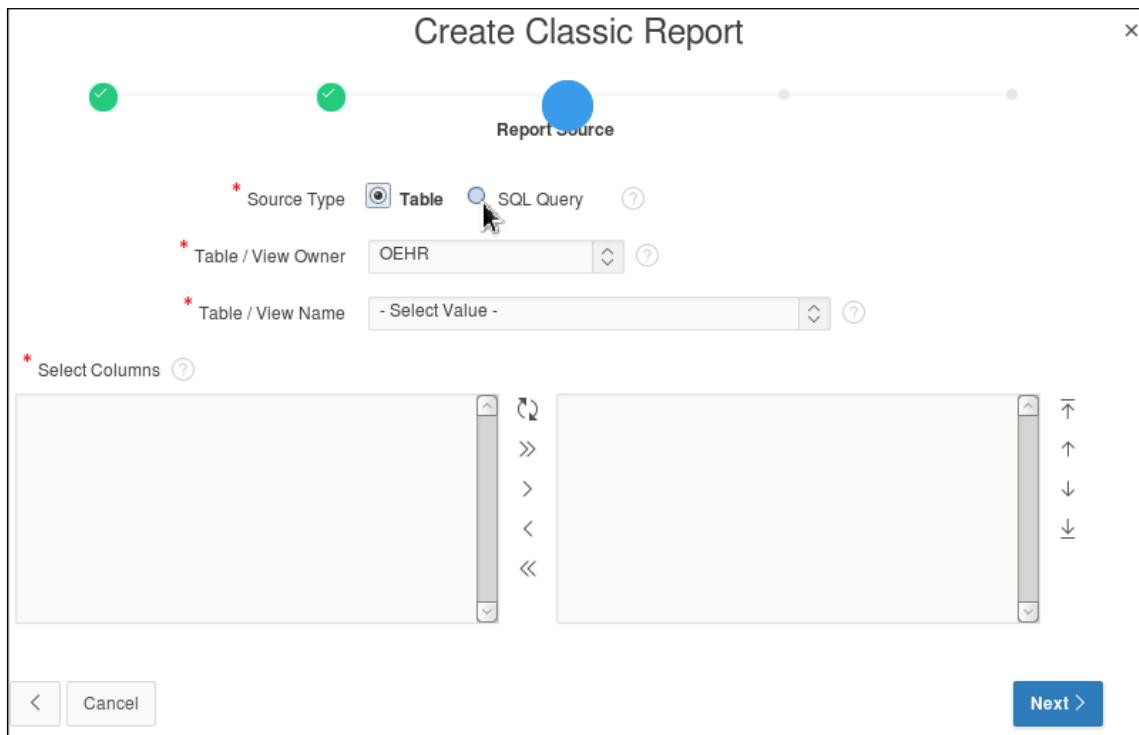
Create a new navigation menu entry

Identify an existing navigation menu entry for this page

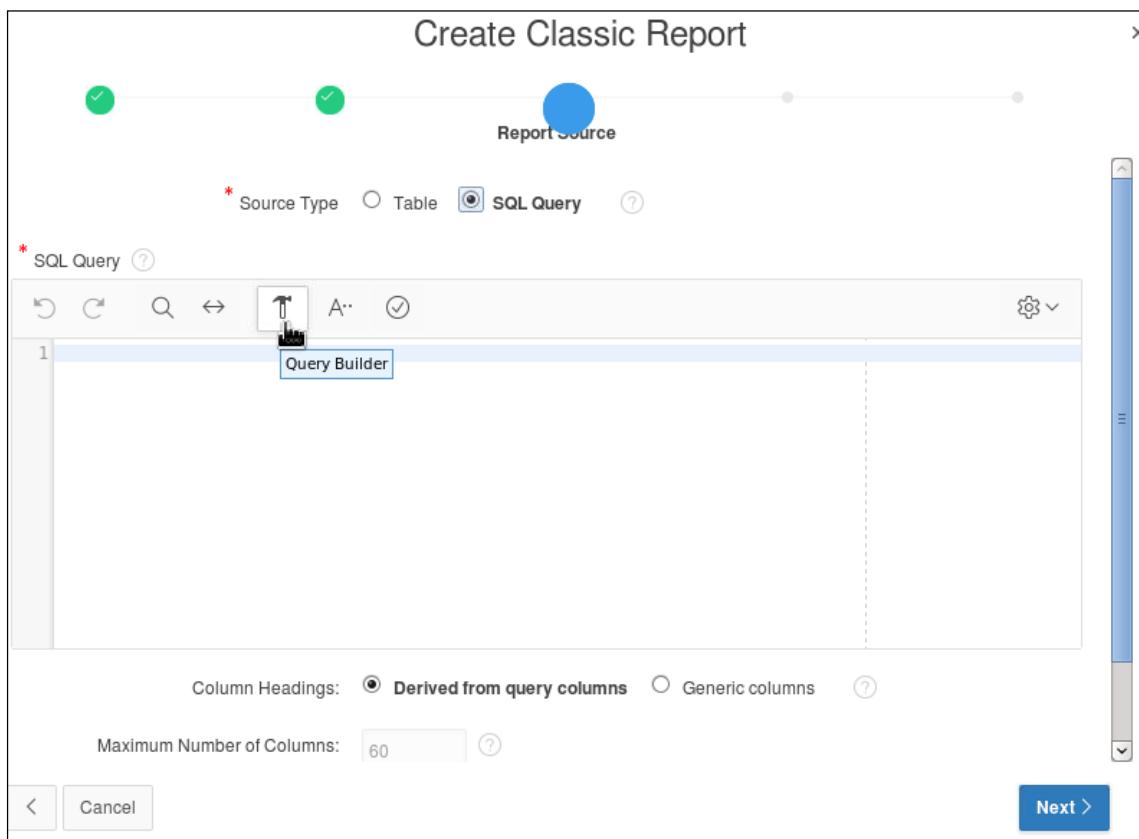
< Cancel Next >



- f. For **Source Type**, select the **SQL Query** option button.



- g. You create the query using the Query Builder. Click the **Query Builder** icon <>.



- h. From the Object Selection pane (on the left side of the page), select **EMPLOYEES**.

The screenshot shows the Oracle SQL Developer interface. On the left, there is a vertical list of database objects under the heading 'Object Selection'. The 'EMPLOYEES' object is highlighted with a blue selection bar and has a small icon next to it. At the top right of the main window, there are three buttons: 'Cancel', 'Run', and a blue 'Return' button.

- i. Select the **LAST\_NAME**, **EMAIL**, and **SALARY** columns. For the **SALARY** column, enter the condition **BETWEEN 5000 and 12000**, and then click **Run**.

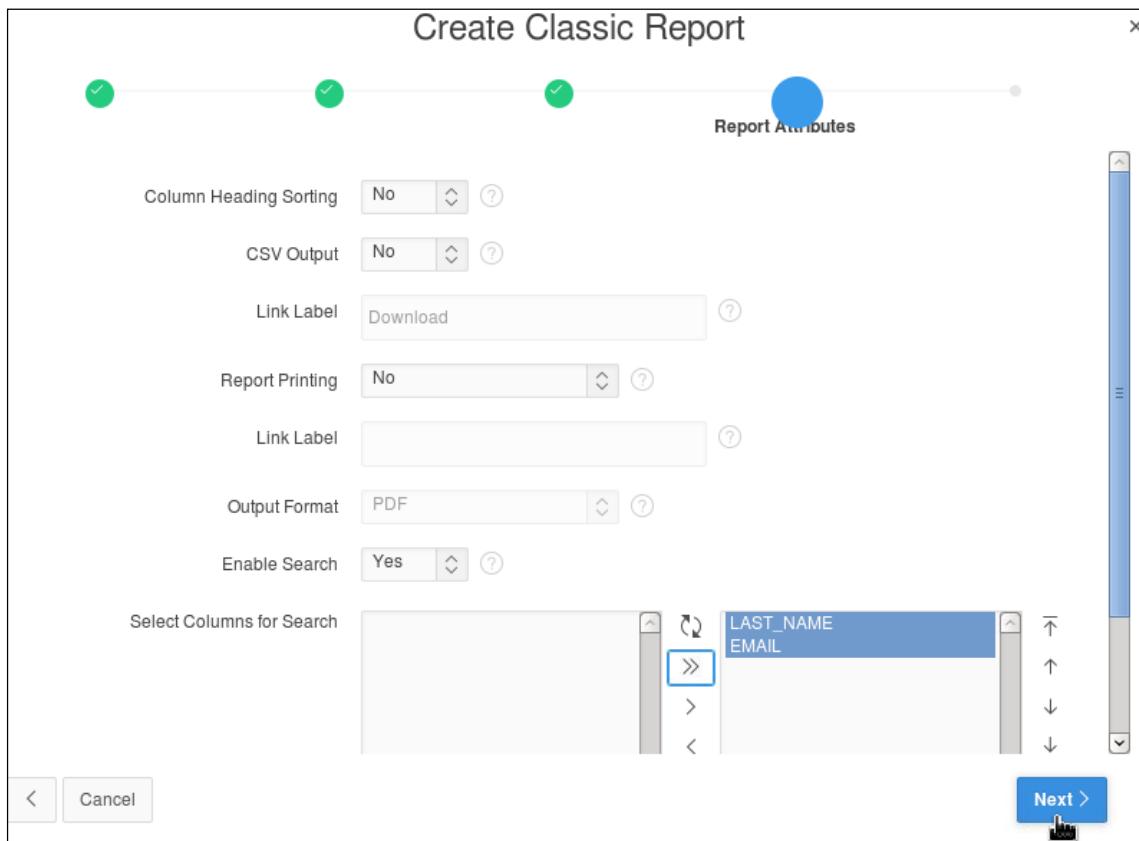
The screenshot shows the Oracle SQL Developer interface with the SQL builder open. On the left, the 'Object Selection' pane lists various objects, including 'EMPLOYEES'. In the center, a 'EMPLOYEES' query editor window is open, displaying a list of columns with checkboxes for selection. The 'LAST\_NAME', 'EMAIL', and 'SALARY' checkboxes are checked. Below the query editor, the 'Conditions' tab of the SQL builder is active, showing a table with three rows corresponding to the selected columns. The 'SALARY' row has a condition set to 'BETWEEN 5000 and 12000'. At the top right of the main window, there are three buttons: 'Cancel', 'Run', and a blue 'Return' button.

| Column    | Alias     | Object    | Condition              | Sort Type | Sort Order               |
|-----------|-----------|-----------|------------------------|-----------|--------------------------|
| LAST_NAME | LAST_NAME | EMPLOYEES |                        | Asc       | <input type="checkbox"/> |
| EMAIL     | EMAIL     | EMPLOYEES |                        | Asc       | <input type="checkbox"/> |
| SALARY    | SALARY    | EMPLOYEES | BETWEEN 5000 and 12000 | Asc       | <input type="checkbox"/> |

- j. You will see the results of the query. Click **Return**.

- k. The query is generated and entered in the SQL Query text box. Click **Next >**.

- I. Select **No** for **Column Heading Sorting**, **No** for **CSV Output**, and **Yes** for **Enable Search**. In the **Select Columns for Search** field, click the double right arrow (**>>**) to search on the **LAST\_NAME** and the **EMAIL** column. Click **Next >**.



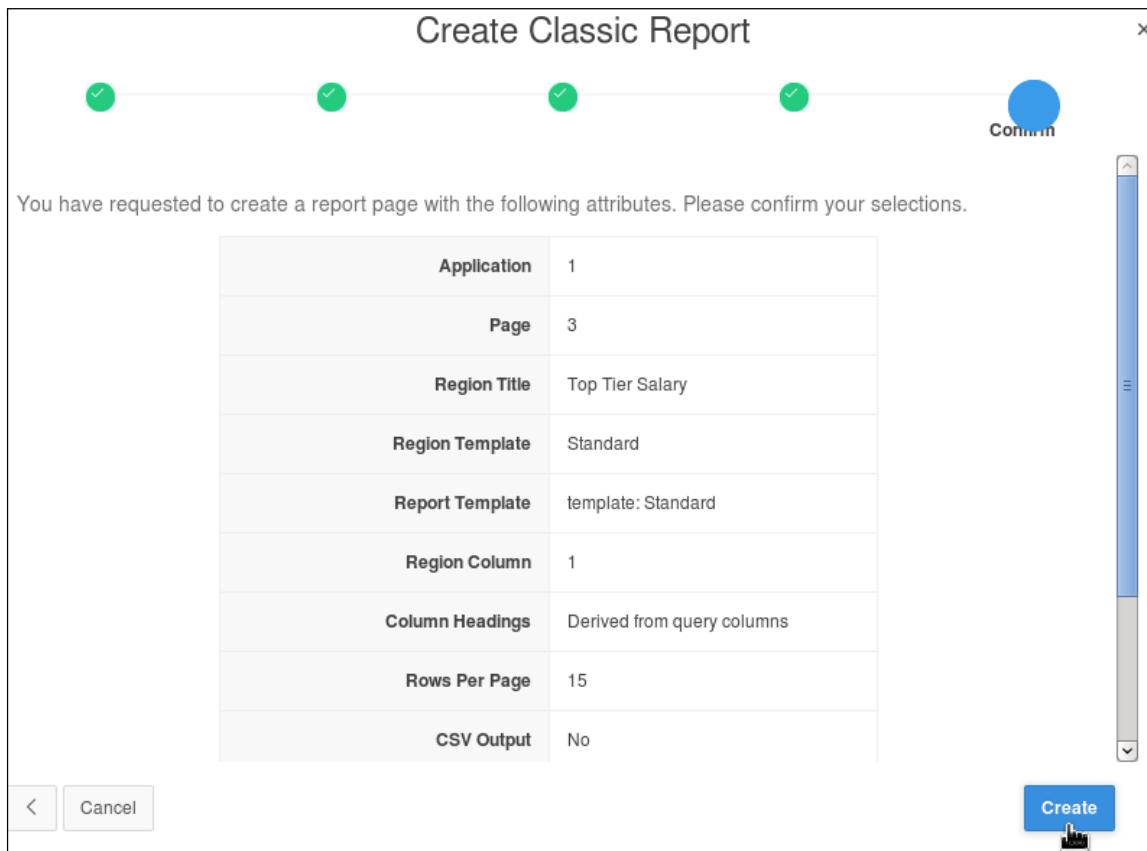
- m. Click **Create**.

**Create Classic Report**

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

|                 |                            |
|-----------------|----------------------------|
| Application     | 1                          |
| Page            | 3                          |
| Region Title    | Top Tier Salary            |
| Region Template | Standard                   |
| Report Template | template: Standard         |
| Region Column   | 1                          |
| Column Headings | Derived from query columns |
| Rows Per Page   | 15                         |
| CSV Output      | No                         |

< Cancel **Create**



- n. The Page Designer view of the page loads. Click the **Save and Run Page** icon <>.



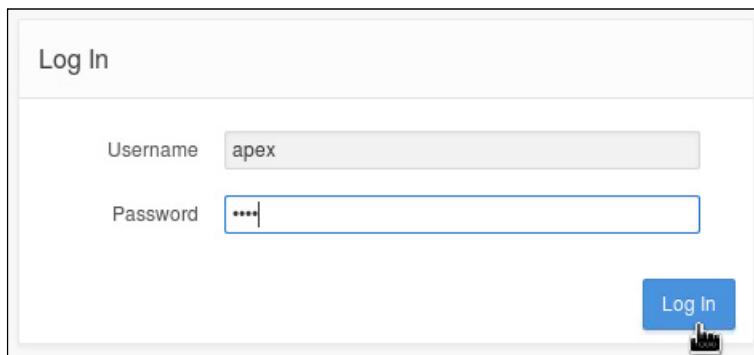
- o. If the login window opens, enter the developer user credentials, and click **Log In**.

**Log In**

Username

Password

**Log In**



- p. Review the report. Enter Green in the Search area and click Go.

The screenshot shows a search interface with a search bar containing 'Green'. Below the search bar is a table titled 'Top Tier Salary' with columns 'Last Name', 'Email', and 'Salary'. The table contains the following data:

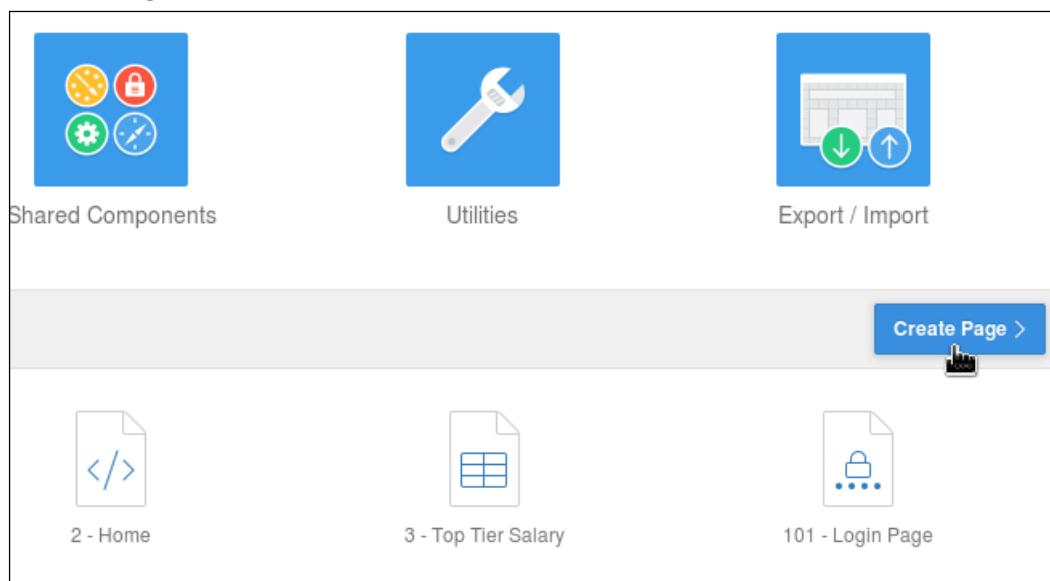
| Last Name | Email    | Salary |
|-----------|----------|--------|
| Hunold    | AHUNOLD  | 9000   |
| Ernst     | BERNST   | 6000   |
| Greenberg | NGREENBE | 12000  |
| Faviet    | DFAVIET  | 9000   |
| Chen      | JCHEN    | 8200   |
| Sciarra   | ISCIARRA | 7700   |

- q. Review the search results. Note that you can make changes to the SQL with this report type. Click Application 1 in the Developer toolbar (at the bottom of the page).

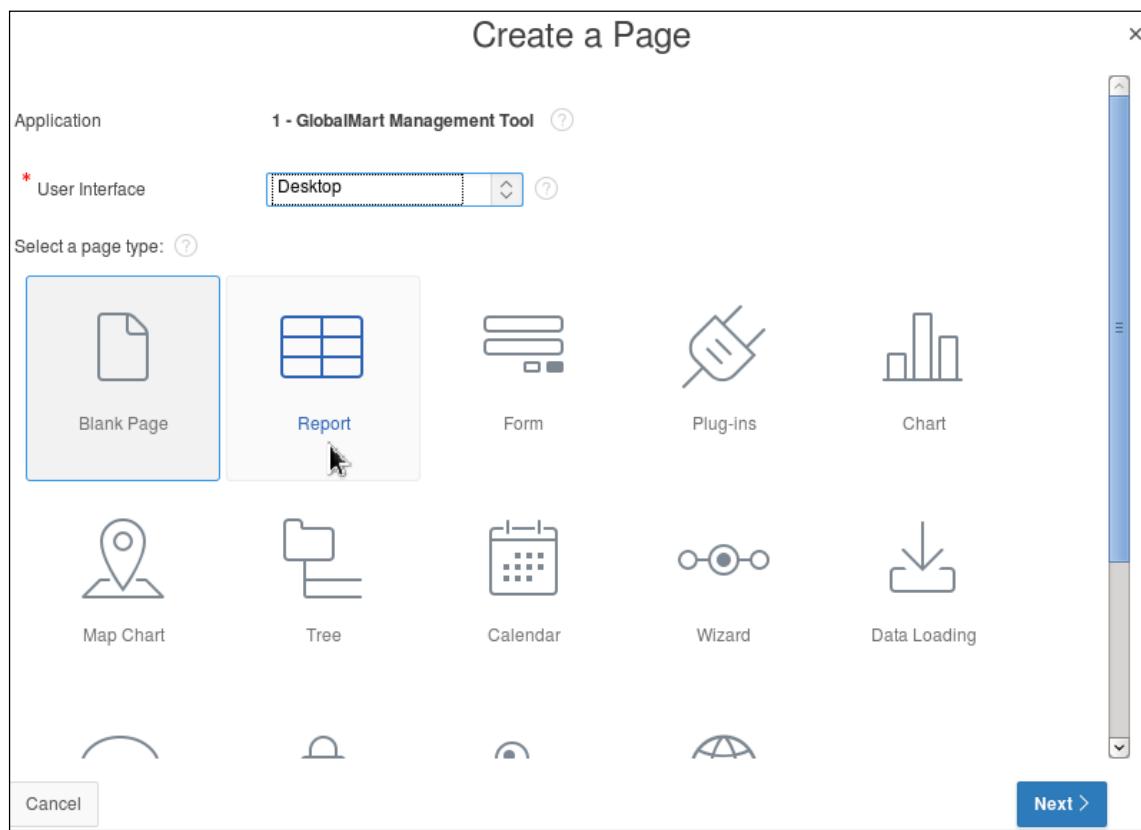
The screenshot shows the Oracle Database application interface. On the left is a dark sidebar labeled 'Home'. The main content area displays the same 'Top Tier Salary' table as the previous screenshot, but with two rows highlighted in red: 'Greenberg' and 'Greene'. The developer toolbar at the bottom includes icons for Home, Application 1 (which is selected), Edit Page 3, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a gear icon.

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 CUSTOMERS table.

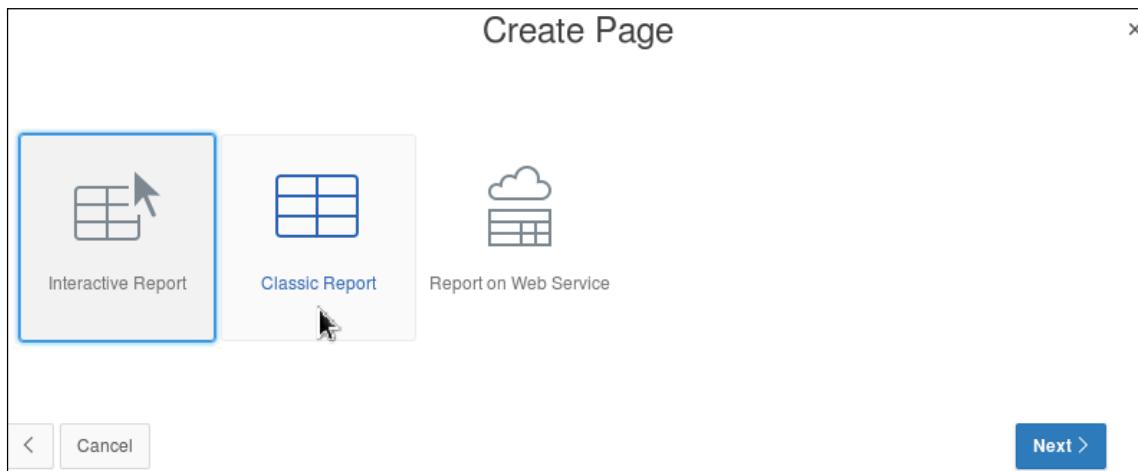
- a. In the GlobalMart Management Tool application page in the Application Builder, click **Create Page >**.



- b. Select **Report**.



- c. Select **Classic Report**.

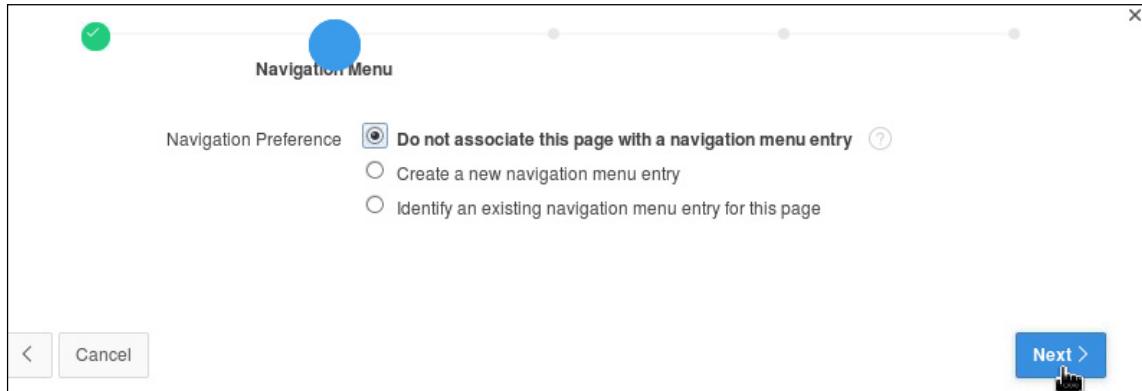


- d. Enter Page Number as 4 and Customer Address List for both **Page Name** and **Region Name**. Click **Next >**.

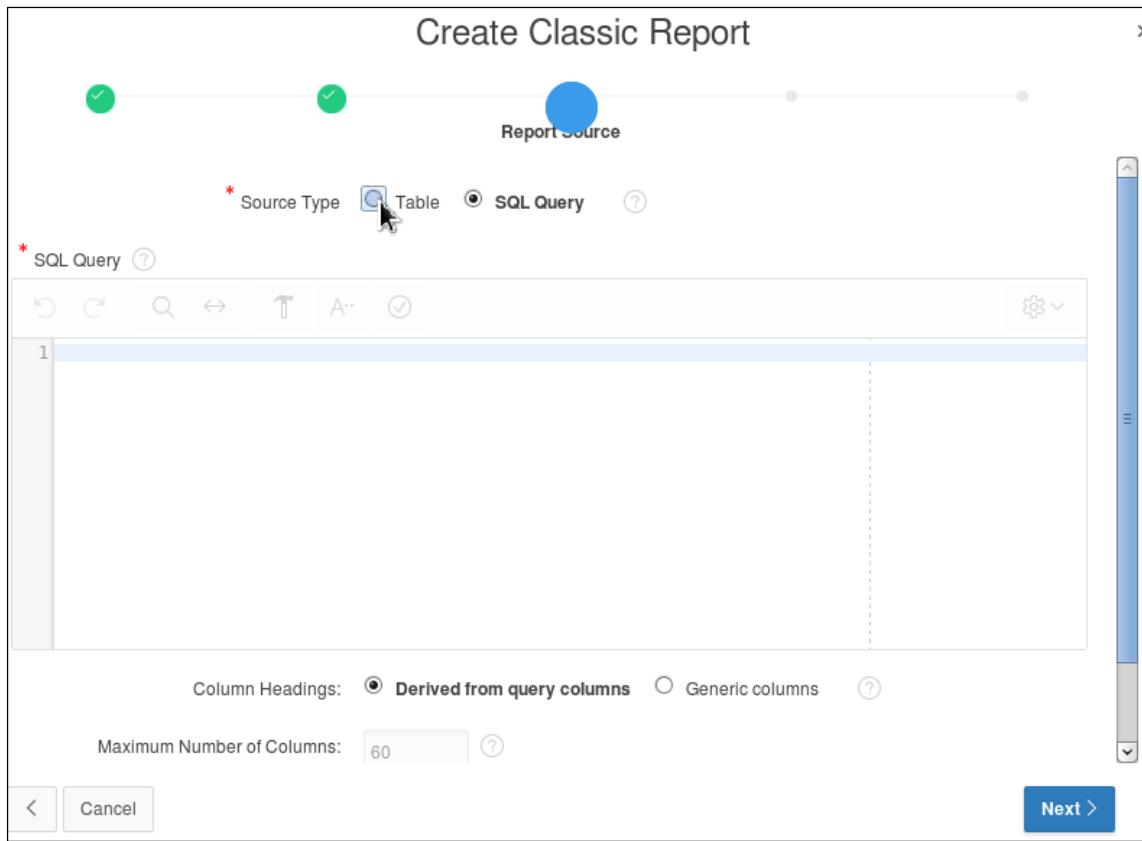
**Note:** The Region Name automatically gets populated when the Page Name is entered.

The screenshot shows a 'Create Classic Report' dialog box. It includes fields for Page Number (4), Page Name (Customer Address List), Page Mode (Normal), Region Name (Customer Address List), Region Template (Standard), Report Template (template: 42. Standard), and Breadcrumb (- do not use breadcrumbs on page -). The 'Region Name' field is highlighted with a blue border. At the bottom, there are 'Cancel' and 'Next >' buttons, with a cursor pointing at the 'Next >' button.

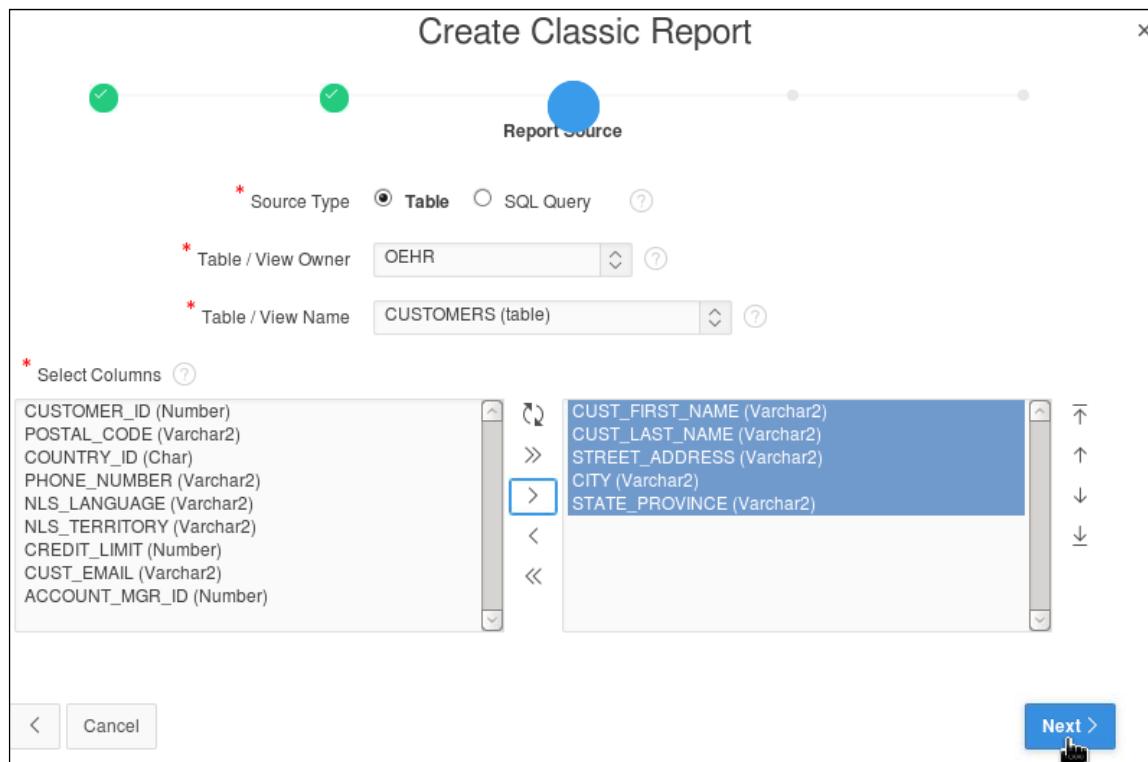
- e. Accept the default and click **Next >**.



- f. For **Source Type**, select the **Table** option button.



- g. From the **Table / View Name** drop-down list, select **CUSTOMERS (table)**. By default, all the columns are selected. Move all the columns to the left by clicking the double-left arrow (**<<**). Then deselect all columns and ctrl-click and select the **CUST\_FIRST\_NAME**, **CUST\_LAST\_NAME**, **STREET\_ADDRESS**, **CITY**, and **STATE\_PROVINCE** columns. Click the right arrow (**>**) to move the columns to the Displayed Columns area. Click **Next >**.



- h. Accept the defaults and click **Next >**.

Create Classic Report

Report Attributes

|                        |          |   |
|------------------------|----------|---|
| Column Heading Sorting | Yes      | ? |
| CSV Output             | Yes      | ? |
| Link Label             | Download | ? |
| Report Printing        | No       | ? |
| Link Label             |          | ? |
| Output Format          | PDF      | ? |
| Enable Search          | No       | ? |

< Cancel Next >

- i. Click **Create**.

Create Classic Report

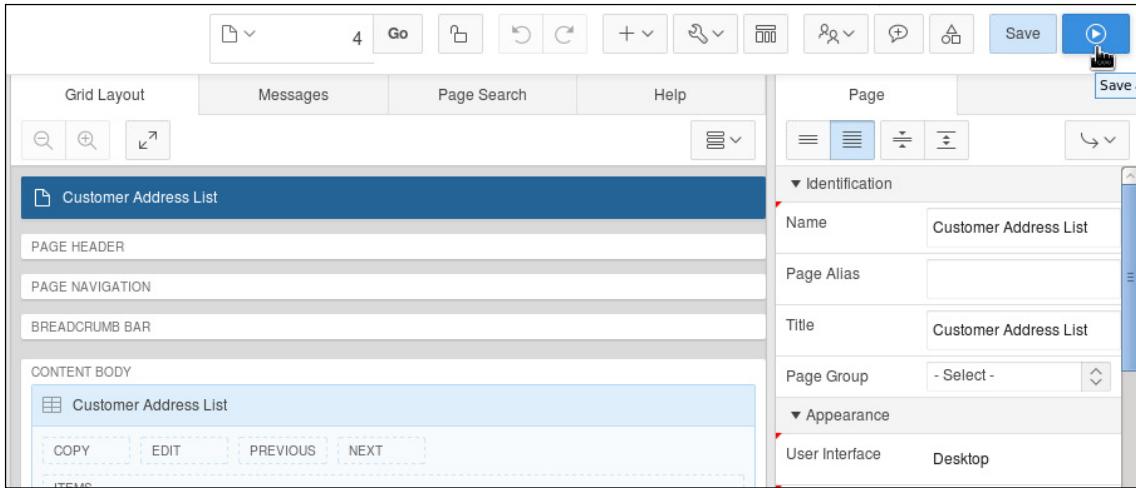
Confirm

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

|                 |                            |
|-----------------|----------------------------|
| Application     | 1                          |
| Page            | 4                          |
| Region Title    | Customer Address List      |
| Region Template | Standard                   |
| Report Template | template: Standard         |
| Region Column   | 1                          |
| Column Headings | Derived from query columns |
| Rows Per Page   | 15                         |
| CSV Output      | Yes                        |

< Cancel Create

- j. Click the **Save and Run Page** icon <  >.



- k. Review the report. To make changes to the report, click the **Edit Page 4** link in the Developer toolbar.

The screenshot displays the GlobalMart Management Tool interface. On the left is a sidebar with a 'Home' link. The main content area shows a table titled 'Customer Address List' with the following data:

| Cust First Name | Cust Last Name | Street Address              | City           | State Province |
|-----------------|----------------|-----------------------------|----------------|----------------|
| Ajay            | Sen            | 220 Penn Ave # 300          | Scranton       | PA             |
| Ajay            | Andrews        | 223 4Th Ave # 1100          | Pittsburgh     | PA             |
| Alain           | Siegel         | Alfred E. Neumann-Weg 3     | Baden-Daettwil | AG             |
| Alain           | Dreyfuss       | Harmoniegasse 3             | Baden-Daettwil | AG             |
| Alain           | Barkin         | Sonnenberg 4                | Baden-Daettwil | AG             |
| Alan            | Minnelli       | Dr. Herbert Bitto Str 23    | Baden-Daettwil | AG             |
| Alan            | Hunter         | Taefernstr 4                | Baden-Daettwil | AG             |
| Albert          | Spacek         | Zum Freundlichen Nachbarn 5 | Baden-Daettwil | AG             |
| Albert          | Dutt           | Kreuzritterplatz 5          | Baden-Daettwil | AG             |
| Albert          | Bel Geddes     | Helebardenweg 5             | Baden-Daettwil | AG             |
| Alec            | Moranis        | Ziegenwiese 3               | Baden-Daettwil | AG             |
| Alec            | Idle           | Am Waldrand 5               | Baden-Daettwil | AG             |

At the bottom of the interface is a toolbar with various links and icons, including 'Edit Page 4'.

**Note:** If the login window opens, enter the developer user credentials, and click **Log In**.

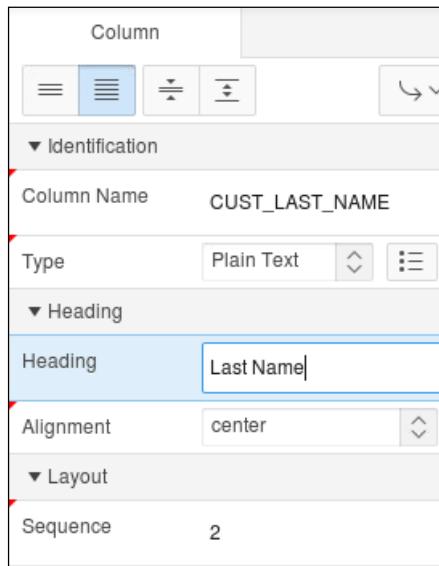
3. Modify the Customer Address List report with the following requirements:
- Change the report headings for `CUST_FIRST_NAME` and `CUST_LAST_NAME` to First Name and Last Name, respectively.
  - a. Select **Regions > Content Body > Customer Address List > Columns > CUST\_FIRST\_NAME** on the Rendering tab (left side of the page) to open the `CUST_FIRST_NAME` column settings.

The screenshot shows the Oracle Reports rendering interface. On the left, the 'Rendering' pane displays the report structure: 'Page 4: Customer Address List' under 'Regions', 'Content Body', and 'Customer Address List'. The 'Columns' section is expanded, and the 'CUST\_FIRST\_NAME' column is selected, highlighted with a blue background. On the right, the 'Grid Layout' pane shows the report structure with the 'Customer Address List' region expanded. The 'CONTENT BODY' section contains the 'Customer Address List' item, which has 'COPY', 'EDIT', 'PREVIOUS', and 'NEXT' buttons. Below it are 'ITEMS' and 'REGION CONTENT' sections.

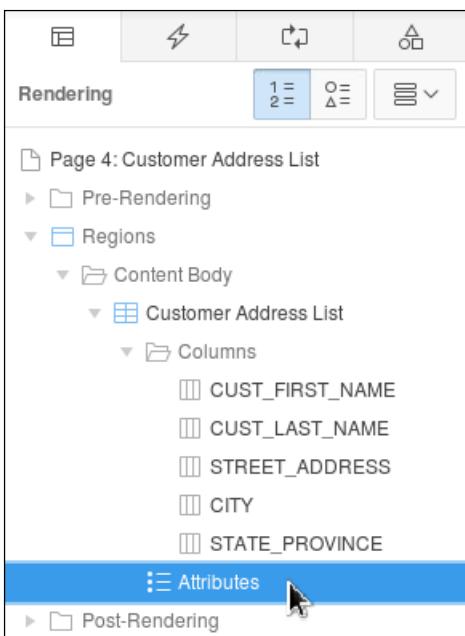
- b. On the Column tab (right side of the page), change the **Heading** value to First Name.

The screenshot shows the Oracle Reports Column tab configuration window. The 'Column' tab is selected. In the 'Identification' section, the 'Column Name' is set to `CUST_FIRST_NAME`. In the 'Heading' section, the 'Heading' field is set to 'First Name'. Other settings include 'Type: Plain Text', 'Alignment: center', and 'Sequence: 1'.

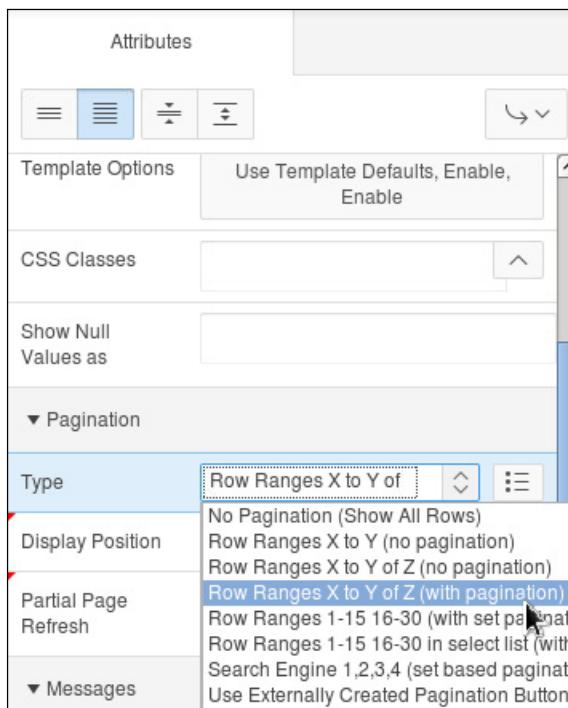
- c. In the Column tab, change the **Heading** value to **Last Name**.



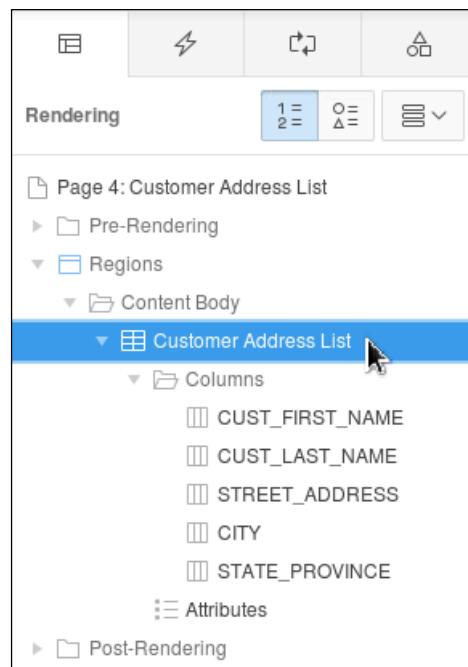
- Change the Pagination to Row Ranges X to Y of Z (with pagination).
- d. In the Rendering tab, select **Regions > Content Body > Customer Address List > Attributes**.



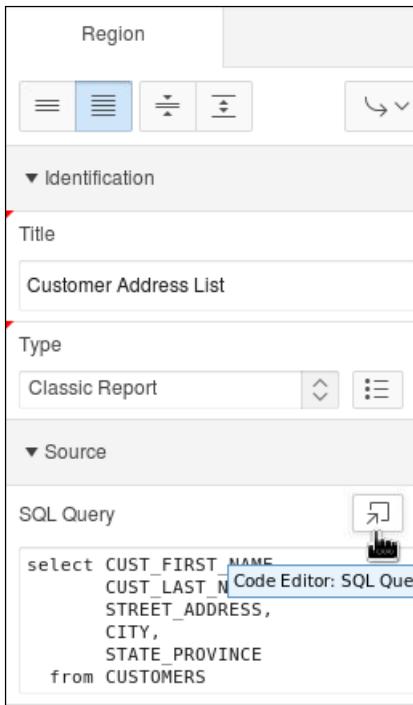
- e. Under the **Pagination** section of the Attributes tab, select the **Type as Row Ranges X to Y of Z (with pagination)**.



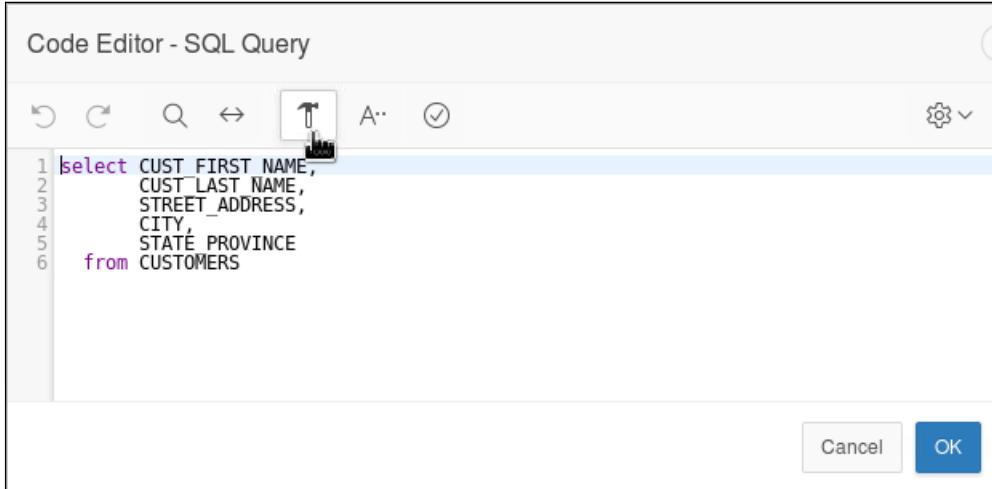
- Review the query definition and add the COUNTRIES.COUNTRY\_NAME column to the report.
- Hint:** You will need to create a join.
- f. Select **Regions > Content Body > Customer Address List** in the Rendering tab to open the report settings.



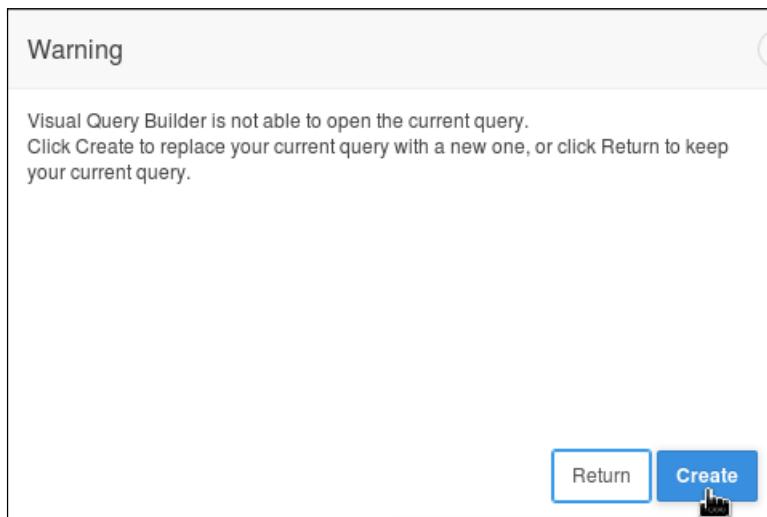
- g. In the Region tab, click the **Code Editor: SQL Query** icon <>under the **Source** section.



- h. You will modify the query definition using the Query Builder. Click the **Query Builder** icon <>.



- i. You receive a warning. Click **Create**.



- j. From the Object Selection pane (on the left side of the page), select CUSTOMERS and COUNTRIES.

A screenshot of the Oracle Database Visual Query Builder interface. On the left, the 'Object Selection' pane lists various database objects: ACCOUNT\_MANAGERS, BOMBAY\_INVENTORY, COUNTRIES, CUSTOMERS, CUSTOMERS\_VIEW, DEPARTMENTS, EMPLOYEES, EMP\_DETAILS\_VIEW, INVENTORIES, JOBS, and JOB\_HISTORY. The 'CUSTOMERS' and 'COUNTRIES' objects are selected, indicated by a checkmark icon next to them. To the right of the selection pane are two tables: 'CUSTOMERS' and 'COUNTRIES', each with several columns listed.

| CUSTOMERS                                  | COUNTRIES                               |
|--|---|
| <input type="checkbox"/> CUSTOMER_ID 789   | <input type="checkbox"/> COUNTRY_ID A   |
| <input type="checkbox"/> CUST_FIRST_NAME A | <input type="checkbox"/> COUNTRY_NAME A |
| <input type="checkbox"/> CUST_LAST_NAME A  | <input type="checkbox"/> REGION_ID 789  |
| <input type="checkbox"/> STREET_ADDRESS A  |   |
| <input type="checkbox"/> POSTAL_CODE A     |   |
| <input type="checkbox"/> CITY A            |   |
| <input type="checkbox"/> STATE_PROVINCE A  |   |
| <input type="checkbox"/> COUNTRY_ID A      |   |

- k. In the CUSTOMERS table, select the CUST\_FIRST\_NAME, CUST\_LAST\_NAME, STREET\_ADDRESS, CITY, and STATE\_PROVINCE columns. In the COUNTRIES table, select the COUNTRY\_NAME column.

| Column          | Alias           | Object    | Condition | Sort Type | Sort Order |
|-----------------|-----------------|-----------|-----------|-----------|------------|
| CUST_FIRST_NAME | CUST_FIRST_NAME | CUSTOMERS |           | Asc       | ↑          |
| CUST_LAST_NAME  | CUST_LAST_NAME  | CUSTOMERS |           | Asc       | ↑          |
| STREET_ADDRESS  | STREET_ADDRESS  | CUSTOMERS |           | Asc       | ↑          |
| CITY            | CITY            | CUSTOMERS |           | Asc       | ↑          |

- l. Join both the tables, by clicking the join column field, next to the COUNTRY\_ID field, of both the tables.

m. Click **Run**.

CUSTOMERS

|  |     |
|--|-----|
| <input type="checkbox"/> POSTAL_CODE               | A   |
| <input checked="" type="checkbox"/> CITY           | A   |
| <input checked="" type="checkbox"/> STATE_PROVINCE | A   |
| <input type="checkbox"/> COUNTRY_ID                | A   |
| <input type="checkbox"/> PHONE_NUMBER              | A   |
| <input type="checkbox"/> NLS_LANGUAGE              | A   |
| <input type="checkbox"/> NLS_TERRITORY             | A   |
| <input type="checkbox"/> CREDIT_LIMIT              | 789 |

COUNTRIES

|  |     |
|--|-----|
| <input type="checkbox"/> COUNTRY_ID              | A   |
| <input checked="" type="checkbox"/> COUNTRY_NAME | A   |
| <input type="checkbox"/> REGION_ID               | 789 |

Cancel Run Return

n. You will see the results of the query. Click **Return**.

Conditions SQL Results Saved SQL

| CUST_FIRST_NAME | CUST_LAST_NAME | STREET_ADDRESS         | CITY      | STATE_PROVINCE | COUNTRY |
|-----------------|----------------|------------------------|-----------|----------------|---------|
| Scott           | Jordan         | 1636 Pretty Blvd       | Bangalore | Kar            | India   |
| Shammi          | Pacino         | 1646 Brazil Blvd       | Chennai   | Tam            | India   |
| Sharmila        | Kazan          | 1647 Suspense St       | Cochin    | Ker            | India   |
| Sharmila        | Fonda          | 1648 Anamika St        | Cochin    | Ker            | India   |
| Shelley         | Taylor         | 1650 Teesri Manjil Crt | Kashmir   | -              | India   |

Cancel Run Return

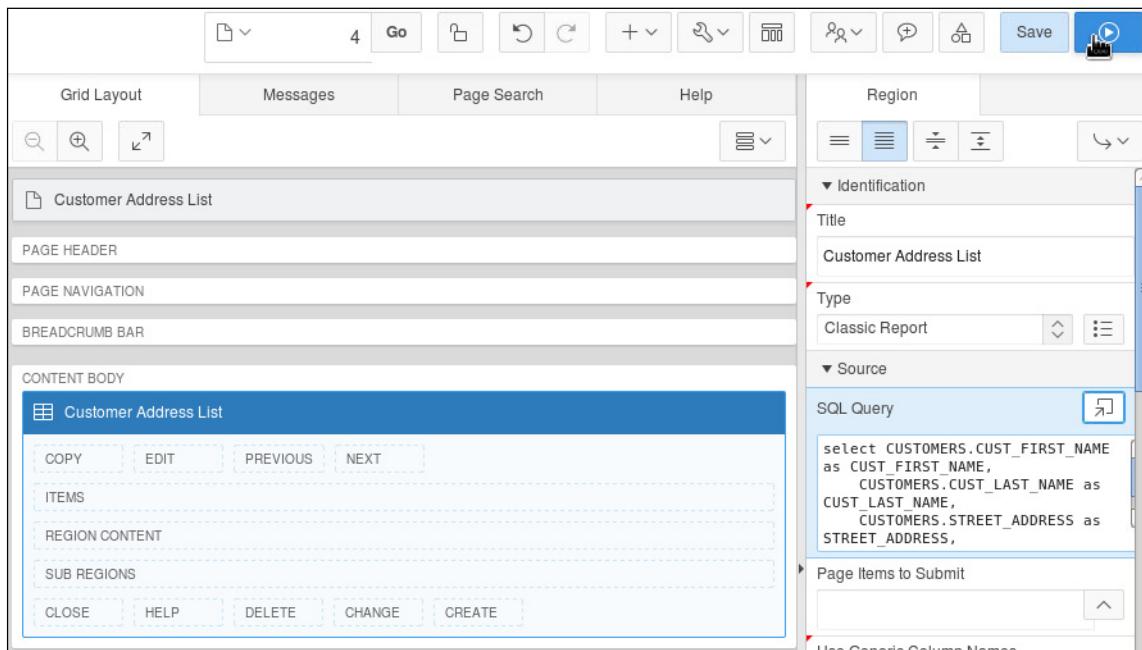
- o. Click **OK** to commit the new query.

```
Code Editor - SQL Query

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

Cancel OK

- p. Click the **Save and Run Page** icon < >.



- q. Note the changes that you made to the report. Click **Application 1**.

The screenshot shows a web-based application titled "GlobalMart Management Tool". The left sidebar has a "Home" link. The main content area is titled "Customer Address List". A table displays the following data:

| First Name | Last Name  | Street Address              | City           | State Province | Country name             |
|------------|------------|-----------------------------|----------------|----------------|--------------------------|
| Ajay       | Sen        | 220 Penn Ave # 300          | Scranton       | PA             | United States of America |
| Ajay       | Andrews    | 223 4Th Ave # 1100          | Pittsburgh     | PA             | United States of America |
| Alain      | Siegel     | Alfred E. Neumann-Weg 3     | Baden-Daettwil | AG             | Switzerland              |
| Alain      | Dreyfuss   | Harmoniegasse 3             | Baden-Daettwil | AG             | Switzerland              |
| Alain      | Barkin     | Sonnenberg 4                | Baden-Daettwil | AG             | Switzerland              |
| Alan       | Minnelli   | Dr. Herbert Bitto Str 23    | Baden-Daettwil | AG             | Switzerland              |
| Alan       | Hunter     | Taefernstr 4                | Baden-Daettwil | AG             | Switzerland              |
| Albert     | Spacek     | Zum Freundlichen Nachbarn 5 | Baden-Daettwil | AG             | Switzerland              |
| Albert     | Dutt       | Kreuzritterplatz 5          | Baden-Daettwil | AG             | Switzerland              |
| Albert     | Bel Geddes | Helebardenweg 5             | Baden-Daettwil | AG             | Switzerland              |
| Alec       | Moranis    | Ziegenwiese 3               | Baden-Daettwil | AG             | Switzerland              |
| Alec       | Idle       | Am Waldrand 5               | Baden-Daettwil | AG             | Switzerland              |

At the bottom, there is a navigation bar with links: Home, Application 1, Edit Page 4, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a gear icon.

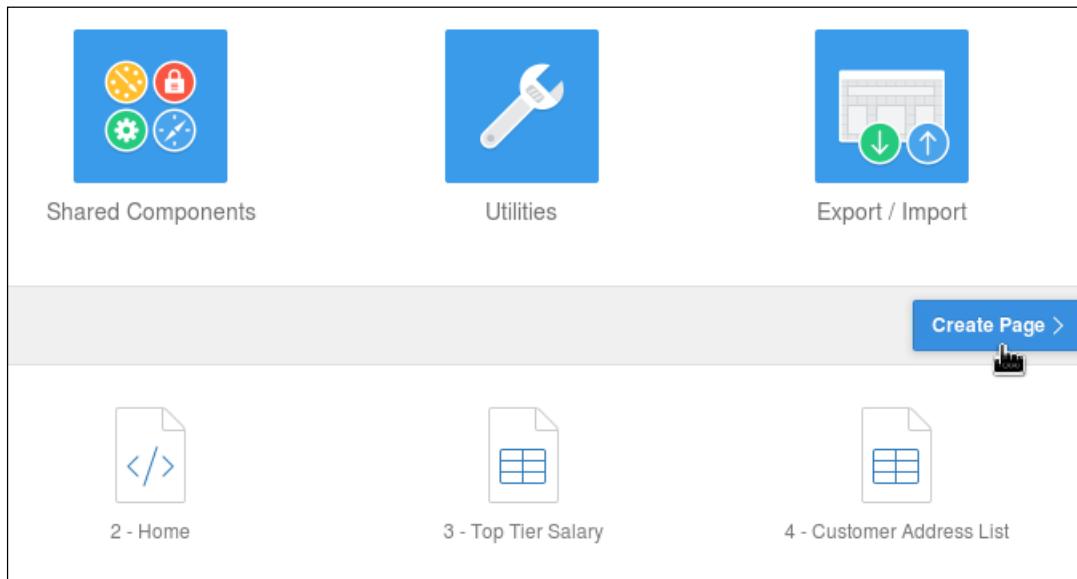
## Solution 4-2: Building and Manipulating an Interactive Report

### Overview

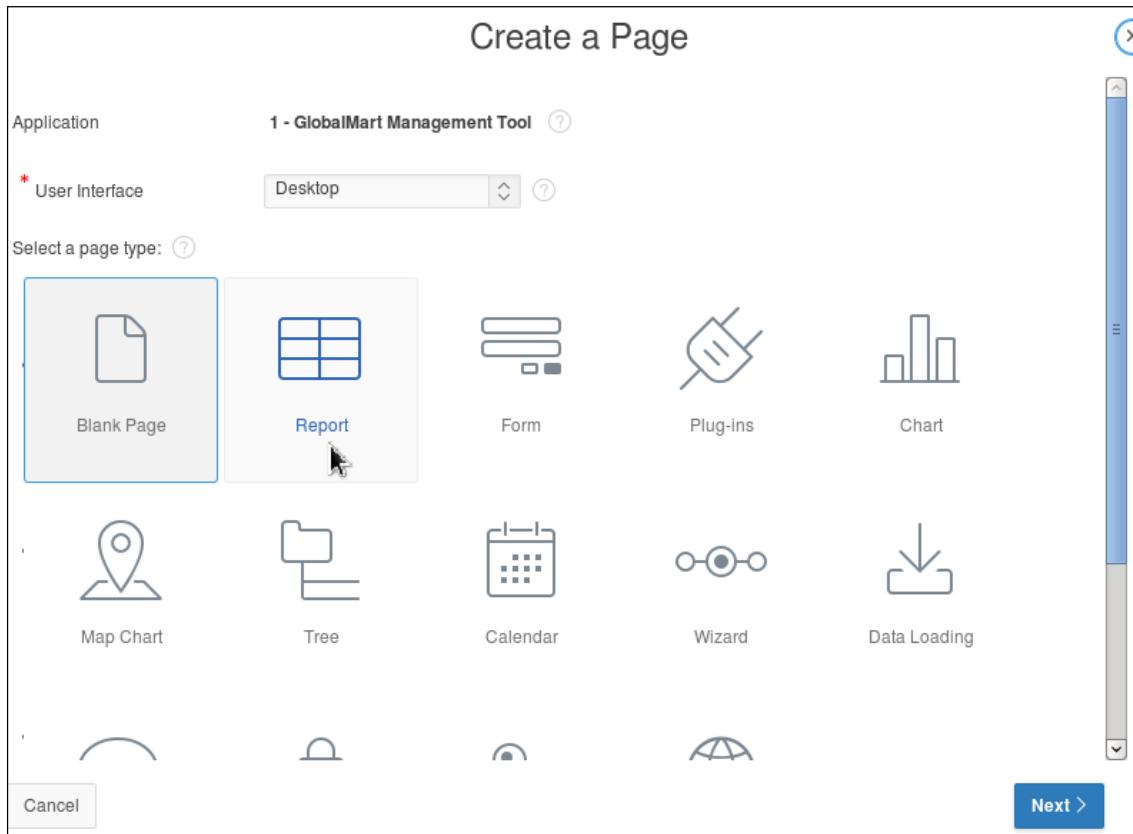
In this practice solution, steps are provided to create and manipulate the reports for the GMT application.

### Steps

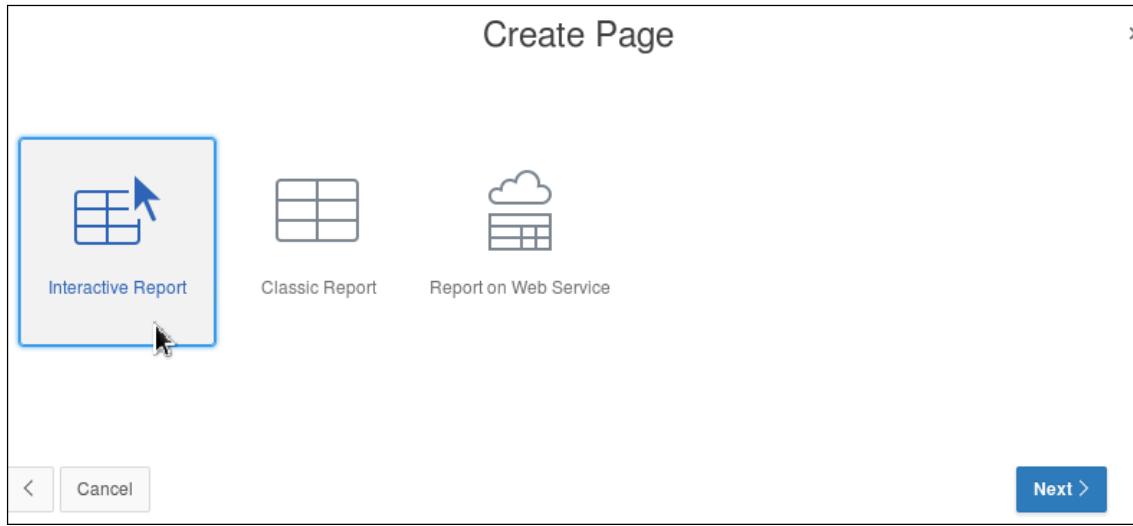
1. Create an interactive report to display all the columns from the CUSTOMERS table on a new page in the GMT application. Name the page **Customers** and the region **Customer Report**.
  - a. Navigate to the GMT application home page and click **Create Page >**.



b. Select Report.



c. Select Interactive Report.



- d. Enter **Page Number** as 5. Enter **Customers** for **Page Name** and **Customer Report** for **Region Name**. Click **Next >**.

Create Interactive Report

Page and Region Attributes

Identify a page number and name.

\* Page Number: 5

\* Page Name: Customers

\* Page Mode: Normal

Region Template: Interactive Report

\* Region Name: Customer Report

Breadcrumb: - do not use breadcrumbs on page -

Cancel Next >

- e. Select **Create a new navigation menu entry** for **Navigation Preference**. Notice that **Customers** is auto populated in the **New Navigation Menu Entry** field. Accept the default values, and click **Next >**.

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

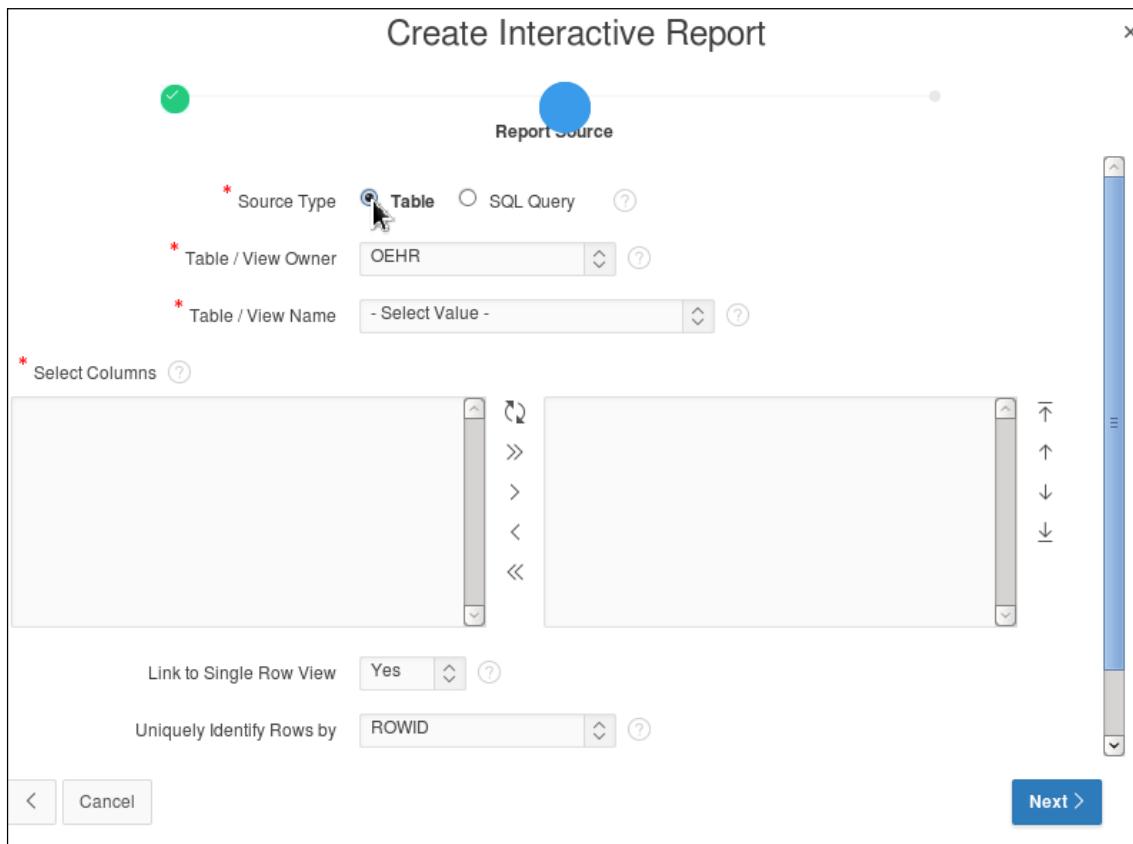
\* New Navigation Menu Entry: Customers

Parent Navigation Menu Entry: - No parent selected -

Home

Cancel Next >

- f. For **Source Type**, select the **Table** option button.



- g. From the **Table / View Name** drop-down list, select **CUSTOMERS (table)**. By default, all the columns are selected. Click **Next >**.

**Create Interactive Report**

Report Source

\* Source Type  Table  SQL Query [?](#)

\* Table / View Owner OEHR [?](#)

\* Table / View Name CUSTOMERS (table) [?](#)

\* Select Columns [?](#)

Link to Single Row View Yes [?](#)

Uniquely Identify Rows by ROWID [?](#)

[Cancel](#) [Next >](#)

- h. Click **Create**.

**Create Interactive Report**

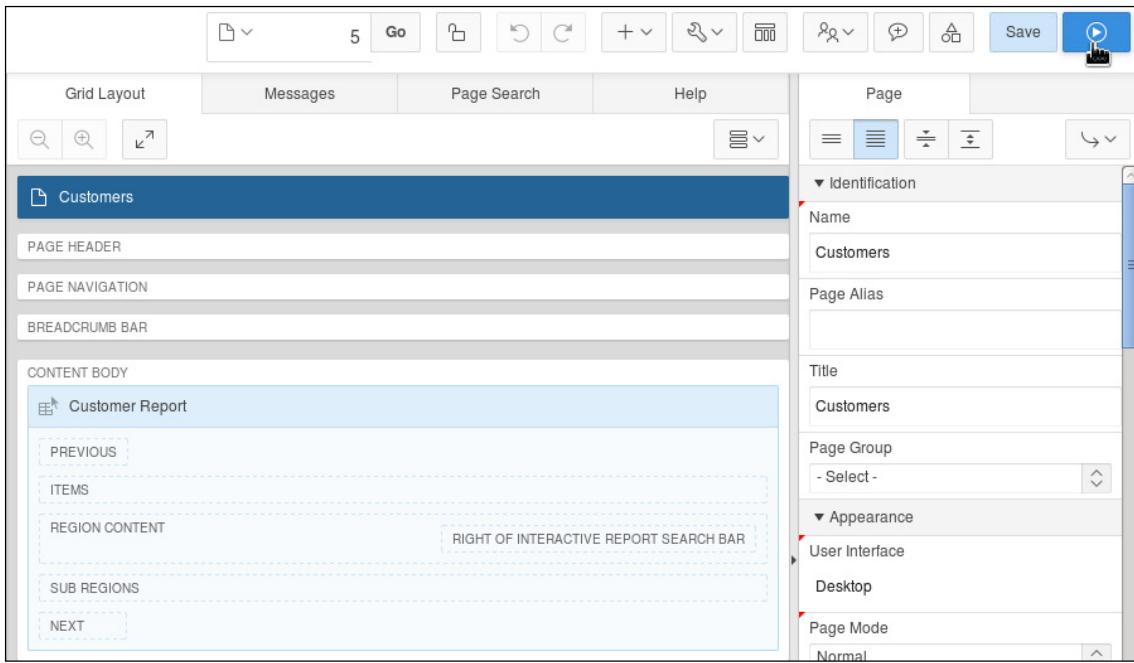
Comm

You have requested to create an Interactive Report page with the following attributes. Please confirm your selections.

|                 |                    |
|-----------------|--------------------|
| Application     | 1                  |
| Page            | 5                  |
| Page Name       | Customers          |
| Region Title    | Customer Report    |
| Region Template | Interactive Report |

[Cancel](#) [Create](#)

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



**Note:** If you are asked to log in, enter the developer user credentials.

- j. The interactive report is displayed.

|  | Customer Id | Cust First Name | Cust Last Name | Street Address         | Postal Code | City      | State Province | Country Id | Phone Number     | Nl Language |
|--|-------------|-----------------|----------------|------------------------|-------------|-----------|----------------|------------|------------------|-------------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd       | 361168      | Bangalore | Kar            | IN         | +91 80 012 4869  | hi          |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4887  | hi          |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St       | 361168      | Cochin    | Ker            | IN         | +91 80 012 4889  | hi          |
|  | 607         | Sharmila        | Fonda          | 1648 Anamika St        | 361168      | Cochin    | Ker            | IN         | +91 80 012 4891  | hi          |
|  | 609         | Shelley         | Taylor         | 1650 Teesri Manjil Crt | 361168      | Kashmir   | -              | IN         | +91 141 012 4895 | hi          |
|  | 615         | Shyam           | Plummer        | 1656 Veterans Rd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4907  | hi          |

- Create a filter on the city of Philadelphia.

- k. You want to show records only for a particular city. Select **City** from the Column Selector. Note that if you do not select the column, the search criteria you enter in the next step will search all columns.

| Customer Id | Cust First Name | Cust Last Name | Street Address         | Postal Code | City      | State Province | Country Id | Phone Number     | Nls Language |
|-------------|-----------------|----------------|------------------------|-------------|-----------|----------------|------------|------------------|--------------|
| 496         | Scott           | Jordan         | 1636 Pretty Blvd       | 361168      | Bangalore | Kar            | IN         | +91 80 012 4869  | hi           |
| 605         | Shammi          | Pacino         | 1646 Brazil Blvd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4887  | hi           |
| 606         | Sharmila        | Kazan          | 1647 Suspense St       | 361168      | Cochin    | Ker            | IN         | +91 80 012 4889  | hi           |
| 607         | Sharmila        | Fonda          | 1648 Anamika St        | 361168      | Cochin    | Ker            | IN         | +91 80 012 4891  | hi           |
| 609         | Shelley         | Taylor         | 1650 Teesri Manjil Crt | 361168      | Kashmir   | -              | IN         | +91 141 012 4895 | hi           |
| 615         | Shyam           | Plummer        | 1656 Veterans Rd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4907  | hi           |

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

| Customer Id | Cust First Name | Cust Last Name | Street Address         | Postal Code | City      | State Province | Country Id | Phone Number     | Nls Language |
|-------------|-----------------|----------------|------------------------|-------------|-----------|----------------|------------|------------------|--------------|
| 496         | Scott           | Jordan         | 1636 Pretty Blvd       | 361168      | Bangalore | Kar            | IN         | +91 80 012 4869  | hi           |
| 605         | Shammi          | Pacino         | 1646 Brazil Blvd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4887  | hi           |
| 606         | Sharmila        | Kazan          | 1647 Suspense St       | 361168      | Cochin    | Ker            | IN         | +91 80 012 4889  | hi           |
| 607         | Sharmila        | Fonda          | 1648 Anamika St        | 361168      | Cochin    | Ker            | IN         | +91 80 012 4891  | hi           |
| 609         | Shelley         | Taylor         | 1650 Teesri Manjil Crt | 361168      | Kashmir   | -              | IN         | +91 141 012 4895 | hi           |

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

The screenshot shows a web-based application titled "GlobalMart Management Tool". The left sidebar has "Home" and "Customers" options. The main area has a search bar with "City contains 'phil'" and a "Go" button. Below is a table of customer data with columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, Country Id, Phone Number, Nls Language, and I Ter. Five rows are shown, all matching the search term "phil". The bottom navigation bar includes links like Home, Application 1, Edit Page 5, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and Help.

| Customer Id | Cust First Name | Cust Last Name | Street Address      | Postal Code | City         | State Province | Country Id | Phone Number    | Nls Language | I Ter |
|-------------|-----------------|----------------|---------------------|-------------|--------------|----------------|------------|-----------------|--------------|-------|
| 191         | Maureen         | Sanders        | 6432 Rising Sun Ave | 19111       | Philadelphia | PA             | US         | +1 215 123 4644 | us           | AMER  |
| 199         | Clint           | Chapman        | 115 Chestnut St     | 19106       | Philadelphia | PA             | US         | +1 215 123 4676 | us           | AMER  |
| 209         | Cyndi           | Collins        | 100 N Peach St      | 19139       | Philadelphia | PA             | US         | +1 215 123 4708 | us           | AMER  |
| 212         | Luchino         | Falk           | 5643 N 5Th St       | 19120       | Philadelphia | PA             | US         | +1 215 123 4721 | us           | AMER  |
| 216         | Orson           | Koirlala       | 810 Race St         | 19107       | Philadelphia | PA             | US         | +1 215 123 4738 | us           | AMER  |

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

This screenshot shows the same GlobalMart Management Tool interface. A context menu is open over the fifth row of the customer table. The menu path "Format > Highlight" is highlighted with a blue selection bar. Other options in the menu include "Rows Per Page", "Select Columns", "Filter", "Sort", "Control Break", "Save Report", "Reset", "Help", "Download", "Compute", "Aggregate", "Chart", "Group By", and "Pivot". The table data remains the same as in the previous screenshot.

- n. Enter a name for the highlight, for example, Good Credit Rating. Specify a color for the highlight, for example, select [yellow]. Select **Credit Limit** for **Column**, **>** for **Operator**, and enter **2500** for **Expression**. Then click **Apply**.

Highlight

Name: Good Credit Rating

Sequence: 10

Enabled: Yes

Highlight Type: Row

Background Color: #FFFF99

Text Color:

Highlight Condition:

| Column       | Operator | Expression |
|--------------|----------|------------|
| Credit Limit | >        | 2500       |

Cancel Apply

The records that meet the criteria are highlighted.

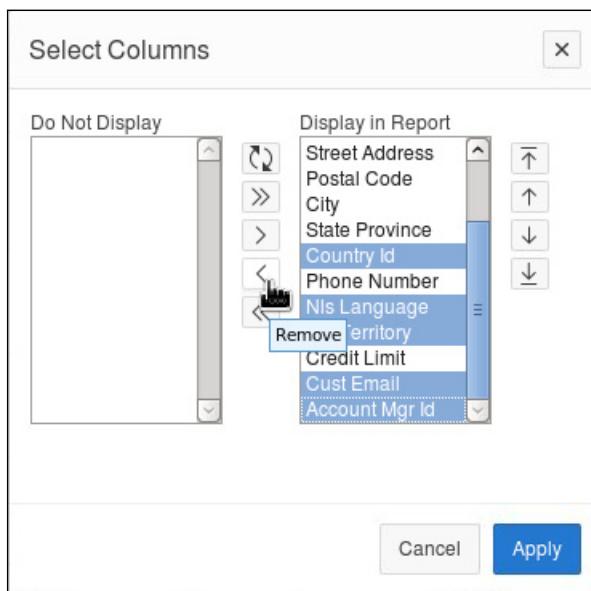
| GlobalMart Management Tool |             |                 |                |                    |             |              |                |            |                 |              |       | Log Out |
|----------------------------|-------------|-----------------|----------------|--------------------|-------------|--------------|----------------|------------|-----------------|--------------|-------|---------|
|                            | Customer Id | Cust First Name | Cust Last Name | Street Address     | Postal Code | City         | State Province | Country Id | Phone Number    | Nls Language | I Ter |         |
|                            | 224         | Clara           | Krige          | 101 E Olney Ave    | 19120       | Philadelphia | PA             | US         | +1 215 123 4748 | us           | AMER  |         |
|                            | 229         | Ian             | Chapman        | 601 Market St      | 19106       | Philadelphia | PA             | US         | +1 215 123 4768 | us           | AMER  |         |
|                            | 230         | Danny           | Wright         | 5565 Baynton St    | 19144       | Philadelphia | PA             | US         | +1 215 123 4771 | us           | AMER  |         |
|                            | 264         | George          | Adjani         | 1136 Arch St       | 19107       | Philadelphia | PA             | US         | +1 215 123 4702 | us           | AMER  |         |
|                            | 265         | Irene           | Laughton       | 6Th And Master St  | 19122       | Philadelphia | PA             | US         | +1 215 123 4749 | us           | AMER  |         |
|                            | 280         | Rob             | MacLaine       | 5344 Haverford Ave | 19139       | Philadelphia | PA             | US         | +1 215 123 4709 | us           | AMER  |         |

- Display only the Customer ID, Customer Name, Address, Phone Number, and Credit Limit.

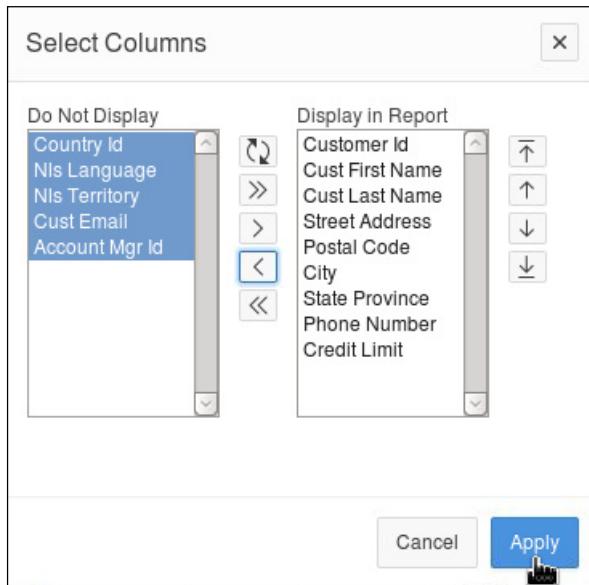
- o. You do not want some of the columns to appear on the report. Click **Actions > Select Columns**.

The screenshot shows a web-based application interface for managing customers. On the left, there's a sidebar with 'Home' and 'Customers' options. The main area displays a table of customer records with columns like Customer Id, Cust First Name, Cust Last Name, Street Address, State Province, Country Id, Phone Number, Nls Language, and Nls Territory. Two filters are applied: 'City contains 'phil'' and 'Good Credit Rating'. A context menu is open over the third row, and the 'Select Columns' option is highlighted.

- p. Ctrl-select the following columns and click **Remove (<)** to move them to the **Do Not Display** area. Note that you will still be able to perform other actions against these columns even though they are not displayed in the report.
- 1) Country ID
  - 2) Nls Language
  - 3) Nls Territory
  - 4) Cust Email
  - 5) Account Mgr ID



- q. Click **Apply**.



Only the columns that were under the **Display in Report** area appear in the report.

| Customer Id | Cust First Name | Cust Last Name | Street Address      | Postal Code | City         | State Province | Phone Number    | Credit Limit |
|-------------|-----------------|----------------|---------------------|-------------|--------------|----------------|-----------------|--------------|
| 191         | Maureen         | Sanders        | 6432 Rising Sun Ave | 19111       | Philadelphia | PA             | +1 215 123 4644 | 1200         |
| 199         | Clint           | Chapman        | 115 Chestnut St     | 19106       | Philadelphia | PA             | +1 215 123 4676 | 1400         |
| 209         | Cyndi           | Collins        | 100 N Peach St      | 19139       | Philadelphia | PA             | +1 215 123 4708 | 1400         |
| 212         | Luchino         | Falk           | 5643 N 5Th St       | 19120       | Philadelphia | PA             | +1 215 123 4721 | 1500         |
| 216         | Orson           | Koitala        | 810 Race St         | 19107       | Philadelphia | PA             | +1 215 123 4738 | 1900         |
| 220         | Carol           | Jordan         | 135 S 18Th St # 1   | 19103       | Philadelphia | PA             | +1 215 123 4743 | 2300         |

- Delete the filter that you created first.

- r. You want to delete the filter that you created first. Click the **Remove Filter** icon for the **City contains 'phil'** filter.

| Customer Id | Cust First Name | Cust Last Name | Street Address      | Postal Code | City         | State Province | Phone Number    | Credit Limit |
|-------------|-----------------|----------------|---------------------|-------------|--------------|----------------|-----------------|--------------|
| 191         | Maureen         | Sanders        | 6432 Rising Sun Ave | 19111       | Philadelphia | PA             | +1 215 123 4644 | 1200         |
| 199         | Clint           | Chapman        | 115 Chestnut St     | 19106       | Philadelphia | PA             | +1 215 123 4676 | 1400         |
| 209         | Cyndi           | Collins        | 100 N Peach St      | 19139       | Philadelphia | PA             | +1 215 123 4708 | 1400         |
| 212         | Luchino         | Falk           | 5643 N 5Th St       | 19120       | Philadelphia | PA             | +1 215 123 4721 | 1500         |
| 216         | Orson           | Koitala        | 810 Race St         | 19107       | Philadelphia | PA             | +1 215 123 4738 | 1900         |
| 220         | Carol           | Jordan         | 135 S 16Th St # 1   | 19103       | Philadelphia | PA             | +1 215 123 4743 | 2300         |

- Display the rows in ascending order by State.
- s. You want to sort by State Province. Select the Column Header for the **State Province** and click the **Sort Ascending** icon.

| Customer Id | Cust First Name | Cust Last Name | Street Address         | Postal Code | City      | State Province | Phone Number    | Credit Limit |
|-------------|-----------------|----------------|------------------------|-------------|-----------|----------------|-----------------|--------------|
| 496         | Scott           | Jordan         | 1636 Pretty Blvd       | 361168      | Bangalore | AG             | +91 80 012 4907 | 2500         |
| 605         | Shammi          | Pacino         | 1646 Brazil Blvd       | 361168      | Chennai   | BE             | +91 80 012 4919 | 1500         |
| 606         | Sharmila        | Kazan          | 1647 Suspense St       | 361168      | Cochin    | GR             |                 |              |
| 607         | Sharmila        | Fonda          | 1648 Anamika St        | 361168      | Cochin    | Har            |                 |              |
| 609         | Shelley         | Taylor         | 1650 Teesri Manjil Crt | 361168      | Kashmir   | IA             |                 |              |
| 615         | Shyam           | Plummer        | 1656 Veterans Rd       | 361168      | Chennai   | IL             |                 |              |
| 621         | Silk            | Kurosawa       | 1662 Talaivar St       | 361168      | Chennai   | Tam            |                 |              |

- Display only five rows to see how pagination works.

- t. You want to change the number of rows that are displayed in the report. Click **Actions > Rows Per Page > 5**. Note that the default value is 50.

The screenshot shows a table of customer data with a dropdown menu open over the header row. The menu is titled 'Rows Per Page' and has a value of '5' highlighted with a blue background. Other options in the menu include '1', '10', '20', '25', '50', '100', and 'All'. The table has columns for Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, Phone Number, and Credit Limit. The first five rows are visible, while the last five are shown as '... 10 more'.

| Customer Id | Cust First Name | Cust Last Name | Street Address           | Postal Code | City           | State Province | Phone Number    | Credit Limit |
|-------------|-----------------|----------------|--------------------------|-------------|----------------|----------------|-----------------|--------------|
| 825         | Alain           | Dreyfuss       | Harmoniegasse 3          | 3413        | Baden-Daettwil | AG             | +41 56 012 3527 | 500          |
| 826         | Alain           | Barkin         | Sonnenberg 4             | 3413        | Baden-Daettwil | AG             | +41 57 012 3529 | 500          |
| 827         | Alain           | Siegel         | Alfred E. Neumann-Weg 3  | 3413        | Baden-Daettwil | AG             | +41 58 012 3531 | 500          |
| 828         | Alan            | Minnelli       | Dr. Herbert Bilto Str 23 | 3413        | Baden-Daettwil | AG             | +41 59 012 3533 | 2300         |
| 829         | Alan            | Hunter         | Taefernstr 4             | 3413        | Baden-Daettwil | AG             | +41 60 012 3535 | 2300         |
| 830         | Albert          | Dutt           | Kreuzritterplatz 5       | 3413        | Baden-Daettwil | AG             | +41 61 012 3537 | 3500         |
|             |                 |                |                          |             | Baden-Daettwil | AG             | +41 62          | 3500         |

- u. Note that only five rows are displayed. The pagination is automatically specified and you can click the right arrow (>) to move to the next page.

The screenshot shows the same table and dropdown menu as the previous one, but the 'Rows Per Page' value is now explicitly set to '5' in the menu. The table displays the first five rows of data again.

| Customer Id | Cust First Name | Cust Last Name | Street Address           | Postal Code | City           | State Province | Phone Number    | Credit Limit |
|-------------|-----------------|----------------|--------------------------|-------------|----------------|----------------|-----------------|--------------|
| 825         | Alain           | Dreyfuss       | Harmoniegasse 3          | 3413        | Baden-Daettwil | AG             | +41 56 012 3527 | 500          |
| 826         | Alain           | Barkin         | Sonnenberg 4             | 3413        | Baden-Daettwil | AG             | +41 57 012 3529 | 500          |
| 827         | Alain           | Siegel         | Alfred E. Neumann-Weg 3  | 3413        | Baden-Daettwil | AG             | +41 58 012 3531 | 500          |
| 828         | Alan            | Minnelli       | Dr. Herbert Bilto Str 23 | 3413        | Baden-Daettwil | AG             | +41 59 012 3533 | 2300         |
| 829         | Alan            | Hunter         | Taefernstr 4             | 3413        | Baden-Daettwil | AG             | +41 60 012 3535 | 2300         |

release 1.0 Set Screen Reader Mode On

- Create a **Group By** report to display the number of customers in a particular province or state. Change the pagination to display all rows.

- v. To create a **Group By** report, click **Actions** and select **Format > Group By**.

| Customer Id | Cust First Name | Cust Last Name | Street Ad                   | City            | State Province | Phone Number | Credit Limit |
|-------------|-----------------|----------------|-----------------------------|-----------------|----------------|--------------|--------------|
| 825         | Alain           | Dreyfuss       | Harmoniegasse 9             | +41 56 012 3527 | 500            |              |              |
| 826         | Alain           | Barkin         | Sonnenbergweg 12            | +41 57 012 3529 | 500            |              |              |
| 827         | Alain           | Siegel         | Alfred E. Neumann-Viertel 9 | +41 58 012 3531 | 500            |              |              |
| 828         | Alan            | Minnelli       | Dr. Herbertstr 23           | +41 59 012 3533 | 2300           |              |              |
| 829         | Alan            | Hunter         | Taefernstr 4                | +41 60 012 3535 | 2300           |              |              |

- w. You want to show a list of states and how many customers belong to that state. Select **State Province** for **Group By Column**, **Count** for **Functions**, and **Customer Id** for **Column**, and enter **Number of Customers** for **Label**. Then click **Apply**.

| Functions | Column      | Label               | Format Mask | Sum                      |
|-----------|-------------|---------------------|-------------|--------------------------|
| Count     | Customer Id | Number of Customers |             | <input type="checkbox"/> |

- x. Your **Group By** report is displayed. Because the pagination is set to 5, you do not see all the rows. To view all the rows, click **Actions > Rows Per Page > All**.

- y. The state provinces and the number of customers per state are displayed. To return to the detail report, click the **View Report** icon < >.

| State Province | Number of Customers |
|----------------|---------------------|
| ZH             | 67                  |
| SG             | 10                  |
| MN             | 2                   |
| Har            | 12                  |
| Tam            | 2                   |
| BE             | 6                   |
| WI             | 1                   |
| GR             | 25                  |
| M              | 1                   |

- Save the report as a private report called **My Report**.

- z. You want to save this report as a private report that is available only to you. Click **Actions > Save Report**.

The screenshot shows a grid of customer data with columns: Customer Id, Cust First Name, Cust Last Name, Street Address, State Province, Phone Number, and Credit Limit. A context menu is open over the third row, with 'Save Report' highlighted.

| Customer Id | Cust First Name | Cust Last Name | Street Address           | State Province | Phone Number    | Credit Limit            |
|-------------|-----------------|----------------|--------------------------|----------------|-----------------|-------------------------|
| 825         | Alain           | Dreyfuss       | Harmoniegasse 3          | AG             | +41 56 012 3527 | 500                     |
| 826         | Alain           | Barkin         | Sonnenberg 4             | AG             | +41 57 012 3529 | 500                     |
| 827         | Alain           | Siegel         | Alfred E. Neumann-Weg 3  | AG             | +41 58 012 3531 | 500                     |
| 828         | Alan            | Minnelli       | Dr. Herbert Bitto Str 23 | 3413           | Baden-Daetwil   | +41 59 012 3533         |
| 829         | Alan            | Hunter         | Taefernstr 4             | 3413           | Baden-Daetwil   | AG +41 60 012 3535 2300 |

- aa. Enter My Report for Name and click **Apply**.

The dialog box has fields for Save (As Named Report), Name (My Report), and Description. The 'Apply' button is highlighted.

- bb. The report is saved. Click the Reports drop-down list to see the list of reports.

The screenshot shows the GlobalMart Management Tool interface. On the left, there's a sidebar with 'Home' and 'Customers' options. The main area displays a grid of customer data with columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, Phone Number, and Credit Limit. A yellow highlight covers the first four rows of the grid. At the top, there's a search bar, a 'Go' button, and a dropdown menu labeled 'Reports' containing '1. My Report'. Below the grid, there's a toolbar with various icons and buttons like 'Home', 'Application 1', 'Edit Page 5', etc.

- Reset the Primary Report to its original state.

cc. Select **Primary Report**.

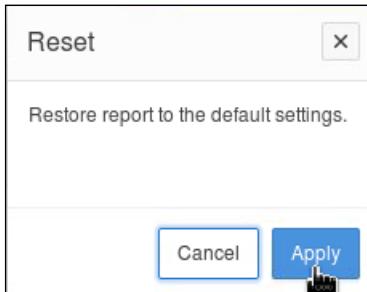
This screenshot is identical to the one above, but the 'Primary Report' option in the 'Reports' dropdown menu is now highlighted with a mouse cursor, indicating it has been selected.

- dd. To return to the default settings, click **Actions** and select **Reset**.

The screenshot shows a report titled '1. Primary Report' displaying customer data. A yellow bar at the top indicates a 'Good Credit Rating'. A context menu is open over the third row, with the 'Reset' option highlighted.

| Customer Id | Cust First Name | Cust Last Name | Street Address           | Postal Code | City          | Country | Phone Number    | Nbr Lang |
|-------------|-----------------|----------------|--------------------------|-------------|---------------|---------|-----------------|----------|
| 825         | Alain           | Dreyfuss       | Harmoniegasse 3          | 3413        | Baden-Daetwil | AG      | +41 59 012 3533 | 2300     |
| 826         | Alain           | Barkin         | Sonnenberg 4             | 3413        | Baden-Daetwil | AG      | +41 60 012 3535 | 2300     |
| 827         | Alain           | Siegel         | Alfred E. Neumann-Weg 3  | 3413        | Baden-Daetwil | AG      | +41 59 012 3533 | 2300     |
| 828         | Alan            | Minnelli       | Dr. Herbert Bitto Str 23 | 3413        | Baden-Daetwil | AG      | +41 59 012 3533 | 2300     |
| 829         | Alan            | Hunter         | Taefernstr 4             | 3413        | Baden-Daetwil | AG      | +41 60 012 3535 | 2300     |

- ee. Click **Apply**.



- ff. You see the original report without customizations.

The screenshot shows the same report without the 'Good Credit Rating' filter applied. The data is identical to the previous screenshot.

| Customer Id | Cust First Name | Cust Last Name | Street Address         | Postal Code | City      | State Province | Country Id | Phone Number     | Nbr Lang |
|-------------|-----------------|----------------|------------------------|-------------|-----------|----------------|------------|------------------|----------|
| 496         | Scott           | Jordan         | 1636 Pretty Blvd       | 361168      | Bangalore | Kar            | IN         | +91 80 012 4869  | hi       |
| 605         | Shammi          | Pacino         | 1646 Brazil Blvd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4887  | hi       |
| 606         | Sharmila        | Kazan          | 1647 Suspense St       | 361168      | Cochin    | Ker            | IN         | +91 80 012 4889  | hi       |
| 607         | Sharmila        | Fonda          | 1648 Anamika St        | 361168      | Cochin    | Ker            | IN         | +91 80 012 4891  | hi       |
| 609         | Shelley         | Taylor         | 1650 Teesri Manjil Crt | 361168      | Kashmir   | -              | IN         | +91 141 012 4895 | hi       |
| 615         | Shyam           | Plummer        | 1656 Veterans Rd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4907  | hi       |

- Display a single row view.

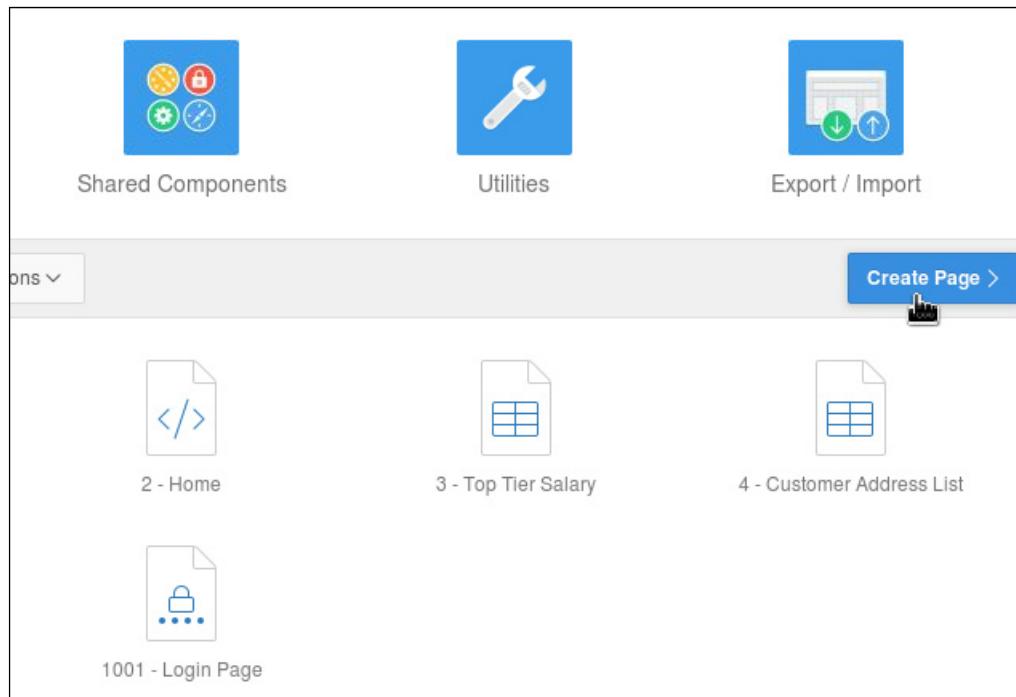
- gg. You can view a row at a time. Click the **Single Row View** icon < > for one of the rows.

|  | Customer Id | Cust First Name | Cust Last Name | Street Address         | Postal Code | City      | State Province | Country Id | Phone Number     | Nls Language |
|--|-------------|-----------------|----------------|------------------------|-------------|-----------|----------------|------------|------------------|--------------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd       | 361168      | Bangalore | Kar            | IN         | +91 80 012 4869  | hi           |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4887  | hi           |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St       | 361168      | Cochin    | Ker            | IN         | +91 80 012 4889  | hi           |
|  | 607         | Sharmila        | Fonda          | 1648 Anamika St        | 361168      | Cochin    | Ker            | IN         | +91 80 012 4891  | hi           |
|  | 609         | Shelley         | Taylor         | 1650 Teesri Manjil Crt | 361168      | Kashmir   | -              | IN         | +91 141 012 4895 | hi           |
|  | 615         | Shyam           | Plummer        | 1656 Veterans Rd       | 361168      | Chennai   | Tam            | IN         | +91 80 012 4907  | hi           |

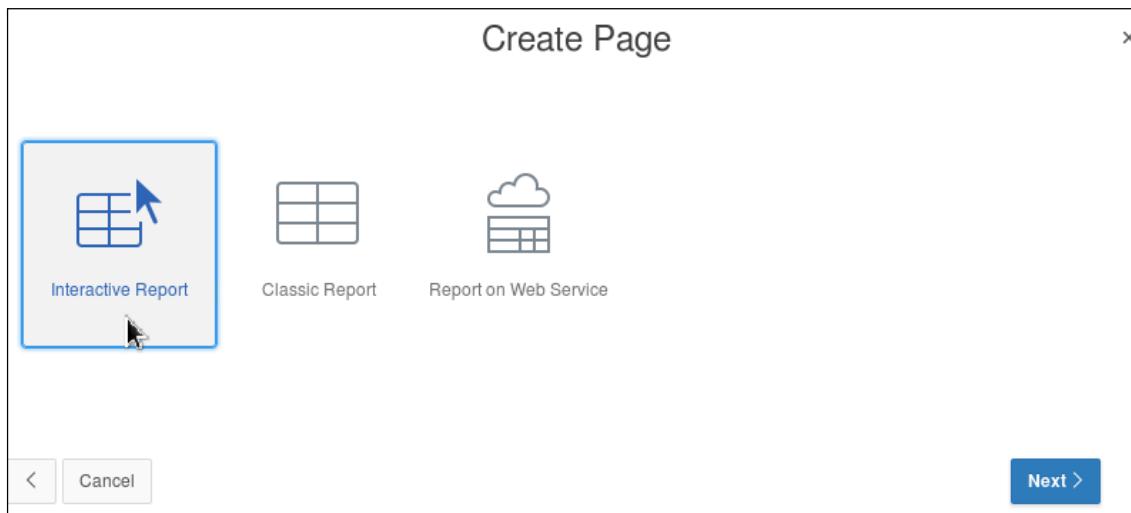
- hh. One row is displayed. You can click the right arrow (>) or left arrow (<) to scroll to the next or previous row. You have completed this interactive report. Click the **Application 1** link at the bottom of the page.

|                                 |                  |
|---------------------------------|------------------|
| <a href="#">Customer Id</a>     | 496              |
| <a href="#">Cust First Name</a> | Scott            |
| <a href="#">Cust Last Name</a>  | Jordan           |
| <a href="#">Street Address</a>  | 1636 Pretty Blvd |
| <a href="#">Postal Code</a>     | 361168           |
| <a href="#">City</a>            | Bangalore        |
| <a href="#">State Province</a>  | Kar              |
| <a href="#">Country Id</a>      | IN               |
| <a href="#">Phone Number</a>    | +91 80 012 4869  |
| <a href="#">Nls Language</a>    | hi               |
| <a href="#">Nls Territory</a>   | INDIA            |

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 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.
- a. Navigate to the GMT application home page and click **Create Page >**.



b. Select **Interactive Report**.



c. Enter 6 for **Page Number**. Enter Employee Commission for both **Page Name** and **Region Name**. Select **Breadcrumb** for **Breadcrumb** and **Home** for **Parent Entry** and click **Next >**.

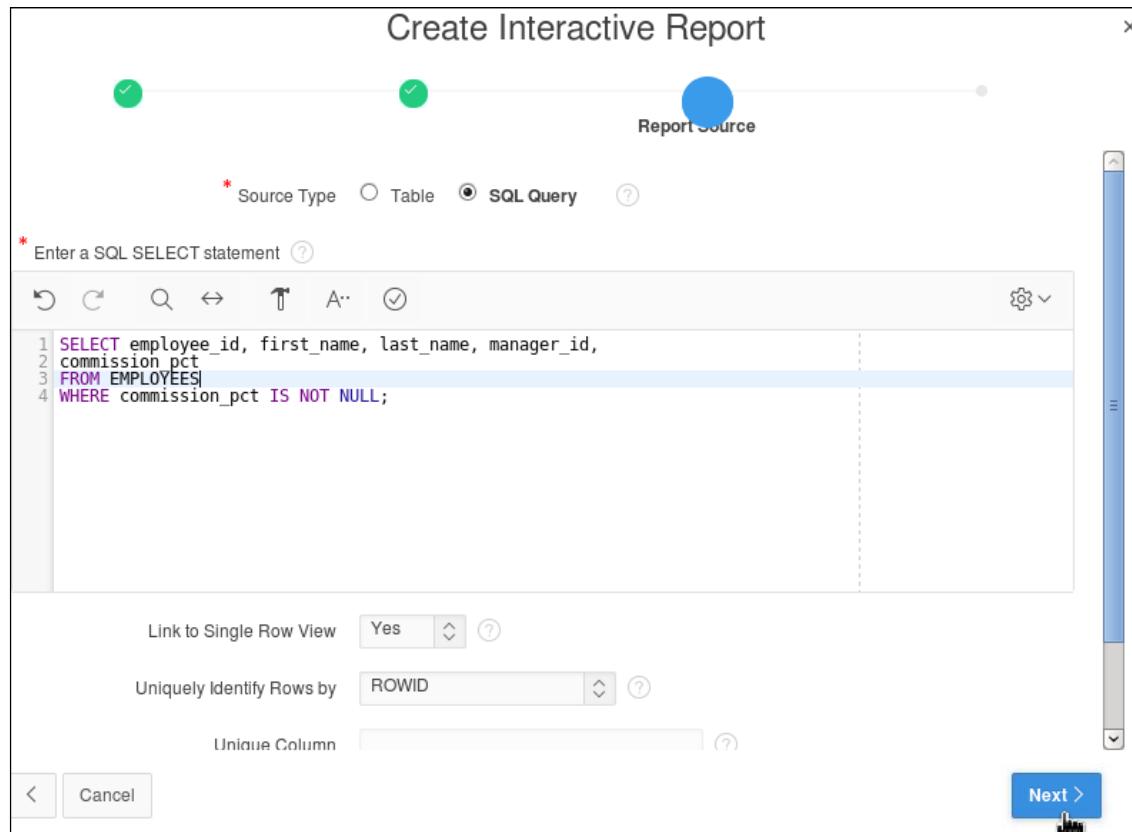
The screenshot shows a 'Create Interactive Report' dialog box. At the top center is the title 'Create Interactive Report'. Below it is a progress bar with three dots. On the left, there is a blue circular icon and the text 'Page and Region Attributes'. The main area contains the following fields:

|                 |                     |     |
|-----------------|---------------------|-----|
| * Page Number   | 6                   | (?) |
| * Page Name     | Employee Commission | (?) |
| * Page Mode     | Normal              | (?) |
| Region Template | Interactive Report  | (?) |
| * Region Name   | Employee Commission | (?) |
| Breadcrumb      | Breadcrumb          | (?) |
| Parent Entry    | Home (Page 1)       | (?) |
| Entry Name      | Employee Commission | (?) |

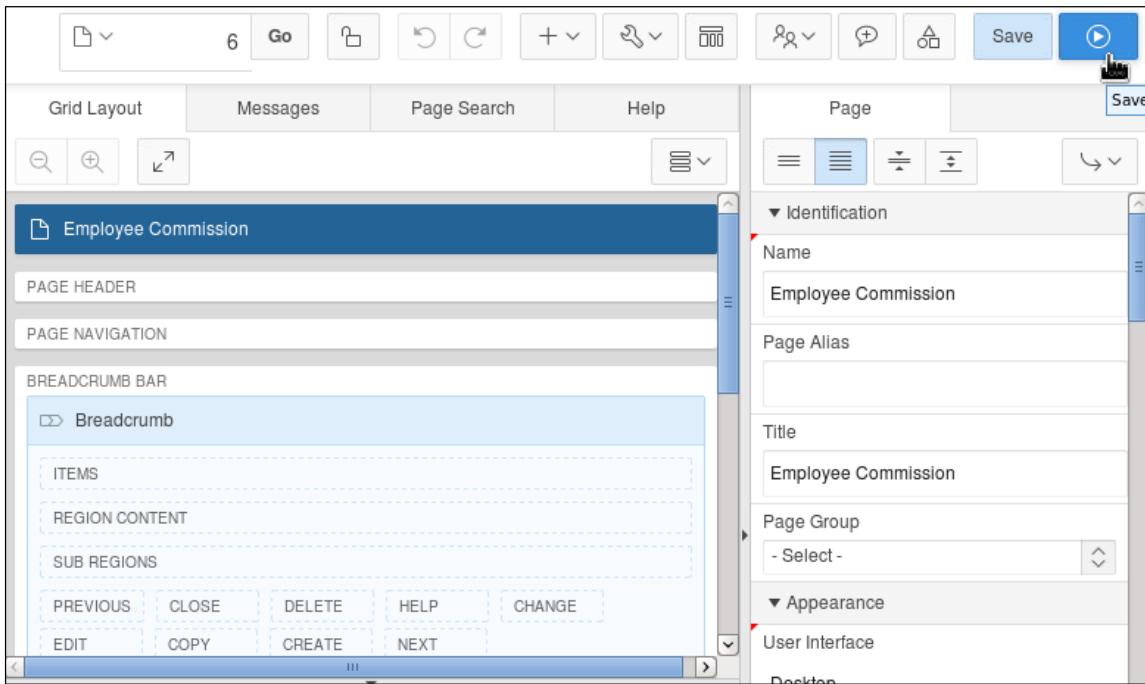
At the bottom left are 'Cancel' and 'Next >' buttons, and at the bottom right is a close 'x' button.

- d. Select **Source Type as SQL Query**. Enter the following SQL SELECT statement and click **Next >**. You can copy and paste the SQL statement from /home/oracle/labs/labs/lab\_04\_02\_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 EMPLOYEES  
WHERE commission_pct IS NOT NULL;
```



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



- f. If prompted, enter your developer user login credentials. Your report is displayed.

The screenshot shows the GlobalMart Management Tool interface. The left sidebar has links for Home and Customers. The main area shows a breadcrumb path 'Home / Employee Commission'. Below is a table with the following data:

|  | 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             |
|  | 151         | David      | Bernstein | 145        | .25            |
|  | 152         | Peter      | Hall      | 145        | .25            |

At the bottom are navigation buttons: Home, Application 1, Edit Page 6, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a help icon.

- 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.

- g. To create a new computation, click **Actions > Format > Compute**.

The screenshot shows a web-based application titled "GlobalMart Management Tool". The main page is titled "Employee Commission". On the left, there's a sidebar with links for "Home" and "Customers". The main content area displays a table with columns "Employee Id" and "First Name". The table contains 15 rows of employee data. A context menu is open over the table, with the "Format" option selected. Under the "Format" option, the "Compute" option is highlighted. The menu also includes other options like "Select Columns", "Filter", "Rows Per Page", "Aggregate", "Chart", "Group By", "Pivot", "Flashback", "Save Report", "Reset", "Help", and "Download". At the bottom of the screen, there's a navigation bar with various icons and labels such as "Home", "Application 1", "Edit Page 6", "Session", "View Debug", "Debug", "Show Grid", "Quick Edit", "Theme Roller", and a user icon.

|     | Employee Id | First Name |
|-----|-------------|------------|
| 145 | John        |            |
| 146 | Karen       |            |
| 147 | Alberto     |            |
| 148 | Gerald      |            |
| 149 | Eleni       |            |
| 150 | Peter       |            |
| 151 | David       |            |
| 152 | Peter       |            |

- h. Enter New Commission for **Column Heading**. The computation should add .15 to a commission of .1 and .05 to a commission of .15. You will use the following CASE statement to perform the computation (located in /home/oracle/labs/labs/lab\_04\_02\_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**.

The screenshot shows the Oracle Database Compute dialog box. At the top, it says "Compute". Below that, under "Computation", there is a dropdown menu set to "- New Computation -". Under "Column Heading", the text "New Commission" is entered. Under "Format Mask", there is a dropdown menu with a checkmark. In the "Computation Expression" section, the text "CASE E WHEN 0.1 THEN E+0.15 WHEN 0.15 THEN E+0.05 ELSE E END" is pasted into a text area. Below this, there are three panels: "Columns" (listing Employee Id, First Name, Last Name, Manager Id, and Commission Pct), "Keypad" (showing a numeric keypad and various operators like +, -, \*, /, =, >=, ABS, ADD\_MONTHS, AND, BETWEEN, CASE, etc.), and "Functions / Operators" (a scrollable list of functions). At the bottom, there are "Cancel" and "Apply" buttons.

Note that the computed column now appears in the report.

The screenshot shows a web-based application titled "GlobalMart Management Tool". The left sidebar has links for "Home" and "Customers". The main content area shows a breadcrumb path "Home / Employee Commission". Below is a grid with columns: Employee Id, First Name, Last Name, Manager Id, Commission Pct, and New Commission. The "New Commission" column contains values like .4, .3, .3, .3, .2, .3, .25, .25, .25, .2, .2, .2, .2. At the bottom of the grid, there's a toolbar with icons for Home, Application 1, Edit Page 6, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a gear icon.

- Create a control break on Manager ID.
- i. To create a control break on the Manager ID, click the **Manager ID** column header and click the **Control Break** icon. Alternatively, you can click **Actions** and select **Format > Control Break**.

This screenshot is similar to the previous one, showing the "Employee Commission" report. However, the "Manager Id" column header is highlighted with a blue background, and a context menu is open over it. The menu items are "Filter...", "Control Break", and "Format". The "Control Break" option is highlighted with a blue border. The rest of the grid and toolbar are identical to the first screenshot.

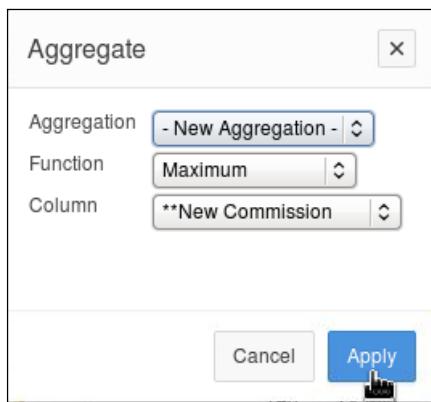
Note that the column is eliminated and now appears before each break point in the report.

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

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

Select Columns  
Filter  
Rows Per Page >  
Format >  
Flashback  
Save Report  
Reset  
Help  
Download  
Aggregate  
Chart  
Group By  
Pivot

- k. Select **Maximum** from the function list. Select **\*\*New Commission**, which is a computed column from the column list, and click **Apply**.



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

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

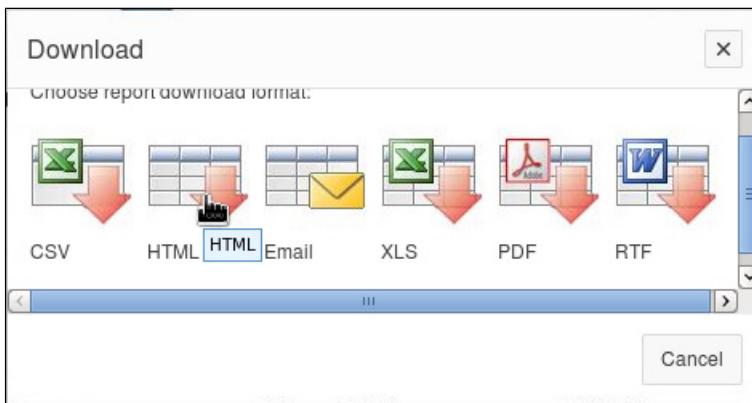
- Download the HTML report.

- I. To download a report in multiple formats, click **Actions** and select **Download**.

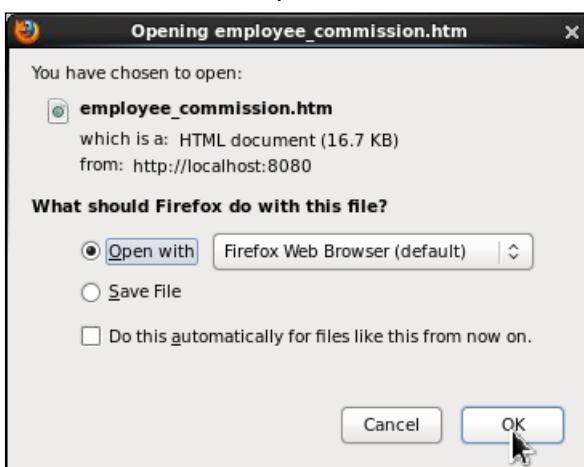
The screenshot shows a report titled "Employee Commission" with Manager ID 100. The report lists employees with their first names, manager names, commission percentages, and new commissions. A context menu is open over the grid, with the "Actions" dropdown expanded. The "Download" option is highlighted in blue, indicating it has been selected.

| Employee Id | First Name | Commission Pct | New Commission |
|-------------|------------|----------------|----------------|
| 145         | John       | .4             | .4             |
| 146         | Karen      | .3             | .3             |
| 147         | Alberto    | .3             | .3             |
| 148         | Gerald     | .3             | .3             |
| 149         | Eleni      | .2             | .2             |

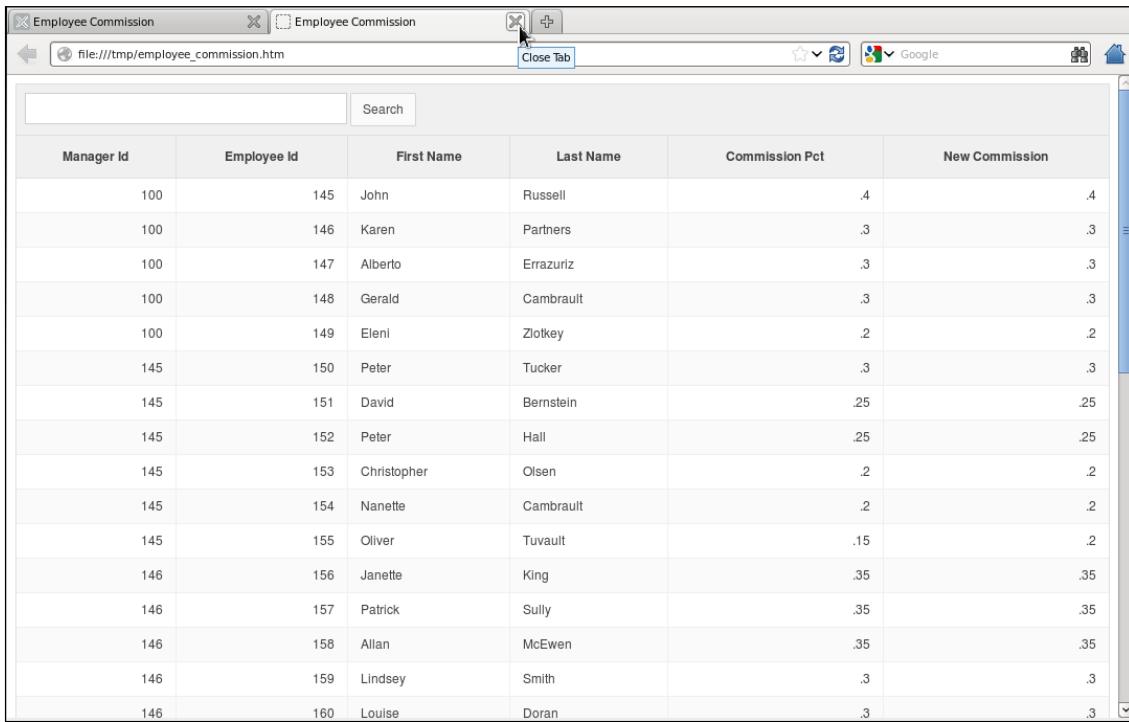
- m. Click **HTML**.



- n. Click **OK** to view a report in a web browser.

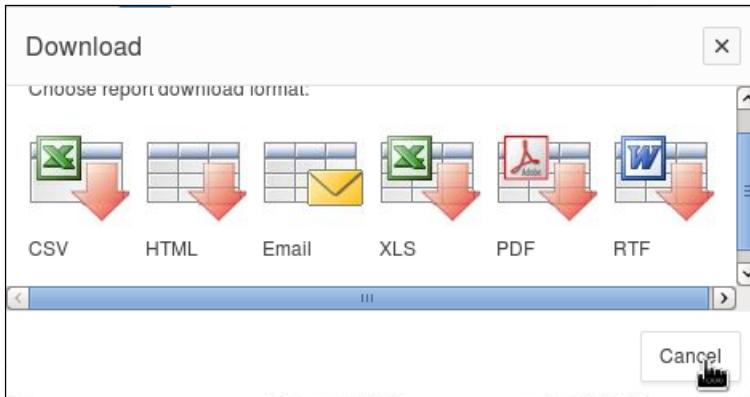


The HTML report is displayed on a new tab. Close the tab.

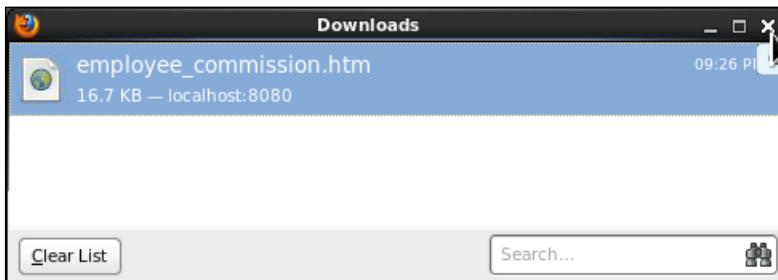


| Manager Id | Employee Id | First Name  | Last Name | Commission Pct | New Commission |
|------------|-------------|-------------|-----------|----------------|----------------|
| 100        | 145         | John        | Russell   | .4             | .4             |
| 100        | 146         | Karen       | Partners  | .3             | .3             |
| 100        | 147         | Alberto     | Errazuriz | .3             | .3             |
| 100        | 148         | Gerald      | Cambrault | .3             | .3             |
| 100        | 149         | Eleni       | Zlotkey   | .2             | .2             |
| 145        | 150         | Peter       | Tucker    | .3             | .3             |
| 145        | 151         | David       | Bernstein | .25            | .25            |
| 145        | 152         | Peter       | Hall      | .25            | .25            |
| 145        | 153         | Christopher | Olsen     | .2             | .2             |
| 145        | 154         | Nanette     | Cambrault | .2             | .2             |
| 145        | 155         | Oliver      | Tuvault   | .15            | .2             |
| 146        | 156         | Janette     | King      | .35            | .35            |
| 146        | 157         | Patrick     | Sully     | .35            | .35            |
| 146        | 158         | Allan       | McEwen    | .35            | .35            |
| 146        | 159         | Lindsey     | Smith     | .3             | .3             |
| 146        | 160         | Louise      | Doran     | .3             | .3             |

- o. Click **Cancel** to close the Download window.



- p. Close the Firefox Downloads window.



- 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**.

- q. To save all the customizations that you made to this report and to make it available to other users, click **Actions > Save Report**.

The screenshot shows the GlobalMart Management Tool interface. On the left, there's a sidebar with 'Home' and 'Customers' options. The main area is titled 'Employee Commission' with the URL 'Home / Employee Commission'. Below the title is a search bar and a 'Actions' dropdown menu. The menu includes 'Select Columns', 'Filter', 'Rows Per Page', 'Name', 'Format', 'Flashback', 'Reset', 'Help', and 'Save Report'. The 'Save Report' option is highlighted with a mouse cursor. The main content area displays a grid of employee data with columns: Manager Id, Employee Id, First Name, Last Name, Commission Pct, and New Commission. The data shows five employees: John, Karen, Alberto, Gerald, and Eleni, each with their respective commission percentages (.4, .3, .3, .3, .2). At the bottom of the grid, it says 'Manager Id : 145'. The bottom navigation bar includes links for Home, Application 1, Edit Page 6, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and Session.

- r. Select **As Default Report Settings** from the Save drop-down list.

The screenshot shows a 'Save Report' dialog box. It has fields for 'Save' (set to 'As Named Report'), 'Name' (set to 'As Named Report'), and 'Description'. A note on the right says '(Only displayed for developers)'. At the bottom are 'Cancel' and 'Apply' buttons. A dropdown menu is open over the 'Save' field, with 'As Default Report Settings' highlighted.

- s. You want to make this report available to other users. However, you do not want to make it the default report. Select **Alternative** for **Default Report Type**, enter **Commission Proposal** for **Name**, and click **Apply**.

The screenshot shows a 'Save Default Report' dialog box. It contains a message: 'The current report settings will be used as the default for all users.' Below it, 'Default Report Type' has 'Primary' and 'Alternative' radio buttons, with 'Alternative' selected. The 'Name' field is filled with 'Commission Proposal'. At the bottom are 'Cancel' and 'Apply' buttons.

The alternative report is now listed in the **Reports** drop-down list.

The screenshot shows the GlobalMart Management Tool interface. The title bar says "GlobalMart Management Tool" and "Log Out". The left sidebar has "Home" and "Customers" options. The main area shows "Employee Commission" with a breadcrumb "Home / Employee Commission". A search bar and a "Go" button are at the top. Below is a dropdown menu for "Default" reports, with "1. Primary Report" and "2. Commission Proposal" listed. The "2. Commission Proposal" option is highlighted. A "Reports" button is also visible. A table titled "Manager Id : 100" lists employee details:

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

At the bottom, there are navigation links like Home, Application 1, Edit Page 6, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a gear icon.

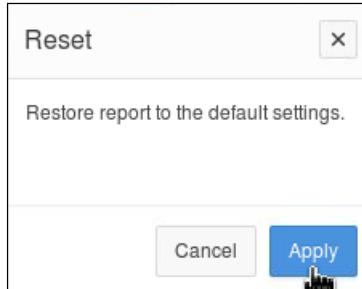
- Reset the Primary Report.
- t. Select **Primary Report** from the Reports drop-down list.

This screenshot is identical to the one above, except the "1. Primary Report" option in the dropdown menu is now highlighted, indicating it has been selected.

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

The screenshot shows the GlobalMart Management Tool interface. On the left is a sidebar with 'Home' and 'Customers' options. The main area displays a report titled 'Employee Commission' with a search bar and a 'Manager Id' filter set to '100'. The report table lists five employees: John Russell, Karen Partners, Alberto Errazuriz, Gerald Cambrault, and Eleni Zlotkey. The 'Commission P...' column shows values .4, .3, .3, .3, and .2 respectively. On the right, an 'Actions' dropdown menu is open, with 'Reset' highlighted in blue. Other options include 'Select Columns', 'Filter', 'Rows Per Page', 'Format', 'Flashback', 'Save Report', 'Help', and 'Download'. The bottom of the screen has a toolbar with various application icons.

- v. Click **Apply**.



- w. The primary report is reset to its original settings. Click the **Edit Page 6** link at the bottom of the page.

The screenshot shows a web-based application titled "GlobalMart Management Tool". The left sidebar has links for "Home" and "Customers". The main content area is titled "Employee Commission". At the top, there is a search bar, a "Go" button, a dropdown menu set to "1. Primary Report", and an "Actions" dropdown. Below is a table with columns: Employee Id, First Name, Last Name, Manager Id, and Commission Pct. The table contains 8 rows of employee data. At the bottom of the page is a toolbar with various icons and a status bar showing "Edit Page 6" and other session information.

| 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             |
| 151         | David       | Bernstein | 145        | .25            |
| 152         | Peter       | Hall      | 145        | .25            |
| 153         | Christopher | Olsen     | 145        | .2             |

**Note:** If you receive an alert asking if you are sure that you want to leave the page, click **Leave**.

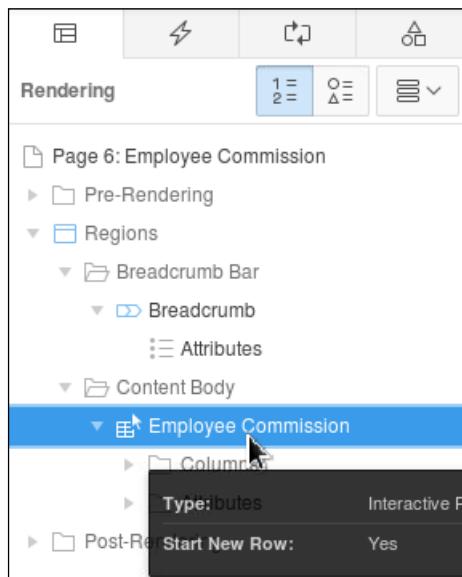
## Solution 4-3: Customizing an Interactive Report

### Overview

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

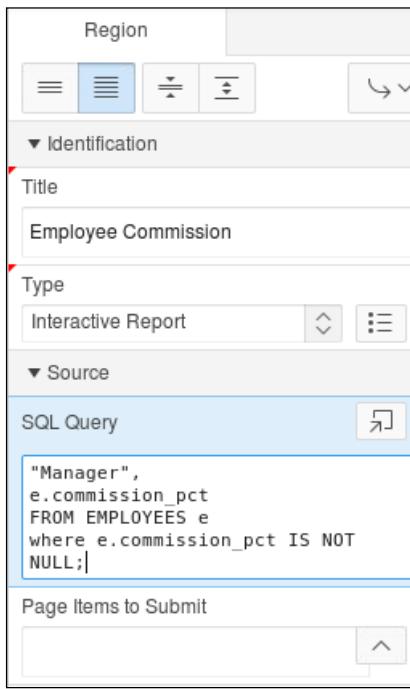
### Steps

1. Make the following customizations to the Employee Commissions report:
  - a. Navigate to the Page Designer view of the **Employee Commission** page. Under **Regions > Content Body**, select **Employee Commission**.

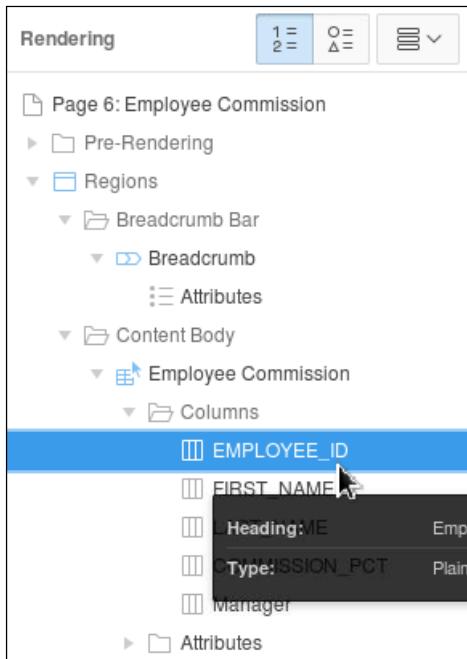


- b. In the Region tab, change the **SQL Query** field value under the **Source** section to reflect the following query (located in /home/oracle/labs/labs/lab\_04\_03.txt):

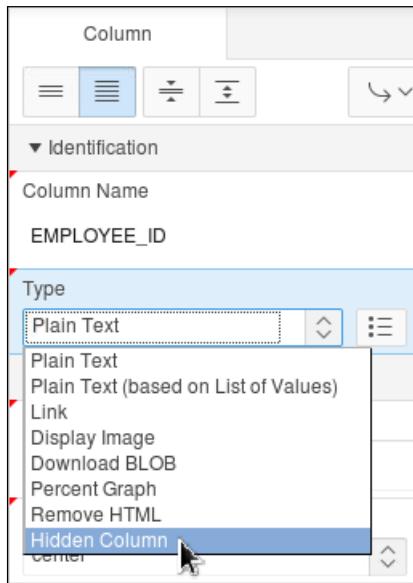
```
SELECT e.employee_id,
       e.first_name,
       e.last_name,
       (SELECT e1.first_name||' '||e1.last_name from
        EMPLOYEES e1 where e1.employee_id =
        e.manager_id) as
       "Manager",
       e.commission_pct
    FROM EMPLOYEES e
   where e.commission_pct IS NOT NULL;
```



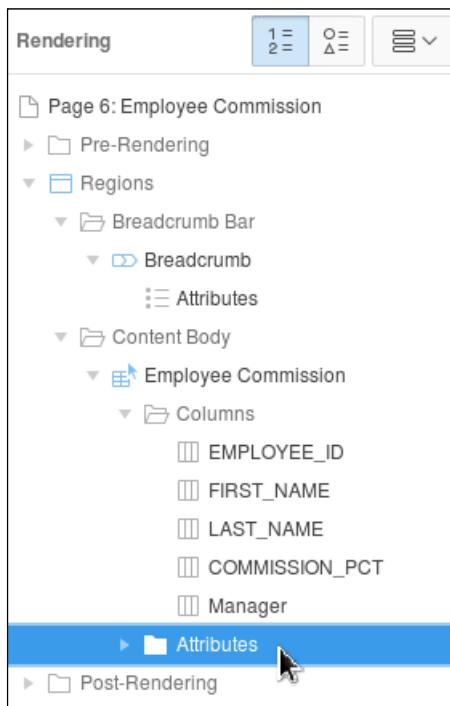
- c. In the Rendering tab, select **Regions > Content Body > Employee Commission > Columns > EMPLOYEE\_ID**.



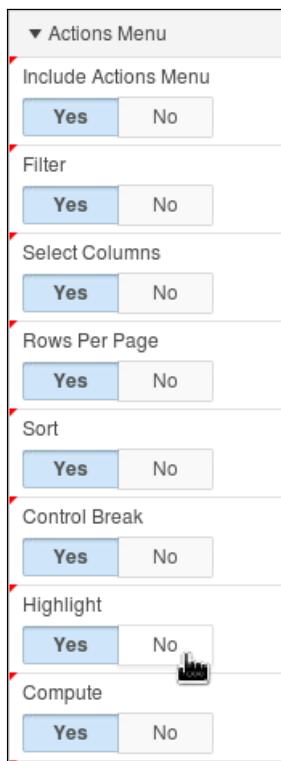
- d. In the Column tab, select the **Hidden Column** option from the **Type** drop-down list.



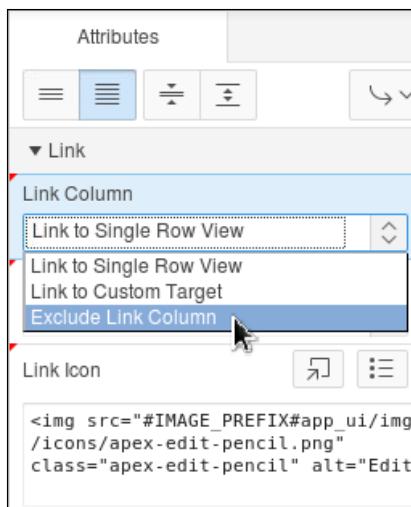
- Remove the Highlight option from the Actions menu.
- e. In the Rendering tab, select **Regions > Content Body > Employee Commission > Attributes**.



- f. In the Attributes tab, scroll down to the **Actions Menu** section. Select **No** for **Highlight** so that it is not displayed in the Actions Menu.

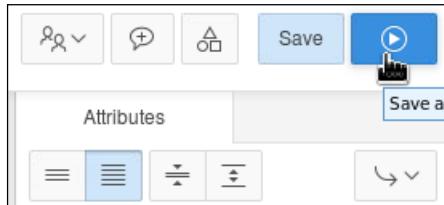


- Remove the Single Row View icon for each row in the report.
- g. In the Attributes tab, scroll up to the **Link** section. To not display the Single Row View, select **Exclude Link Column** from the **Link Column** drop-down list.



- Run the report and confirm the changes that you made.

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



Note that Employee ID and the single row view are excluded from the report. The Manager column displays the First Name and Last Name of the manager.

Home / Employee Commission

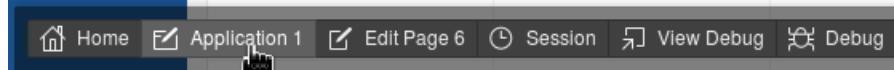
| First Name  | Last Name | Commission Pct | Manager      |
|-------------|-----------|----------------|--------------|
| John        | Russell   | .4             | Steven King  |
| Karen       | Partners  | .3             | Steven King  |
| Alberto     | Errazuriz | .3             | Steven King  |
| Gerald      | Cambrault | .3             | Steven King  |
| Eleni       | Zlotkey   | .2             | Steven King  |
| Peter       | Tucker    | .3             | John Russell |
| David       | Bernstein | .25            | John Russell |
| Peter       | Hall      | .25            | John Russell |
| Christopher | Olsen     | .2             | John Russell |
| Nanette     | Cambrault | .2             | John Russell |

- i. The **Highlight** option is removed in the **Actions** menu.

The screenshot shows a report titled "Employee Commission" with columns for First Name, Last Name, and Commission Pct. The data includes rows for John Russell, Karen Partners, Alberto Errazuriz, Gerald Cambrault, Eleni Zlotkey, Peter Tucker, David Bernstein, Peter Hall, Christopher Olsen, and Nanette Cambrault. An "Actions" button is open, displaying options like Sort, Filter, Rows Per Page, Format (which is highlighted with a cursor), Flashback, Save Report, Reset, Help, and Download. A tooltip for "Format" shows the full menu path: John Russell > Format.

| First Name  | Last Name | Commission Pct |
|-------------|-----------|----------------|
| John        | Russell   | .4             |
| Karen       | Partners  | .3             |
| Alberto     | Errazuriz |                |
| Gerald      | Cambrault |                |
| Eleni       | Zlotkey   |                |
| Peter       | Tucker    |                |
| David       | Bernstein |                |
| Peter       | Hall      |                |
| Christopher | Olsen     |                |
| Nanette     | Cambrault | .2             |

- j. Click the **Application 1** link at the bottom of the page.





# **Practices for Lesson 5: Working with Reports for Mobile Applications**

## **Chapter 5**

## Practices for Lesson 5: Overview

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### Practices Overview

There are three practices in this lesson. In these practices, you create and use different types of reports for mobile interface, namely, List View Report, Column Toggle Report, and Reflow Report.

## Practice 5-1: Adding and Modifying a List View Report Page in Your Application

### Overview

In one of the earlier practices, you have created a mobile interface for the GMT application. In this practice, you create Employee List using List View, which is a report type used for mobile applications.

### 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 in the GMT application, create a **List View**, which is a report type used for mobile applications. Enter **Employee List** as the Page Name and Region Name. Change the Page Number to **201**. The list view should select all the columns from the **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 haven't completed **Practice 2-1**, perform the following steps:

- a. Log 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** user is created.

If you haven't completed **Practice 4-3**, perform the following steps:

- a. Log in to the Application Express workspace as the **apex** user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the **sol\_04\_03.sql** file in the **/home/oracle/labs/solutions** directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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 5-2: Creating a Column Toggle Report for Your Mobile Application

### Overview

In this practice, you create a Column Toggle Report (Product Information) for the GMT application. You will deselect a few columns that are not meant to be shown in the report. You will again select those columns to show in the report.

### 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 in the GMT application, create a **Column Toggle Report**. Enter Product Information as the Page Name and Region Name. Change the Page Number to 202. The report should select all the columns from the `PRODUCT_INFORMATION` table.
  - After the page is created, run the page to view the Product Information report with all the columns from `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 haven't completed **Practice 2-1**, perform the following steps:

- a. Log 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` user is created.

If you haven't completed **Practice 5-1**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_05_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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 5-3: Creating a Reflow Report for Your Mobile Application

### Overview

In this practice, you create a Reflow Report (Customer Details) for the GMT application. You will run the page and view the results.

### 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 in the GMT application, create a **Reflow Report**. Enter **Customer Details** as the Page Name and Region Name. Change the Page Number to 203. The report should select all the columns from the CUSTOMERS table.
  - After the page is created, run the page to view the Customer Details report with all the columns from CUSTOMERS displayed. Check out the responsive nature of the report.

### Catch Up

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

- a. Log 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` user is created.

If you haven't completed **Practice 5-2**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_05_02.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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.

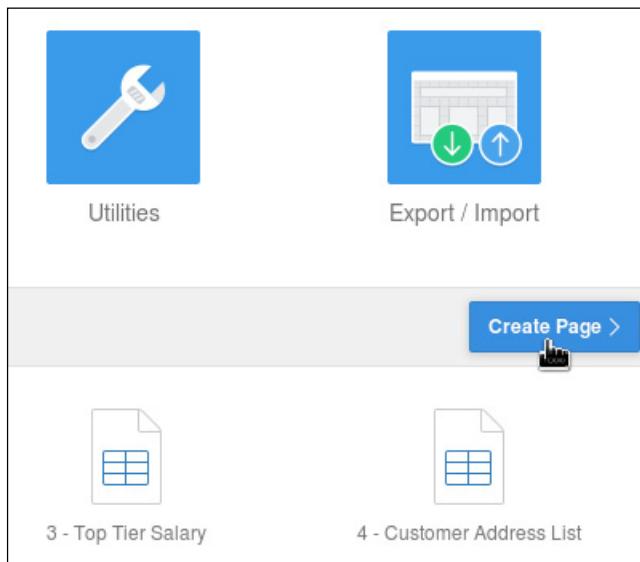
## Solution 5-1: Adding and Modifying a List View Report Page in Your Application

### Overview

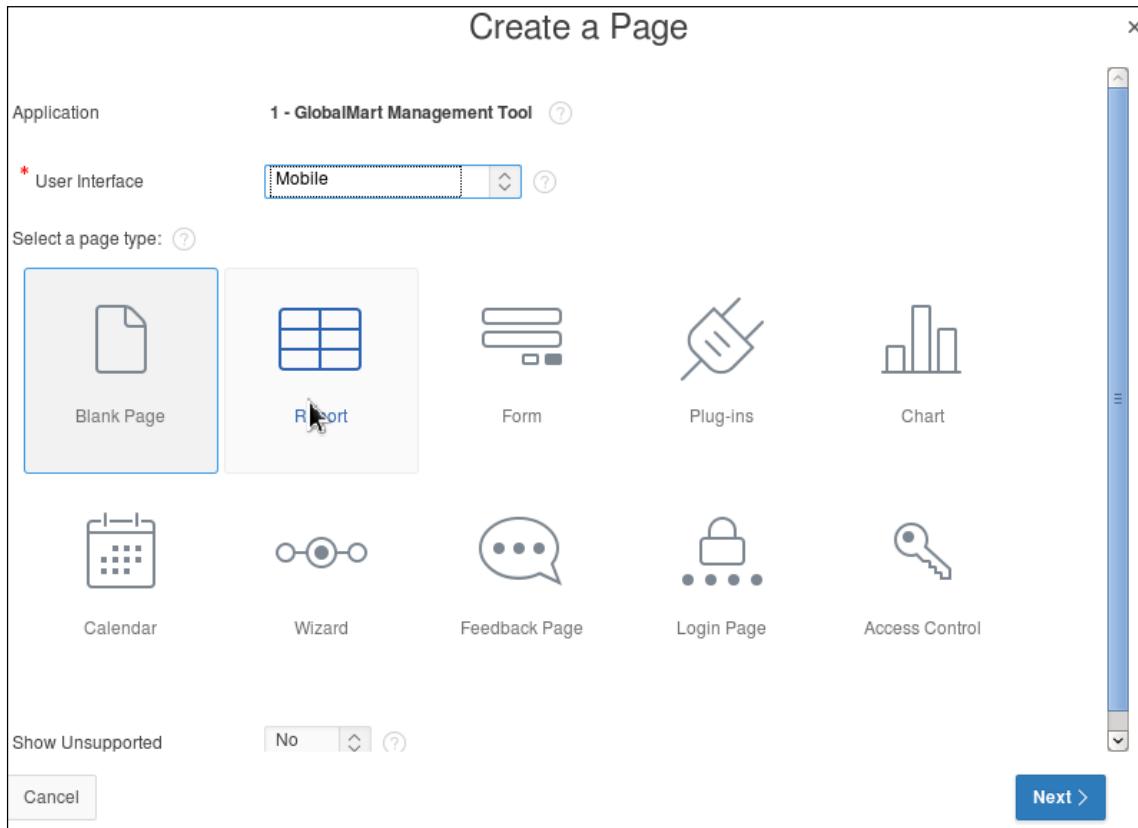
In this practice solution, steps are provided for adding and modifying a List View Report page in your application.

### Steps

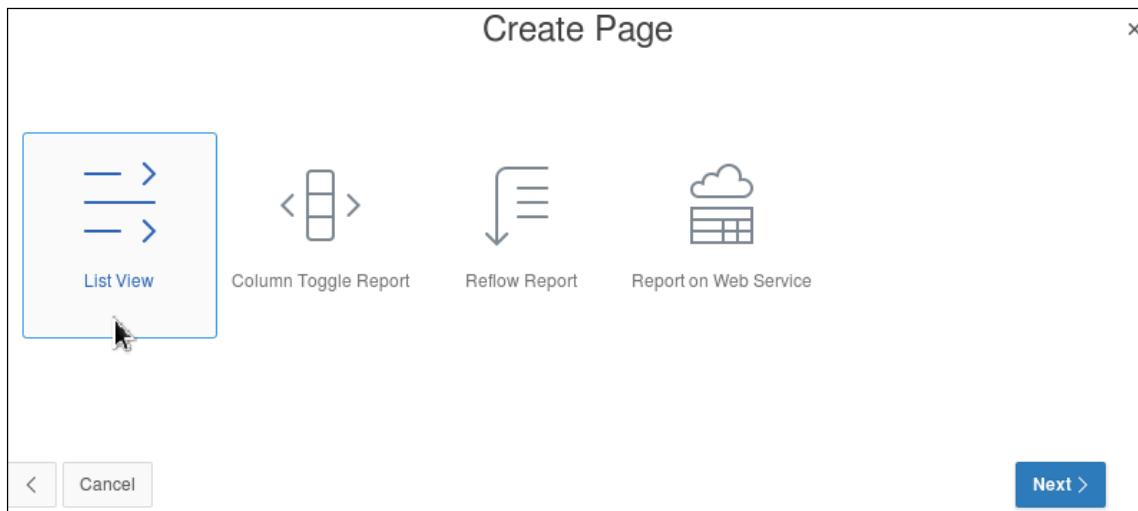
1. On a new page in the GMT application, create a **List View**, which is a report type used for mobile applications. Enter `Employee List` as the Page Name and Region Name. Change the Page Number to **201**. The list view should select all the columns from the `EMPLOYEES` table and should display the 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. Navigate to the GMT application page and click **Create Page >**.



- b. Select **Mobile** for User Interface and click **Report**.



- c. Click **List View**.



- d. Change the **Page Number** to 201 and enter Employee List as the **Page Name** and **Region Name**. Click **Next >**.

Create Page

Page and Region Attributes

Identify a page number and name.

Region Type List View

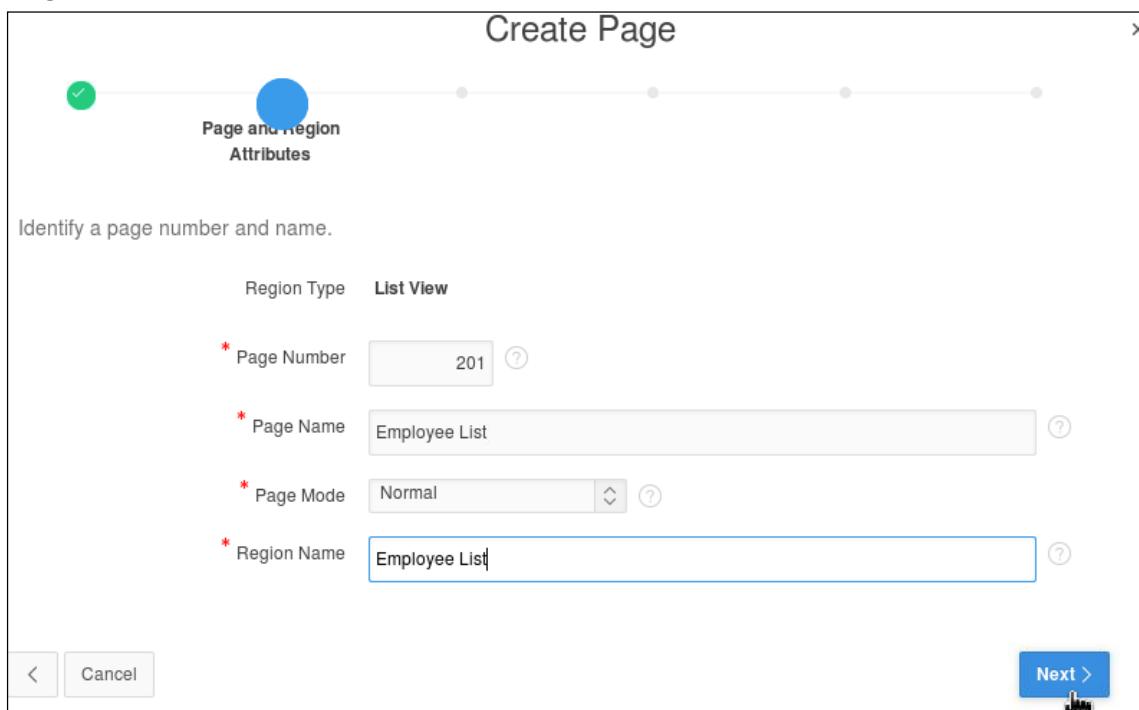
\* Page Number 201 (?)

\* Page Name Employee List (?)

\* Page Mode Normal (?)

\* Region Name Employee List (?)

< Cancel Next >



- e. Accept the defaults and click **Next >**.

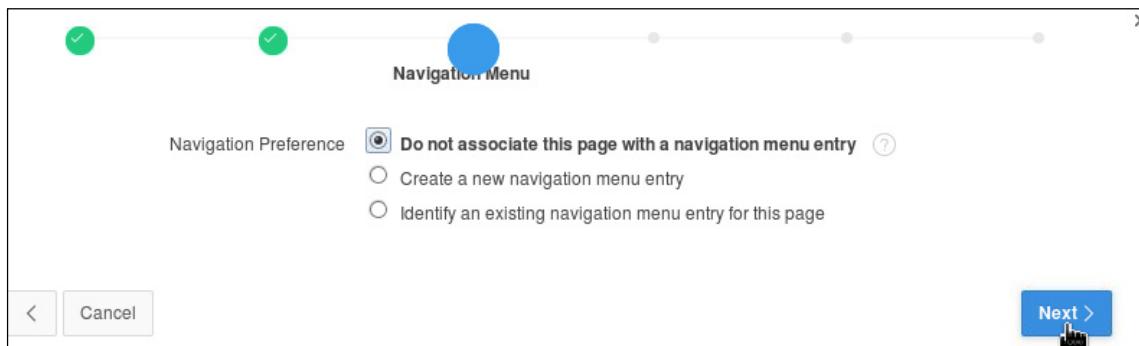
Navigation Menu

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

< Cancel Next >



- f. Select **Source Type as SQL Query**. Enter the following SQL SELECT statement (in the /home/oracle/labs/labs/lab\_05\_01.txt file) and click **Next >**.

```
SELECT * from EMPLOYEES
```

Create Page

X

Source

Source Type  Table  SQL Query [?](#)

\* Enter Region Source: [?](#)

```
1 SELECT * from EMPLOYEES
```

SQL Examples

[Next >](#)

- g. To perform a search in the report, select **Enable Search in Features**. To display the last name as the text column, select **LAST\_NAME** from the drop-down list for **Text Column**. For **Search Type**, select **Server: Like & Ignore Case**. Select the **Inset List** check box in **Features** and click **Next >**.

**Create Page**

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

[Next >](#)

- h. Click **Create**.

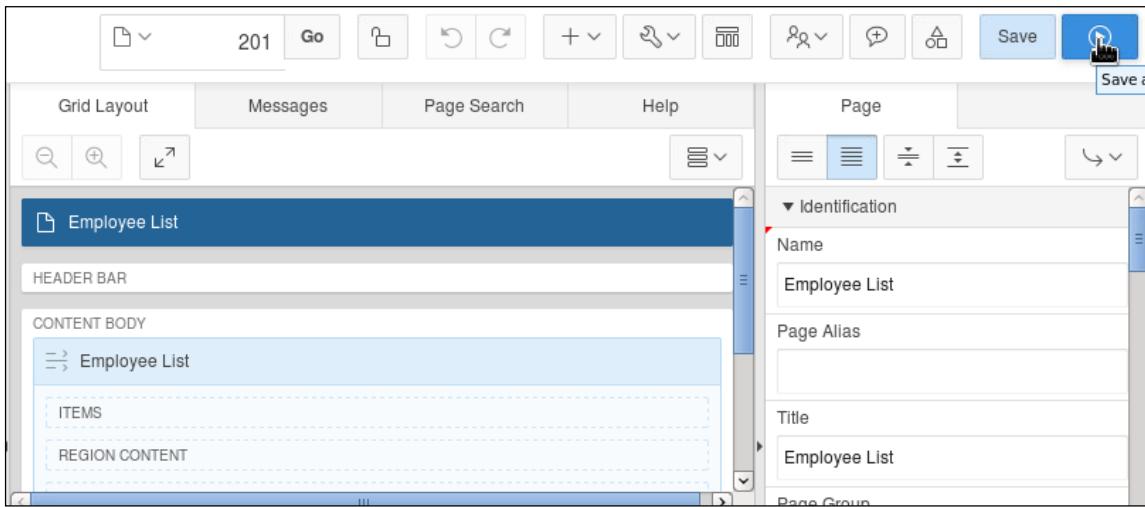
**Create Page**

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

|              |               |
|--------------|---------------|
| Application  | 1             |
| Page         | 201           |
| Page Name    | Employee List |
| Region Title | Employee List |

[Create](#)

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



- j. If the login window appears, enter the developer user credentials, and click **Log In**.

The screenshot shows a login window with a title bar 'GlobalMart Management...'. On the left is a 'Menu' button. On the right is a 'Log Out' button. The main area has two input fields: 'Username' with the value 'apex' and 'Password' with the value '\*\*\*\*'. Below the password field is a large black 'Log In' button with a white hand cursor icon pointing at it.

- k. Review the List View Report.

The screenshot shows a web-based application titled "Employee List". At the top, there is a menu button, a search bar with a magnifying glass icon, and a "Log Out" button. Below the search bar is a list of names: King, Kochhar, De Haan, Hunold, Ernst, Austin, and Pataballa. Each name is displayed in a separate row.

- l. Enter **Green** in the search bar and press the **Enter** key. Notice that search is performed and the results are displayed.

The screenshot shows the same "Employee List" application after a search has been performed. The search bar now contains the text "green". The results show two names: Greenberg and Greene, indicating that the system has filtered the list to show only entries containing the search term.

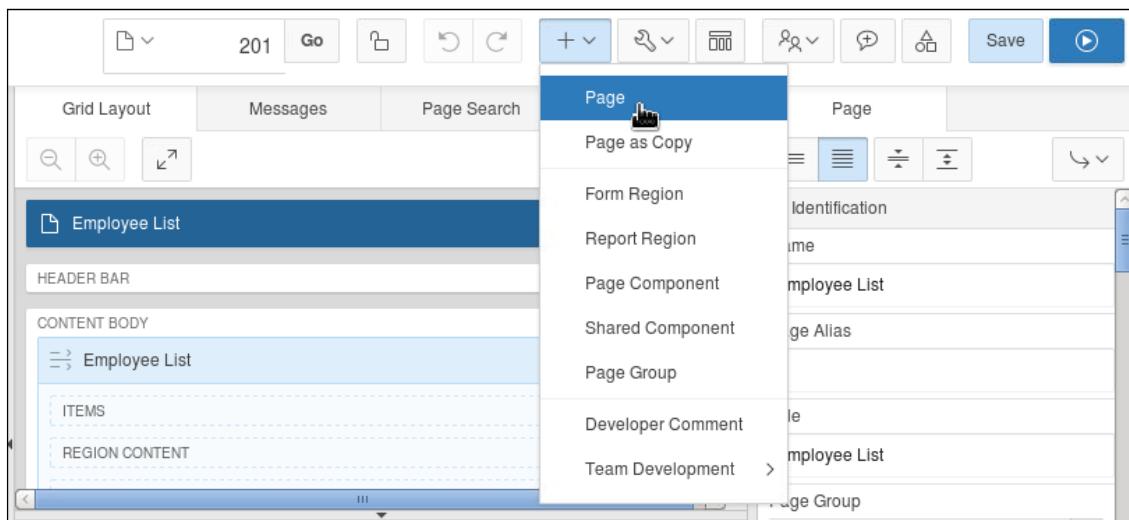
## Solution 5-2: Creating a Column Toggle Report for Your Mobile Application

### Overview

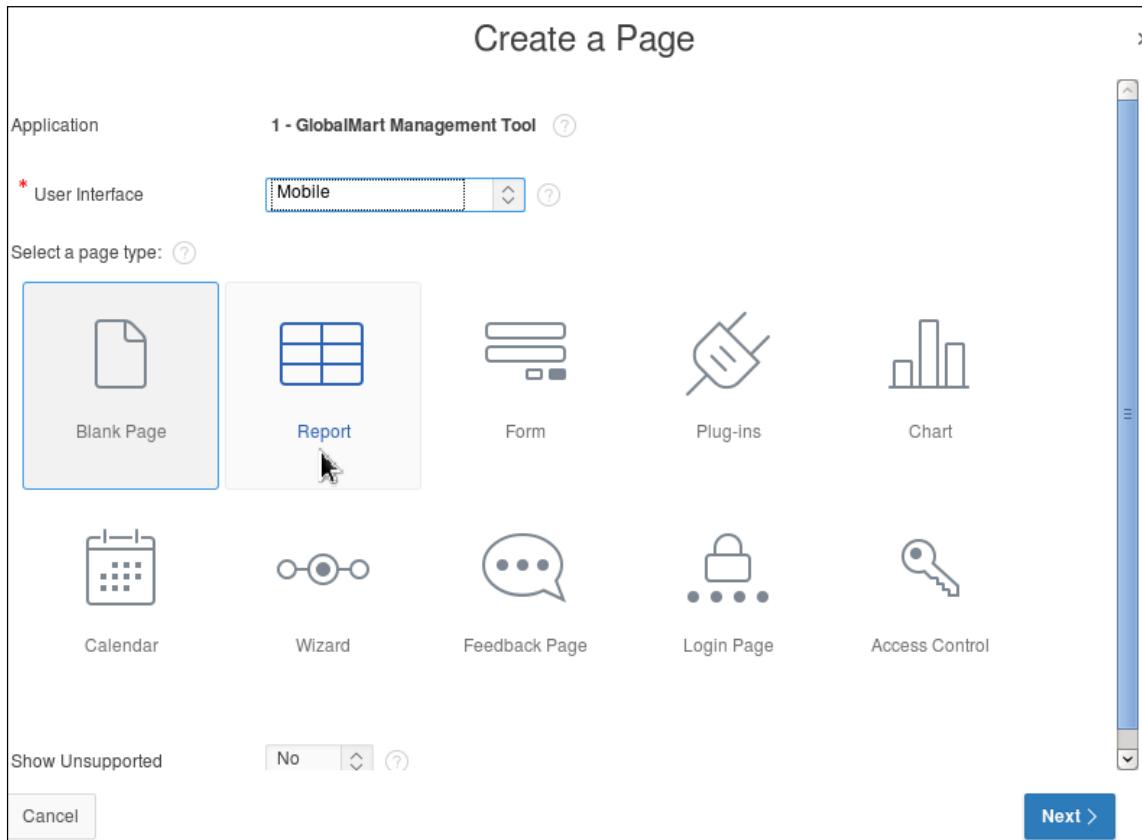
In this practice solution, steps are provided for creating a Column Toggle Report for your GMT Mobile Application.

### Steps

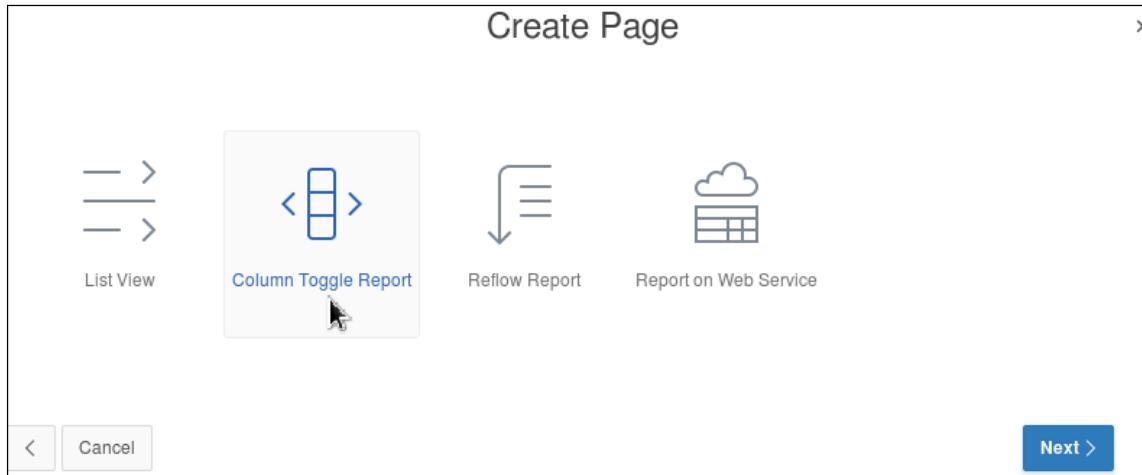
1. On a new page in the GMT application, create a **Column Toggle Report**. Enter Product Information as the Page Name and Region Name. Change the Page Number to 202. The report should select all the columns from the PRODUCT\_INFORMATION table.
  - a. Navigate to the Page Designer view of the Employee List page (already open in another window). Click the **Create < + >** icon and select **Page**.



- b. Select **Mobile** for User Interface and click **Report**.



- c. Click **Column Toggle Report**.



- d. Change the **Page Number** to 202 and enter Product Information as the **Page Name** and **Region Name**. Click **Next >**.

Create Page

Page and Region Attributes

Identify a page number and name.

Region Type    Column Toggle Report

\* Page Number    202

\* Page Name    Product Information

\* Page Mode    Normal

\* Region Name    Product Information

<    Cancel    Next >

- e. Accept the defaults and click **Next >**.

Navigation Menu

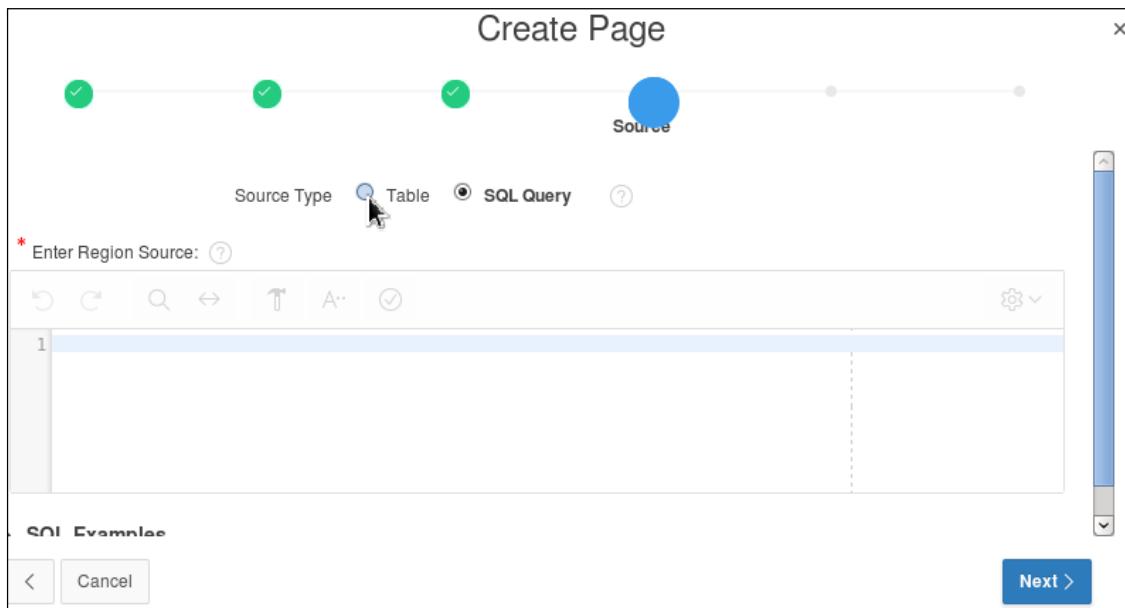
Navigation Preference     Do not associate this page with a navigation menu entry    [?](#)

Create a new navigation menu entry

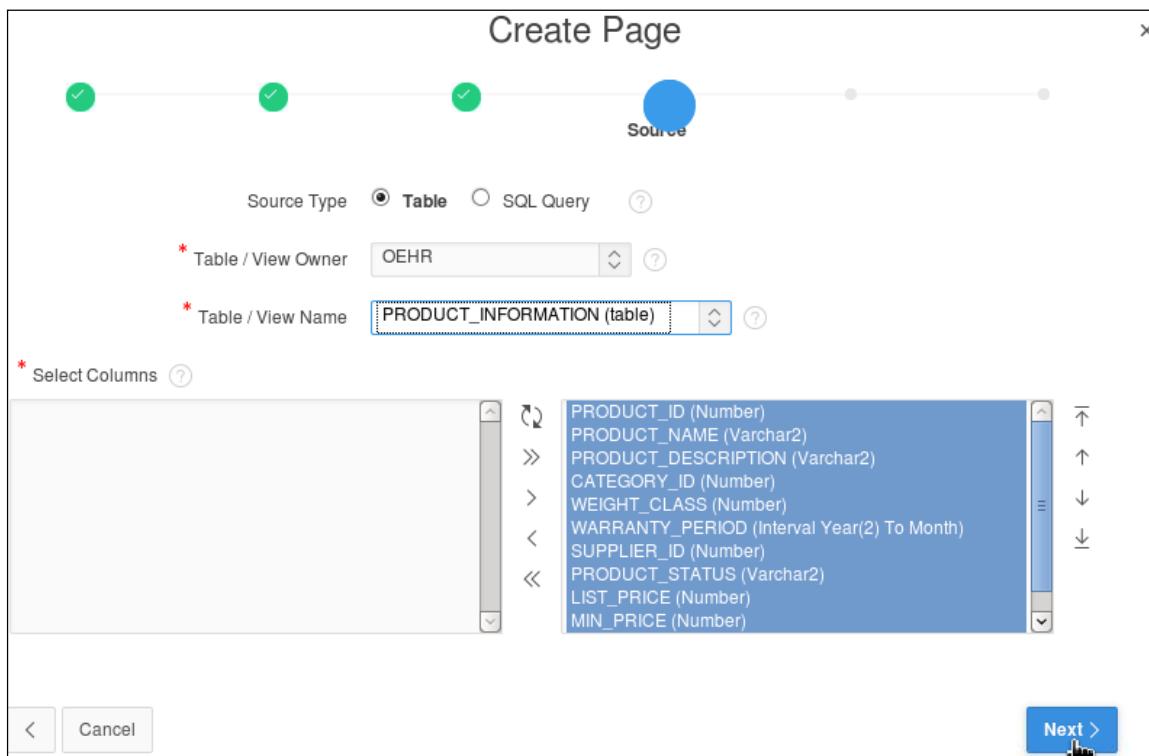
Identify an existing navigation menu entry for this page

<    Cancel    Next >

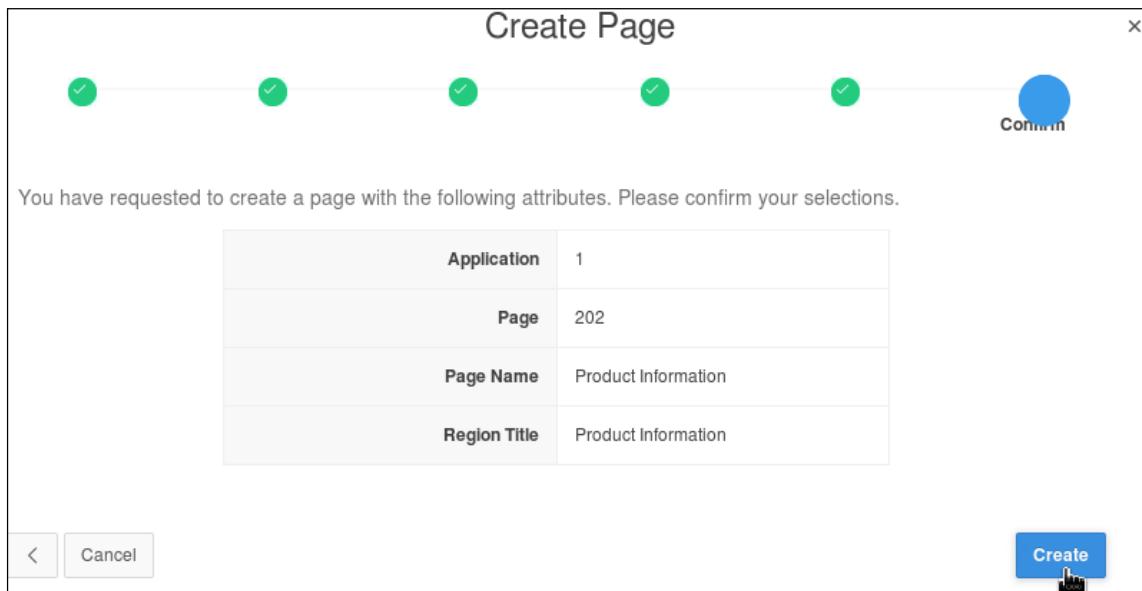
- f. For **Source Type**, select the **Table** option button.



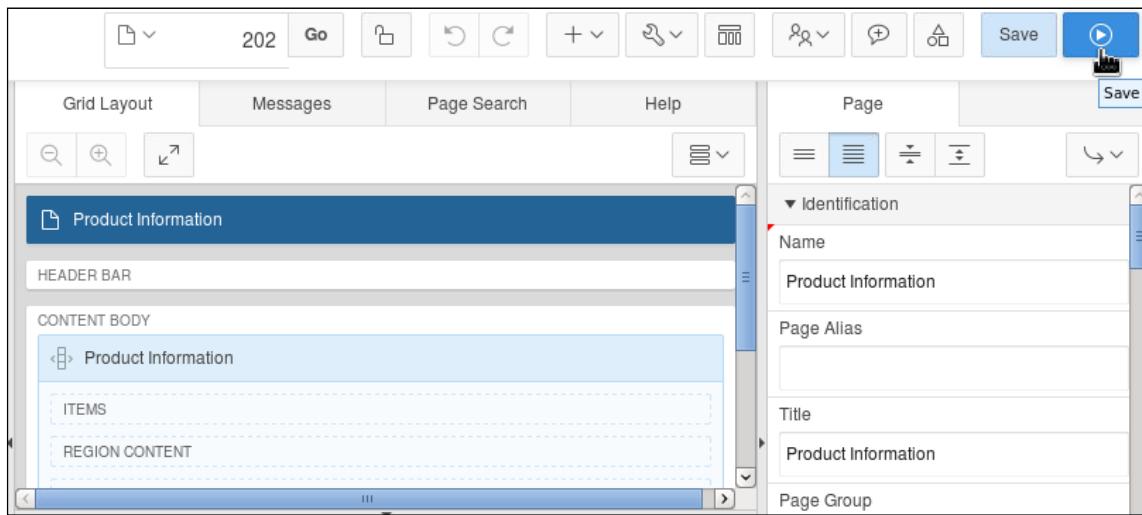
- g. From the **Table / View Name** drop-down list, select **PRODUCT\_INFORMATION (table)**. By default, all the columns are selected. Click **Next >**.



- h. Click **Create**.



- After the page is created, run the page to view the Product Information report with all the columns from PRODUCT\_INFORMATION displayed. Check out the responsive nature of the report.
- i. Click the **Save and Run Page** icon.



- j. 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.

| Product Id | Product Name | Product Description                                      | Category Id | Weight Class | Warranty Period | Supplier Id | Product Status | List Price | Min Price | Catalog Url   |
|------------|--------------|--|-------------|--------------|-----------------|-------------|----------------|------------|-----------|---|
| 1781       | CDW 20/48/E  | CD Writer, read 48x, write 20x                           | 17          | 2            | +00-09          | 102060      | orderable      | 233        | 206       | <a href="http://www.supplier.com/cat/hv/p1781.html">http://www.supplier.com/cat/hv/p1781.html</a> |
| 2264       | CDW 20/48/I  | CD-ROM drive: read 20x, write 48x (internal)             | 17          | 2            | +00-09          | 102060      | orderable      | 223        | 181       | <a href="http://www.supplier.com/cat/hv/p2264.html">http://www.supplier.com/cat/hv/p2264.html</a> |
| 2260       | DFD 1.44/3.5 | Dual Floppy Drive - 1.44 MB - 3.5                        | 17          | 2            | +00-06          | 102062      | orderable      | 67         | 54        | <a href="http://www.supplier.com/cat/hv/p2260.html">http://www.supplier.com/cat/hv/p2260.html</a> |
| 2266       | DVD 12x      | DVD-ROM drive: speed 12x                                 | 17          | 3            | +01-00          | 102099      | orderable      | 333        | 270       | <a href="http://www.supplier.com/cat/hv/p2266.html">http://www.supplier.com/cat/hv/p2266.html</a> |
| 3077       | DVD 8x       | DVD - ROM drive, 8x speed. Will probably become obsolete | 17          | 3            | +01-00          | 102099      | orderable      | 274        | 237       | <a href="http://www.supplier.com/cat/hv/p3077.html">http://www.supplier.com/cat/hv/p3077.html</a> |

| Product Id | Product Name | Product Description                                      | Category Id | Weight Class | Warranty Period | Supplier Id |
|------------|--------------|--|-------------|--------------|-----------------|-------------|
| 1781       | CDW 20/48/E  | CD Writer, read 48x, write 20x                           | 17          | 2            | +00-09          | 102060      |
| 2264       | CDW 20/48/I  | CD-ROM drive: read 20x, write 48x (internal)             | 17          | 2            | +00-09          | 102060      |
| 2260       | DFD 1.44/3.5 | Dual Floppy Drive - 1.44 MB - 3.5                        | 17          | 2            | +00-06          | 102062      |
| 2266       | DVD 12x      | DVD-ROM drive: speed 12x                                 | 17          | 3            | +01-00          | 102099      |
| 3077       | DVD 8x       | DVD - ROM drive, 8x speed. Will probably become obsolete | 17          | 3            | +01-00          | 102099      |

- Using the Columns option in the report, hide the columns Product Description, Category ID, and Supplier ID from the report.
- k. Click the **Columns** button in the Product Information Page and deselect the columns:
- Product Description
  - Category ID
  - Supplier ID

Click anywhere on the page to close the Columns drop-down list.

| Product Information |              |              |                 |                |            |   | Log Out   |
|---------------------|--------------|--------------|-----------------|----------------|------------|---|---|
| Product Id          | Product Name | Weight Class | Warranty Period | Product Status | List Price | Supplier Id   | Catalog Url   |
| 1781                | CDW 20/48/E  | 2            | +00-09          | orderable      | 233        |   |   |
| 2264                | CDW 20/48/I  | 2            | +00-09          | orderable      | 223        |  | <input checked="" type="checkbox"/> Warranty Period   |
| 2260                | DFD 1.44/3.5 | 2            | +00-06          | orderable      | 67         | <input checked="" type="checkbox"/> Product Status                                  |   |
| 2266                | DVD 12x      | 3            | +01-00          | orderable      | 333        | <input checked="" type="checkbox"/> List Price                                      |   |
| 3077                | DVD 8x       | 3            | +01-00          | orderable      | 274        | 237   | <a href="http://www.supplierid.com/catalog/p3077.html">http://www.supplierid.com/catalog/p3077.html</a> |

- I. You will notice that the columns that you deselected are hidden in the report.

| Product Information |              |              |                 |                |            |           |   | Log Out    |
|---------------------|--------------|--------------|-----------------|----------------|------------|-----------|---|------------|
|                     |              |              |                 |                |            |           |   | Columns... |
| Product Id          | Product Name | Weight Class | Warranty Period | Product Status | List Price | Min Price | Catalog Url                               |            |
| 1781                | CDW 20/48/E  | 2            | +00-09          | orderable      | 233        | 206       | http://www.suppl102060.com/cat/p1781.html |            |
| 2264                | CDW 20/48/I  | 2            | +00-09          | orderable      | 223        | 181       | http://www.suppl102060.com/cat/p2264.html |            |
| 2260                | DFD 1.44/3.5 | 2            | +00-06          | orderable      | 67         | 54        | http://www.suppl102062.com/cat/p2260.html |            |
| 2266                | DVD 12x      | 3            | +01-00          | orderable      | 333        | 270       | http://www.suppl102099.com/cat/p2266.html |            |
| 3077                | DVD 8x       | 3            | +01-00          | orderable      | 274        | 237       | http://www.suppl102099.com/cat/p3077.html |            |

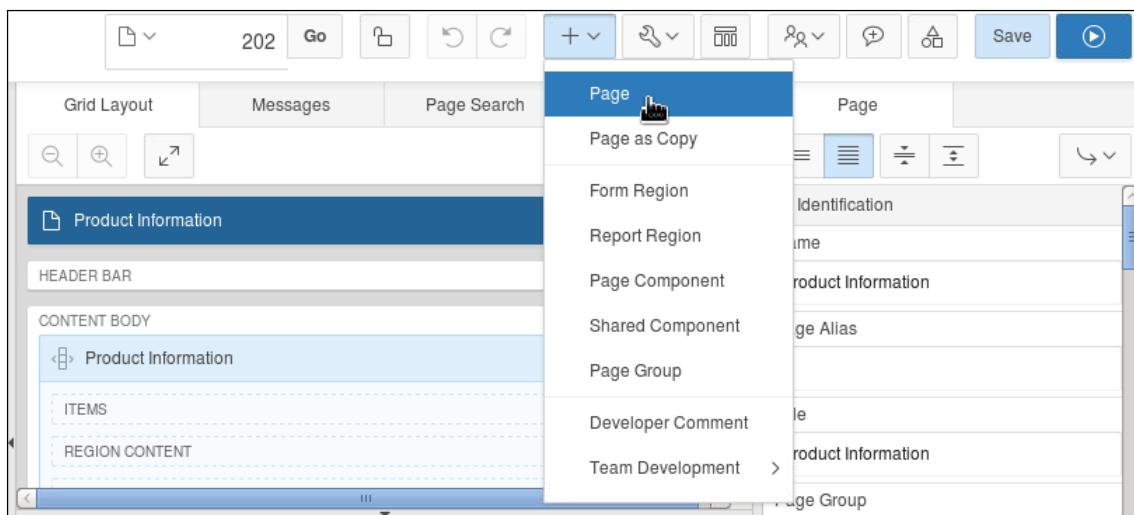
## Solution 5-3: Creating a Reflow Report for Your Mobile Application

### Overview

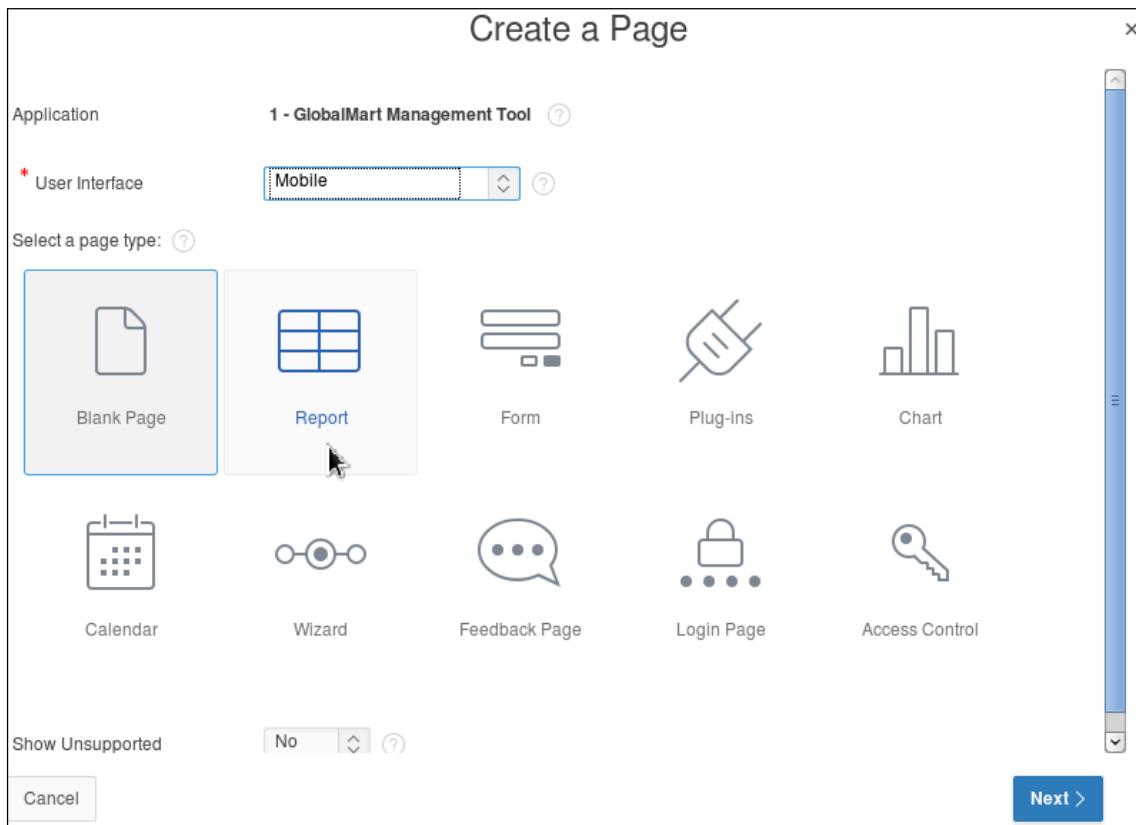
In this practice solution, steps are provided for creating a Reflow Report for your GMT Mobile Application.

### Steps

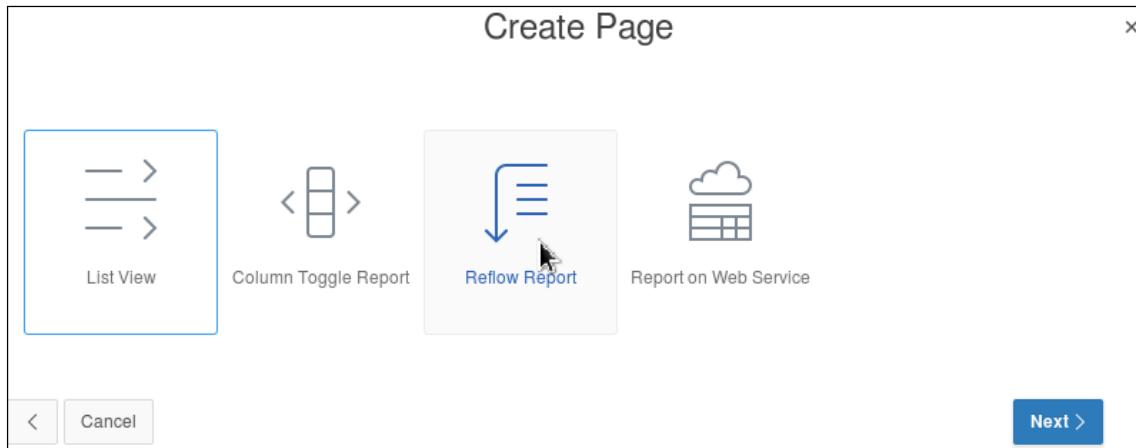
1. On a new page in the GMT application, create a **Reflow Report**. Enter Customer Details as the Page Name and Region Name. Change the Page Number to 203. The report should select all the columns from the CUSTOMERS table.
  - a. Navigate to the Page Designer view of the Product Information page (already open in another window). Click the **Create < + >** icon and select **Page**.



- b. Select **Mobile** for User Interface and click **Report**.



- c. Click **Reflow Report**.



- d. Change the **Page Number** to **203** and enter **Customer Details** as the **Page Name** and **Region Name**. Click **Next >**.

Create Page

Page and Region Attributes

Identify a page number and name.

Region Type Reflow Report

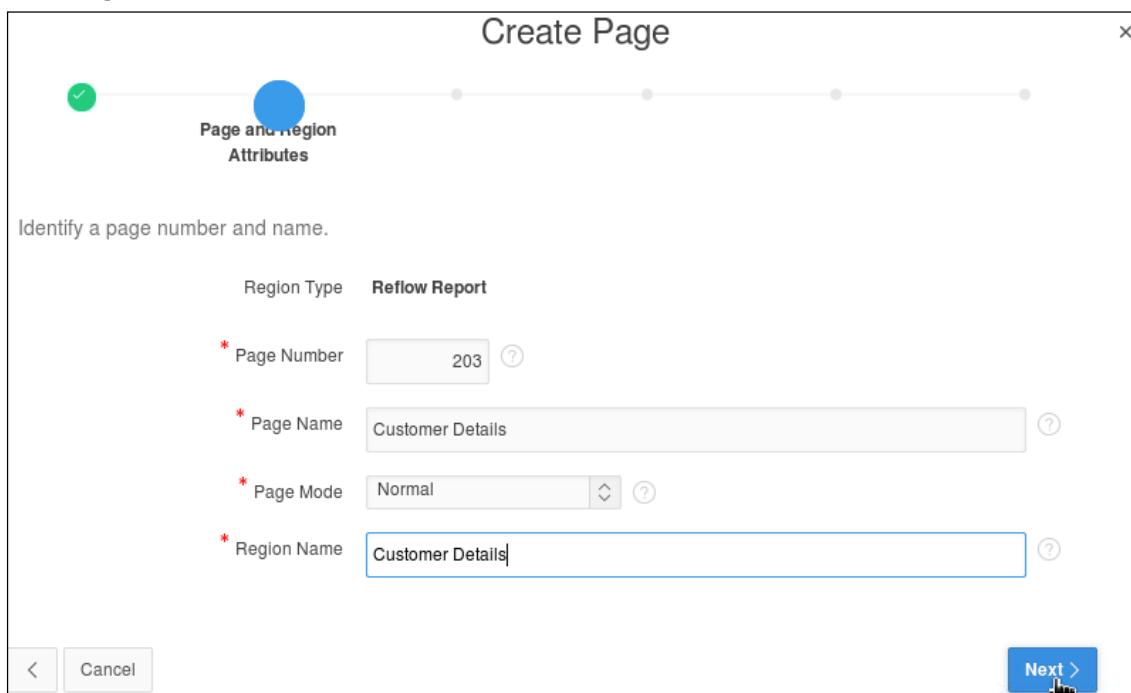
\* Page Number 203

\* Page Name Customer Details

\* Page Mode Normal

\* Region Name Customer Details

< Cancel Next >



- e. Accept the defaults and click **Next >**.

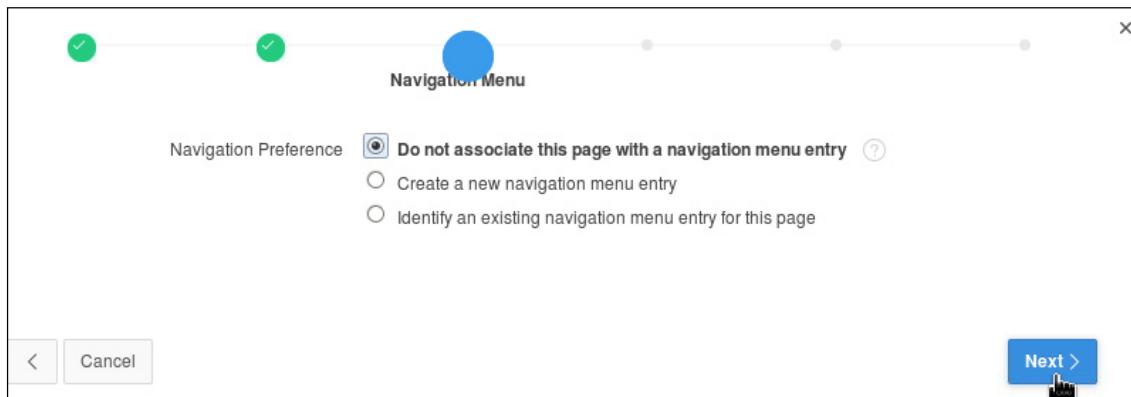
Navigation Menu

Navigation Preference  Do not associate this page with a navigation menu entry [?](#)

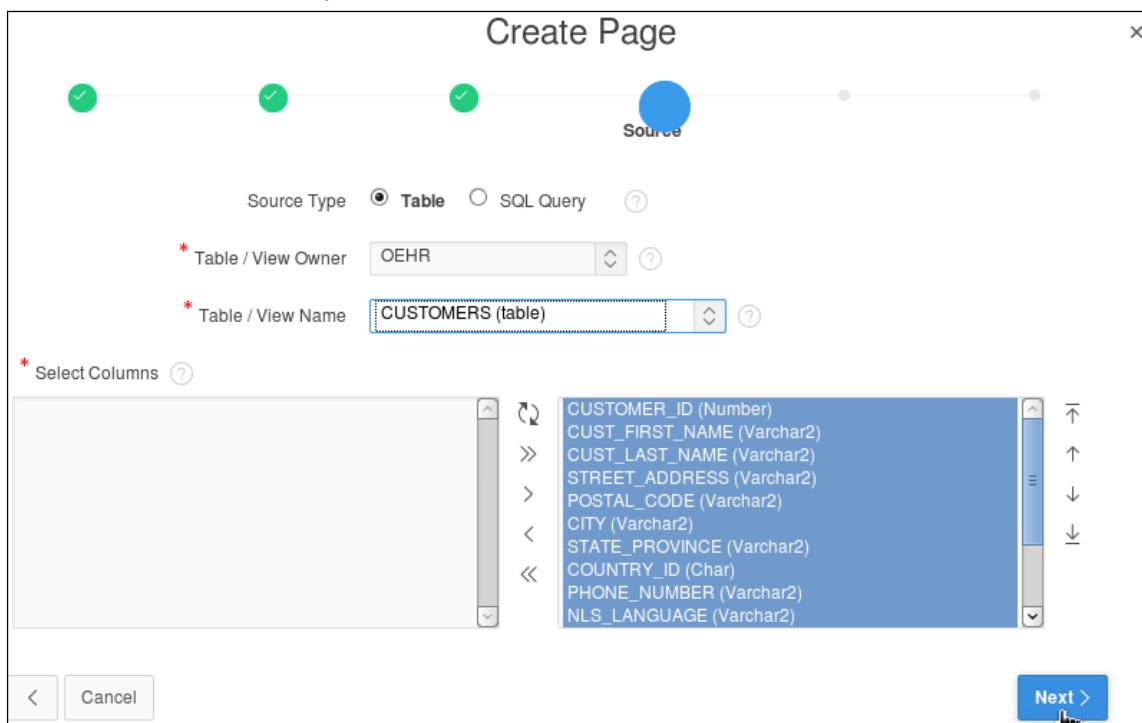
Create a new navigation menu entry

Identify an existing navigation menu entry for this page

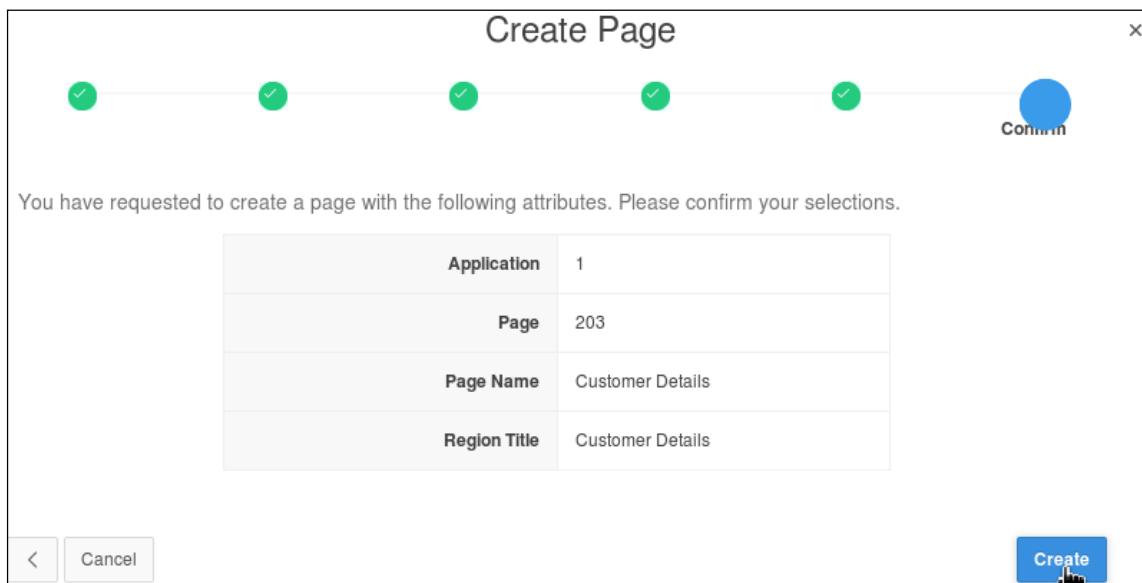
< Cancel Next >



- f. Select **Table for Source Type**. From the **Table / View Name** drop-down list, select **CUSTOMERS (table)**. By default, all the columns are selected. Click **Next >**.

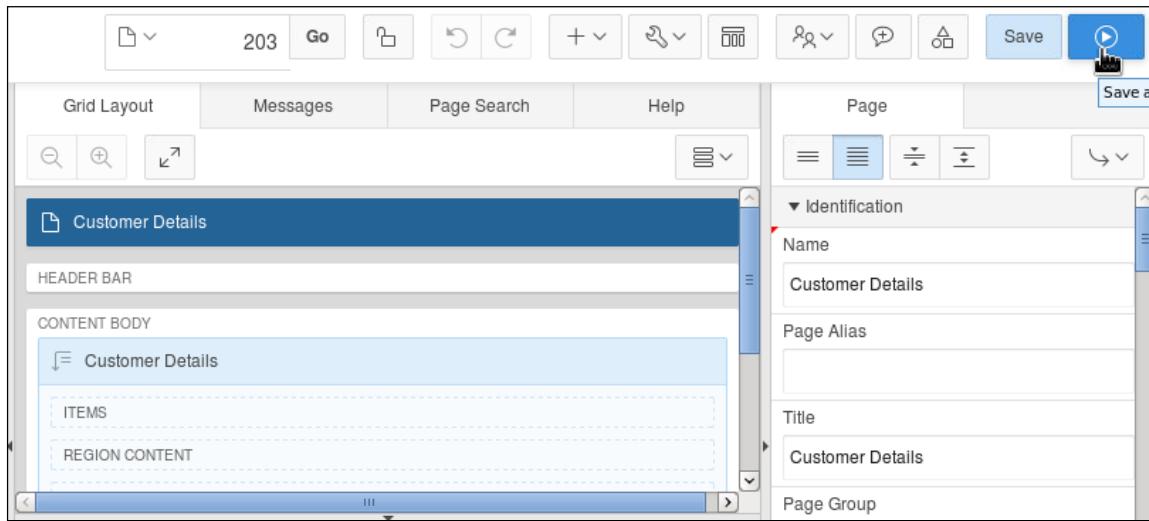


- g. Click **Create**.



- After the page is created, run the page to view the Customer Details report with all the columns from CUSTOMERS displayed. Check out the responsive nature of the report.

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

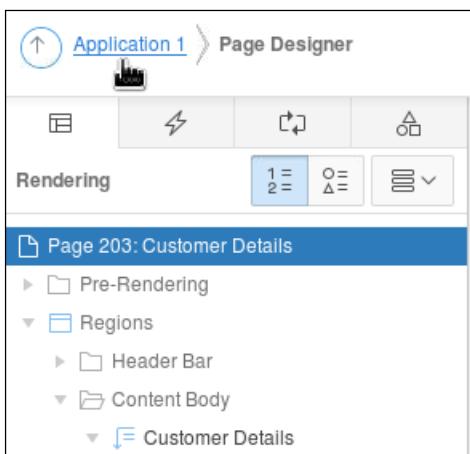


- i. Slowly reduce the size of the browser horizontally. Notice the behavior of the report as the size of the browser is reduced.

| Customer Details |                 |                |                        |             |           |                |    |   |
|------------------|-----------------|----------------|------------------------|-------------|-----------|----------------|----|---|
| Customer Id      | Cust First Name | Cust Last Name | Street Address         | Postal Code | City      | State Province | C  | I |
| 496              | Scott           | Jordan         | 1636 Pretty Blvd       | 361168      | Bangalore | Kar            | IN |   |
| 605              | Shammi          | Pacino         | 1646 Brazil Blvd       | 361168      | Chennai   | Tam            | IN |   |
| 606              | Sharmila        | Kazan          | 1647 Suspense St       | 361168      | Cochin    | Ker            | IN |   |
| 607              | Sharmila        | Fonda          | 1648 Anamika St        | 361168      | Cochin    | Ker            | IN |   |
| 609              | Shelley         | Taylor         | 1650 Teesri Manjil Crt | 361168      | Kashmir   |                | IN |   |
| 615              | Shyam           | Plummer        | 1656 Veterans          | 361168      | Chennai   | Tam            | IN |   |

| Customer Details       |                         |
|------------------------|-------------------------|
| <b>Customer Id</b>     | 496                     |
| <b>Cust First Name</b> | Scott                   |
| <b>Cust Last Name</b>  | Jordan                  |
| <b>Street Address</b>  | 1636 Pretty Blvd        |
| <b>Postal Code</b>     | 361168                  |
| <b>City</b>            | Bangalore               |
| <b>State Province</b>  | Kar                     |
| <b>Country Id</b>      | IN                      |
| <b>Phone Number</b>    | +91 80 012 4869         |
| <b>Nls Language</b>    | hi                      |
| <b>Nls Territory</b>   | INDIA                   |
| <b>Credit Limit</b>    | 5000                    |
| <b>Cust Email</b>      | Scott.Jordan@WILLET.COM |
| <b>Account Mgr Id</b>  | 148                     |
| <b>Customer Id</b>     | 605                     |

- j. Navigate to the Page Designer view of the Product Information page (already open in another window), and click the **Application 1** link.



## **Practices for Lesson 6: Creating Forms**

**Chapter 6**

## Practices for Lesson 6: Overview

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### Practices Overview

There are four practices in this lesson. In these practices, you create and use different types of forms for GMT application, namely, Form on a Table, Tabular Form, Master Detail Form, and Form on a Table with List View.

## Practice 6-1: Creating a Form on a Table

### Overview

In this practice, you create a form based on a table, and then link to the form from the Customer 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 the page number as 7. 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 source of the primary key is an existing trigger.
  - The Create, Save, and Delete 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 Customer Report 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.

### Catch Up

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

- a. Log 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` user is created.

If you haven't completed **Practice 5-3**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_05_03.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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 6-2: Creating a Master Detail Form

---

### 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 based on the ORDERS and ORDER\_ITEMS tables and specify the page numbers as 8 and 9, respectively.
  - 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.
  - Use the Existing trigger option as the primary key source for the master and detail tables.
  - 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. Log 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` user is created.

If you haven't completed **Practice 6-1**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_06_01.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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 6-3: Creating a Tabular Form

---

### Overview

In this practice, you create and manipulate a form that shows the information in tabular form with few columns available for update.

### 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 **Update Employee Information**, create a tabular form that displays the `first_name`, `LAST_NAME`, `EMAIL`, `JOB_ID`, and `COMMISSION_PCT` from the `EMPLOYEES` table. The columns `EMAIL`, `JOB_ID`, and `COMMISSION_PCT` should be updatable columns. Set the page number to 10. Change the element width of the `CUST_EMAIL` column to **40**.

### Catch Up

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

- a. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 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 6-4: Creating a Form on a Table with List View for Mobile Applications

### Overview

In this practice, you add a form page for mobile to the GMT application and link it from a mobile list view 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. Add a form page called **Employee Detail** to the application for mobile interface. Enter the page number as **204**. Link this Employee Detail form page to the existing **Employee List** list view page.

### Catch Up

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

- a. Log 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` user is created.

If you haven't completed **Practice 6-3**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_06_03.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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.

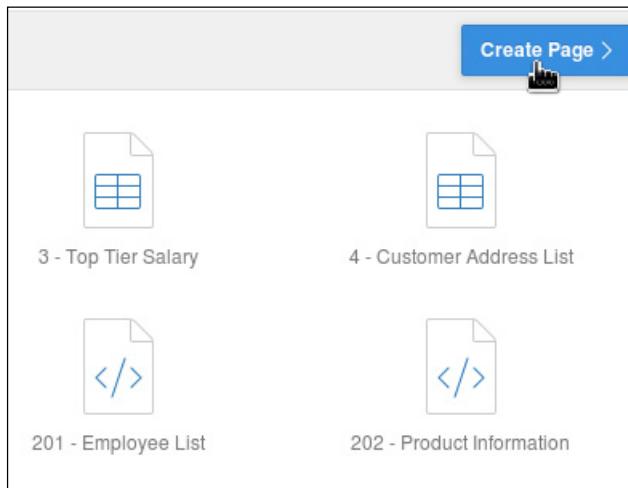
## Solution 6-1: Creating a Form on a Table

### Overview

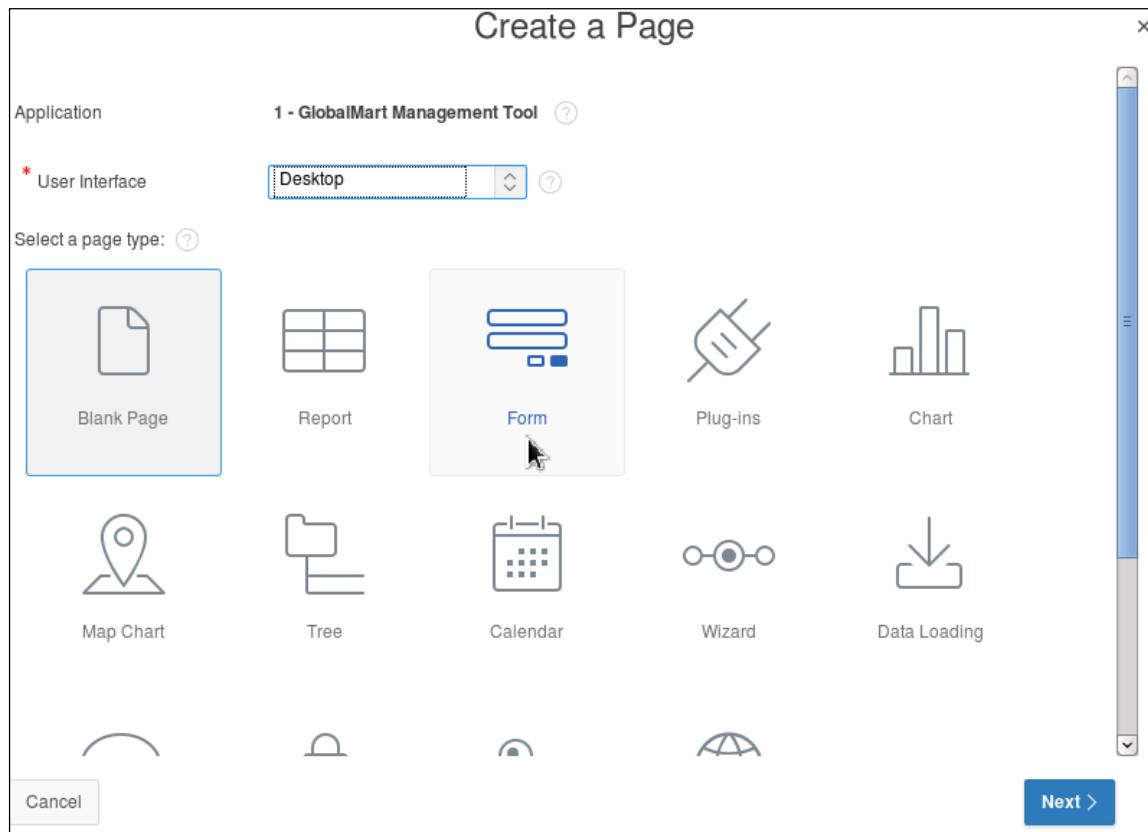
In this practice solution, steps are provided for creating a form on a table for the GMT application.

### Steps

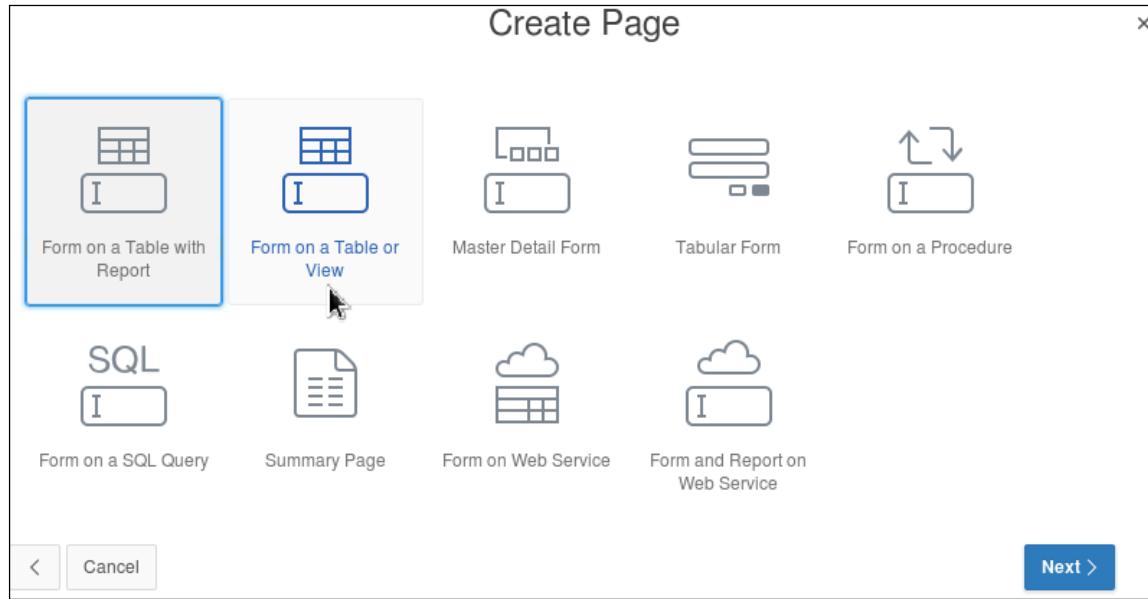
1. Create a form based on the CUSTOMERS table. Enter the page number as 7. The form page and region should be titled **Customer Details** and contain the customer's First Name, Last Name, Email, and Manager ID fields. The following are the other requirements:
  - Ensure that the primary key has the value CUSTOMER\_ID .
  - The source of the primary key is an existing trigger.
  - The Create, Save, and Delete 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. Select the **Form on a Table or View** option.



- d. Ensure that your schema is selected. From the list of tables, select **CUSTOMERS (table)**. Click **Next >**.

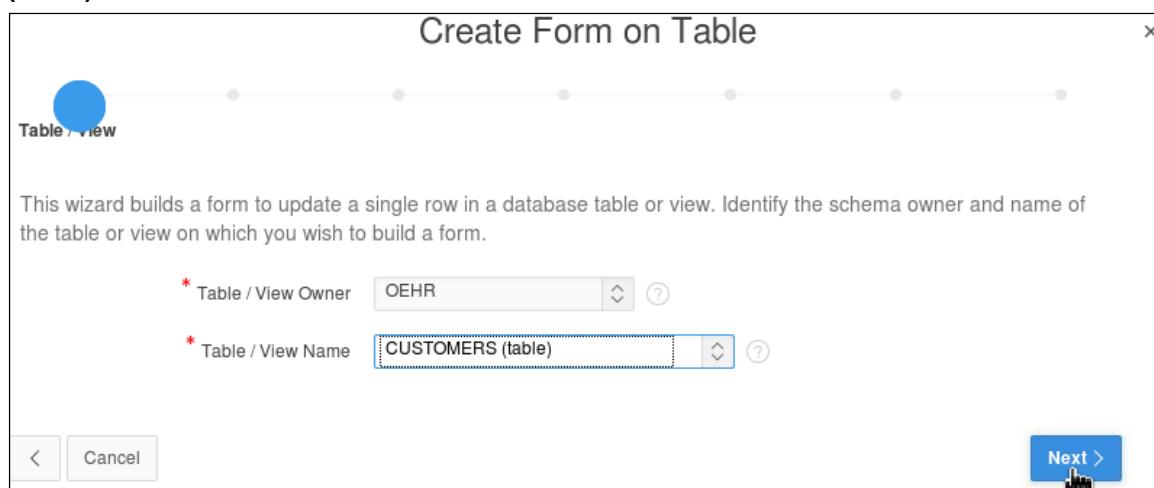
Create Form on Table

Table / View

This wizard builds a form to update a single row in a database table or view. Identify the schema owner and name of the table or view on which you wish to build a form.

\* Table / View Owner: OEHR  
\* Table / View Name: CUSTOMERS (table)

< Cancel Next >



- e. Enter **Page Number** as 7. For **Page Name** and **Region Title**, enter Customer Details and click **Next >**.

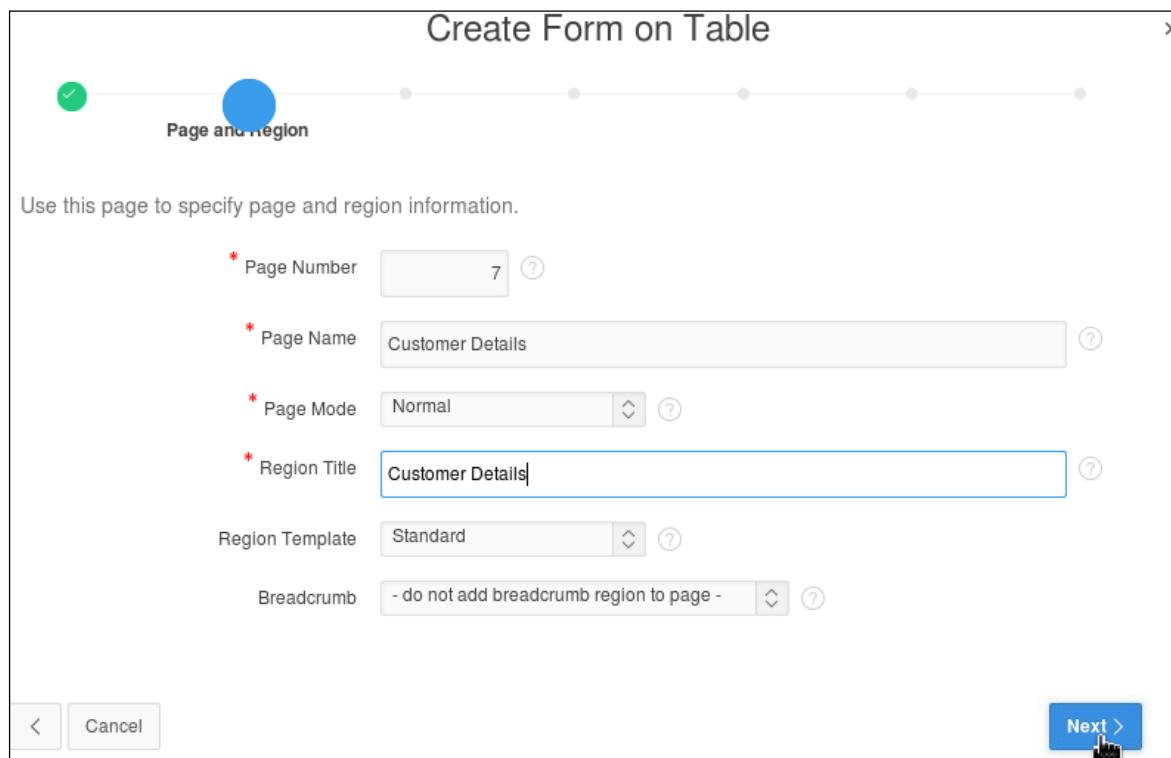
Create Form on Table

Page and Region

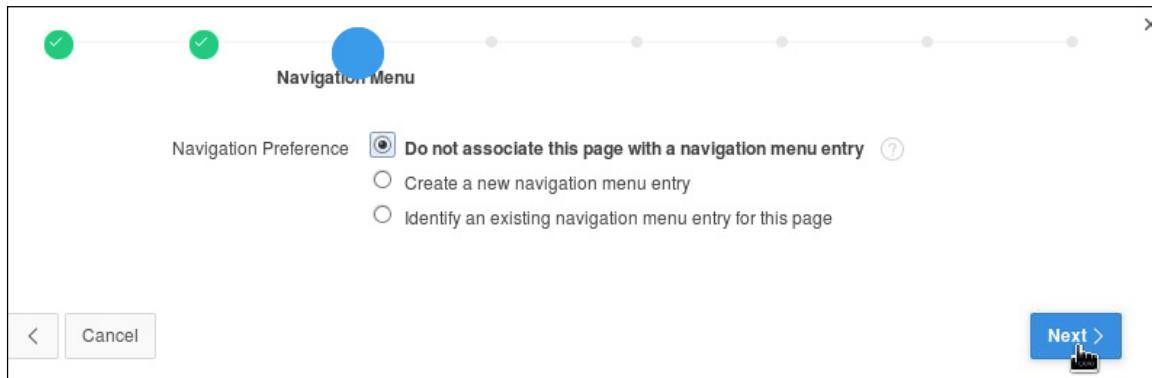
Use this page to specify page and region information.

\* Page Number: 7  
\* Page Name: Customer Details  
\* Page Mode: Normal  
\* Region Title: Customer Details  
Region Template: Standard  
Breadcrumb: - do not add breadcrumb region to page -

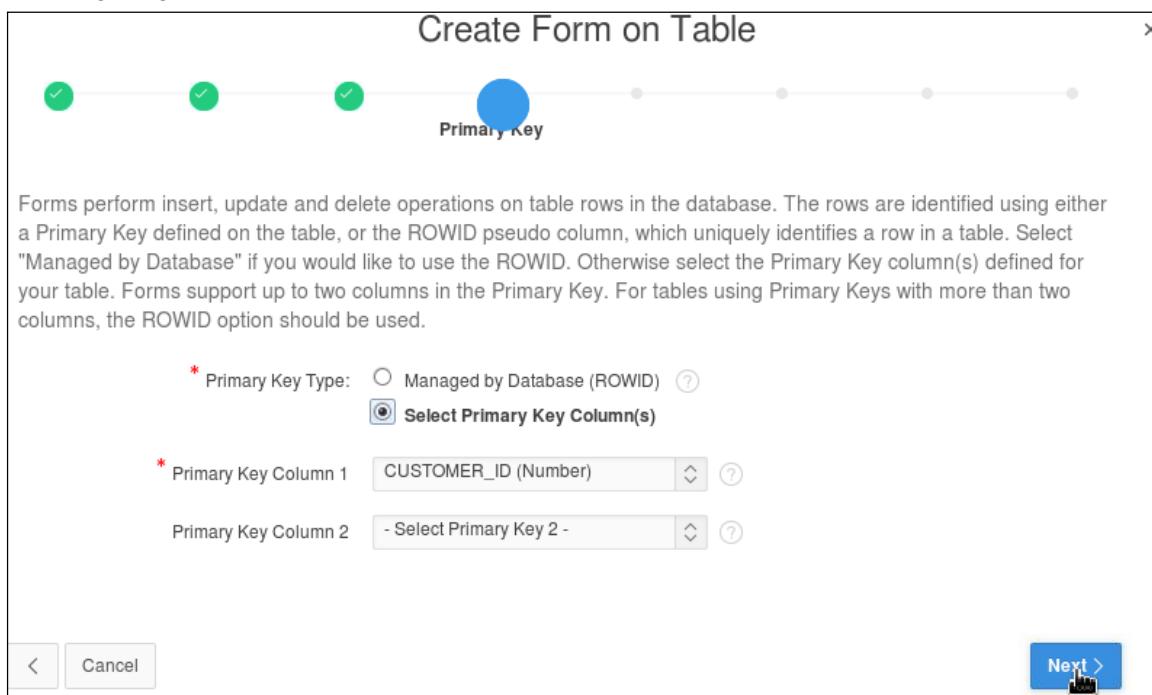
< Cancel Next >



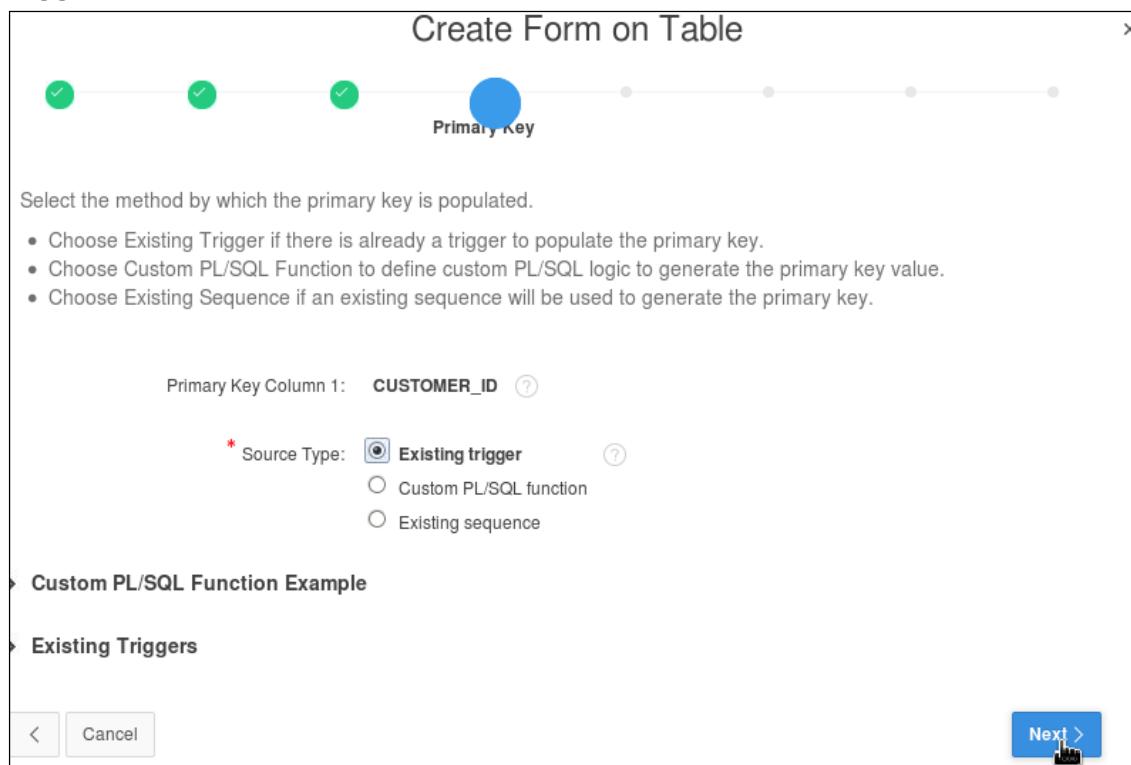
- f. Accept the default and click **Next >**.



- g. For **Primary Key Type**, select the **Select Primary Key Column(s)** option. Select the **Primary Key Column 1** value as **CUSTOMER\_ID (Number)** and click **Next >**.



- h. Because the source of the primary key is an existing trigger, select the **Existing trigger** option and click **Next >**.



- i. Make sure that the CUST\_FIRST\_NAME, CUST\_LAST\_NAME, CUST\_EMAIL, and ACCOUNT\_MGR\_ID are on the right and the rest of the columns are on the left. Use the right arrow (>) and left arrow (<) to move the columns. Click **Next >**.



- j. You want to be able to cancel, create, save, and delete. Accept the default values and click **Next >**.

Create Form on Table

Buttons

Identify the process options and button display text for the form. For example, to prevent users from being able to delete from the form, choose **No** for the delete button option.

|                     |               |     |
|---------------------|---------------|-----|
| Cancel Button Label | Cancel        | (?) |
| Show Create Button  | Yes           | ?   |
| Create Button Label | Create        | (?) |
| Show Save Button    | Yes           | ?   |
| Save Button Label   | Apply Changes | (?) |
| Show Delete Button  | Yes           | ?   |
| Delete Button Label | Delete        | (?) |

< Cancel Next >

- k. Click the arrow icon to the right of both the boxes and select the **Customers** page (Page 5) in both cases. Then click **Next >**.

Create Form on Table

Branching

Select the pages to branch to after the page processing is submitted or cancelled.

|                         |   |   |     |
|-------------------------|---|---|-----|
| * Branch here on Submit | 5 | ^ | (?) |
| * Branch here on Cancel | 5 | ^ | (?) |

< Cancel Next >

- I. Review the details and click **Create**.

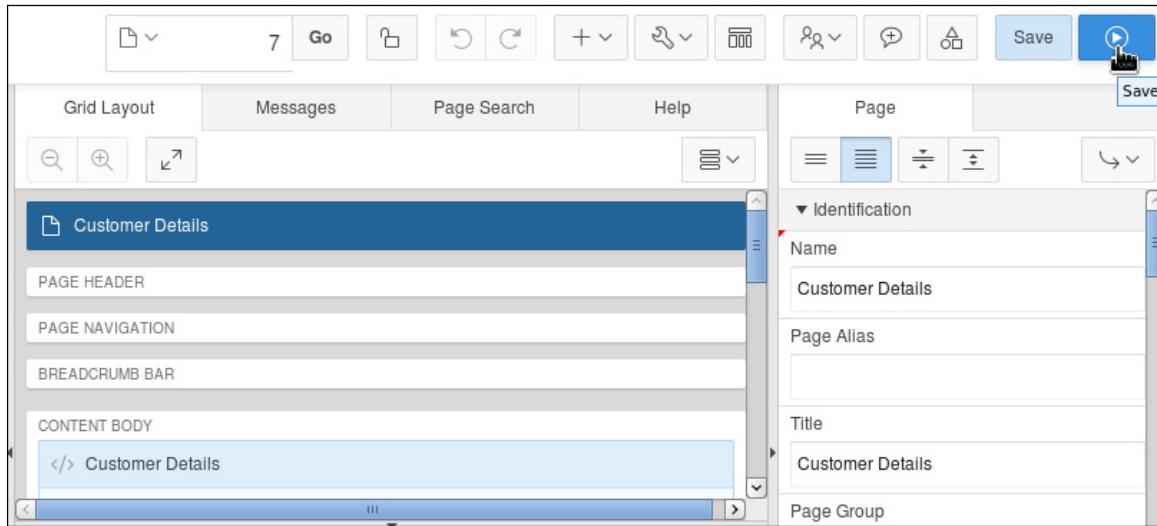
**Create Form on Table**

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

|                      |                  |
|----------------------|------------------|
| Application          | 1                |
| Page                 | 7                |
| Page Name            | Customer Details |
| Region Title         | Customer Details |
| Region Template      | Standard         |
| Table / View Owner   | OEHR             |
| Table / View Name    | CUSTOMERS        |
| Primary Key Column 1 | CUSTOMER_ID      |
| Primary Key Column 2 |                  |

**Create**

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



- n. If the Login page appears, enter your developer login credentials and click **Log In**.

The screenshot shows a simple log-in interface titled "Log In". It contains two text input fields: "Username" with the value "apex" and "Password" with the value "\*\*\*\*". Below the password field is a blue rectangular button with the text "Log In" and a small icon of a person.

- o. Review the form. You will link this form from the Customer Report. To return to the application home page, click the **Application 1** link on the Developer toolbar.

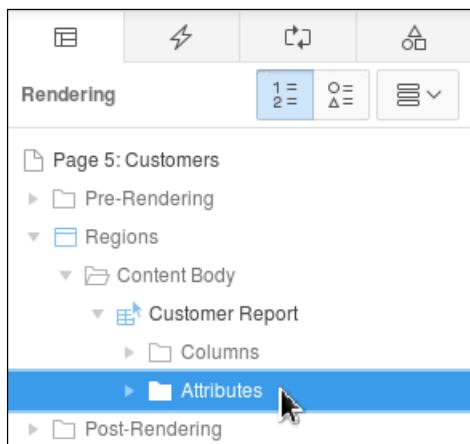
The screenshot shows the "GlobalMart Management Tool" application. On the left is a sidebar with "Home" and "Customers" options. The main area is titled "Customer Details" and contains four input fields: "Cust First Name" (with a red asterisk), "Cust Last Name" (with a red asterisk), "Cust Email", and "Account Mgr Id". At the bottom of this form are "Cancel" and "Create" buttons. Below the form is a toolbar with various icons and labels: Home, Application 1, Edit Page 7, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a gear icon. A status bar at the bottom displays "release 1.0 Set Screen Reader Mode On".

2. Link the Customer Report 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.

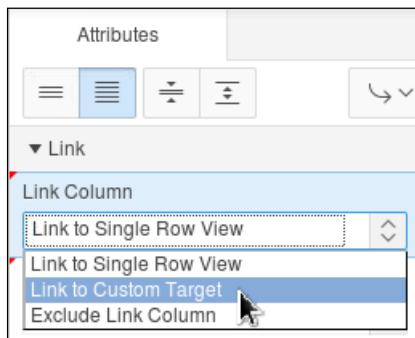
- a. On the GMT application home page, click **5 - Customers**.

The screenshot shows the "GlobalMart Management Tool" application home page. It features a grid of icons representing different applications. The icons are: 0 - Global Page - Mobile (document with globe), 1 - Home (document with house), 2 - Home (document with code tags), 5 - Customers (document with a small factory icon), 6 - Employee Commission (document with a grid), and 7 - Customer Details (document with a grid). The icon for "5 - Customers" is highlighted with a red rectangular box.

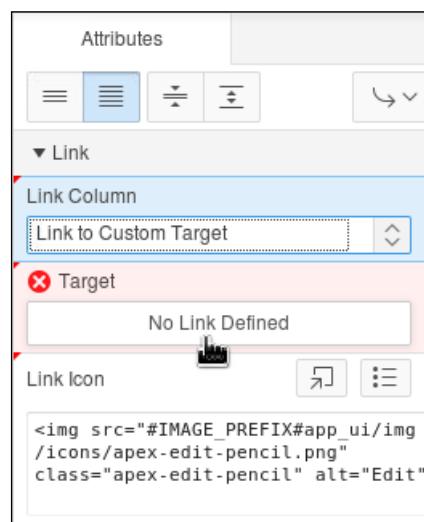
- b. In the page designer view, select **Regions > Customer Report > Attributes** from the Rendering tab.



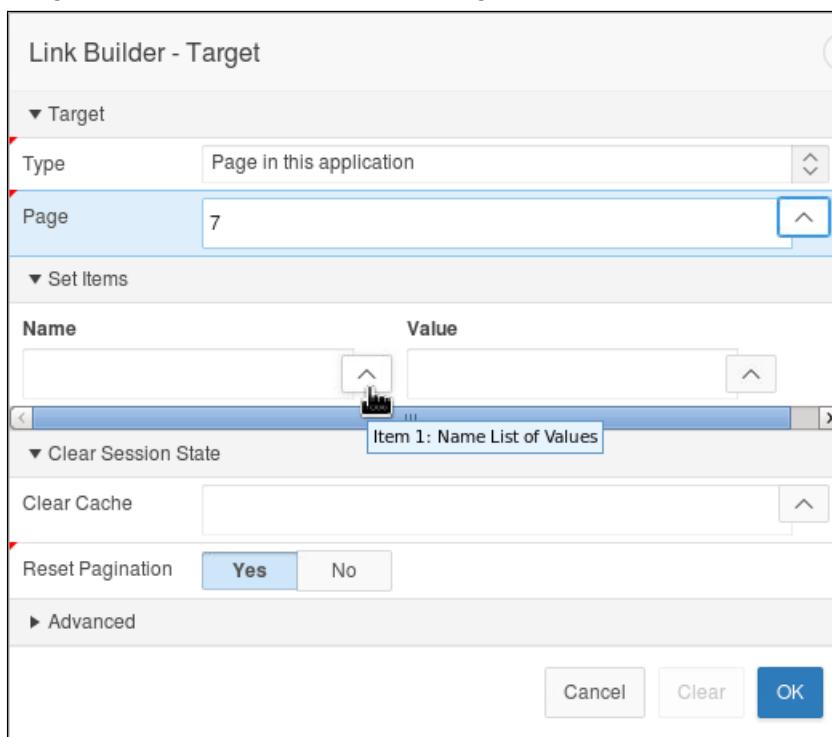
- c. In the Attributes tab, select **Link to Custom Target** in the **Link Column** drop-down list.



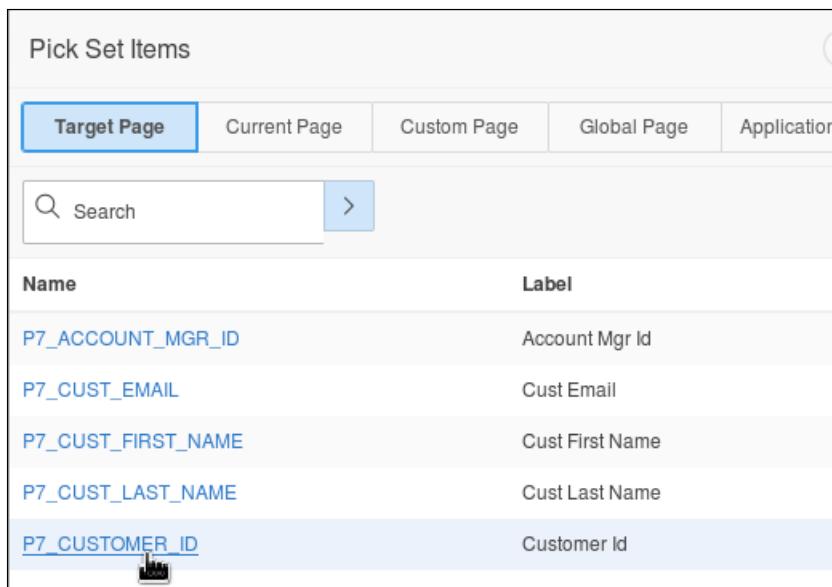
- d. Click the **No Link Defined** button in the **Target** section.

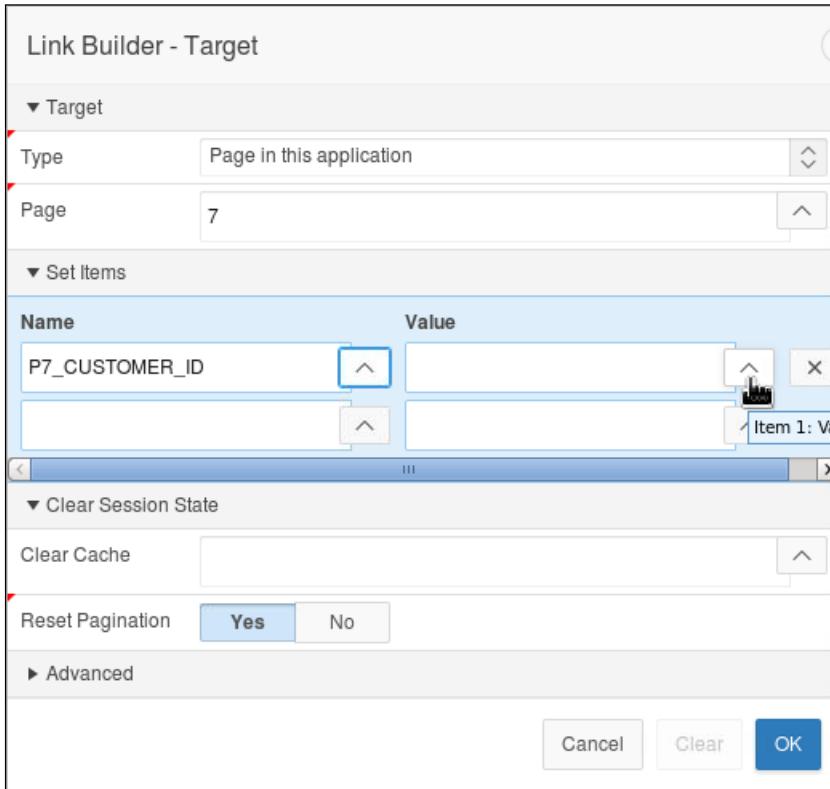


- e. Click the up arrow to the right of the **Page** field and select the **Customer Details** page (Page 7). Click the up arrow to the right of the **Name** field.



- f. From the list in the pop-up window, click the **P7\_CUSTOMER\_ID** link. Similarly, click the up arrow to the right of the **Value** field.

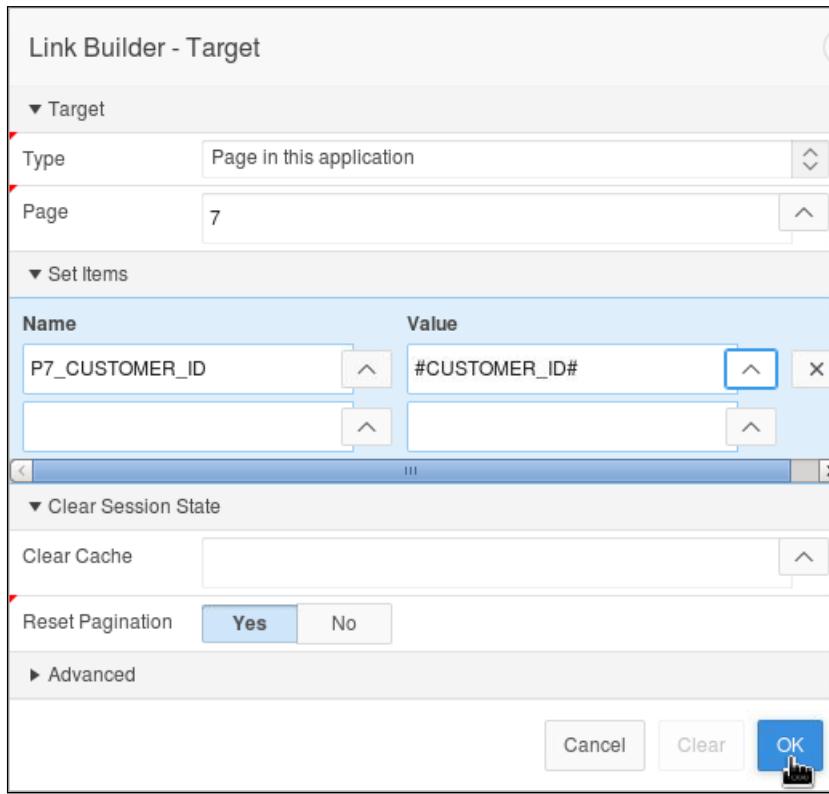




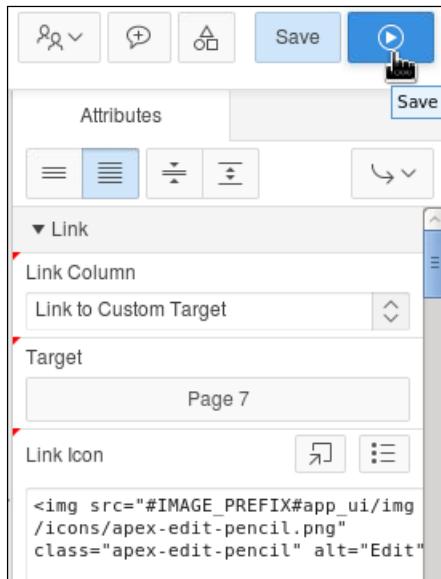
- g. From the list in the pop-up window, click the CUSTOMER\_ID link.

| Pick Set Items  |                 |             |             |             |
|---|-----------------|-------------|-------------|-------------|
| Columns   | Current Page    | Custom Page | Global Page | Application |
| <input type="text"/> Search <input type="button" value="&gt;"/> |                 |             |             |             |
|   |                 |             |             |             |
| Name  | Label           |             |             |             |
| <a href="#">CUSTOMER_ID</a>                                     | Customer Id     |             |             |             |
| <a href="#">CUST_FIRST_NAME</a>                                 | Cust First Name |             |             |             |
| <a href="#">CUST_LAST_NAME</a>                                  | Cust Last Name  |             |             |             |
| <a href="#">STREET_ADDRESS</a>                                  | Street Address  |             |             |             |
| <a href="#">POSTAL_CODE</a>                                     | Postal Code     |             |             |             |
| <a href="#">CITY</a>  | City            |             |             |             |
| <a href="#">STATE_PROVINCE</a>                                  | State Province  |             |             |             |
| <a href="#">COUNTRY_ID</a>                                      | Country Id      |             |             |             |
| <a href="#">PHONE_NUMBER</a>                                    | Phone Number    |             |             |             |
| <a href="#">NLS_LANGUAGE</a>                                    | Nls Language    |             |             |             |

- h. Click **OK**.



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



- j. Click the **Edit** icon for any one of the rows.

|  | Customer Id | Cust First Name | Cust Last Name | Street Address   | Postal Code | City      | State Province | Country Id |
|--|-------------|-----------------|----------------|------------------|-------------|-----------|----------------|------------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd | 361168      | Bangalore | Kar            | IN         |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      | Chennai   | Tam            | IN         |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St | 361168      | Cochin    | Ker            | IN         |

- k. 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 1** link on the Developer toolbar.

GlobalMart Management Tool

Log Out

Customer Details

Cust First Name \* Scott

Cust Last Name \* Jordan

Cust Email Scott.Jordan@WILLET.COM

Account Mgr Id 148

Cancel Delete Apply Changes

release 1.0 Set Screen Reader Mode On

Home Application 1 Edit Page 7 Session View Debug Debug Show Grid Quick Edit Theme Roller

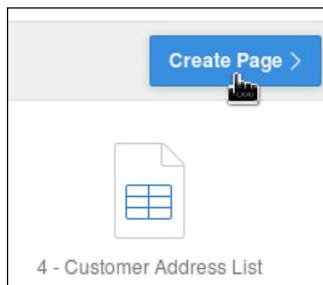
## Solution 6-2: Creating a Master Detail Form

### Overview

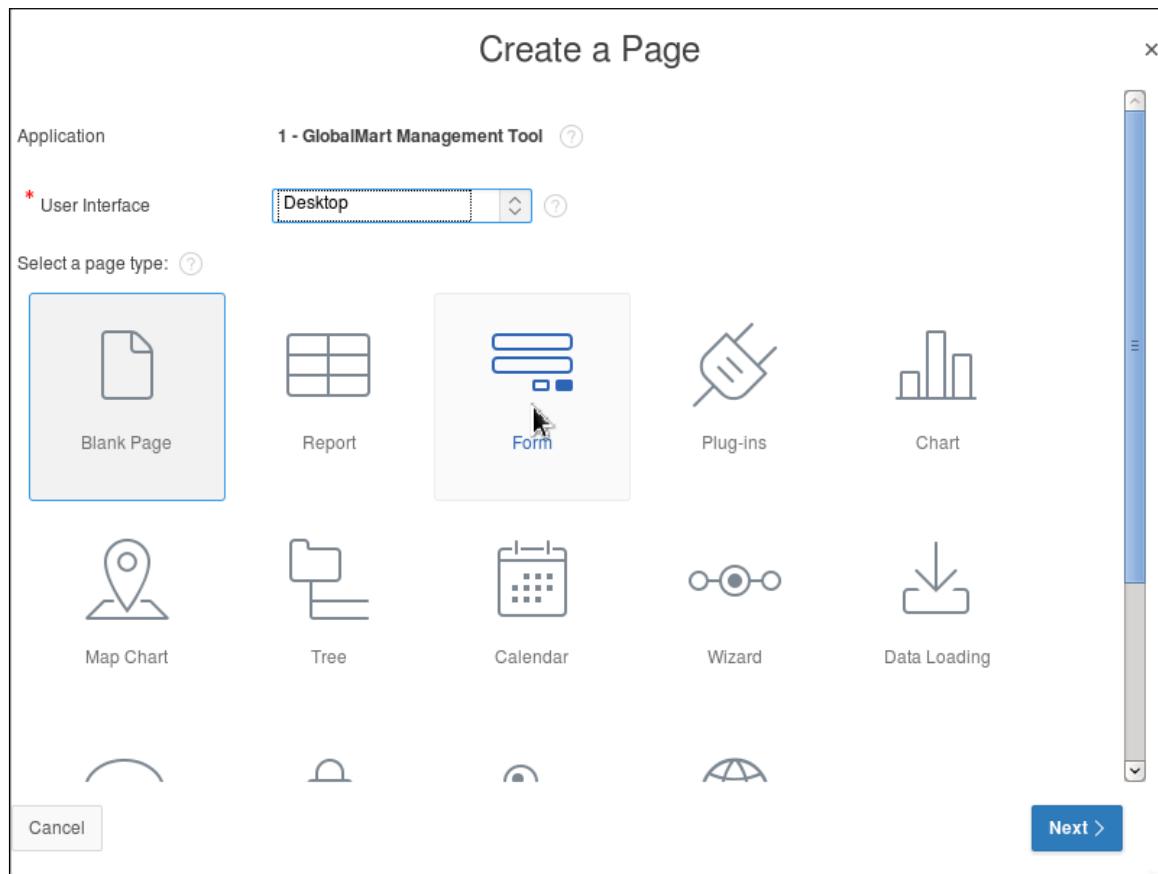
In this practice solution, steps are provided for creating a master detail form for the GMT application.

### Steps

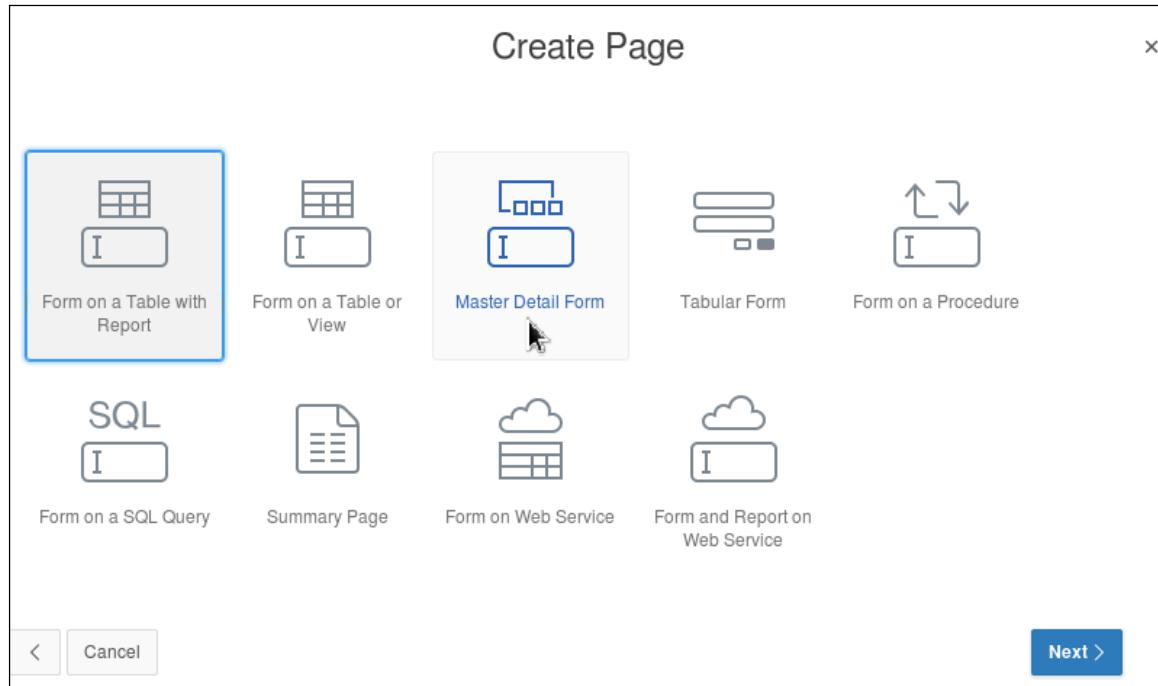
1. On a new page called **Master Detail Form**, create a master detail form based on the ORDERS and ORDER\_ITEMS tables and specify the page numbers as 8 and 9, respectively.
  - Include a report page called **List of Orders** on the master table.
  - Display the master table and detail table forms on a single page.
  - Exclude the ORDER\_ID column in the ORDER\_ITEMS table.
  - Use the Existing trigger option as the primary key source for the master and detail tables.
  - Include navigation based on the ORDER\_ID column.
- a. On the GMT application home page, click **Create Page >**.



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



- c. Select the **Master Detail Form** option.



- d. Ensure that your schema is selected. From the list of tables, select **ORDERS (table)**. All the columns are automatically selected. Click **Next >**.

**Create Master Detail**

Master Table and Columns

Select the table or view which contains the columns to be included in the master page.

\* Table / View Owner: OEHR

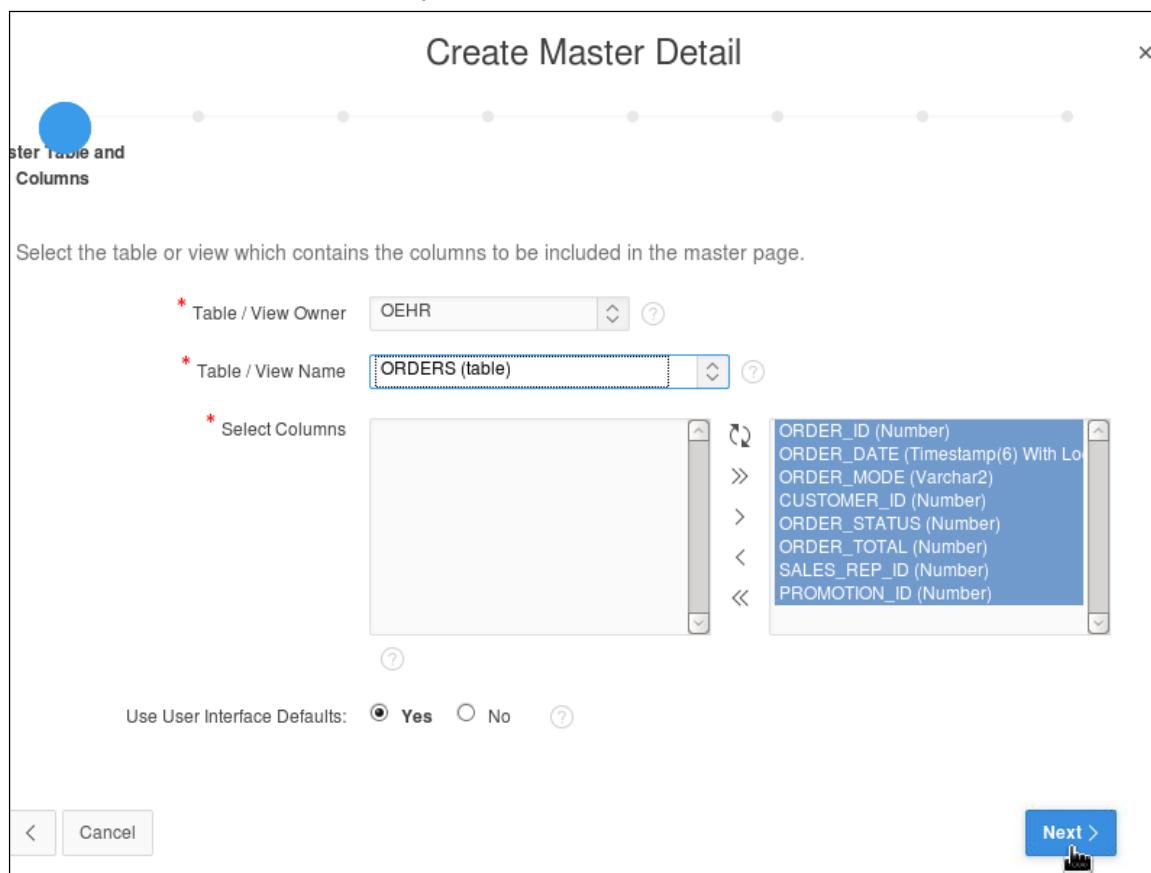
\* Table / View Name: ORDERS (table)

\* Select Columns

ORDER\_ID (Number)  
ORDER\_DATE (Timestamp(6) With Local Timezone)  
ORDER\_MODE (Varchar2)  
CUSTOMER\_ID (Number)  
ORDER\_STATUS (Number)  
ORDER\_TOTAL (Number)  
SALES REP\_ID (Number)  
PROMOTION\_ID (Number)

Use User Interface Defaults:  Yes  No

Cancel Next > 



- e. Ensure that your schema is selected. From the **Table / View Name** list, select ORDER\_ITEMS. Select the ORDER\_ID column and move it to the left by using the left arrow (<) so that the Order ID doesn't get displayed in the Form. Click **Next >**.

**Create Master Detail**

Detail Table and Columns

Select the table or view which contains the columns to be included in the detail page.

Show Only Related Tables:  Yes  No [?](#)

Table / View Owner: OEHR [?](#)

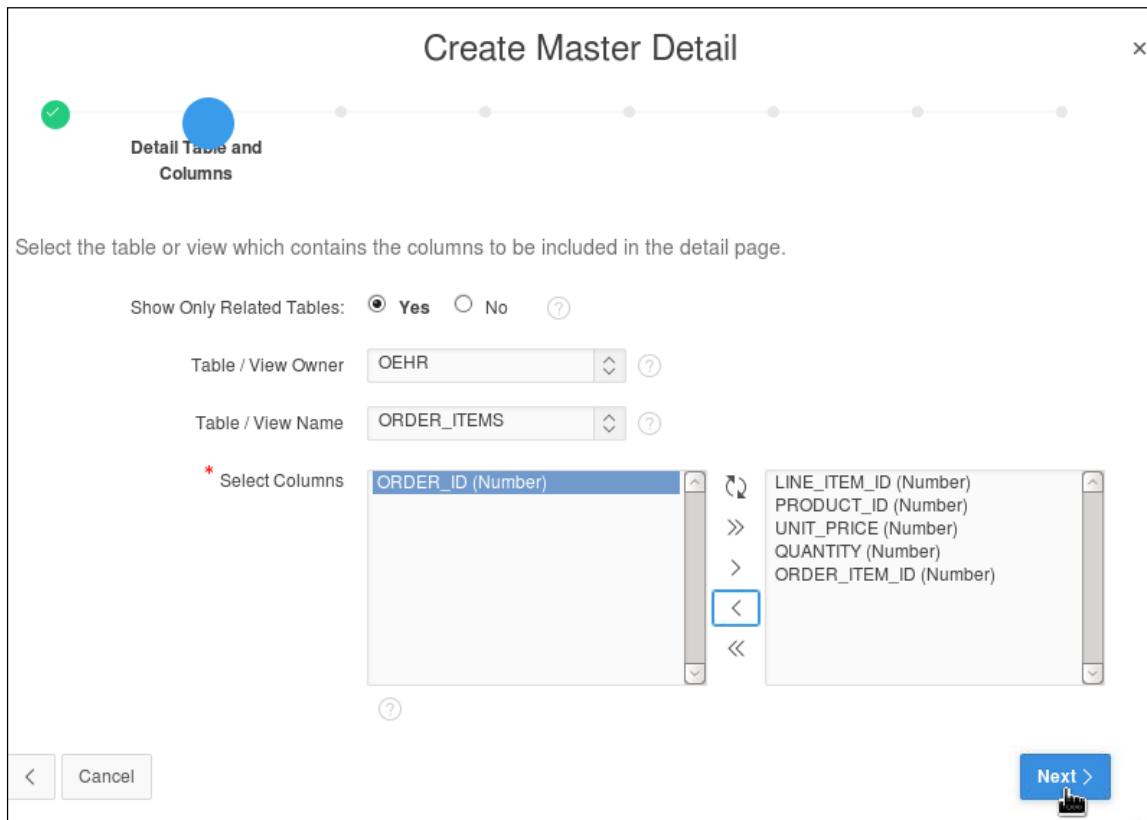
Table / View Name: ORDER\_ITEMS [?](#)

\* Select Columns: ORDER\_ID (Number) [?](#)

LINE\_ITEM\_ID (Number)  
PRODUCT\_ID (Number)  
UNIT\_PRICE (Number)  
QUANTITY (Number)  
ORDER\_ITEM\_ID (Number)

[<](#) [>](#) [>>](#) [<<](#) [>>>](#) [<<<](#) [>>>>](#)

[Cancel](#) [Next > !\[\]\(95971623321d2c0ed7740a6056c5dadf\_img.jpg\)](#)



- f. For both the tables, select **Select Primary Key Column(s)** for Primary Key Type. Select ORDER\_ID and ORDER\_ITEM\_ID as the primary keys for the respective tables. Click **Next >**.

Create Master Detail

Define Primary Key

Master Table: OEHR.ORDERS [?](#)

\* Primary Key Type:  Managed by Database (ROWID) [?](#)  
 Select Primary Key Column(s) [?](#)

\* Primary Key Column 1: ORDER\_ID (Number) [?](#)

Primary Key Column 2: - Select Column - [?](#)

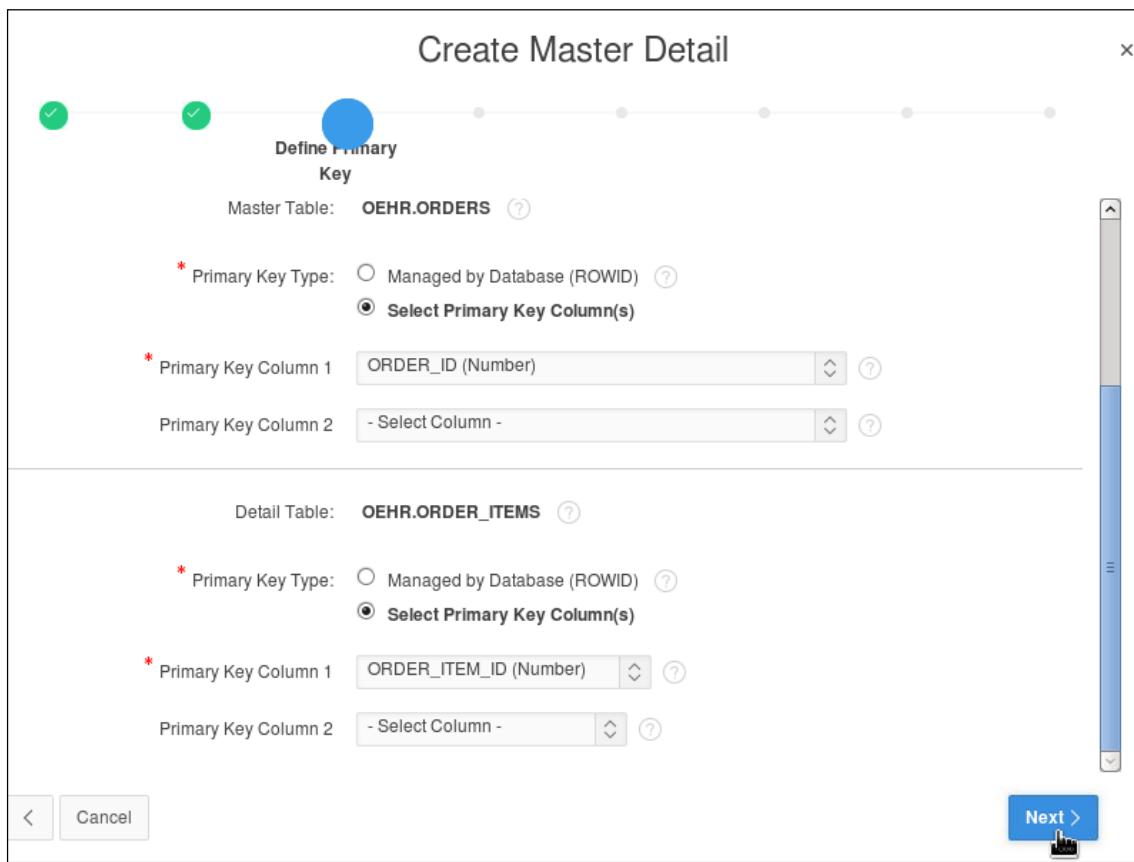
Detail Table: OEHR.ORDER\_ITEMS [?](#)

\* Primary Key Type:  Managed by Database (ROWID) [?](#)  
 Select Primary Key Column(s) [?](#)

\* Primary Key Column 1: ORDER\_ITEM\_ID (Number) [?](#)

Primary Key Column 2: - Select Column - [?](#)

< Cancel **Next >**



- g. For the **Primary Key Source** of the ORDERS table, accept the default value of **Existing trigger**. Click **Next >**.

**Create Master Detail**

Select the method by which the master table primary key is populated.

- Choose Existing Trigger if there is already a trigger to populate the primary key.
- Choose Custom PL/SQL Function to define custom PL/SQL logic to generate the primary key value.
- Choose Existing Sequence if an existing sequence will be used to generate the primary key.

Table Name: OEHR.ORDERS [?](#)

Primary Key Column 1: ORDER\_ID [?](#)

\* Primary Key Source:  Existing trigger [?](#)  
 Custom PL/SQL function  
 Existing sequence

Custom PL/SQL Function Example

Existing Triggers

[<](#) [Cancel](#) [Next >](#)

- h. For the **Primary Key Source** of the ORDER\_ITEMS table, accept the default value of **Existing trigger** and click **Next >**.

Create Master Detail

Select the method by which the detail table primary key is populated.

- Choose Existing Trigger if there is already a trigger to populate the primary key.
- Choose Custom PL/SQL Function to define custom PL/SQL logic to generate the primary key value.
- Choose Existing Sequence if an existing sequence will be used to generate the primary key.

Table Name: OEHR.ORDER\_ITEMS [?](#)

Primary Key Column 1: ORDER\_ITEM\_ID [?](#)

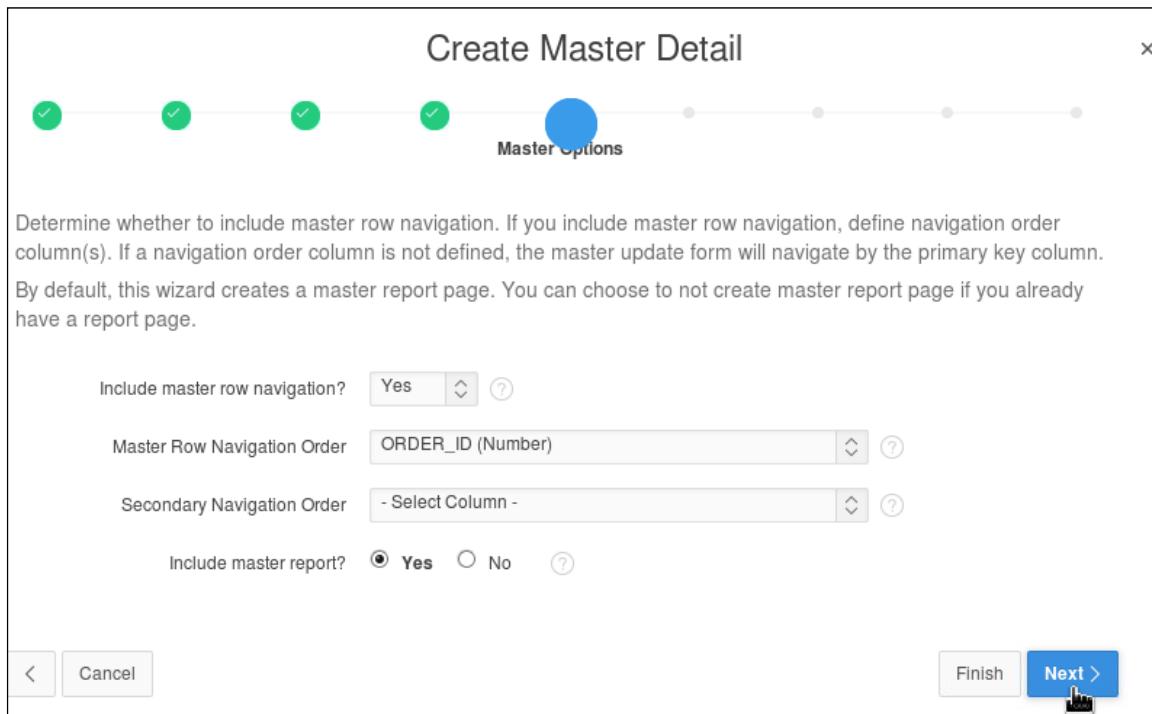
\* Primary Key Source:  Existing trigger [?](#)  
 Custom PL/SQL function  
 Existing sequence

Custom PL/SQL Function Example

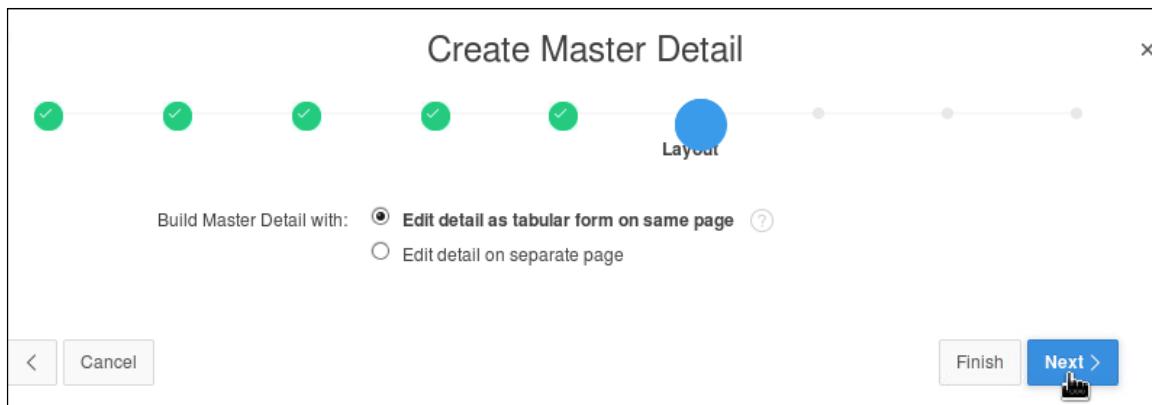
Existing Triggers

< Cancel [Finish](#) **Next >**

- i. Select the following values and click **Next >**
- 1) Include master row navigation?: Yes
  - 2) Master Row Navigation Order: ORDER\_ID (Number)
  - 3) Include master report?: Yes



- j. Ensure that **Edit detail as tabular form on same page** is selected. Click **Next >**.



- k. For Page Attributes, change the **Page Number** to 8 and **Page Title** for ORDERS on the master page to List of Orders. Change the **Page Number** for the Detail Page to 9.

Create Master Detail

|             |                |                |     |
|-------------|----------------|----------------|-----|
| Master Page | * Page Number  | 8              | (?) |
|             | * Page Title   | List of Orders | (?) |
|             | * Region Title | List of Orders | (?) |
|             | * Page Mode    | Normal         | (?) |
| Detail Page | * Page Number  | 9              |     |
|             | * Page Title   | Master Detail  |     |

< Cancel Next >

Scroll down and select **Breadcrumb** from the **Breadcrumb** drop-down list. Click **Next >**.

Create Master Detail

Page Attributes

\* Page Number: 9

\* Page Title: Master Detail

\* Master Region Title: Edit ORDERS

\* Detail Region Title: ORDER\_ITEMS Detail

Page Mode: Normal

Breadcrumbs

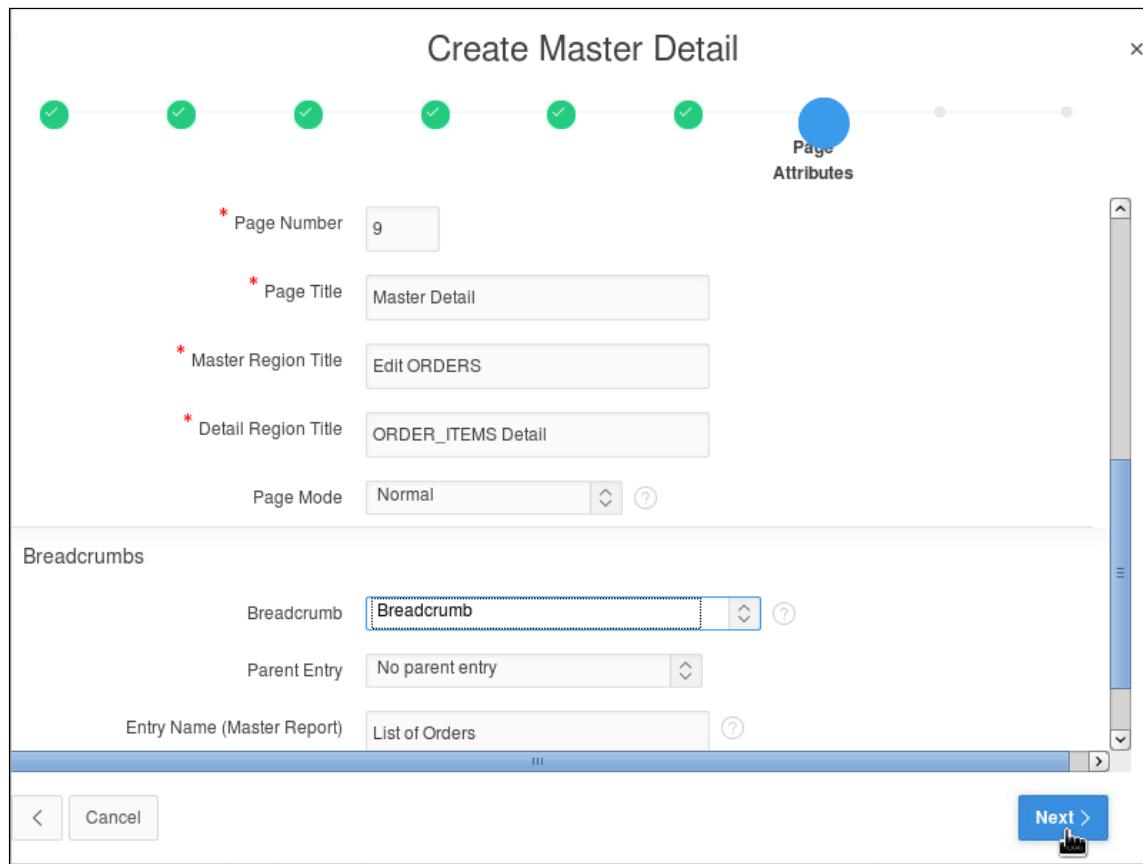
Breadcrumb: Breadcrumb

Parent Entry: No parent entry

Entry Name (Master Report): List of Orders

Navigation Menu

Next >



- I. Accept the default and click **Next >**.

Navigation Preference

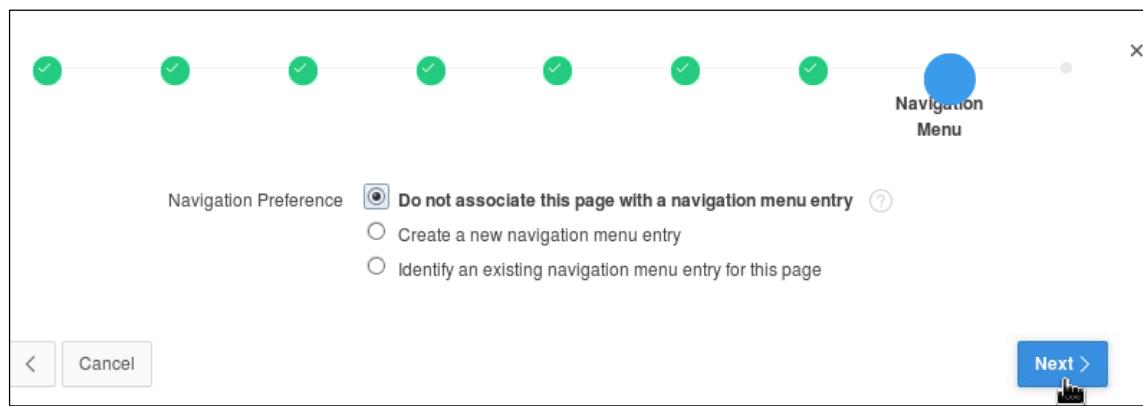
Do not associate this page with a navigation menu entry [?](#)

Create a new navigation menu entry

Identify an existing navigation menu entry for this page

Navigation Menu

Next >



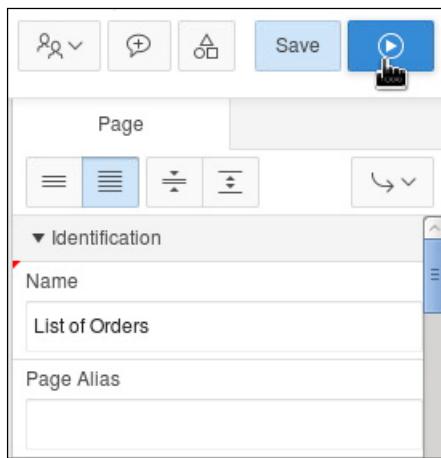
- m. Click **Create**.

**Create Master Detail**

You have requested to create master detail pages with the following attributes. Please confirm your selections.

|                          |  |
|--------------------------|--|
| Application              | 1  |
| Master Table             | OEHR.ORDERS  |
| Master Display Column(s) | ORDER_ID<br>ORDER_DATE<br>ORDER_MODE<br>CUSTOMER_ID<br>ORDER_STATUS<br>ORDER_TOTAL<br>SALES_REP_ID<br>PROMOTION_ID |
| Detail Table             | OEHR.ORDER_ITEMS   |
| Detail Display Column(s) | LINE_ITEM_ID<br>PRODUCT_ID<br>UNIT_PRICE<br>QUANTITY<br>ORDER ITEM ID  |

- n. To view the master detail form, click the **Save and Run Page** icon.



- o. The master report is displayed. Click the **Edit** icon next to one of the rows.

| List of Orders |                                 |            |             |              |             |              |              |
|----------------|---------------------------------|------------|-------------|--------------|-------------|--------------|--------------|
| Order Id       | Order Date                      | Order Mode | Customer Id | Order Status | Order Total | Sales Rep Id | Promotion Id |
|                | 16-AUG-99<br>02.34.12.234359 PM | direct     | 101         | 0            | 78279.6     | 153          |              |
|                | 19-NOV-99<br>03.41.54.696211 PM | direct     | 102         | 1            | 42283.2     | 154          |              |

- p. The Master detail form is displayed. Review the information. Click **Edit Page 9** on the Developer toolbar.

GlobalMart Management Tool Log Out

≡ Home Customers

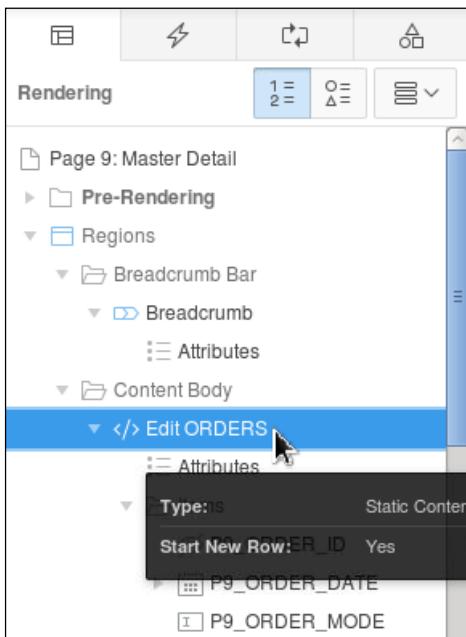
List of Orders / Master Detail

Edit ORDERS

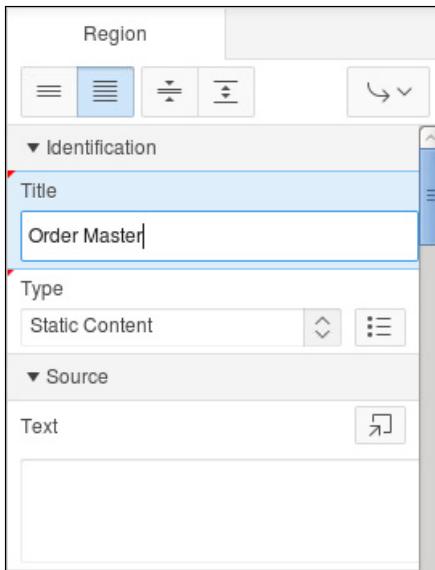
|               |  |
|---------------|--|
| Order Date *  | <input type="text" value="16-AUG-1999"/> |
| Order Mode    | <input type="text" value="direct"/>      |
| Customer Id * | <input type="text" value="101"/>         |
| Order Status  | <input type="text" value="0"/>           |
| Order Total   | <input type="text" value="78279.6"/>     |
| Sales Rep Id  | <input type="text" value="153"/>         |
| Promotion Id  | <input type="text"/>                     |

Home Application 1 Edit Page 9 Session View Debug Debug Show Grid Quick Edit Theme Roller

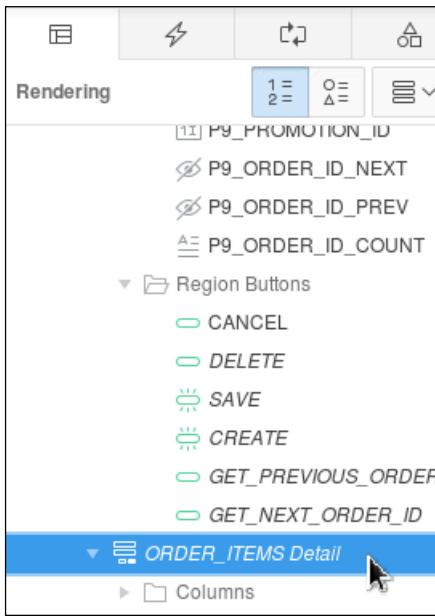
2. On the Master Detail Form page, change the region name for the master region to **Order Master** and change the region name for the detail region to **Order Details**.
  - a. Select **Regions > Content Body > Edit ORDERS**.



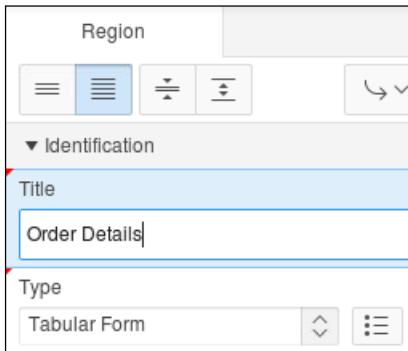
- b. Change the **Title** of the region from **Edit ORDERS** to **Order Master**.



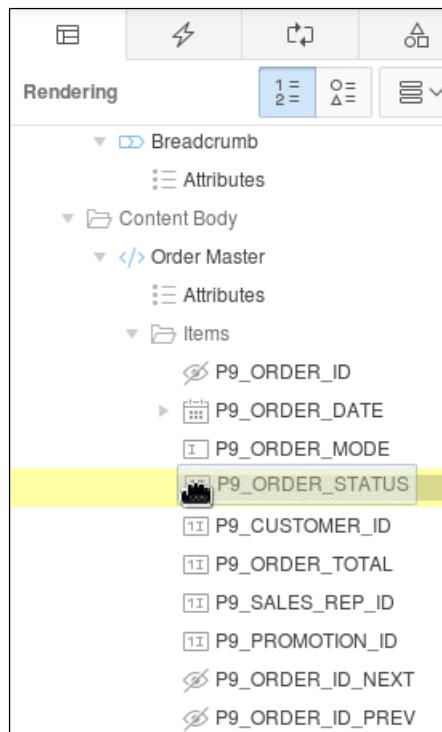
- c. Select **Regions > Content Body > ORDER\_ITEMS Detail**.



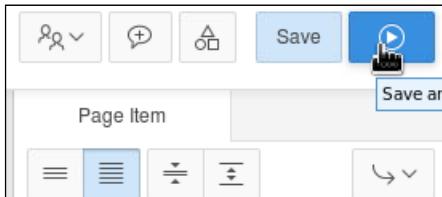
- d. Change the **Title** of the region from **ORDER\_ITEMS Detail** to **Order Details**.



3. On the Master Detail page, move the **Order Status** item to appear before the **Customer ID** in the Order Master region.
- You can reorder items very easily by dragging and dropping them. Drag **P9\_ORDER\_STATUS** to above **P9\_CUSTOMER\_ID**.



- Verify that the item is moved. Click the **Save and Run Page** icon.



- Click the **List of Orders** breadcrumb to return to the master report.

| Order Master |             |
|--------------|-------------|
| Order Date * | 16-AUG-1999 |
| Order Mode   | direct      |
| Order Status | 0           |

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**.
- Click the **Edit Page 8** link on the Developer toolbar.



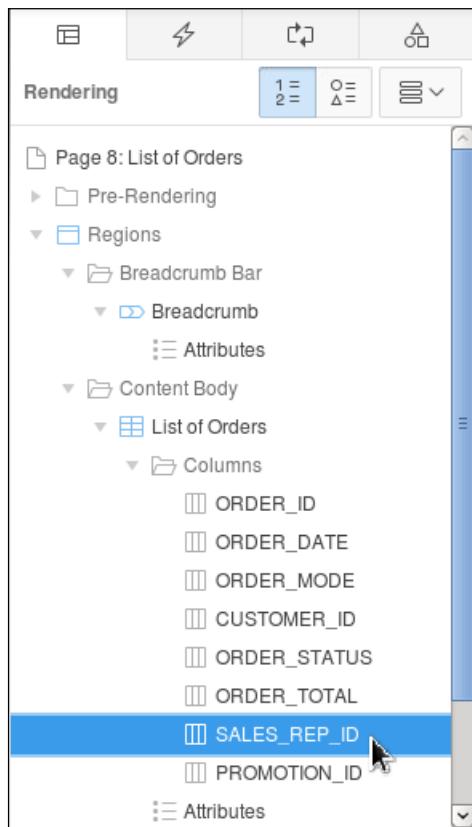
- Select **Regions > Content Body > List of Orders > Columns > PROMOTION\_ID**.

A screenshot of the Oracle ADF Column editor. The tree view shows the hierarchy: Page 8: List of Orders &gt; Regions &gt; Content Body &gt; List of Orders &gt; Columns. The PROMOTION\_ID column is selected, highlighted with a blue border. A context menu is open over the column, with the 'Type' option highlighted.

- Select **Type as Hidden Column**.

A screenshot of the Oracle ADF Column properties dialog. The 'Type' dropdown is open, showing various options like Plain Text, Link, Display Image, etc. The 'Hidden Column' option is selected and highlighted with a blue border.

- d. Select **Regions > Content Body > List of Orders > Columns > SALES\_REP\_ID**.

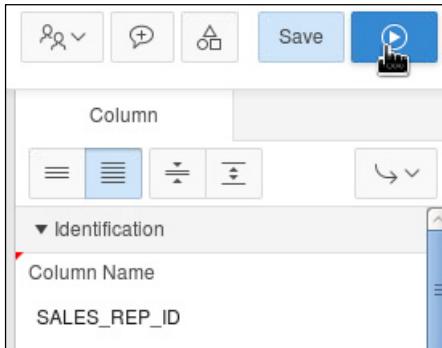


- e. Change the **Heading** to Sales Rep.

The screenshot shows the 'Column' properties dialog for the 'SALES\_REP\_ID' column. The 'Heading' field is set to 'Sales Rep'.

| Column         | Plain Text   | center |
|----------------|--------------|--------|
| Identification | SALES_REP_ID |        |
| Type           | Plain Text   |        |
| Heading        | Sales Rep    |        |
| Alignment      | center       |        |

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



- g. Review the report. Note that PROMOTION\_ID is no longer shown and the heading for Sales Rep has changed. Click the **Application 1** link on the Developer toolbar.

A screenshot of the GlobalMart Management Tool. The left sidebar shows 'Home' and 'Customers' links. The main content area is titled 'List of Orders' and displays a table of order data. The table has columns for Order Id, Order Date, Order Mode, Customer Id, Order Status, Order Total, and Sales Rep. The 'Sales Rep' column now contains values like 153, 154, 155, etc., instead of PROMOTION\_ID. At the bottom of the screen, the developer toolbar is visible, showing various icons and the text '09-FEB-09 10:00:53 AM direct'.

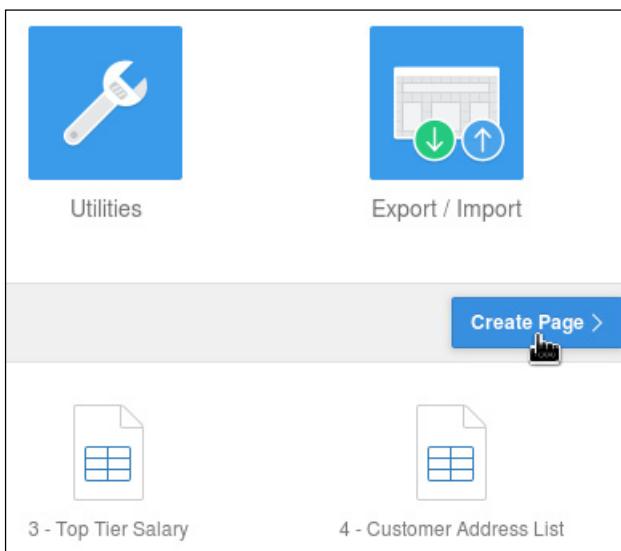
## Solution 6-3: Creating a Tabular Form

### Overview

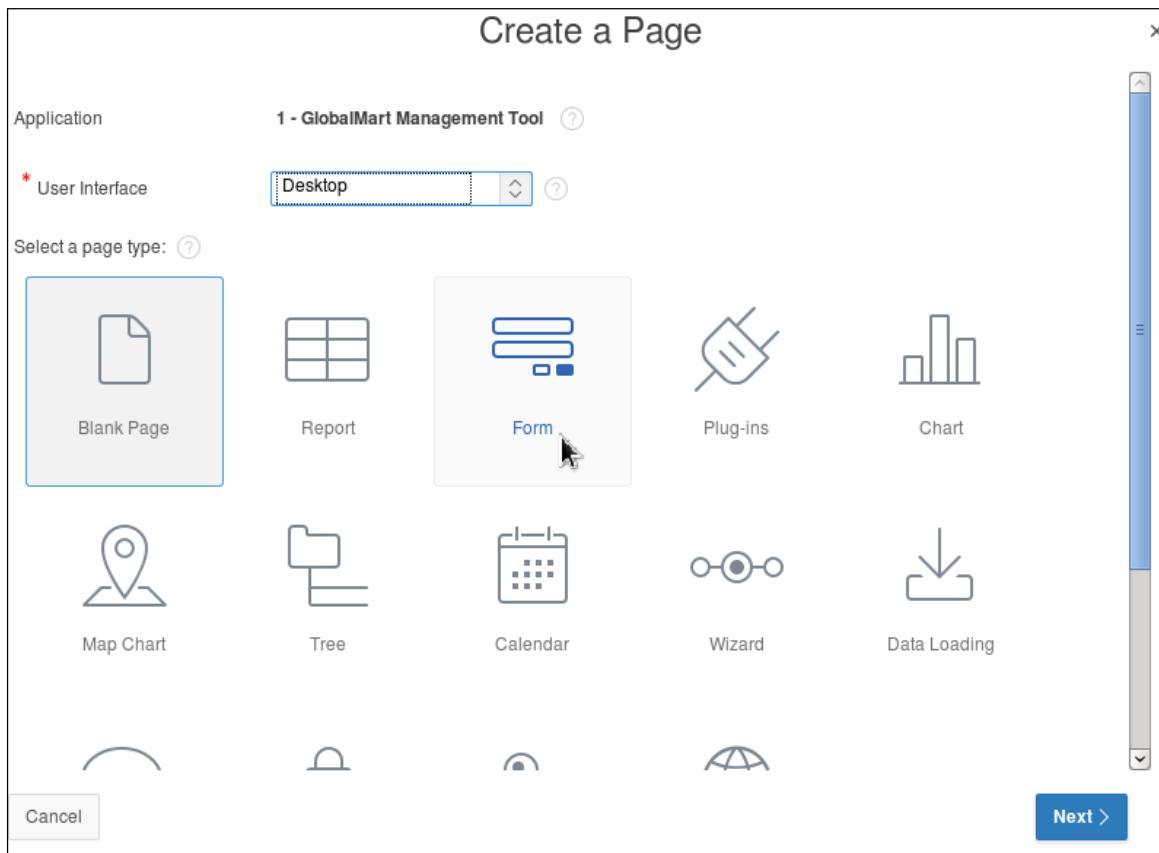
In this practice solution, steps are provided for creating a tabular form for the GMT application.

### Steps

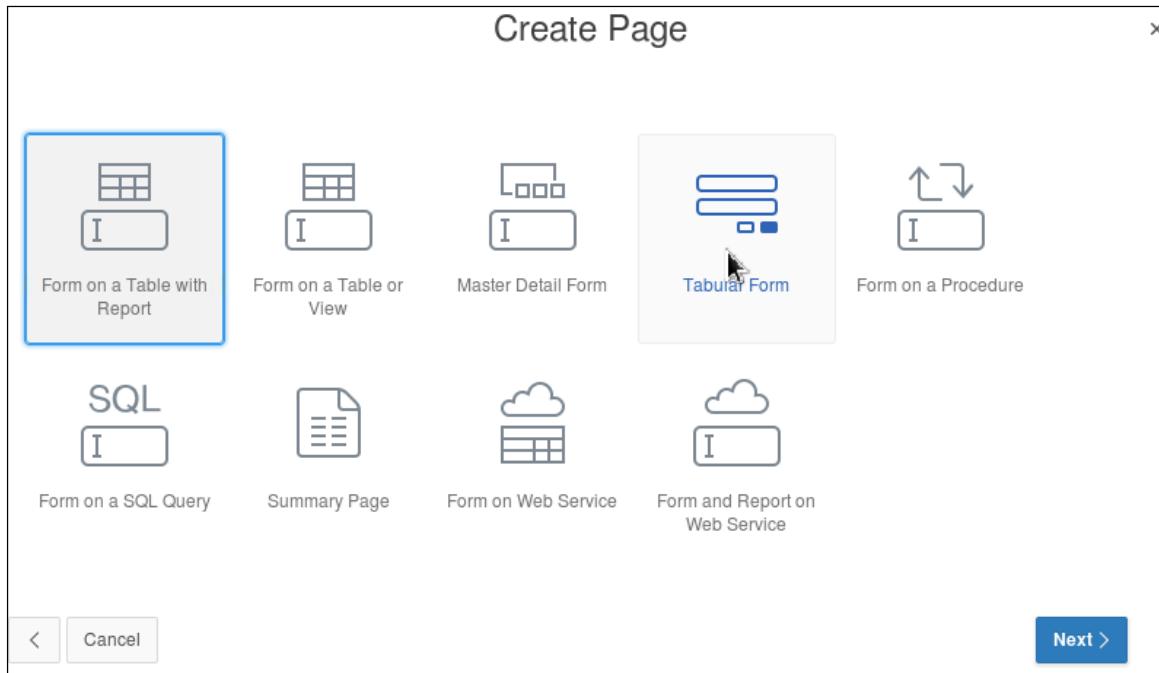
1. On a new page called **Update Employee Information**, create a tabular form that displays the FIRST\_NAME, LAST\_NAME, EMAIL, JOB\_ID, and COMMISSION\_PCT from the EMPLOYEES table. The columns EMAIL, JOB\_ID, and COMMISSION\_PCT should be updatable columns. Set the page number to 10. Change the element width of the CUST\_EMAIL column to 40.
  - a. On the GMT application home page, click **Create Page >**.



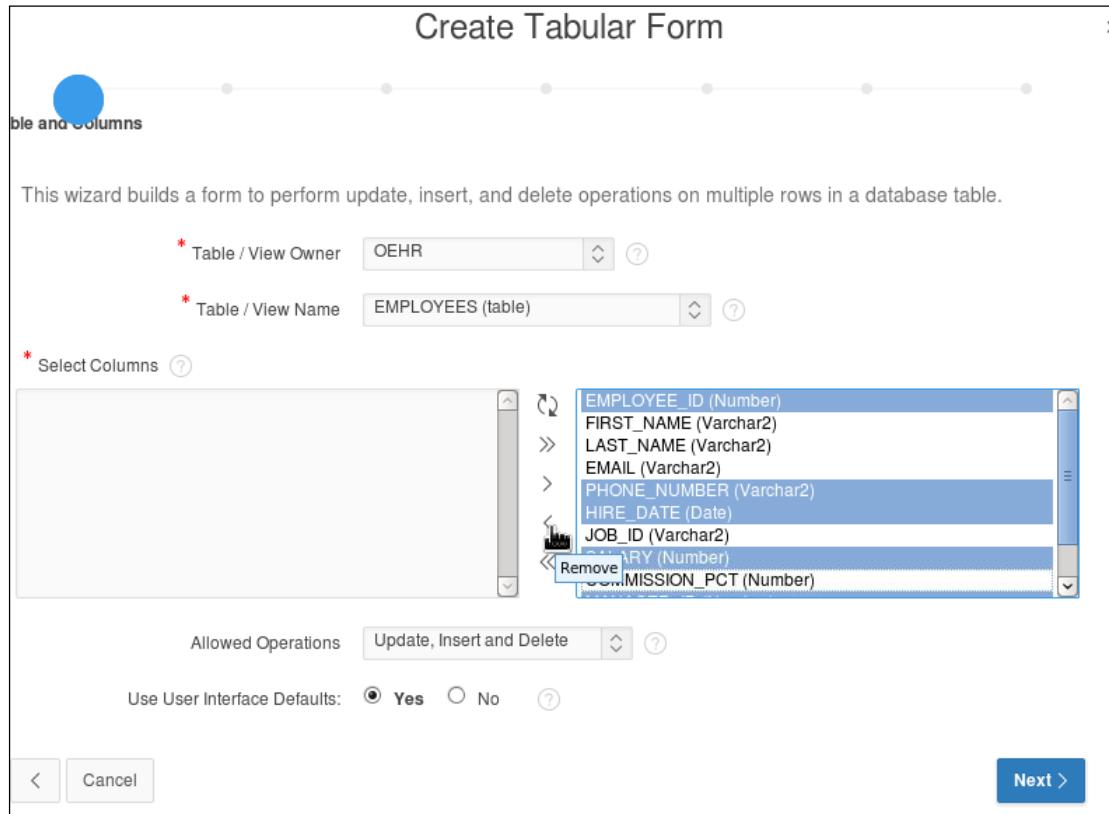
- b. Select the **Form** option.



- c. Select the **Tabular Form** option.



- d. Ensure that your schema is selected in the **Table / View Owner** field. For the **Table / View Name** field, select **EMPLOYEES (table)** from the drop-down list. Select all columns, except FIRST\_NAME, LAST\_NAME, EMAIL, JOB\_ID, and COMMISSION\_PCT from the right and click the left arrow (<).



- e. Ensure that the **Update, Insert and Delete** option is selected in the **Allowed Operations** drop-down list. Click **Next >**.

Create Tabular Form

Table and Columns

This wizard builds a form to perform update, insert, and delete operations on multiple rows in a database table.

\* Table / View Owner: OEHR

\* Table / View Name: EMPLOYEES (table)

\* Select Columns:

|                         |                         |
|-------------------------|-------------------------|
| EMPLOYEE_ID (Number)    | FIRST_NAME (Varchar2)   |
| PHONE_NUMBER (Varchar2) | LAST_NAME (Varchar2)    |
| HIRE_DATE (Date)        | EMAIL (Varchar2)        |
| SALARY (Number)         | JOB_ID (Varchar2)       |
| MANAGER_ID (Number)     | COMMISSION_PCT (Number) |
| DEPARTMENT_ID (Number)  |                         |

Allowed Operations: Update, Insert and Delete

Use User Interface Defaults:  Yes  No

< Cancel Next >

- f. For **Primary Key Type**, select **Select Primary Key Column(s)**. Select **EMPLOYEE\_ID (Number)** for **Primary Key Column 1** and click **Next >**.

Create Tabular Form

Primary Key

Tabular forms perform insert, update and delete operations on table rows in the database. The rows are identified using either a primary key defined on the table, or the ROWID pseudo column, which uniquely identifies a row in a table. Select "Managed by Database" if you would like to use the ROWID. Otherwise select the primary key column(s) defined for your table. Tabular forms support up to two columns in the primary key. For tables using primary keys with more than two columns, the ROWID option should be used.

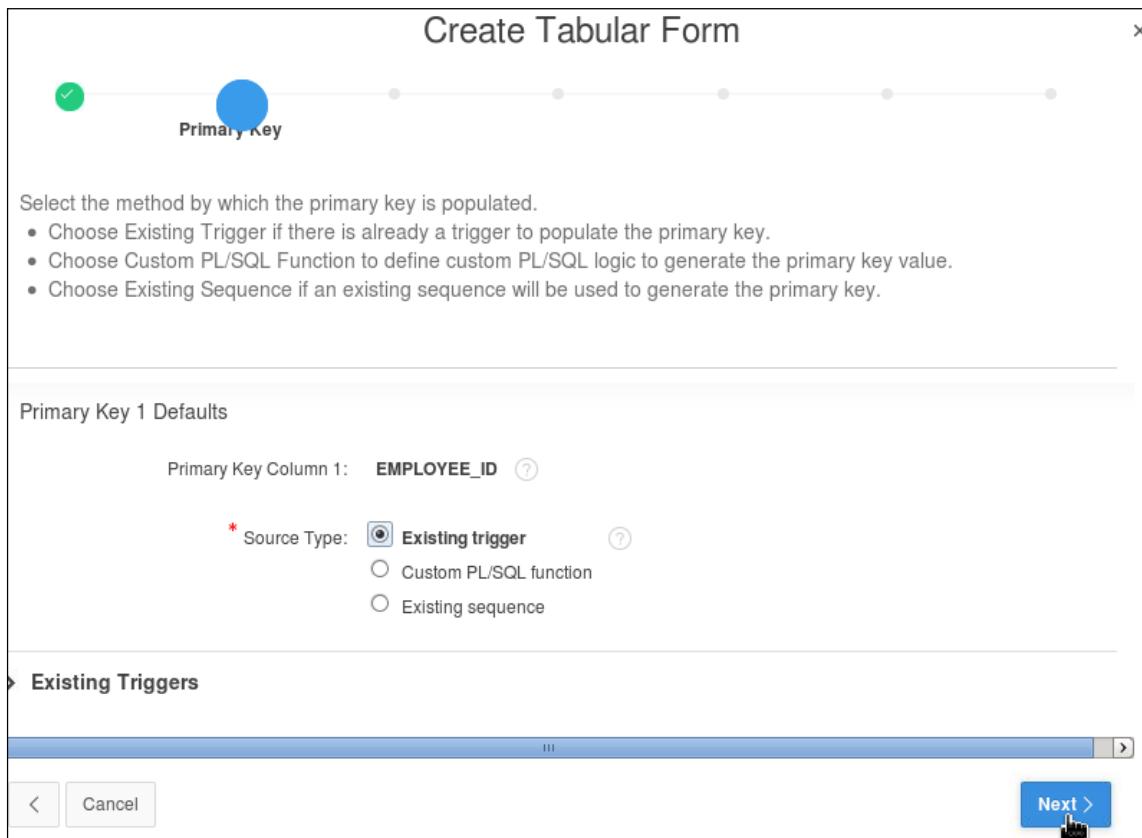
\* Primary Key Type:  Managed by Database (ROWID)  Select Primary Key Column(s)

\* Primary Key Column 1: EMPLOYEE\_ID (Number)

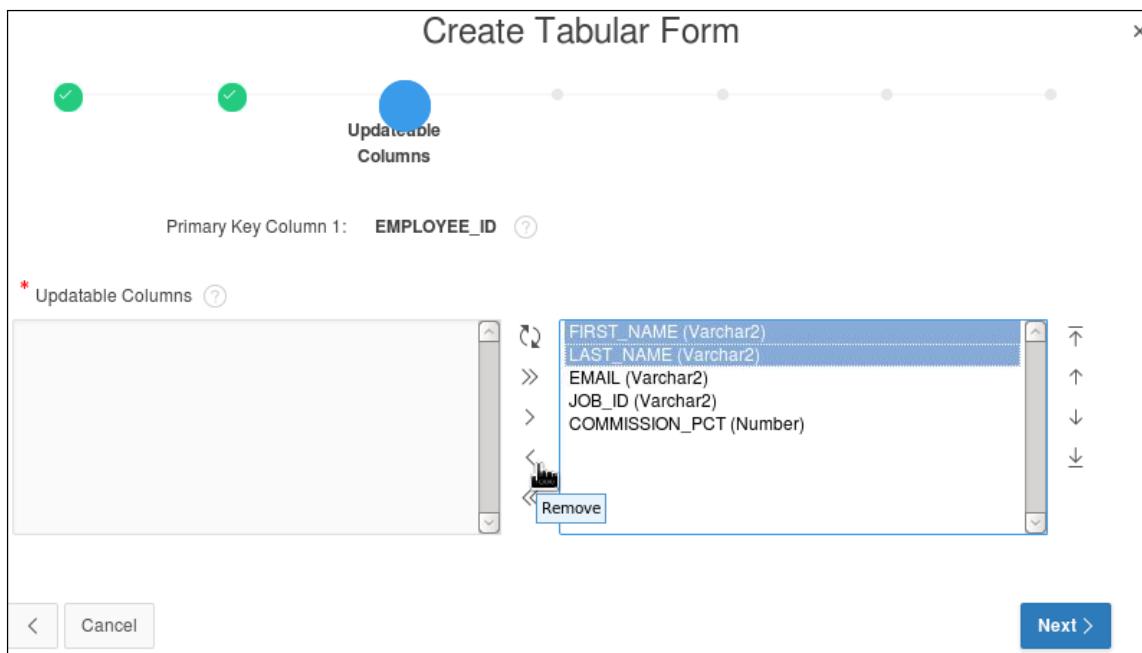
Primary Key Column 2: - Select Column -

< Cancel Next >

- g. For **Source Type**, accept the default **Existing trigger** and click **Next >**.



- h. For **Updatable Columns**, you want all the columns to be updatable except FIRST\_NAME and LAST\_NAME. Ctrl-select FIRST\_NAME and LAST\_NAME, and click the left arrow (<).



- i. Click **Next >**.

Create Tabular Form

Primary Key Column 1: EMPLOYEE\_ID

\* Updatable Columns

|                       |                         |
|-----------------------|-------------------------|
| FIRST_NAME (Varchar2) | EMAIL (Varchar2)        |
| LAST_NAME (Varchar2)  | JOB_ID (Varchar2)       |
|                       | COMMISSION_PCT (Number) |

Updatable Columns

< Cancel Next >

- j. On the **Page and Region Attributes** page, enter 10 for **Page** and Update Employee Information for both **Page Name** and **Region Title**. Click **Next >**.

Create Tabular Form

Use this page to specify page and region information.

\* Page 10

\* Page Name Update Employee Information

\* Page Mode Normal

\* Region Title Update Employee Information

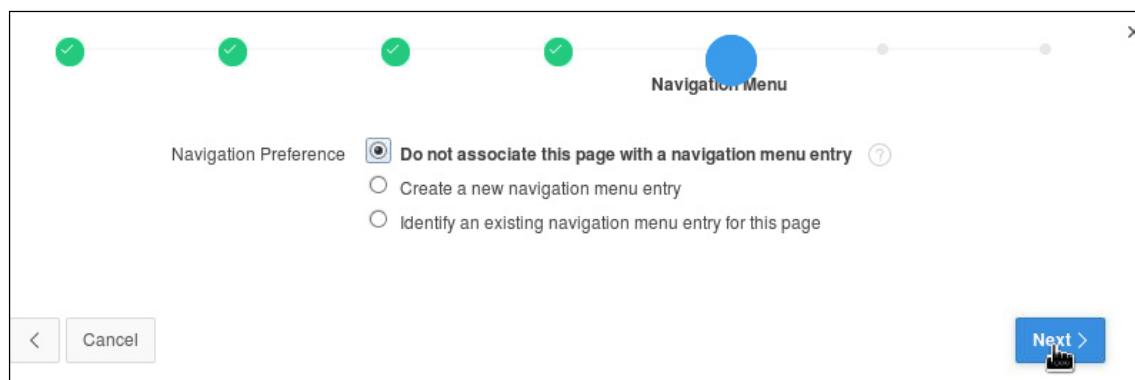
Region Template Standard

Report Template template: Standard

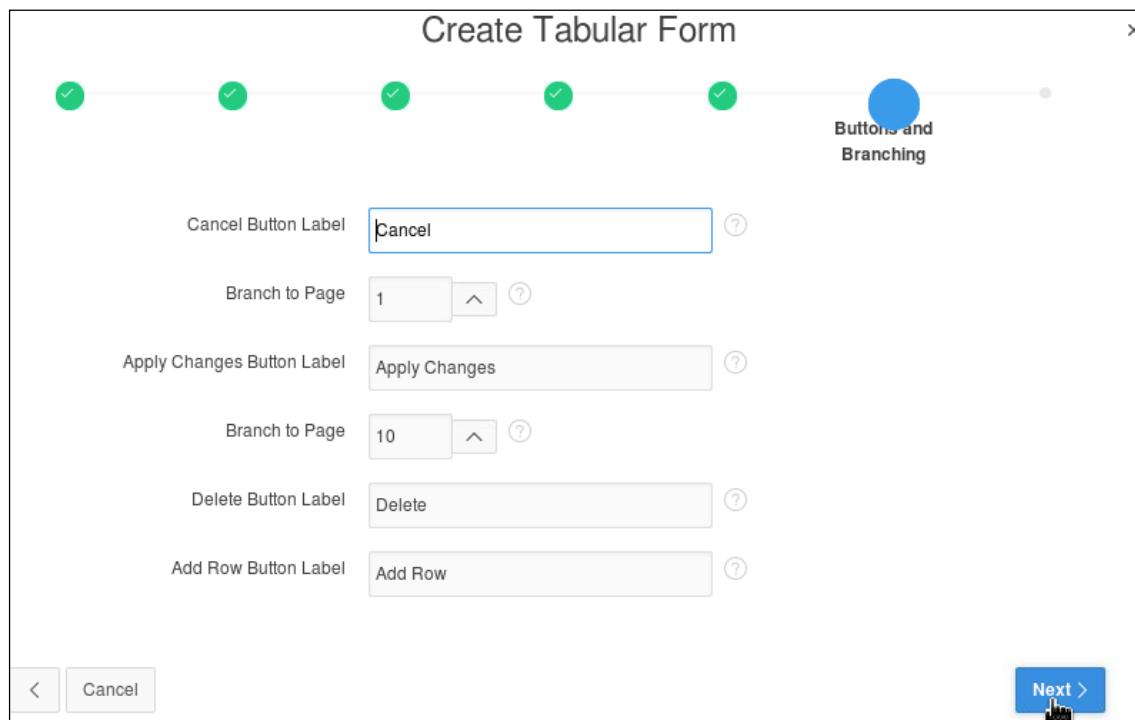
Breadcrumb - do not add breadcrumb region to page -

< Cancel Next >

- k. Ensure that **Do not associate this page with a navigation menu entry** is selected and click **Next >**.



- l. For Buttons and Branching, accept the defaults and click **Next >**.



- m. Click **Create**.

**Create Tabular Form**

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

|              |  |
|--------------|--|
| Application  | 1  |
| Page         | 10   |
| Page Name    | Update Employee Information                                  |
| Region Title | Update Employee Information                                  |
| Table Owner  | OEHR   |
| Table Name   | EMPLOYEES  |
| Columns      | FIRST_NAME<br>LAST_NAME<br>EMAIL<br>JOB_ID<br>COMMISSION_PCT |

**Create**

- n. Click the **Save and Run Page** icon to view your new form.

**Save and Run Page**

**Page**

**Name**  
Update Employee Information

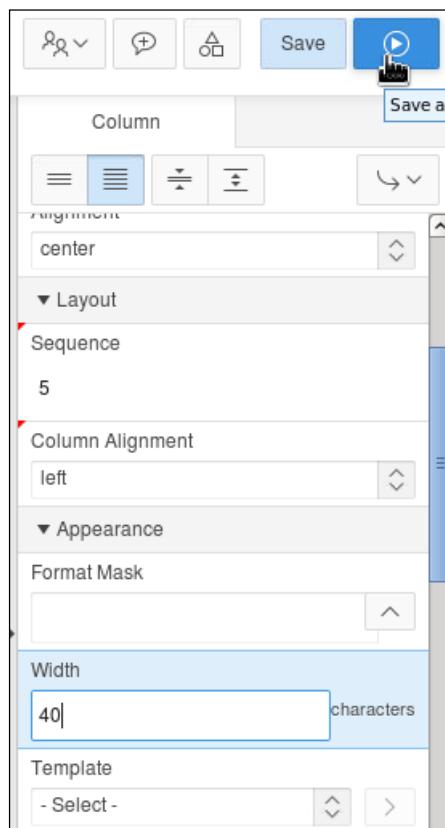
**Page Alias**

- o. You will now increase the field size of the Email field. Click the **Edit Page 10** link on the Developer toolbar.

|                          | First Name | Last Name | Email    | Job Id     | Commission Pct |
|--------------------------|------------|-----------|----------|------------|----------------|
| <input type="checkbox"/> | Steven     | King      | SKING    | AD_PRES    |                |
| <input type="checkbox"/> | Neena      | Kochhar   | NKOCHHAR | AD_VP      |                |
| <input type="checkbox"/> | Lex        | De Haan   | LDEHAAN  | AD_VP      |                |
| <input type="checkbox"/> | Alexander  | Hunold    | AHUNOLD  | IT_PROG    |                |
| <input type="checkbox"/> | Bruce      | Ernst     | BERNST   | IT_PROG    |                |
| <input type="checkbox"/> | David      | Austin    | DAUSTIN  | IT_PROG    |                |
| <input type="checkbox"/> | Valli      | Pataballa | VPATABAL | IT_PROG    |                |
| <input type="checkbox"/> | Diana      | Lorentz   | DLORENTZ | IT_PROG    |                |
| <input type="checkbox"/> | Nancy      | Greenberg | NGREENBE | FI_MGR     |                |
| <input type="checkbox"/> | Daniel     | Faviet    | DFAVIET  | FI_ACCOUNT |                |

- p. Select **Regions > Content Body > Update Employee Information > Columns > EMAIL**.

- q. Change the **Width** in the **Appearance** tab to 40 and click the **Save and Run Page** icon.



- r. Notice that the length of the **Email** column has changed. Click **Application 1** on the Developer toolbar.

The screenshot shows the 'Update Employee Information' form. It displays a grid of employee data with columns for First Name, Last Name, Email, Job Id, and Commission Pct. The 'Email' column width has been increased to 40 characters, making it wider than the other columns. The developer toolbar at the bottom shows the 'Application 1' button highlighted.

|                          | First Name | Last Name | Email    | Job Id     | Commission Pct |
|--------------------------|------------|-----------|----------|------------|----------------|
| <input type="checkbox"/> | Steven     | King      | SKING    | AD_PRES    |                |
| <input type="checkbox"/> | Neena      | Kochhar   | NKOCHHAR | AD_VP      |                |
| <input type="checkbox"/> | Lex        | De Haan   | LDEHAAN  | AD_VP      |                |
| <input type="checkbox"/> | Alexander  | Hunold    | AHUNOLD  | IT_PROG    |                |
| <input type="checkbox"/> | Bruce      | Ernst     | BERNST   | IT_PROG    |                |
| <input type="checkbox"/> | David      | Austin    | DAUSTIN  | IT_PROG    |                |
| <input type="checkbox"/> | Valli      | Pataballa | VPATABAL | IT_PROG    |                |
| <input type="checkbox"/> | Diana      | Lorentz   | DLORENTZ | IT_PROG    |                |
| <input type="checkbox"/> | Nancy      | Greenberg | NGREENBE | FI_MGR     |                |
| <input type="checkbox"/> | Daniel     | Faviet    | DFAVIET  | FI_ACCOUNT |                |

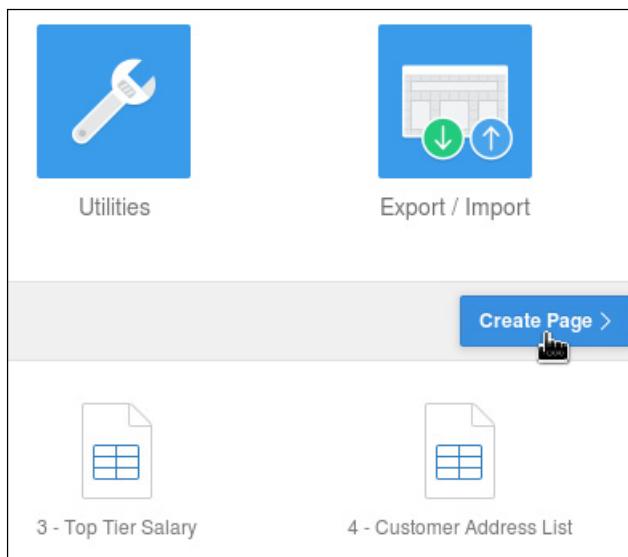
## Solution 6-4: Creating a Form on a Table with List View for Mobile Applications

### Overview

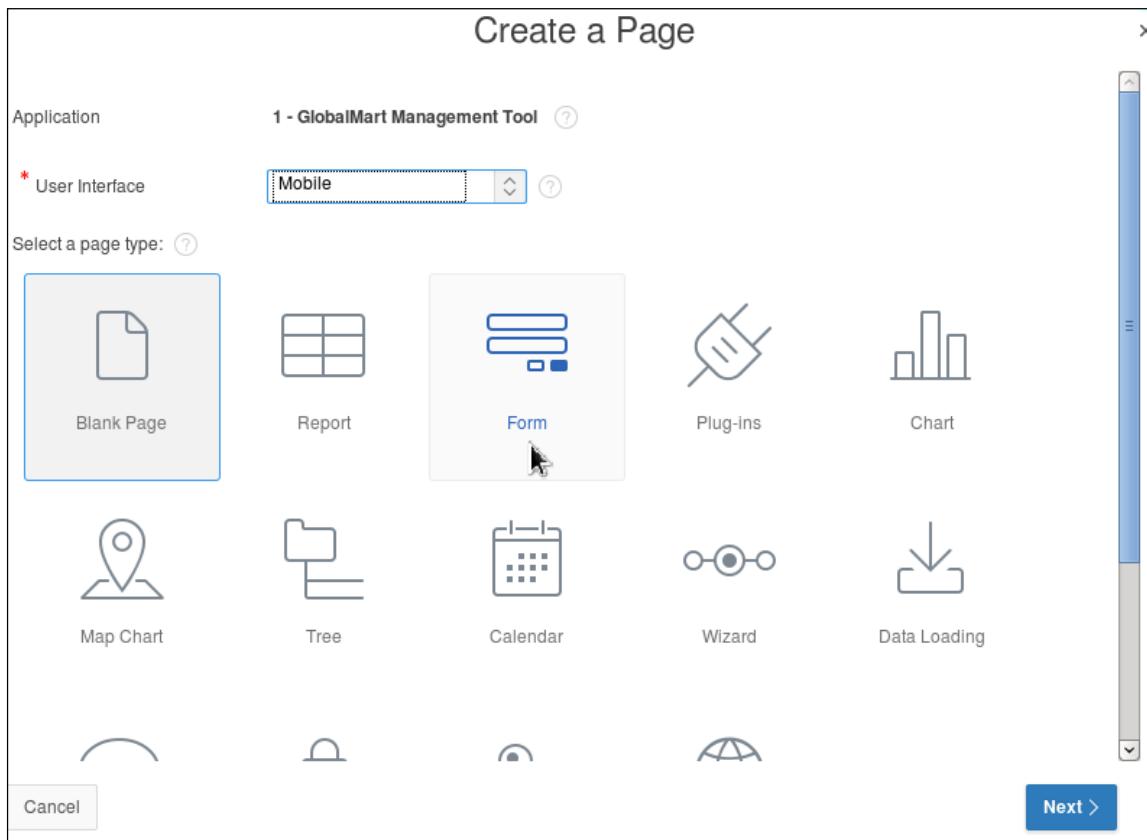
In this practice solution, steps are provided for creating a form on table with list view for the GMT mobile application.

### Steps

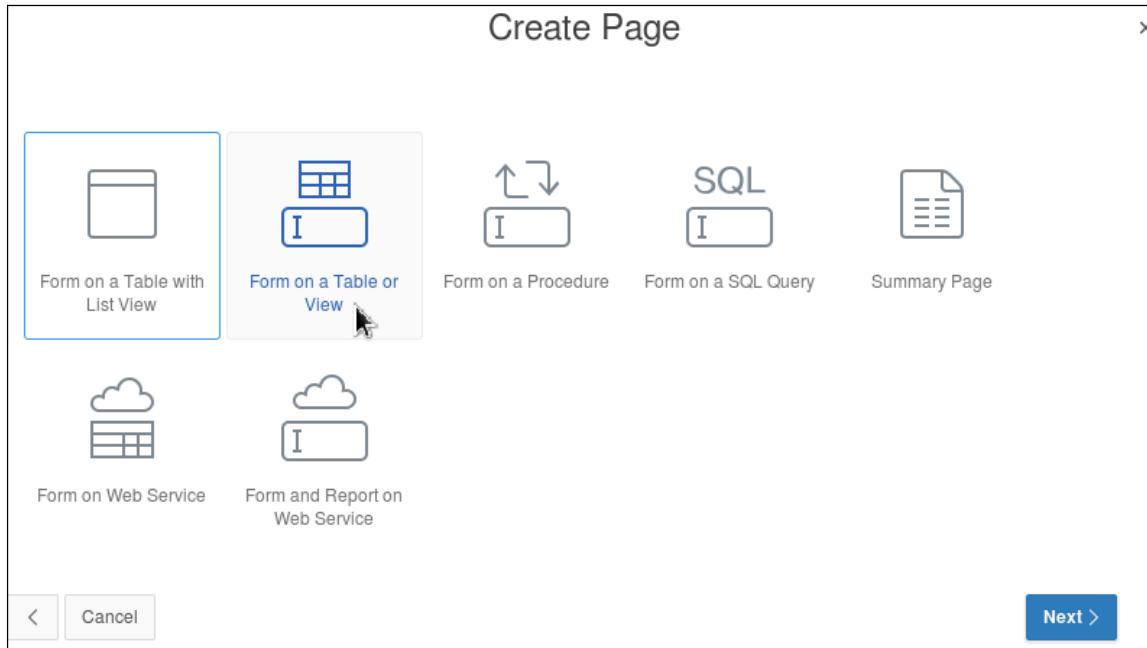
1. Add a form page called **Employee Detail** to the application for mobile interface. Enter the page number as **204**. Link this Employee Detail form page to the existing **Employee List** list view page.
  - a. On the GMT application home page, click **Create Page >**.



- b. Select **Mobile for User Interface**, and select **Form**.



- c. Select the **Form on a Table or View** option.



- d. Select **EMPLOYEES (table)** for **Table / View Name** and click **Next >**.

Create Form on Table

This wizard builds a form to update a single row in a database table or view. Identify the schema owner and name of the table or view on which you wish to build a form.

\* Table / View Owner: OEHR

\* Table / View Name: EMPLOYEES (table)

< Cancel Next >

- e. Change the **Page Number** to 204 and enter the **Page Name** and **Region Name** as Employee Detail. Click **Next >**.

Create Form on Table

Use this page to specify page and region information.

\* Page Number: 204

\* Page Name: Employee Detail

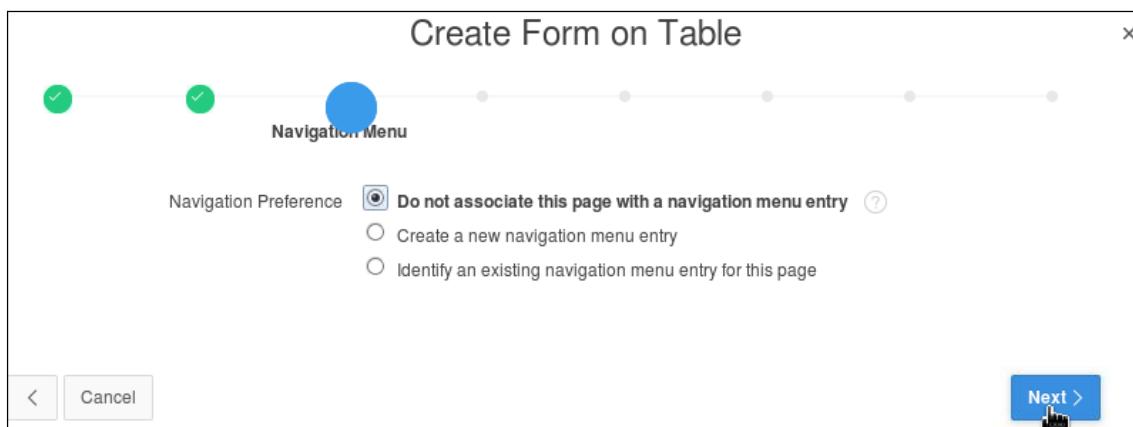
\* Page Mode: Normal

\* Region Title: Employee Detail

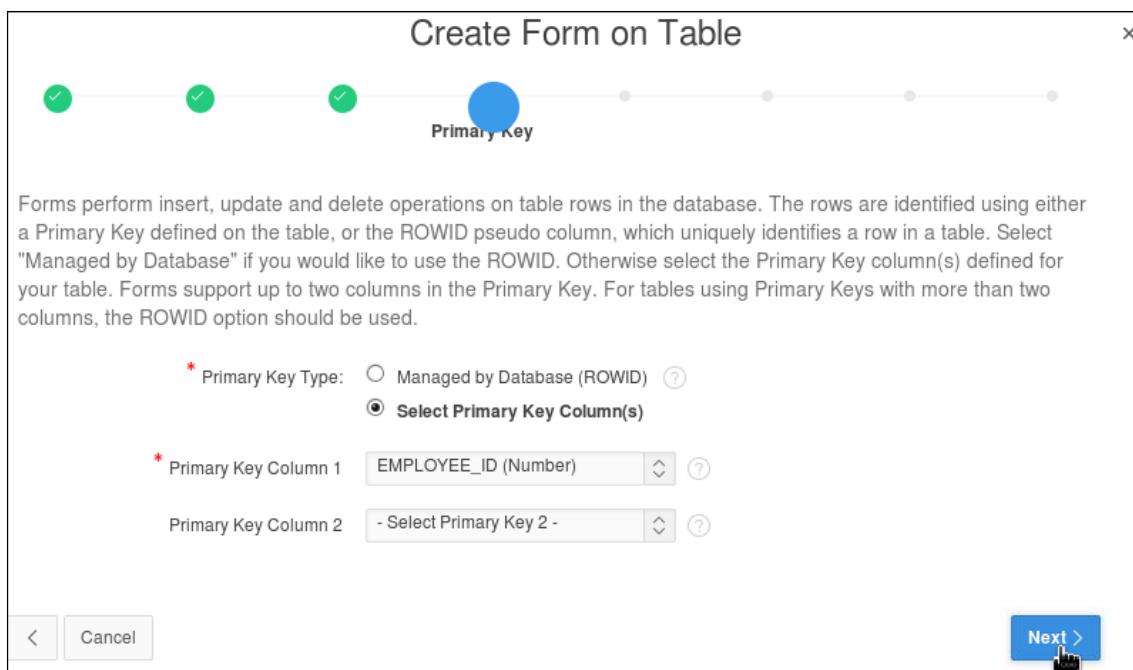
Region Template: Plain (No Title)

< Cancel Next >

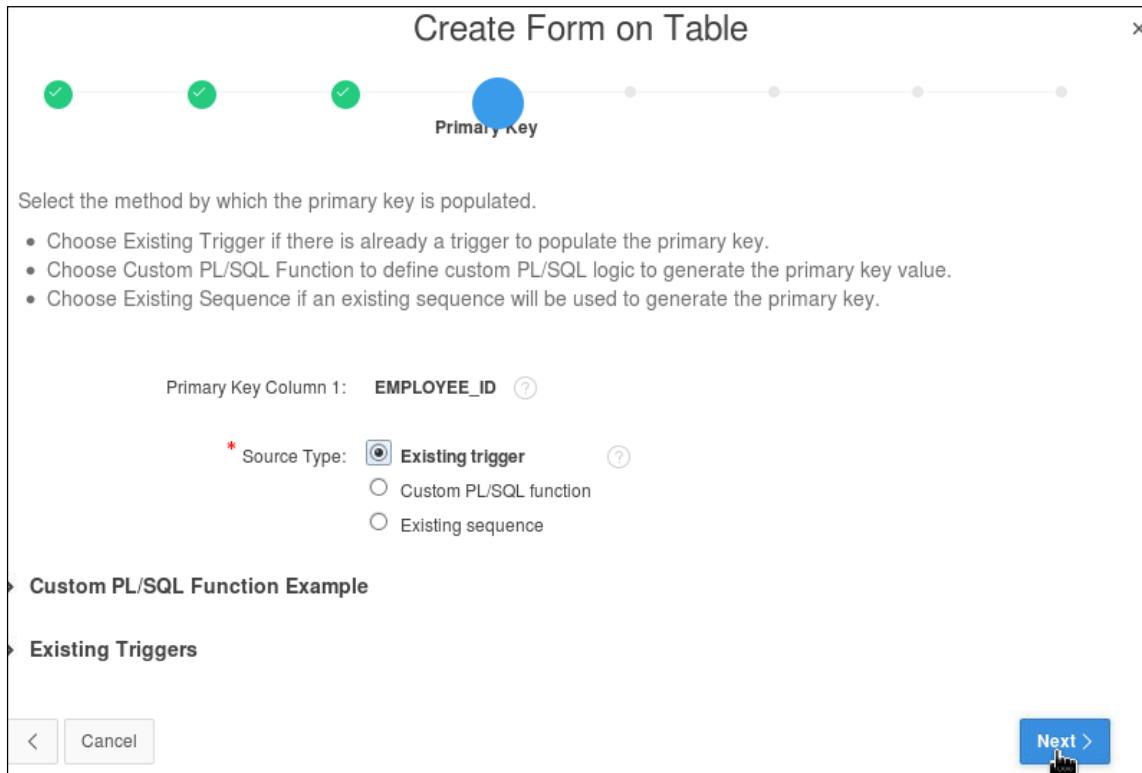
- f. Ensure that **Do not associate this page with a navigation menu entry** is selected and click **Next >**.



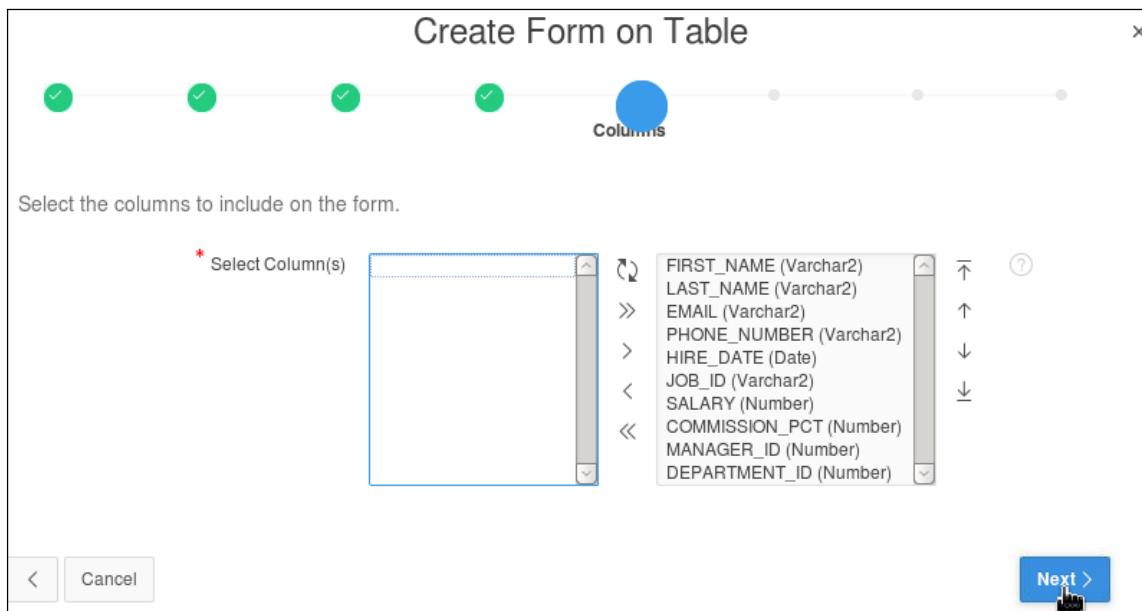
- g. For **Primary Key Type**, select **Select Primary Key Column(s)**. Notice that the **EMPLOYEE\_ID (Number)** column is automatically selected for **Primary Key Column 1**. Click **Next >**.



- h. For **Source Type**, accept the default **Existing trigger** and click **Next >**.



- i. Accept the defaults and click **Next >**.



- j. Accept the default for Buttons and click **Next >**.

Create Form on Table

Buttons

Identify the process options and button display text for the form. For example, to prevent users from being able to delete from the form, choose **No** for the delete button option.

|                     |               |     |
|---------------------|---------------|-----|
| Cancel Button Label | Cancel        | (?) |
| Show Create Button  | Yes           | (?) |
| Create Button Label | Create        | (?) |
| Show Save Button    | Yes           | (?) |
| Save Button Label   | Apply Changes | (?) |
| Show Delete Button  | Yes           | (?) |
| Delete Button Label | Delete        | (?) |

< Cancel Next >

- k. Select the **Employee List** list view page (Page 201) for both **Branch here on Submit** and **Branch here on Cancel**, and click **Next >**.

Create Form on Table

Branching

Select the pages to branch to after the page processing is submitted or cancelled.

|                         |     |     |
|-------------------------|-----|-----|
| * Branch here on Submit | 201 | (?) |
| * Branch here on Cancel | 201 | (?) |

< Cancel Next >

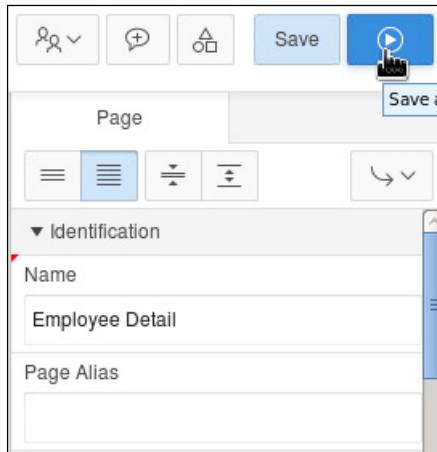
I. Click **Create**.

Create Form on Table

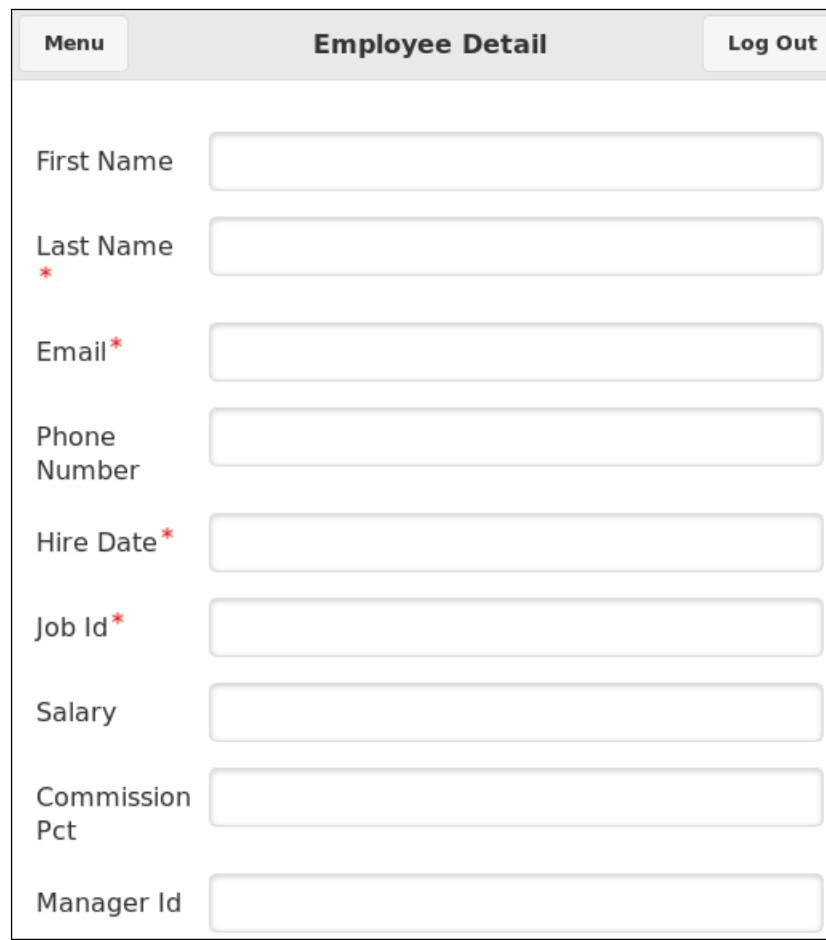
You have requested to create a form on a table page with the following attributes. Please confirm your selections.

|                      |                  |
|----------------------|------------------|
| Application          | 1                |
| Page                 | 204              |
| Page Name            | Employee Detail  |
| Region Title         | Employee Detail  |
| Region Template      | Plain (No Title) |
| Table / View Owner   | OEHR             |
| Table / View Name    | EMPLOYEES        |
| Primary Key Column 1 | EMPLOYEE_ID      |
| Primary Key Column 2 |                  |

< Cancel Create

m. To run the page, click the **Save and Run Page** icon.

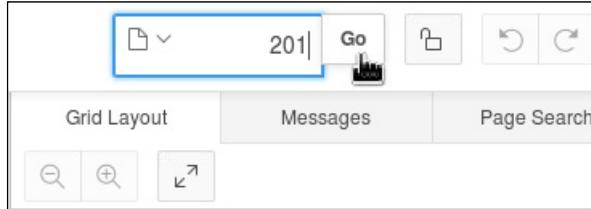
- n. You will notice that there is no data on the Employee Detail page. You will have to link the **Employee List** list view page to the **Employee Detail** form.



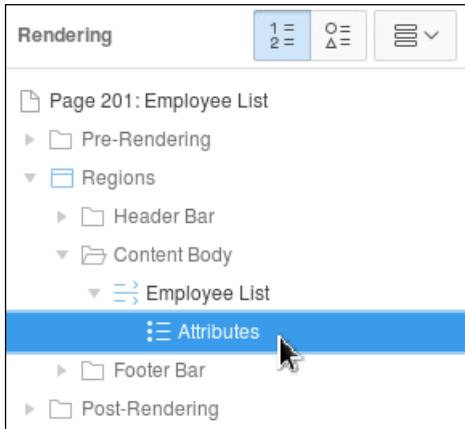
The screenshot shows a web-based form titled "Employee Detail". At the top, there are three buttons: "Menu", "Employee Detail", and "Log Out". Below the title, there are nine input fields, each with a label and a red asterisk indicating it is required:

- First Name
- Last Name\*
- Email\*
- Phone Number
- Hire Date\*
- Job Id\*
- Salary
- Commission Pct
- Manager Id

- o. Go back to the **Page Designer** window. In the Page Finder field, enter the **Employee List** page number (Page 201) and click **Go**.



- p. In the Rendering tab, select **Regions > Content Body > Employee List > Attributes**.

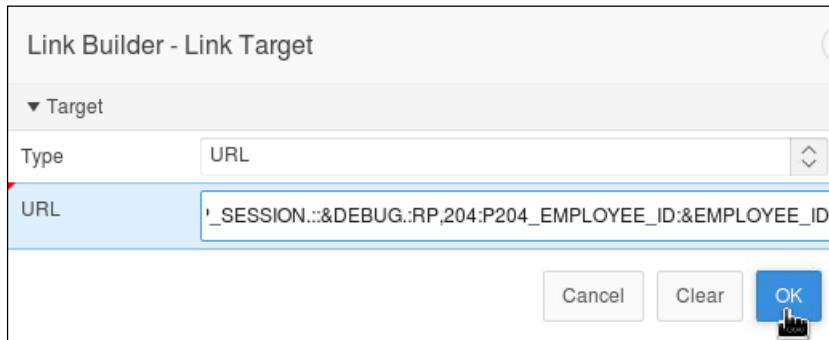


- q. Click the **No Link Defined** button under **Link Target**.

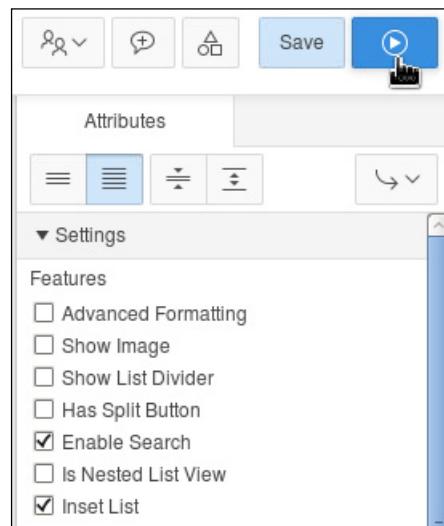
A screenshot of a configuration window titled '▼ Settings'. It contains several sections: 'Features' (checkboxes for Advanced Formatting, Show Image, Show List Divider, Has Split Button, Enable Search, Is Nested List View, and Inset List, with 'Enable Search' and 'Inset List' checked); 'Text Column' (dropdown set to 'LAST\_NAME'); 'Supplemental Information Column' (dropdown set to '- Select -'); 'Counter Column' (dropdown set to '- Select -'); 'Link Target' (dropdown set to 'No Link Defined' with a small icon next to it); and 'Search Type' (dropdown set to 'Server: Like & Ignore Case'). A red box highlights the 'Link Target' dropdown.

- r. Select the **Type** as **URL** and enter the following URL (also located in /home/oracle/labs/labs/lab\_06\_04.txt) and click **OK**.

```
f?p=&APP_ID.:204:&APP_SESSION.::&DEBUG.:RP,204:P204_EMPLOYEE_ID:&EMPLOYEE_ID.
```



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



- t. On the Employee List page, click any **Employee Name** and note that it is linked to the Employee Detail page and the employee details are populated.

| Menu | Employee List   | Log Out   |
|------|---|---|
|      | <input type="text"/>  |   |
|      | <b>King</b>  |    |
|      | <b>Kochhar</b>  |    |
|      | <b>De Haan</b>  |    |
|      | <b>Hunold</b>   |    |
|      | <b>Ernst</b>  |    |
|      | <b>Austin</b>   |    |
|      | <b>Pataballa</b>  |    |
|      | <b>Lorentz</b>  |    |
|      | <b>Greenberg</b>  |   |
|      | <b>Faviet</b>   |  |

| Employee Detail |              |
|-----------------|--------------|
| First Name      | Steven       |
| Last Name<br>*  | King         |
| Email*          | SKING        |
| Phone Number    | 515.123.4567 |
| Hire Date*      | 1987-06-17   |
| Job Id*         | AD_PRES      |
| Salary          | 24000        |
| Commission Pct  |              |
| Manager Id      |              |

- u. Click **Cancel** and you will be redirected to the **Employee List** page.

Employee Detail

|                |              |
|----------------|--------------|
| Email*         | SKING        |
| Phone Number   | 515.123.4567 |
| Hire Date*     | 1987-06-17   |
| Job Id*        | AD_PRES      |
| Salary         | 24000        |
| Commission Pct |              |
| Manager Id     |              |
| Department Id  | 90           |

**Cancel** **Delete** **Apply Changes**

- v. Go back to the **Page Designer** window and click the **Application 1** breadcrumb.



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

**Chapter 7**

## Practices for Lesson 7: Overview

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### Practices Overview

There are three practices in this lesson. In these practices, you work with Pages and Regions, create a Global Page for the application, and modify Mobile Application's Home Page.

## Practice 7-1: Creating and Modifying Pages and Regions

### Overview

In this practice, you create a report region on a Products page 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**. Set the page number as 11. Create a new tab called **Products** by using the existing tab set for this page.
2. Create a new report region called **List of Products** on the Products page. Use a Classic Report and display all the rows in the `PRODUCTS_INFORMATION` table. Run the report after it is created.
3. Modify the report so that it is a subregion under 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. Log 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` user is created.

If you haven't completed **Practice 6-4**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_06_04.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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 create a global page for desktop application and check whether it was added as global page for Desktop UI in Application Properties and then add a Static HTML region 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. Create a Global desktop page in the GlobalMart Management Tool application and review it in the 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. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 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 7-3: Modifying the Mobile Home Page

---

### Overview

In this practice, you will modify the Mobile Home 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. Modify the Mobile Home page.

### Catch Up

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

- a. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 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.

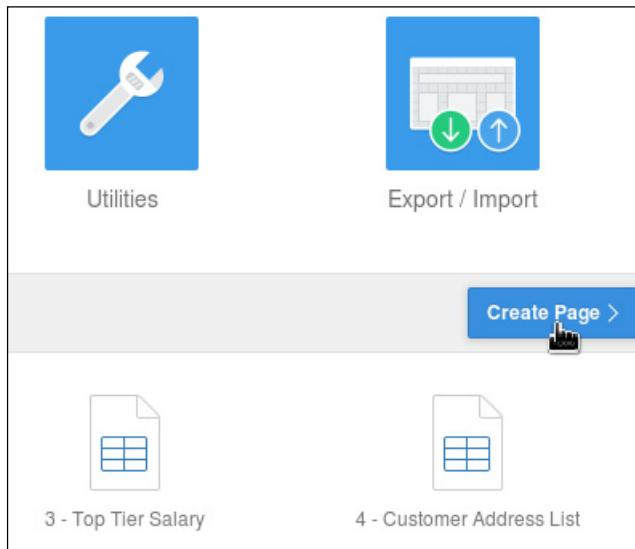
## Solution 7-1: Creating and Modifying Pages and Regions

### Overview

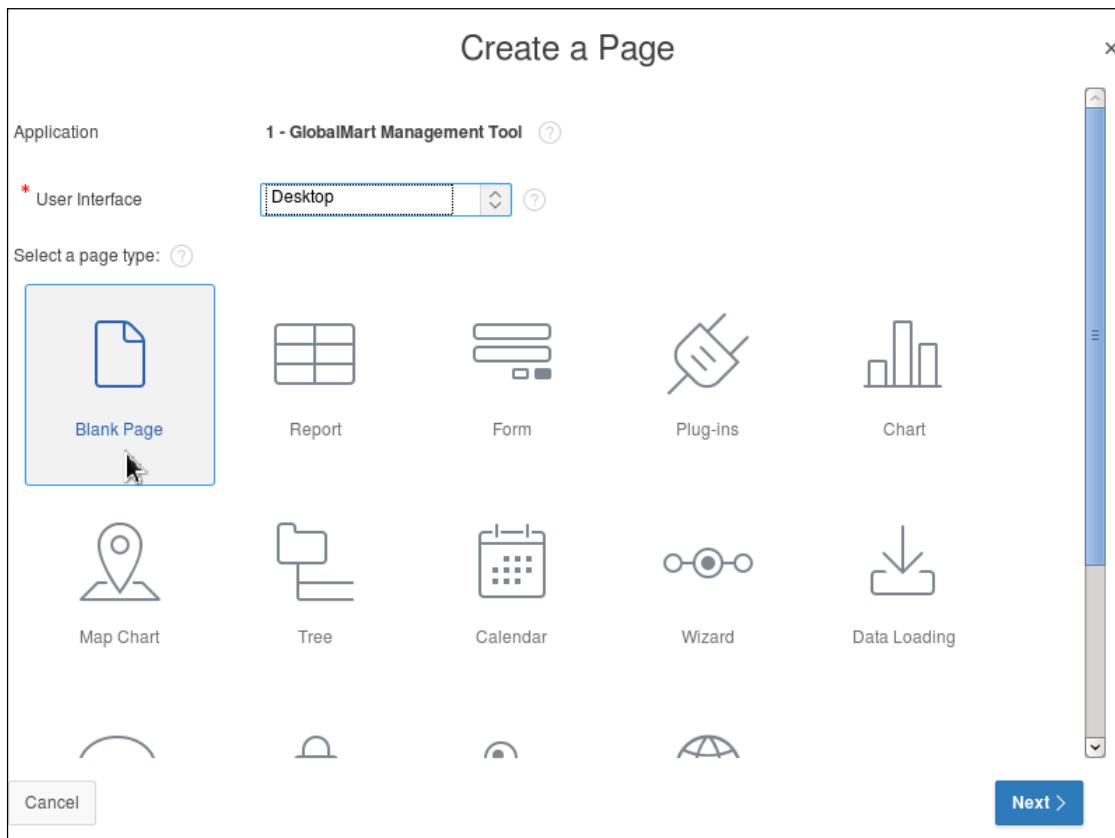
In this practice solution, steps are provided for creating and modifying pages and regions in the GMT application.

### Steps

1. Create a blank page called **Products** with a region called **Products**. Set the page number as 11. 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**.



- c. Enter 11 for **Page Number** and Products for **Name**. Click the **Optional Static Content Regions** pull-down menu and enter Products for **Region 1**. Click **Next >**.

Create a Blank Page

Page Attributes

\* Page Number: 11

\* Name: Products

\* Page Mode: Normal

Breadcrumb: - don't use breadcrumbs on page -

Optional Static Content Regions

Region 1: Products

2:

3:

4:

< Cancel Next >

- d. Select the **Create a new navigation menu entry** option. Ensure that the **New Navigation Menu Entry** text field is set to **Products** and the **- No parent selected -** option is selected for **Parent Navigation Menu Entry**. Click **Next >**.

Page Attributes Navigation Menu Confirm

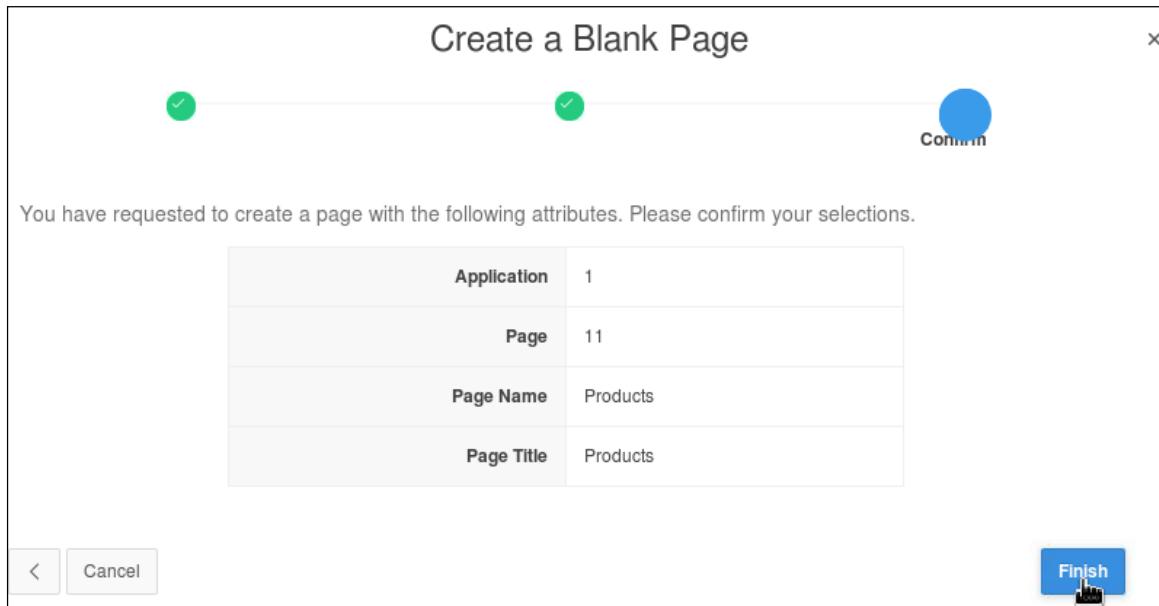
Navigation Preference:  Create a new navigation menu entry  Do not associate this page with a navigation menu entry  Identify an existing navigation menu entry for this page

\* New Navigation Menu Entry: Products

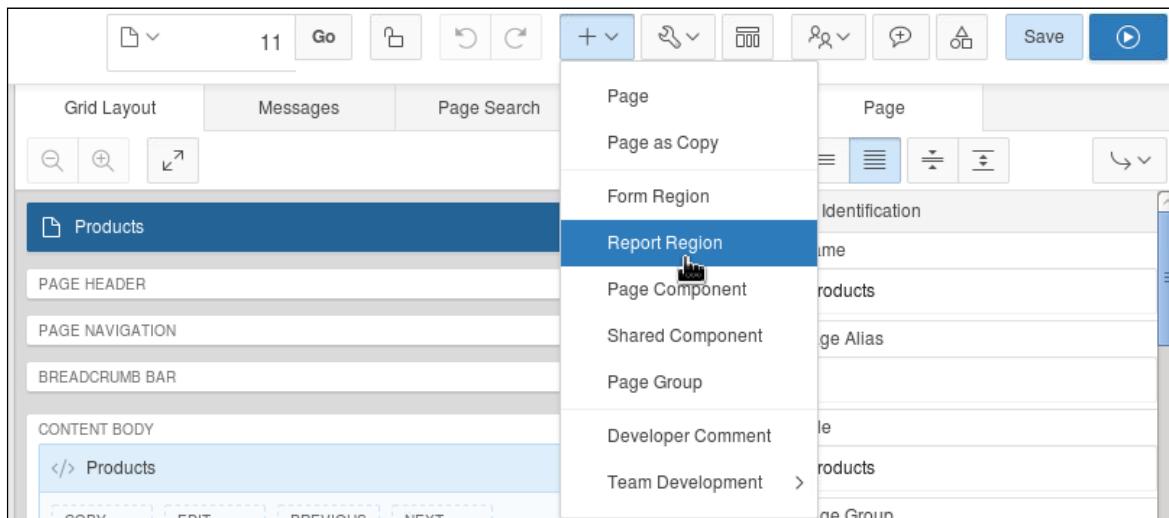
Parent Navigation Menu Entry: - No parent selected -  
Home  
Customers

< Cancel Next >

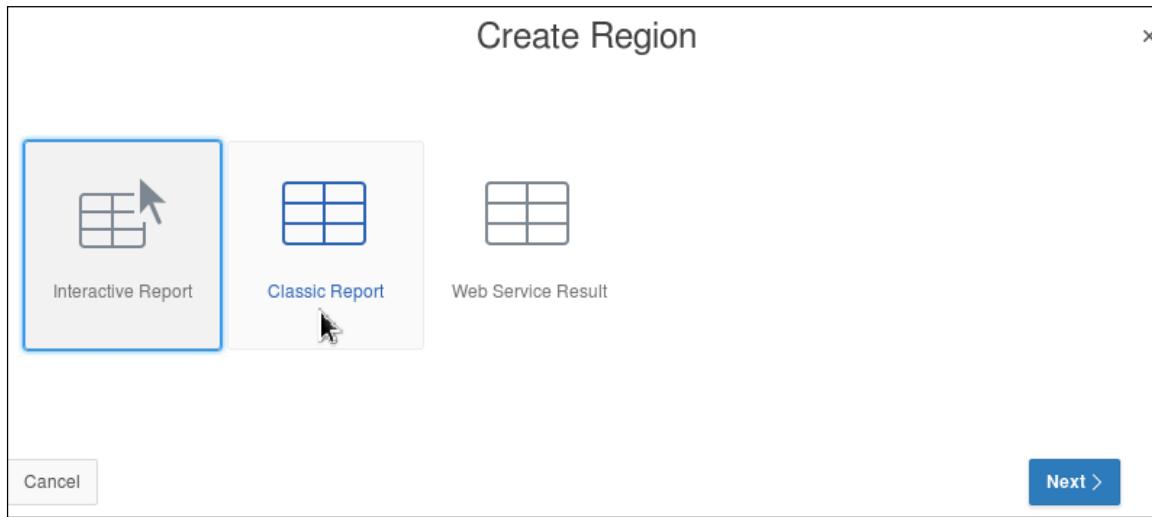
- e. Click **Finish**.



2. Create a new report region called **List of Products** on the Products page. Use a Classic Report and display all the rows in the PRODUCTS\_INFORMATION table. Run the report after it is created.
- a. On the Page Designer page, click **Create < + >** and select **Report Region**.



- b. Select the **Classic Report** option.



- c. Enter Products List for **Title** and click **Next >**.

The screenshot shows a 'Create Region' dialog box. The 'Region Type' is set to 'Report'. The 'Title' field contains 'Products List'. The 'Region Template' is set to 'Standard'. The 'Parent Region' dropdown is set to '- Select a Parent -'. The 'Display Point' is set to 'Page Template Body'. The 'Sequence' is set to 50. Below the form are '<', 'Cancel', and 'Next >' buttons. The 'Next >' button is highlighted with a blue border and a cursor arrow.

- d. Select the **Source Type** as **Table**. Select **PRODUCT\_INFORMATION (table)** from the **Table / View Name** drop-down list. Notice that all the columns are selected by default. Click **Next >**.

Create Region

Source

Source Type  Table  SQL Query

\* Table / View Owner: OEHR

\* Table / View Name: PRODUCT\_INFORMATION (table)

\* 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)                   | ↓ |

< Cancel Create Region Next >

- e. Accept the defaults and click **Create Region**.

Create SQL Report

Report Attributes

The attributes on this page determine the position and the look of your report.

Report Template: template: 42. Standard

Break Columns: - No Break Control -

Rows per Page: 15

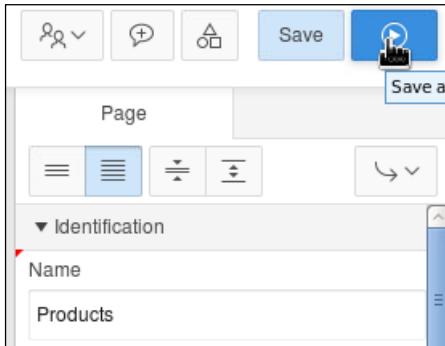
Column Heading Sorting: No

CSV Output: No

Link Label: [empty field]

< Cancel Create Region Next >

- f. Test your page by clicking the **Save and Run Page** icon.



- g. The report is displayed. (**Note:** If you had to relogin, the Home page is displayed. Click the **Products** tab to view the report.) Click the **Edit Page 11** link on the Developer toolbar.

Products

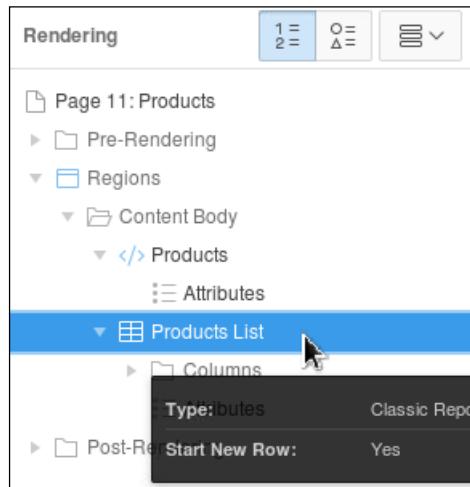
Products List

| Product Id | Product Name | Product Description                          | Category Id | Weight Class | Warranty Period | Supplier Id | Product Status | List Price | Min Price | Catalog Url   |
|------------|--------------|--|-------------|--------------|-----------------|-------------|----------------|------------|-----------|---|
| 1781       | CDW 20/48/E  | CD Writer, read 48x, write 20x               | 17          | 2            | +00-09          | 102060      | orderable      | 233        | 206       | <a href="http://www.supplier102060.com/cat/hw/p1781.html">http://www.supplier102060.com/cat/hw/p1781.html</a> |
| 2264       | CDW 20/48/l  | CD-ROM drive: read 20x, write 48x (internal) | 17          | 2            | +00-09          | 102060      | orderable      | 223        | 181       | <a href="http://www.supplier102060.com/cat/hw/p2264.html">http://www.supplier102060.com/cat/hw/p2264.html</a> |
| 2260       | DFD 1.44/3.5 | Dual Floppy Drive - 1.44 MB - 3.5            | 17          | 2            | +00-06          | 102062      | orderable      | 67         | 54        | <a href="http://www.supplier102062.com/cat/hw/p2260.html">http://www.supplier102062.com/cat/hw/p2260.html</a> |
| 2266       | DVD 12x      | DVD-ROM drive: speed 12x                     | 17          | 3            | +01-00          | 102099      | orderable      | 333        | 270       | <a href="http://www.supplier102099.com/cat/hw/p2266.html">http://www.supplier102099.com/cat/hw/p2266.html</a> |

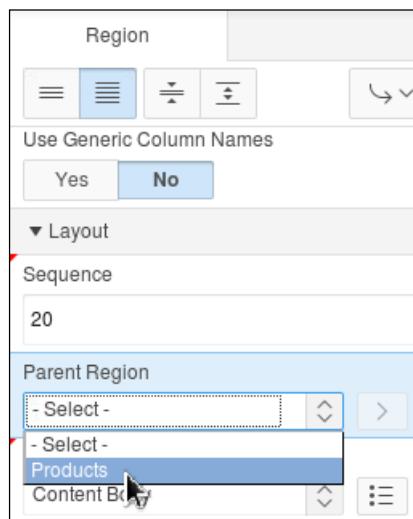
e Application 1 Edit Page 11 Session View Debug Debug Show Grid Quick Edit Theme Roller http://www.supplier102099.com

3. Modify the report so that it is a subregion under 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.

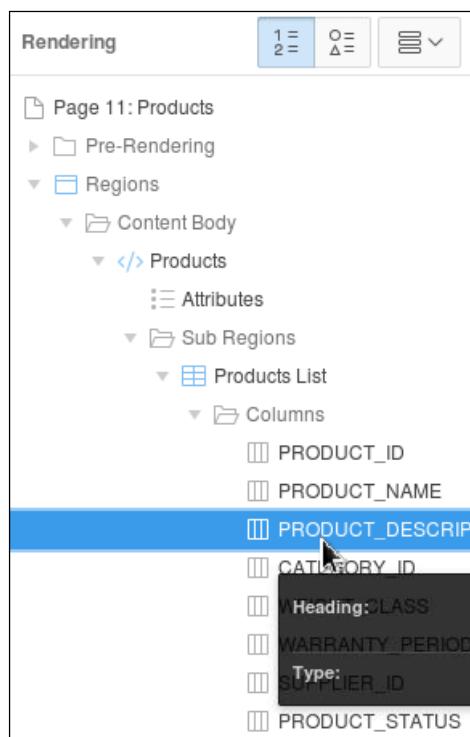
- a. In the Page Designer page, select **Regions > Content Body > Products List**.



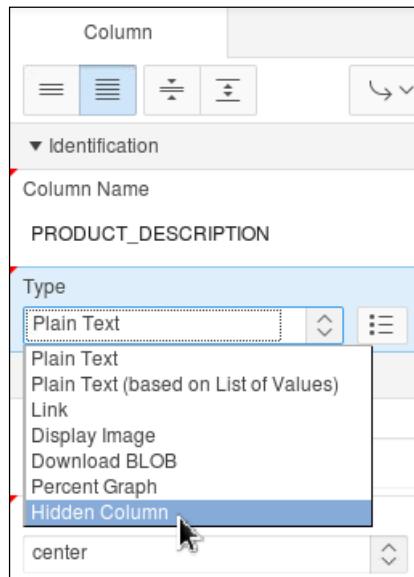
- b. Select the **Parent Region** under the Layout tab as **Products**. Notice that the Products List region becomes a subregion of Products in the Page Designer view. Alternatively, you can use the drag-and-drop feature.



- c. Select **Regions > Content Body > Products > Sub Regions > Products List > Columns > PRODUCT\_DESCRIPTION.**



- d. Select **Type**, under the Identification tab, as **Hidden Column**.



- e. Ctrl-select the following columns:

- 1) WEIGHT\_CLASS
- 2) WARRANTY\_PERIOD
- 3) SUPPLIER\_ID
- 4) MIN\_PRICE

**5) CATALOG\_URL**

The screenshot shows the Oracle ADF Faces Column Editor interface. At the top, there are filtering and sorting controls. Below them is a tree view of page components:

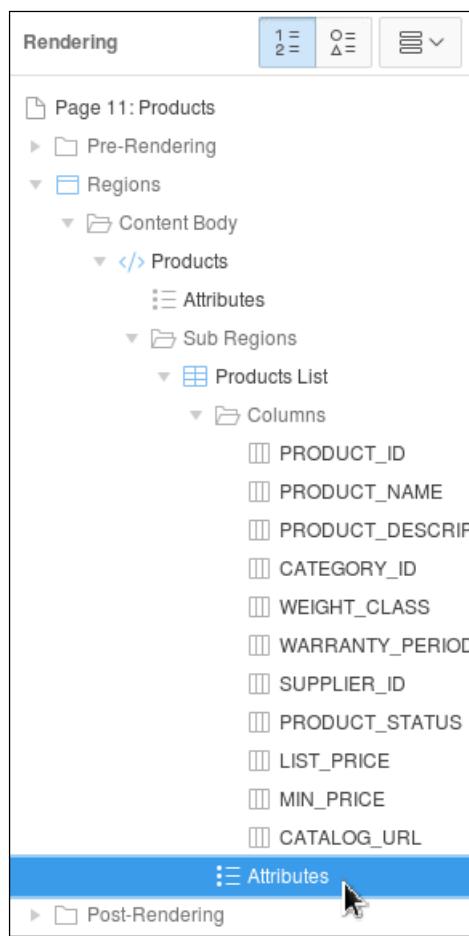
- Page 11: Products
- Pre-Rendering
- Regions
  - Content Body
    - Products
      - Attributes
      - Sub Regions
        - Products List
      - Columns
        - PRODUCT\_ID
        - PRODUCT\_NAME
        - PRODUCT\_DESCRIP
        - CATEGORY\_ID
        - WEIGHT\_CLASS
        - WARRANTY\_PERIOD
        - SUPPLIER\_ID
        - PRODUCT\_STATUS
        - LIST\_PRICE
        - MIN\_PRICE
        - CATALOG\_URL** (highlighted)
      - Attributes

- f. In the Columns tab, select **Type** (under the Identification tab) as **Hidden Column**.

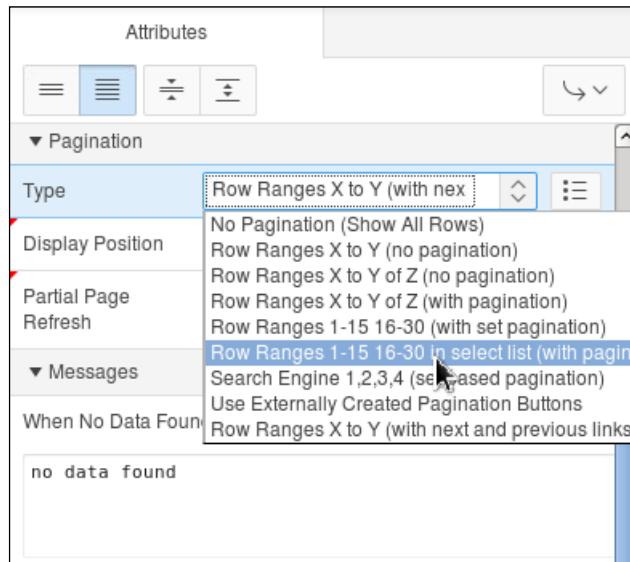
The screenshot shows the 'Type' selection dialog for a column. It has tabs for 'Identification' and 'Presentation'. The 'Identification' tab is selected, showing a list of options:

- Plain Text (selected)
- Plain Text (based on List of Values)
- Link
- Display Image
- Download BLOB
- Percent Graph
- Hidden Column** (highlighted)

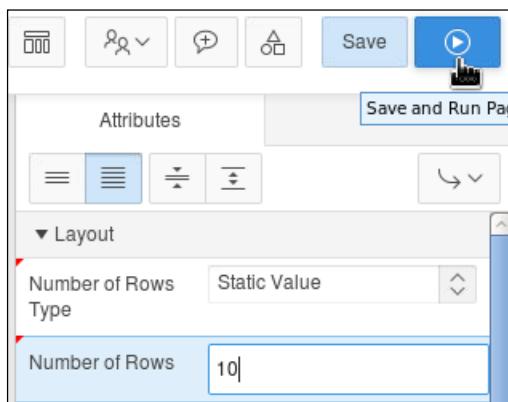
- g. Select **Regions > Content Body > Products > Sub Regions > Products List > Attributes.**



- h. Select **Type**, under the Pagination tab, and choose **Row Ranges 1-15 16-30 in select list (with pagination)**.



- i. In the **Number of Rows** field, under Layout, enter 10. Click the **Save and Run Page** icon.



- j. Notice that the List of Products region is now contained within the Products parent region, that only the columns that you specified are shown, and that the pagination is now in a select list. Click the **Application 1** link on the Developer toolbar.

The screenshot shows the Oracle Application Express application running. On the left, a sidebar menu has 'Products' selected. The main content area is titled 'Products' and contains a sub-section 'Products List'. Below it is a table with the following data:

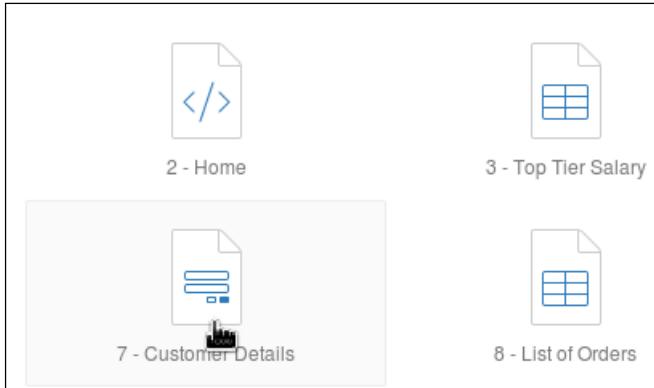
| Product Id | Product Name    | Category Id | Product Status | List Price |
|------------|-----------------|-------------|----------------|------------|
| 1781       | CDW 20/48/E     | 17          | orderable      | 233        |
| 2264       | CDW 20/48/I     | 17          | orderable      | 223        |
| 2260       | DFD 1.44/3.5    | 17          | orderable      | 67         |
| 2266       | DVD 12x         | 17          | orderable      | 333        |
| 3077       | DVD 8x          | 17          | orderable      | 274        |
| 2259       | FD 1.44/3.5     | 17          | orderable      | 39         |
| 2261       | FD 1.44/3.5/E   | 17          | orderable      | 42         |
| 3082       | Modem - 56/90/E | 17          | orderable      | 81         |
| 2270       | Modem - 56/90/I | 17          | orderable      | 66         |

At the bottom, the developer toolbar shows various icons and links, including 'Home', 'Application 1' (which is highlighted), 'Edit Page 11', 'Session', 'View Debug', 'Debug', 'Show Grid', 'Quick Edit', 'Theme Roller', and a gear icon.

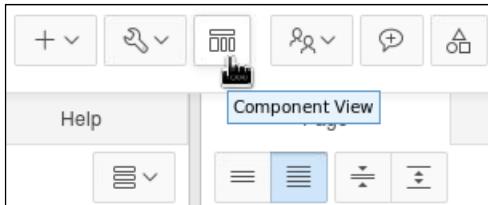
4. Create a **Hint** sidebar region on the right side of the Customer Details page that includes the following HTML code (located in /home/oracle/labs/labs/lab\_07\_01\_01.txt):

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

- a. You want to make some changes to the Customer Details page. Click the **Customer Details** page.



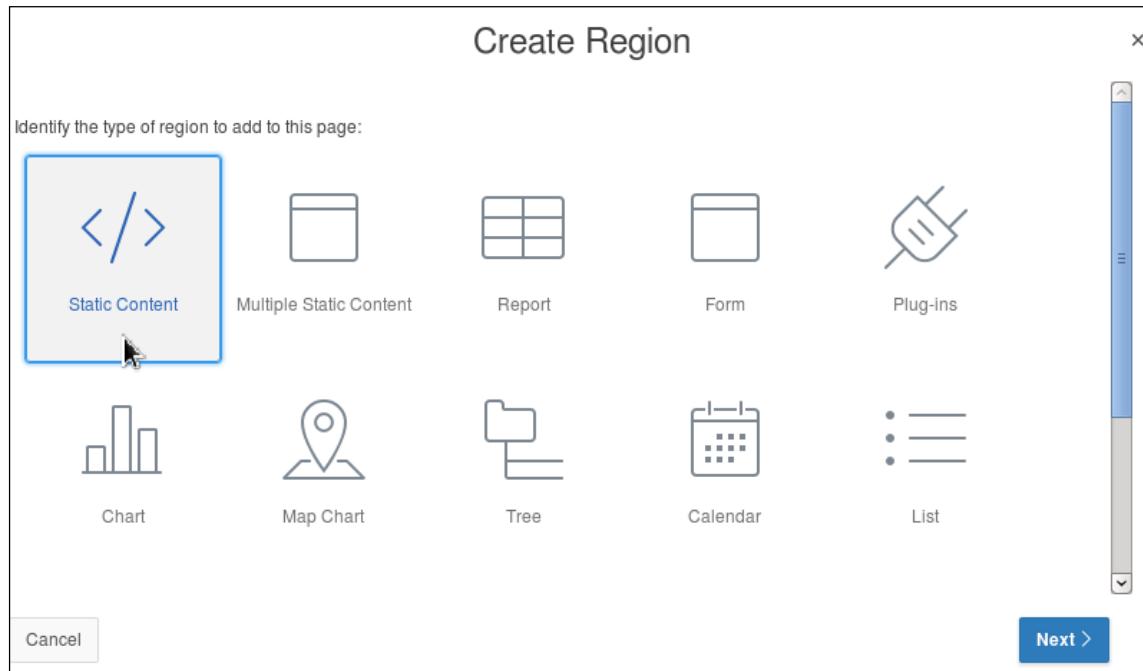
- b. Switch to the Component View by clicking the **Component View** icon <



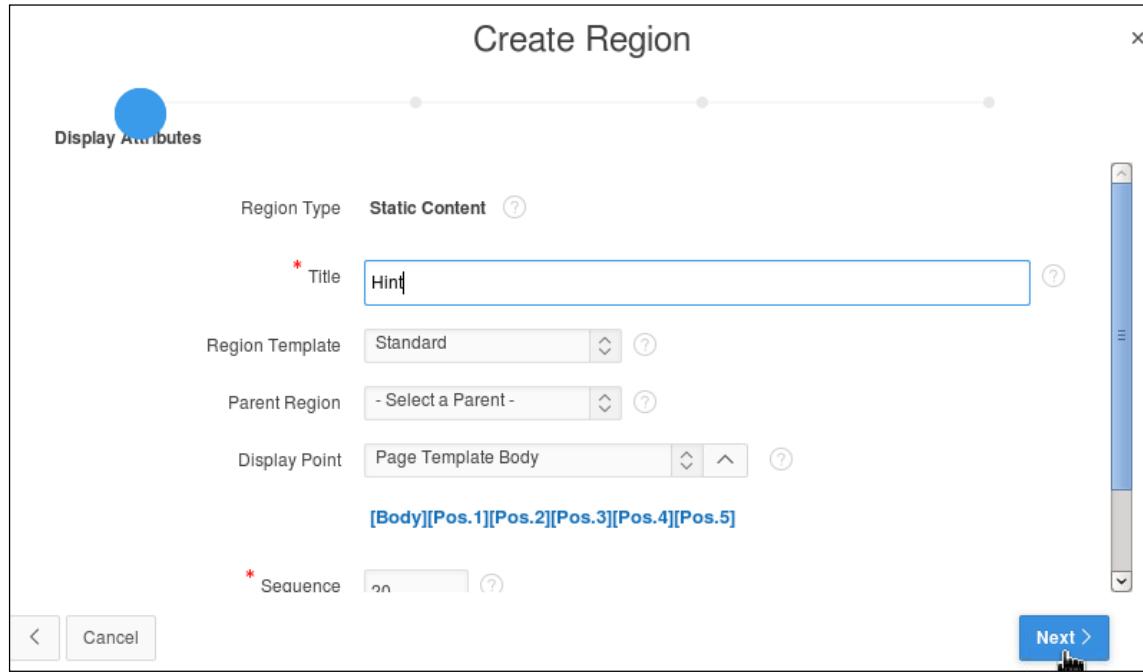
- c. Under Regions, click the **Create** icon.

| Region           | Button        | Description                                    | Condition   |
|------------------|---------------|--|-------------|
| Customer Details | Cancel        | Redirect to page 5                             |             |
| Customer Details | Delete        | Run: javascript:apex.confirm(htmldb_delete_me) | Conditional |
| Customer Details | Apply Changes | Submit as "SAVE"                               | Conditional |
| Customer Details | Create        | Submit as "CREATE"                             | Conditional |

- d. For the region type, select the **Static Content** option.



- e. For Display Attributes, enter Hint for Title and click **Next >**.



- f. In the **Enter Region Source**, enter the following (located in /home/oracle/labs/labs/lab\_07\_01\_01.txt) and click **Next >**.

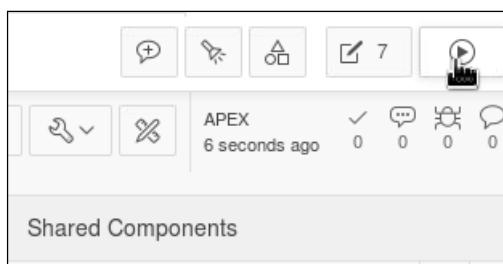
Use this page to enter and <br> maintain customer information.

The screenshot shows the 'Create Region' dialog with the 'Source' tab selected. At the top, there is a green checkmark icon and a blue circular 'Source' button. Below the tabs, there is a text area labeled 'Enter Region Source:' with a question mark icon. The text area contains the instruction: '1 Use this page to enter and <br> maintain customer information.' The text area has a toolbar above it with icons for back, forward, search, and text styling. On the right side of the dialog, there is a vertical sidebar with a gear icon and a scroll bar. At the bottom left are 'Items' and 'Cancel' buttons. At the bottom right are 'Next >' and a small 'X' button.

- g. Select **HTML** from the **Output As** drop-down list and click the **Create Region** button.

The screenshot shows the 'Create Region' dialog with the 'Settings' tab selected. At the top, there are two green checkmark icons and a blue circular 'Settings' button. Below the tabs, there is a dropdown menu labeled 'Output As' with 'HTML' selected. To the right of the dropdown is a help icon. At the bottom left are 'Cancel' and 'Create Region' buttons. At the bottom right are 'Next >' and a small 'X' button.

- h. Run the page by clicking the **Run Page** icon.

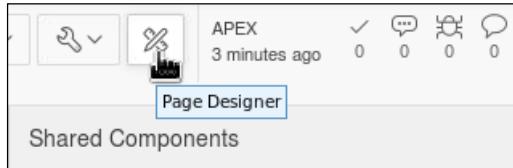


- i. Note that the Hint region is not displayed as a sidebar region on the right side of the page. You need to change the page template so that a sidebar is provided. Click the **Edit Page 7** link on the Developer toolbar.

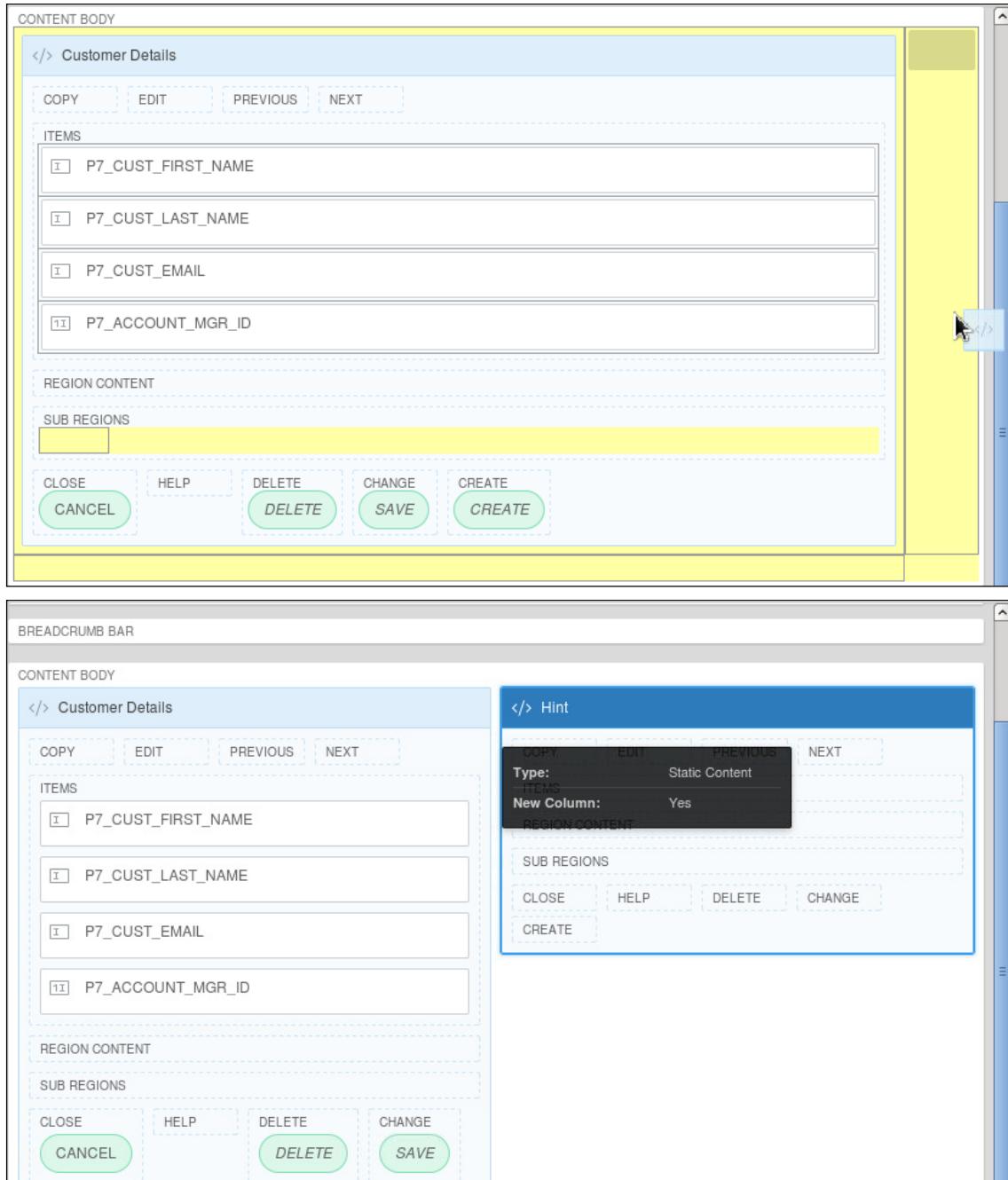
The screenshot shows a web-based application interface. On the left is a vertical navigation bar with links for Home, Customers, and Products. The main content area has a title 'Customer Details'. It contains four input fields: 'Cust First Name' (marked with a red asterisk), 'Cust Last Name' (marked with a red asterisk), 'Cust Email', and 'Account Mgr Id'. Below these fields are two buttons: 'Cancel' and 'Create'. Underneath the input fields is a section titled 'Hint' containing the text: 'Use this page to enter and maintain customer information.' At the bottom of the page is a footer with links for Home, Application 1, Edit Page 7, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a help icon. The 'Edit Page 7' link is highlighted with a blue border.

**Note:** If you see values in the Customer Details field, log out of the application and run the page again. The value appears in these fields due to values in the session state, which is explained in the lesson titled “Understanding Session State.”

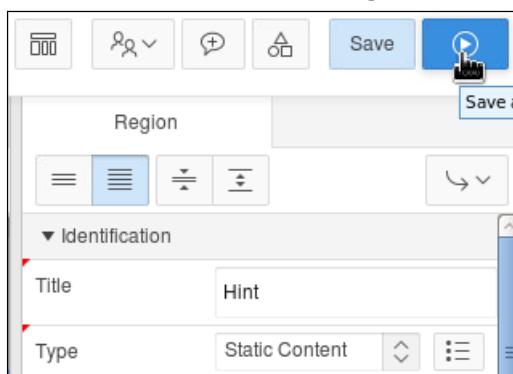
- j. Switch back to the Page Designer view. Click the **Page Designer** icon <>.



- k. Drag the **Hint** region to the right of the **Customer Details** region.



- I. Run the page again and you see that the Hint is now displayed in the right side area. Click the **Save and Run Page** icon.



- m. However, you would like the Hint region to occupy less space in the page. Click **Show Grid** on the Development toolbar.

A screenshot of an Oracle ADF application. On the left, there is a form titled 'Customer Details' with fields for 'Cust First Name', 'Cust Last Name', 'Cust Email', and 'Account Mgr Id'. On the right, there is a 'Hint' region containing the text 'Use this page to enter and maintain customer information.' At the bottom of the screen, the Oracle ADF Development toolbar is visible, with the 'Show Grid' button highlighted by a red box. Other buttons in the toolbar include 'Edit Page 7', 'Session', 'View Debug', 'Debug', 'Quick Edit', 'Theme Roller', and a gear icon.

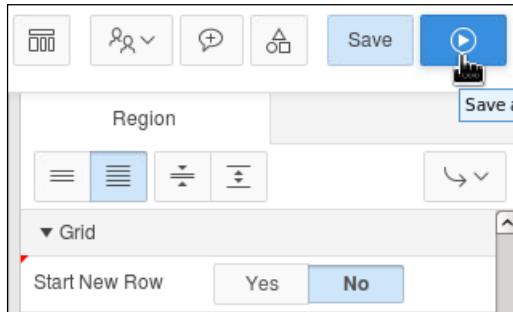
- n. Notice that there are 12 vertical lines (column span) behind the regions. Customer Details and Hint region occupies 6 column span each. You modify the Hint region such that it takes only 2 column span. Click the **Edit Page 7** link on the Developer toolbar.

The screenshot shows a page titled "Customer Details". On the left, there is a form with four fields: "Cust First Name" (with a red asterisk), "Cust Last Name" (with a red asterisk), "Cust Email", and "Account Mgr Id". Below the form are two buttons: "Cancel" and "Create". To the right of the form is a "Hint" region containing the text: "Use this page to enter and maintain customer information." The entire page has a light pink background. At the bottom, there is a toolbar with various icons and labels like "Region 1", "Edit Page 7", "Session", "View Debug", "Debug", "Hide Grid", "Quick Edit", "Theme Roller", and a gear icon.

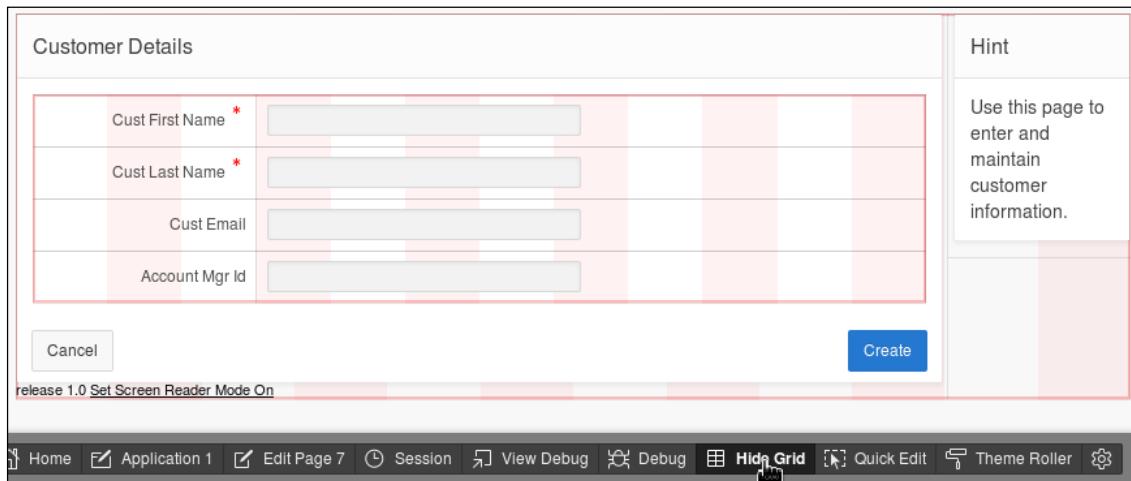
- o. Ensure that the **Hint** region is selected in the Region tab. Set the **Column Span** field, under the Grid section, as **2**.

The screenshot shows the "Region" dialog box. Under the "Grid" section, the "Column Span" dropdown menu is open, showing options: Automatic, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12. The option "2" is highlighted with a blue selection bar. Other sections of the dialog include "Start New Row" (Yes/No), "Column" (Automatic), "New Column" (Yes/No), "Column CSS Classes" (list of numbers 1 through 12), "Column Attributes", "Advanced" (Static ID, Custom Attributes), and "Custom Attributes".

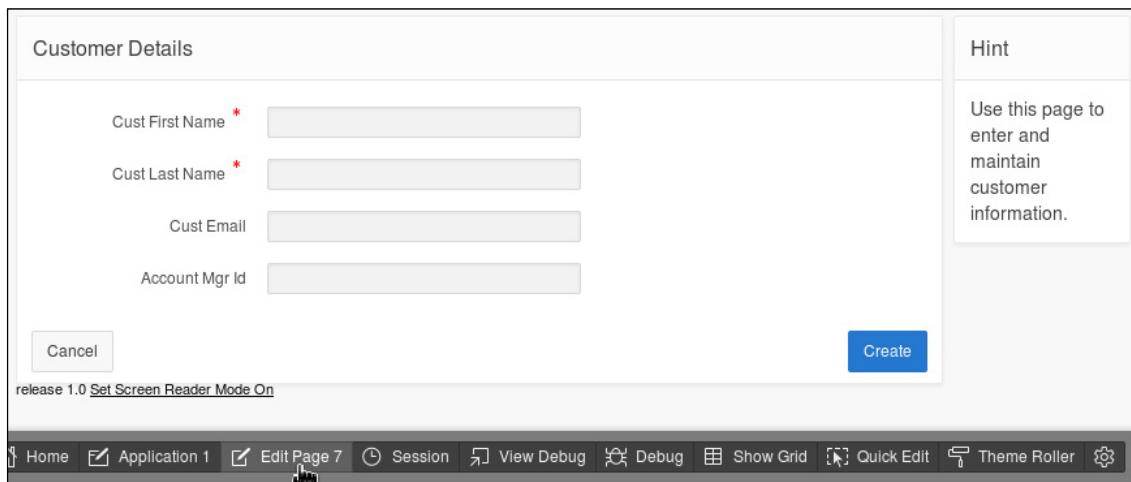
- p. Click the **Save and Run Page** icon.



- q. Note that Hint is now displayed in the right side of the page occupying lesser space than before. Click the **Hide Grid** link on the Developer toolbar.



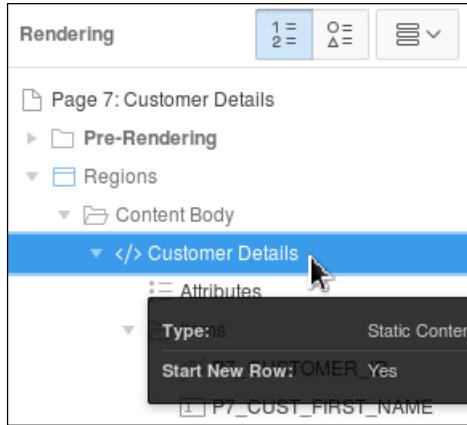
- r. Click the **Edit Page 7** link on the Developer toolbar.



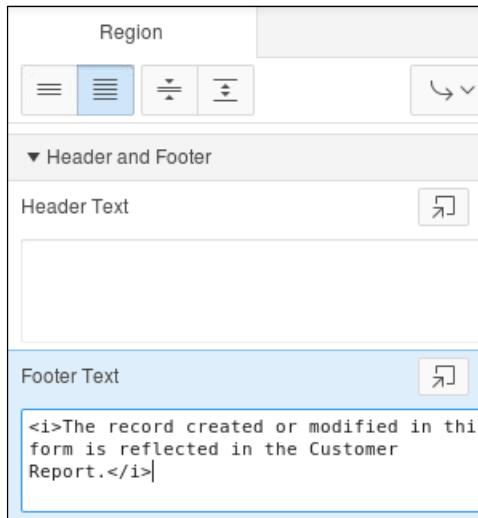
5. Add a footer to the Customer Details region on the Customer Details page so that the following message (located in /home/oracle/labs/labs/lab\_07\_01\_02.txt) appears at the bottom of the region when a user enters this page:

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

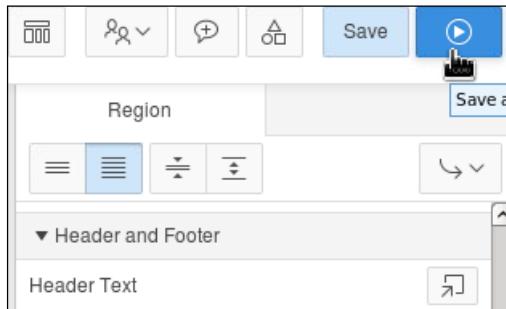
- a. Select **Regions > Content Body > Customer Details**.



- b. Copy the footer text (located in the /home/oracle/labs/labs/lab\_07\_01\_02.txt) and paste it into the **Footer Text** textbox.



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



- d. The footer text is displayed. Click the **Application 1** link on the Developer toolbar.

The screenshot shows a form titled "Customer Details". It contains four input fields: "Cust First Name" (with a red asterisk), "Cust Last Name" (with a red asterisk), "Cust Email", and "Account Mgr Id". Below the form is a note: "The record created or modified in this form is reflected in the Customer Report." At the bottom are "Cancel" and "Create" buttons. A "Hint" box on the right says: "Use this page to enter and maintain customer information." The developer toolbar at the bottom has several icons: Home, Application 1 (highlighted with a mouse cursor), Edit Page 7, Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a gear icon.

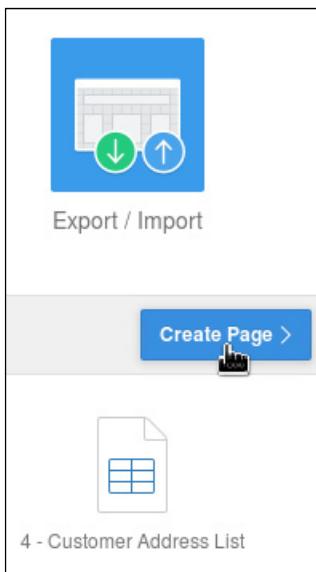
## Solution 7-2: Working with Global Pages

### Overview

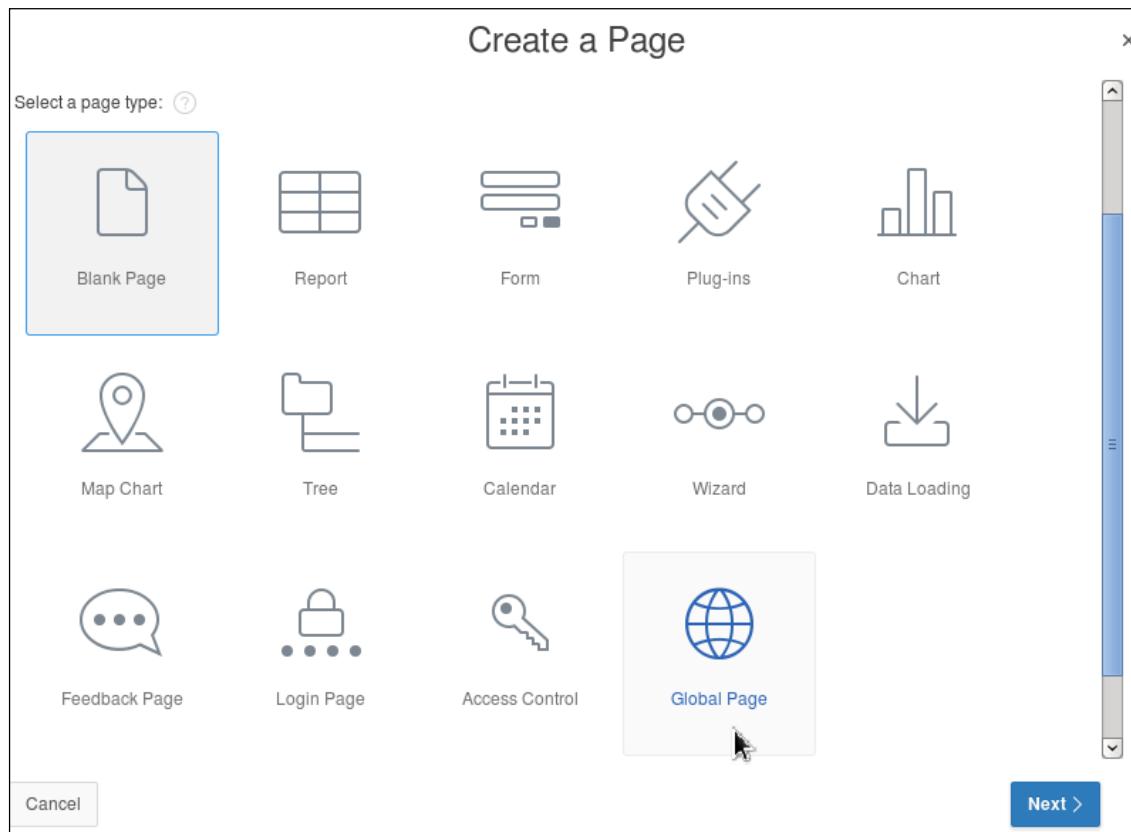
In this practice solution, steps are provided to create and work with a global page for the GMT desktop application.

### Steps

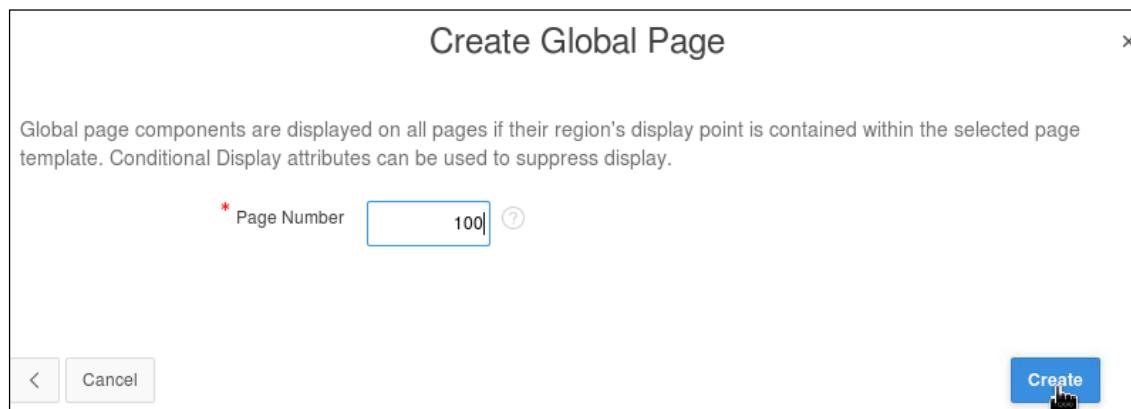
1. Create a Global desktop page in the GlobalMart Management Tool application and review it in the Application Properties.
  - a. Navigate to the **GlobalMart Management Tool** application home page and click **Create Page >**.



- b. Select **Global Page**. Make sure that **Desktop** is selected for **User Interface**.



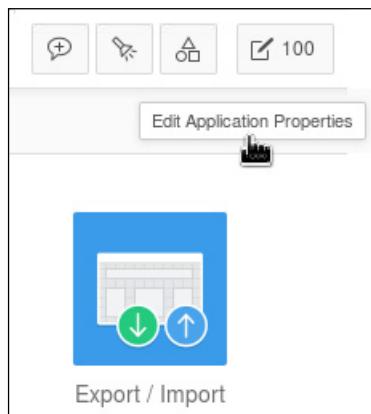
- c. Enter **Page Number** as 100. Click **Create**.



- d. The Global desktop page is created. To review if the Global page was added for the desktop user interface, click the **Application 1** breadcrumb. You are taken to the GMT application home page.



- e. Click **Edit Application Properties**.



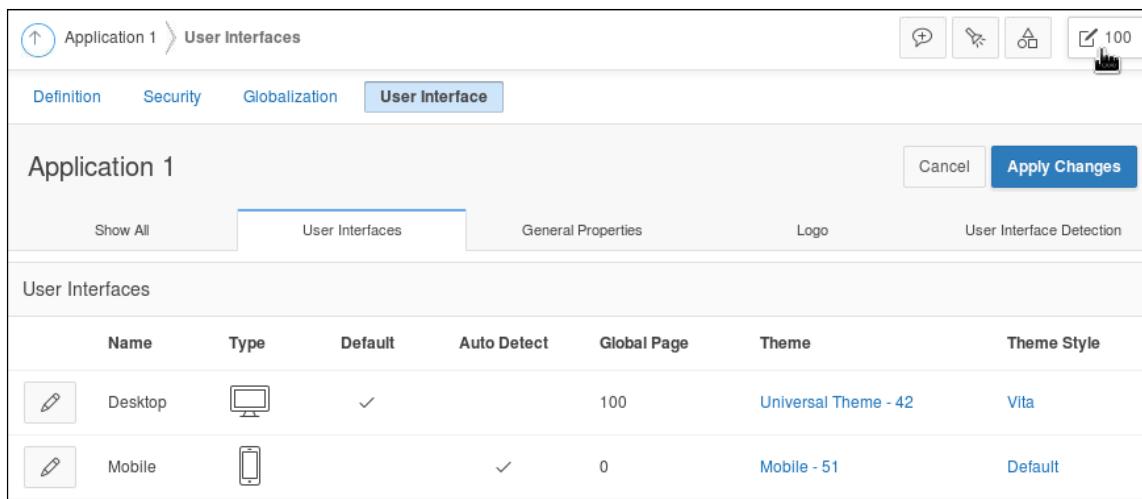
- f. Click the **User Interface** tab.



- g. Click the **User Interfaces** subtab.



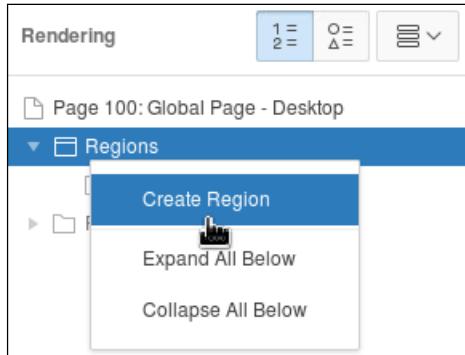
- h. Your Global desktop page has been assigned to the Desktop interface. Click the **Edit Page** icon in the upper-right corner.



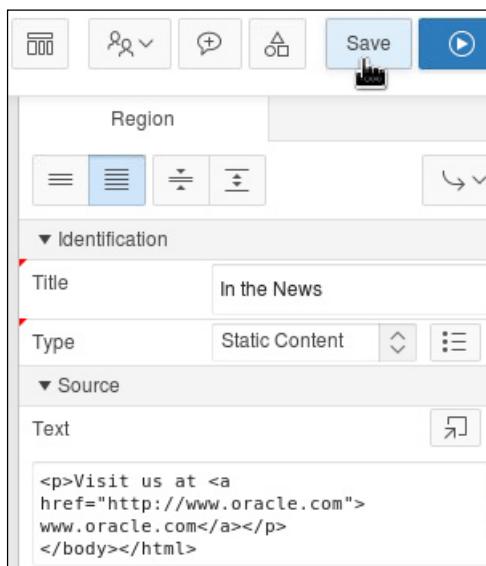
2. Add a Static HTML region to the Global Desktop page. Call the region as **In the News** on the Global page with the following code (located in /home/oracle/labs/labs/lab\_07\_02.txt):

```
<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>
```

- a. Right-click the **Regions** node and click **Create Region**.



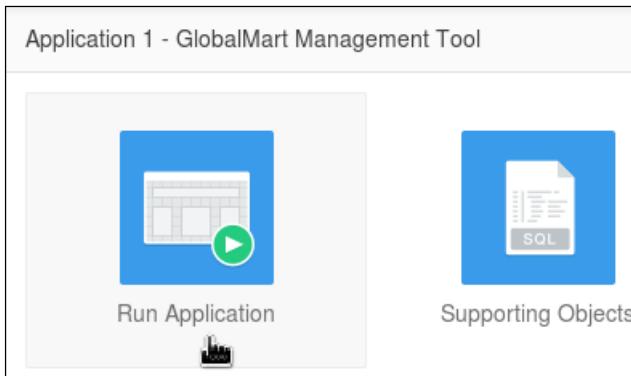
- b. In the Region tab, enter the following value for the respective fields and click the **Save** icon:
- 1) Identification > Title = In the News
  - 2) Source > Text = (Copy content from the /home/oracle/labs/labs/lab\_07\_02.txt)



- c. Click the **Application 1** breadcrumb.



- d. Click the **Run Application** button.



- e. The home page is displayed with the **In the News** region. Click the **Customers** tab.

A screenshot of the 'GlobalMart Management Tool' home page. On the left is a sidebar with three tabs: 'Home', 'Customers' (which is currently selected), and 'Products'. The main content area is titled 'Home' and contains sections for 'In the News' (with a link to 'www.oracle.com'), 'News and Events', and a footer note about screen reader compatibility.

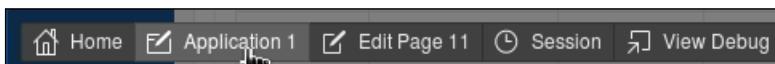
- f. You will notice that the **In the News** region appears on this page too. Click the **Products** tab.

The screenshot shows the GlobalMart Management Tool interface. On the left is a dark blue sidebar with three menu items: Home, Customers, and Products. The Products item is highlighted with a blue background and has a small hand cursor icon pointing at it. To the right of the sidebar is the main content area. At the top of the content area is a header with the text "In the News". Below this is a section titled "News and Events" containing the text "Visit us at [www.oracle.com](http://www.oracle.com)". At the bottom of the content area is a search bar with a dropdown arrow, a "Go" button, and some placeholder text. Below the search bar are three buttons labeled "Customer", "Cust First", and "Cust Last".

- g. The region appears here as well.

This screenshot is similar to the previous one, showing the GlobalMart Management Tool interface. The Products tab is selected in the sidebar. The main content area features the "In the News" region at the top, followed by the "News and Events" section with the oracle.com link. Below these sections, there is a new region titled "Products" which contains some placeholder text.

- h. Click the **Application 1** link on the Developer toolbar.



## Solution 7-3: Modifying the Mobile Home Page

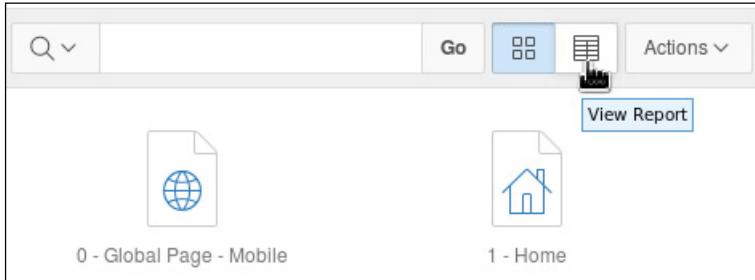
### Overview

In this practice solution, steps are provided for modifying the GMT Mobile Home page.

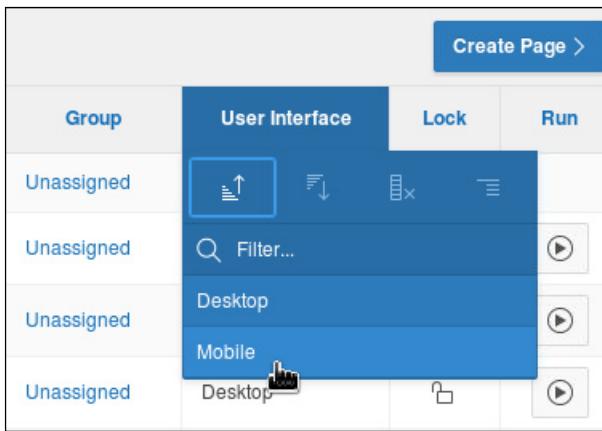
### Steps

1. Modify the Mobile Home page.

- a. Navigate to the GMT application home page and click **View Report <grid>**.



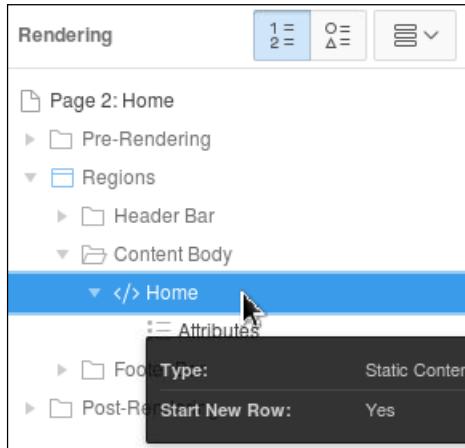
- b. Select **User Interface** and select **Mobile** to create a filter that will only display the mobile pages.



- c. Select the **Home** page.

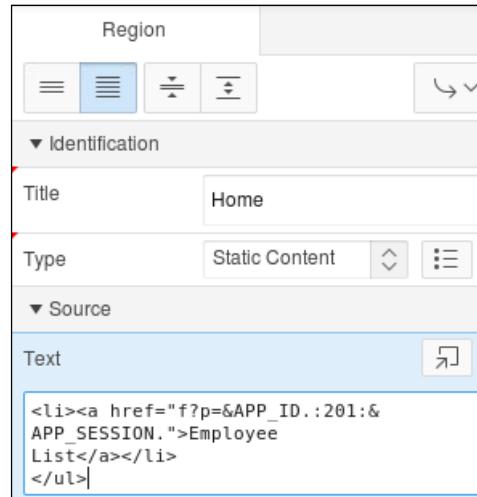
| User Interface = 'Mobile' |                      |              |
|---------------------------|----------------------|--------------|
| Page                      | Name                 | Updated      |
| 0                         | Global Page - Mobile | 46 hours ago |
| 2                         | Home                 | 46 hours ago |
| 201                       | Employee List        | 2 hours ago  |

- d. Select **Regions > Content Body > Home**.

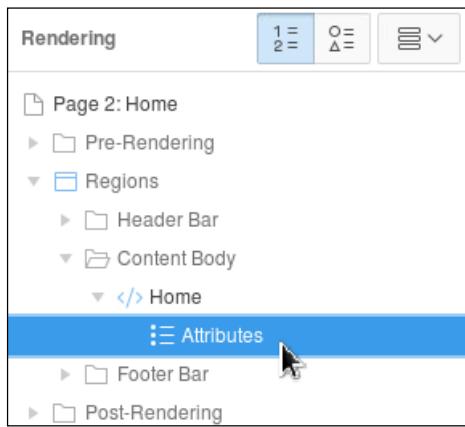


- e. In the **Text** field, under the **Source** tab, enter the following code. You can copy and paste the code from /home/oracle/labs/labs/lab\_07\_03.txt.

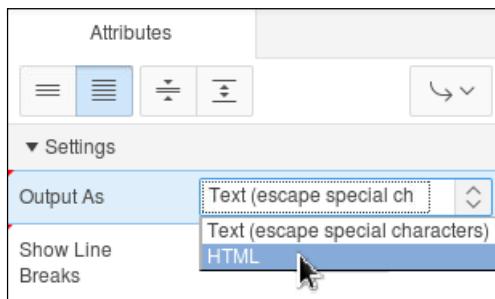
```
<ul>
<li><a href="f?p=&APP_ID.:201:&APP_SESSION.">Employee
List</a></li>
</ul>
```



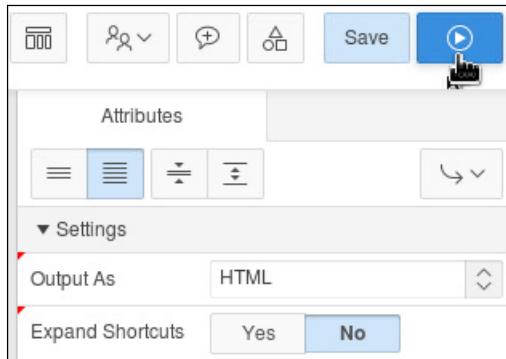
- f. Select **Regions > Content Body > Home > Attributes**.



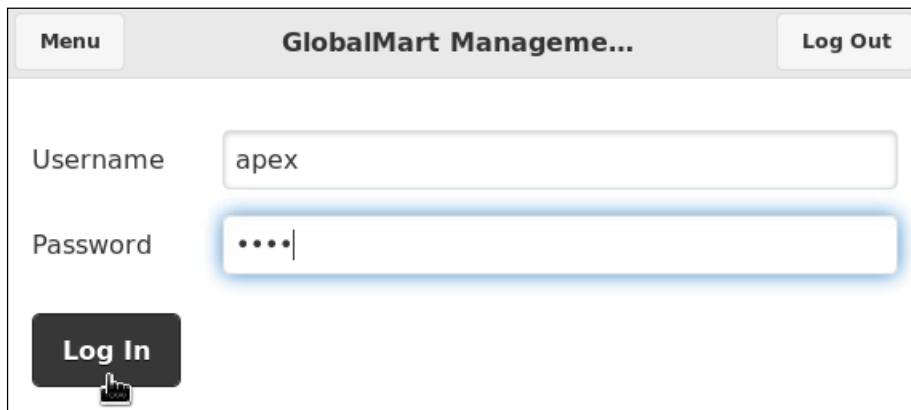
- g. Select **HTML** for the **Output As** field.



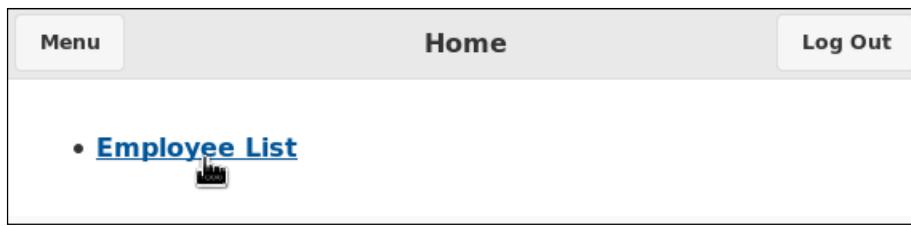
- h. Click the **Save and Run Page** icon.



- i. If prompted for login information, enter the developer user credentials and click **Log In**.



- j. The Home page is displayed. Click the **Employee List** link to go to the Employee List page.



- k. The Employee List page is displayed. Switch to the Page Designer window.

| Menu | Employee List          | Log Out |
|------|------------------------|---------|
|      | <input type="text"/> Q |         |
|      | King                   | ▶       |
|      | Kochhar                | ▶       |
|      | De Haan                | ▶       |
|      | Hunold                 | ▶       |
|      | Ernst                  | ▶       |
|      | Austin                 | ▶       |
|      | Pataballa              | ▶       |
|      | Lorentz                | ▶       |
|      | Greenberg              | ▶       |

- l. Click the **Application 1** breadcrumb.



- m. Remove the filter on **User Interface = 'Mobile'** by clicking the **Remove Filter** icon next to the filter.

| Page | Name                 | Updated      | Actions  |
|------|----------------------|--------------|--|
| 0    | Global Page - Mobile | 46 hours ago |  <a href="#">Remove Filter</a> |



## **Practices for Lesson 8: Adding Items and Buttons**

**Chapter 8**

## Practices for Lesson 8: Overview

---

### Practices 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 8-1: 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 **12**.
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. Log 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` user is created.

If you haven't completed **Practice 7-3**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` user.
- b. Click the arrow next to **Application Builder** and select **Import**.
- c. Click the **Browse** button.
- d. Browse and open the `sol_07_03.sql` file in the `/home/oracle/labs/solutions` directory and click **Next >**.
- e. Click **Next >**.
- f. Select **Reuse Application ID 1 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: 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\_08\_02\_01.txt):

```
select LAST_NAME||', '||FIRST_NAME display_value, EMPLOYEE_ID  
return_value  
from 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   |
| Cambrault, Gerald | 148   |

3. Add a select list item called **Country** that contains the following query (located in /home/oracle/labs/labs/lab\_08\_02\_02.txt). This item should allow nulls.

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

4. Add another item, **City**, based on the Country item that you just created with the following query (located in /home/oracle/labs/labs/lab\_08\_02\_03.txt). Select the Country item as the cascading LOV.

```
select CITY display_value, CITY return_value  
from LOCATIONS  
where country_id = :P<n>_COUNTRY_ID  
order by 1
```

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

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

6. Modify the Employee Detail mobile form page to take advantage of some of the new HTML5 item types.

## Catch Up

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

- a. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 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.

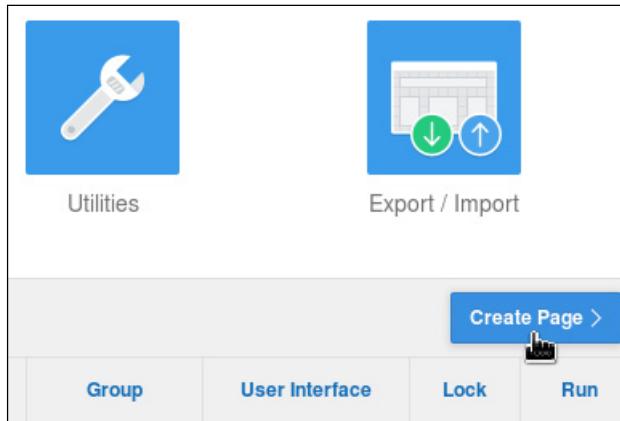
## Solution 8-1: Adding Items and Buttons

### Overview

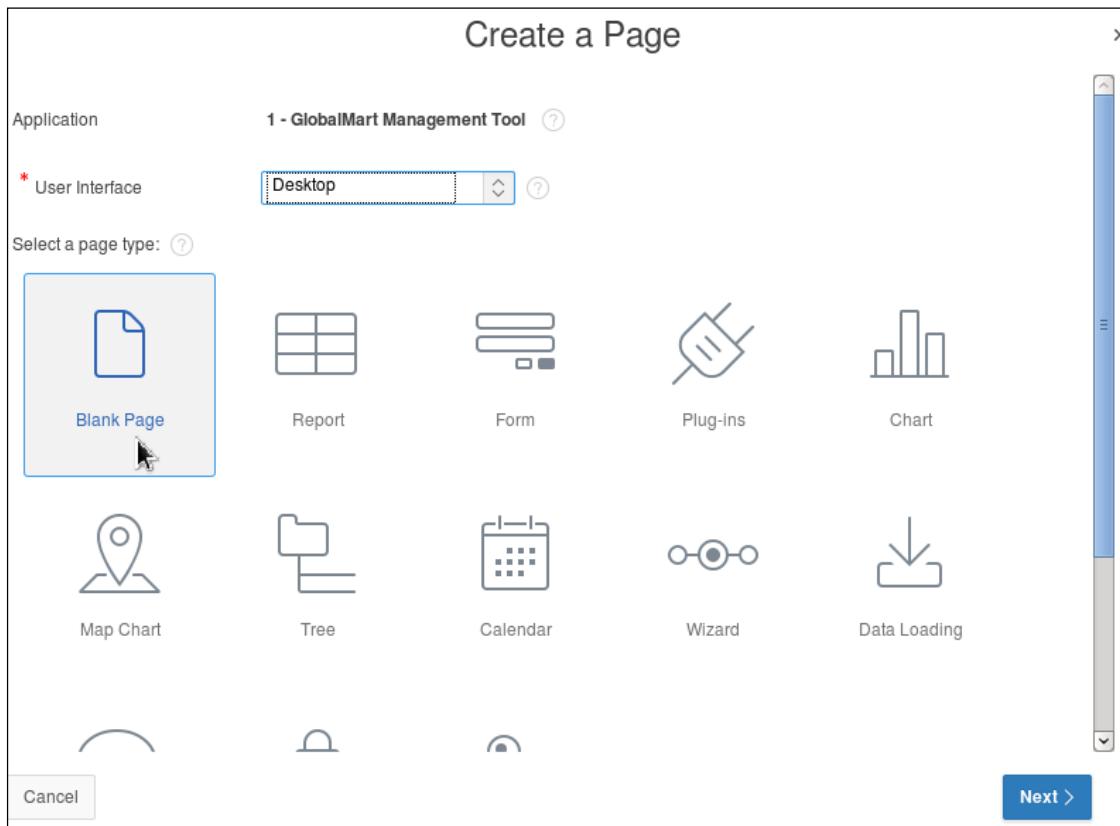
In this practice solution, steps are provided for adding items and buttons to the GMT application.

### Steps

1. Create a blank page called **Customer Feedback**. Enter the page number as **12**.
  - a. Navigate to the GMT application home page and click **Create Page >**.



- b. Select **Blank Page**.



- c. Enter 12 for **Page Number**. In the **Name** field, enter Customer Feedback. Click **Next >**.

Create a Blank Page

Page Attributes

\* Page Number  [?](#)

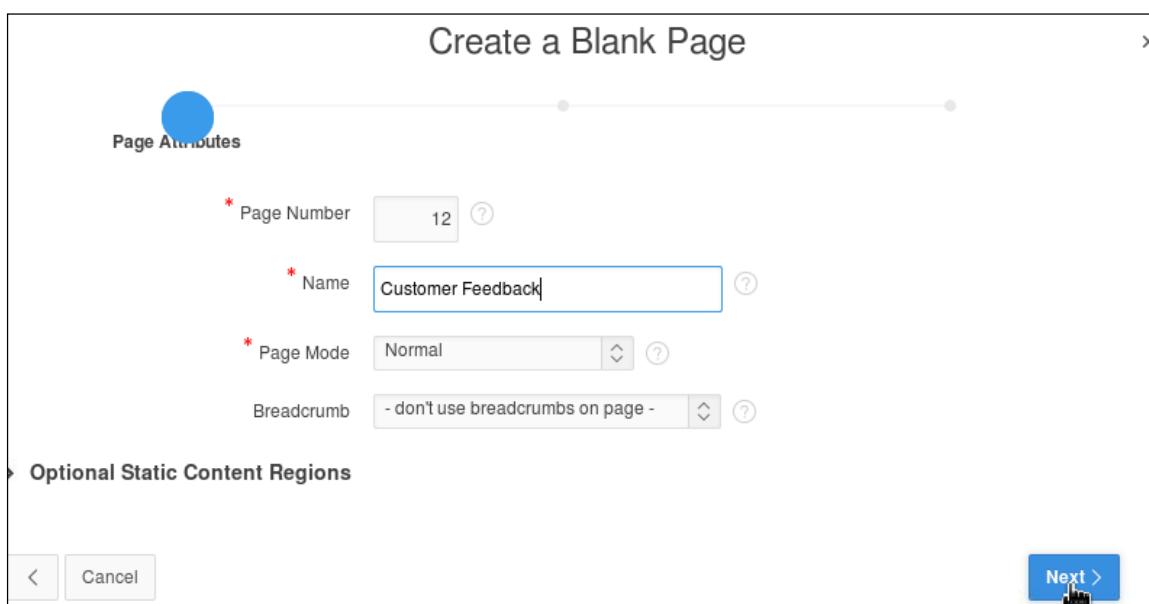
\* Name  [?](#)

\* Page Mode  [?](#)

Breadcrumb  [?](#)

Optional Static Content Regions

< Cancel [Next >](#)

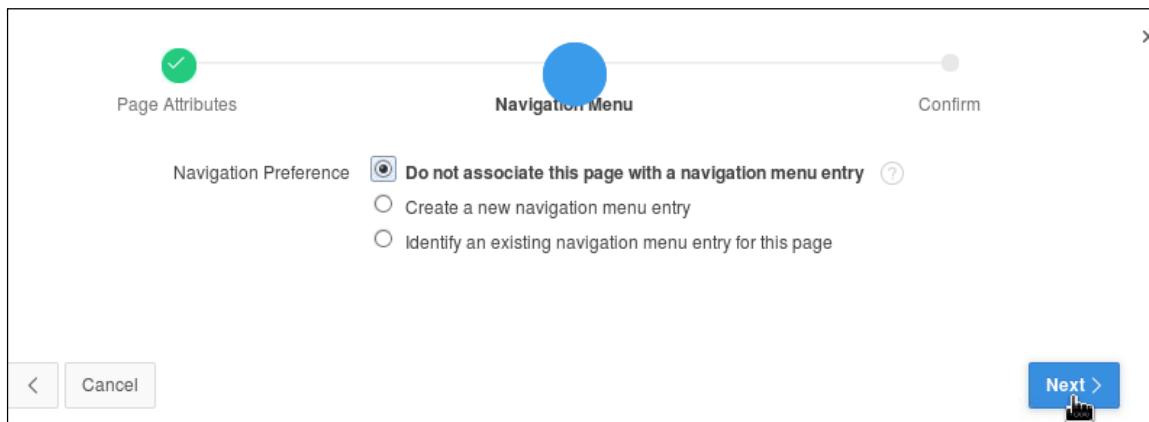


- d. Accept the default and click **Next >**.

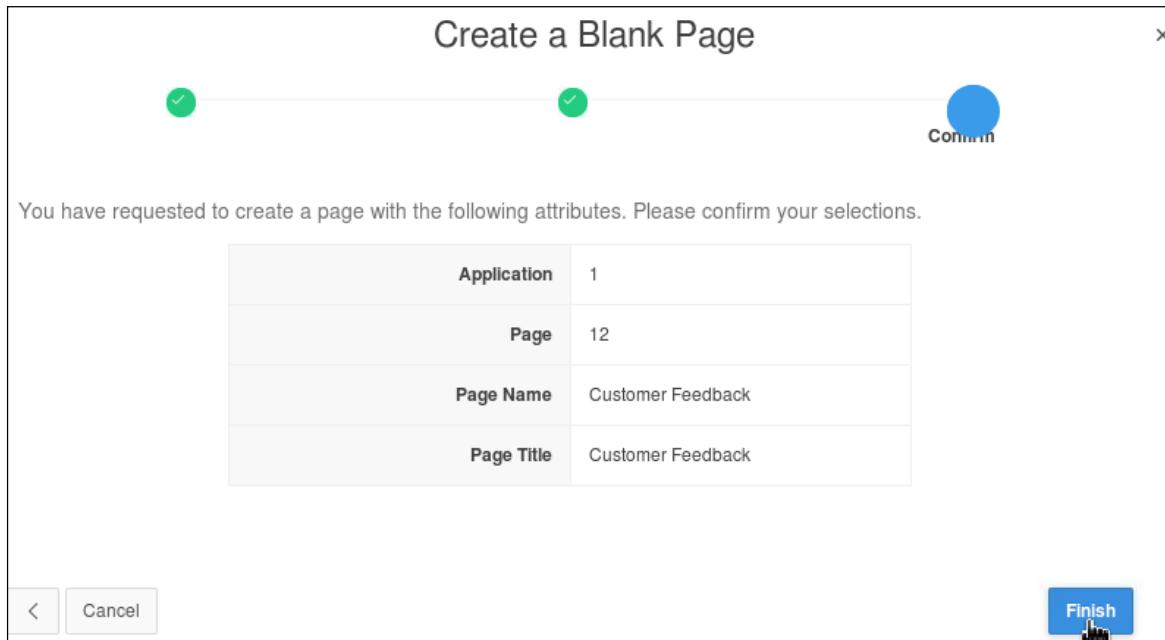
Page Attributes Navigation Menu Confirm

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

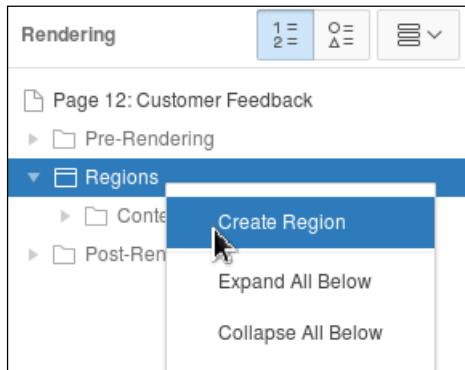
< Cancel [Next >](#)



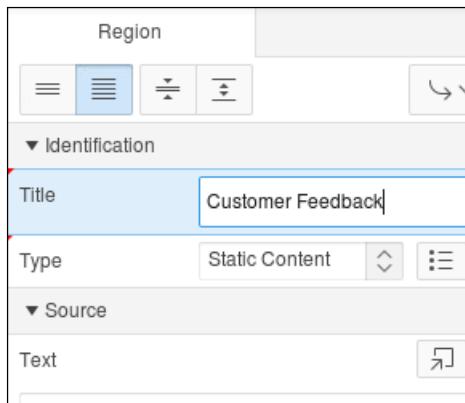
- e. Click **Finish**.



- f. You want to create region on this page. Right-click **Regions** and select **Create Region**.



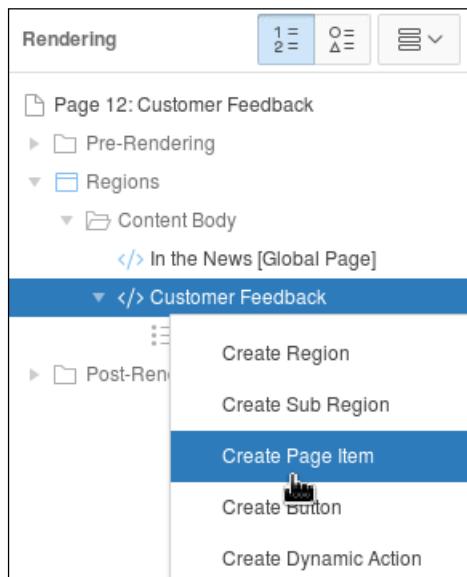
- g. In the Region tab, enter Customer Feedback for **Title** and click **Save**.



2. Add the following items to the form:

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

- a. You want to create some page items in the **Customer Feedback** region. Right-click **Customer Feedback** and select **Create Page Item**.



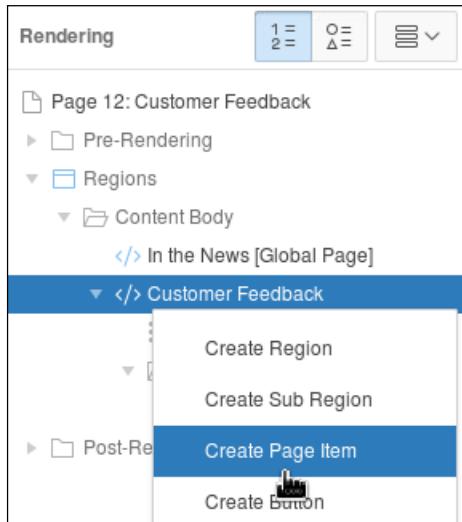
- b. In the Page Item tab, enter the following value for the respective fields and select any other textbox (to remove the warning):
- 1) Identification > Name = P12\_CUSTOMER\_ID
  - 2) Identification > Type = Text Field
  - 3) Source > Type = Database Column
  - 4) Source > Database Column = CUSTOMER\_ID

| Page Item   |                 |
|---|-----------------|
| <input type="button" value="≡"/> <input type="button" value="☰"/> <input type="button" value="÷"/> <input type="button" value="÷"/> |                 |
| <b>Identification</b>   |                 |
| Name  | P12_CUSTOMER_ID |
| Type  | Text Field      |
| <b>Label</b>  |                 |
| Label   | Customer id     |

**Source**

|                 |                       |   |
|-----------------|-----------------------|---|
| Type            | Database Col          | ☰ |
| Database Column | CUSTOMER_ID           | ☰ |
| Used            | Always, replacing any | ☰ |

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



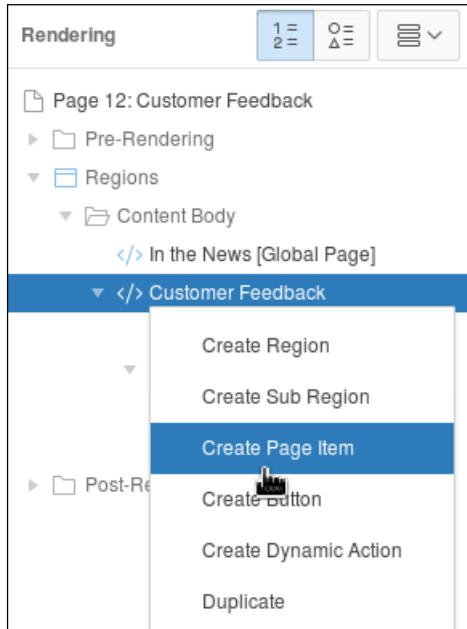
- d. In the Page Item tab, enter the following value for the respective fields and select any other textbox (to remove the warning):

- 1) Identification > Name = P12\_FEEDBACK
- 2) Identification > Type = Textarea
- 3) Source > Type = Database Column
- 4) Source > Database Column = FEEDBACK

**Page Item**

|                 |                       |   |   |   |
|-----------------|-----------------------|---|---|---|
| ☰               | ☰                     | ☰ | ☰ | ☰ |
| Identification  |                       |   |   |   |
| Name            | P12_FEEDBACK          | ☰ |   |   |
| Type            | Textarea              | ☰ |   |   |
| Label           |                       |   |   |   |
| <b>Source</b>   |                       |   |   |   |
| Type            | Database Col          | ☰ | ☰ |   |
| Database Column | FEEDBACK              | ☰ |   |   |
| Used            | Always, replacing any | ☰ |   |   |

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

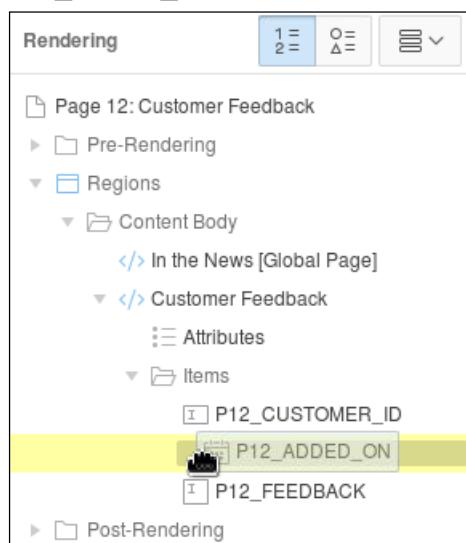


- f. In the Page Item tab, enter the following value for the respective fields and select any other textbox (to remove the warning):

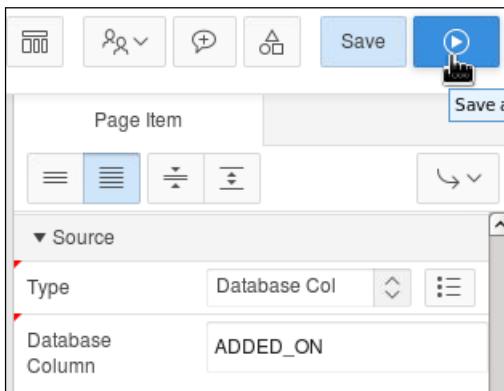
- 1) Identification > Name = P12\_ADDED\_ON
- 2) Identification > Type = Date Picker
- 3) Source > Type = Database Column
- 4) Source > Database Column = ADDED\_ON

The screenshot shows the 'Page Item' configuration screen. It consists of two main tabs: 'Identification' and 'Source'. The 'Identification' tab is active, showing the 'Name' field set to 'P12\_ADDED\_ON' and the 'Type' field set to 'Date Picker'. The 'Source' tab is also visible, showing the 'Type' field set to 'Database Col' and the 'Database Column' field set to 'ADDED\_ON'. There are several warning icons (yellow exclamation marks) visible throughout the interface.

- g. You can drag and drop an item to reposition the item in the list. Drag the P12\_ADDED\_ON item to above the P12\_FEEDBACK item.



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



- i. On the login page, enter your developer user login credentials if prompted.

The screenshot shows the 'Log In' page of Oracle APEX. It has two input fields: 'Username' (apex) and 'Password' (represented by four asterisks). Below the password field is a 'Log In' button, which is being clicked by a mouse cursor. The page also features a 'In the News' section with a link to 'www.oracle.com'.

- j. The Customer Feedback page loads with all the fields. Click the **Application 1** link on the Developer toolbar.

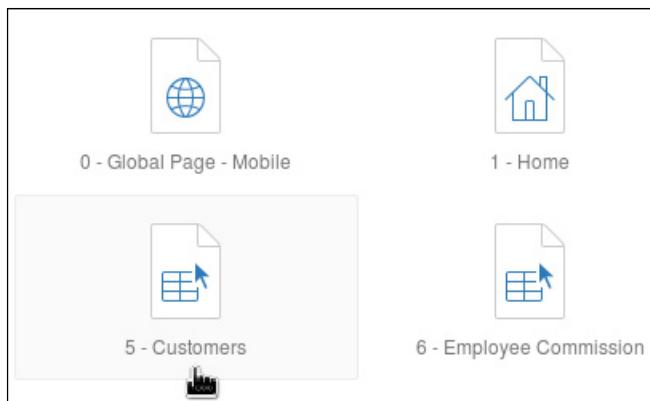
The screenshot shows the Oracle Application Express interface. On the left, a sidebar menu includes Home, Customers, and Products. The main content area displays the 'Customer Feedback' page, which contains three input fields: 'Customer Id', 'Added on', and 'Feedback'. Below the page is a toolbar with various icons and labels like 'release 1.0 Set Screen Reader Mode On', 'Home', 'Application 1' (which is highlighted), 'Edit Page 12', 'Session', 'View Debug', 'Debug', and 'Show Grid'.

3. Add a button on the Customers page to redirect to the Customer Feedback page.

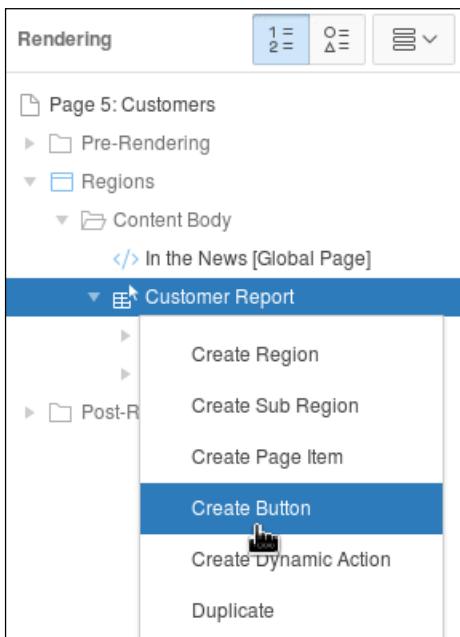
- a. Switch to icon view by clicking the **View Icons** icon <>.

The screenshot shows the 'Customers' page in icon view. The toolbar includes a search bar, 'Go' button, and 'Actions' dropdown. The main area displays a grid of icons with columns for 'Page', 'Name', and 'Created'. The first row shows '0 - Global Page - Mobile' and '47 hours ago'. The second row shows '1 - Home' and '47 hours ago'. The 'Actions' column for the 'Home' row has a blue border around it, indicating it is selected.

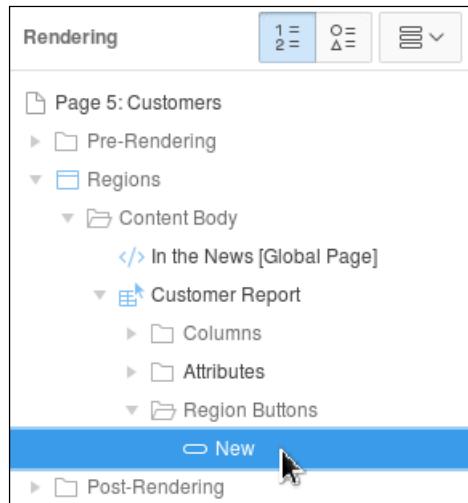
- b. Click the **Customers** page icon.



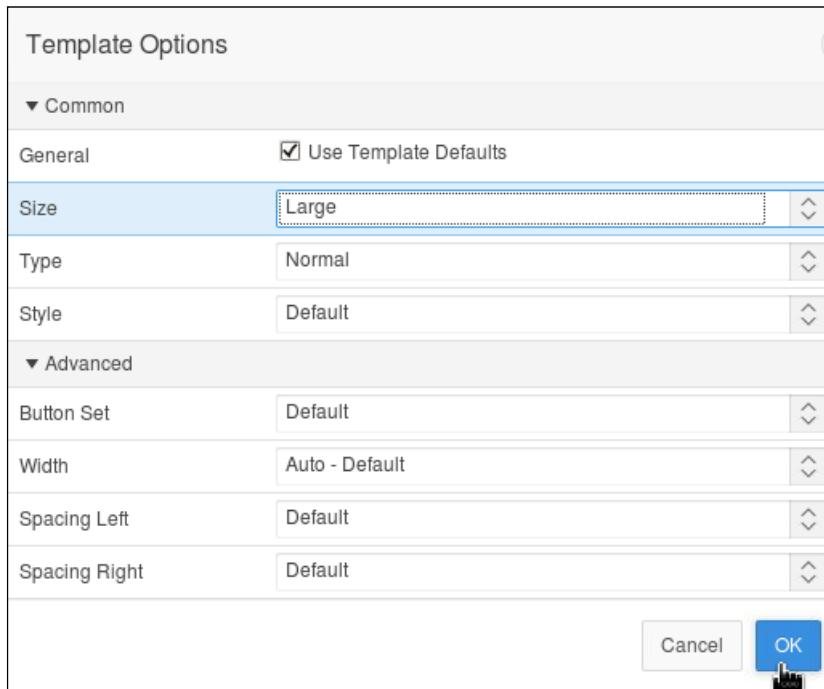
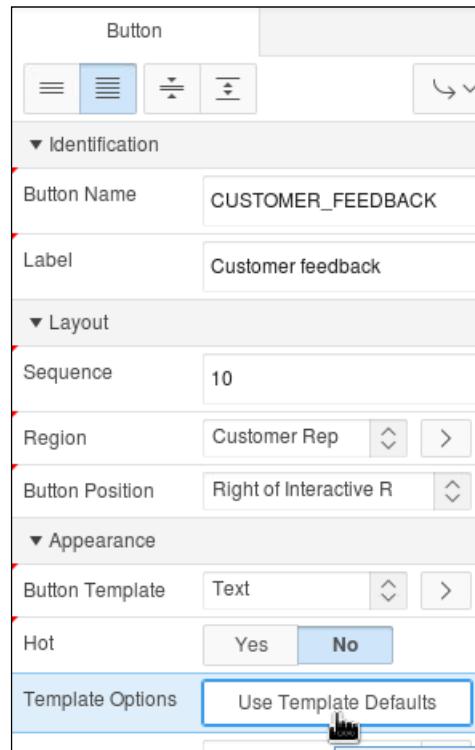
- c. Right-click the **Customer Report** region and select **Create Button**.

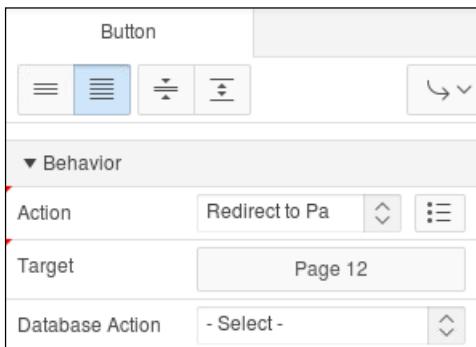


- d. Select **Buttons > Customer Report > Region Buttons > New**.

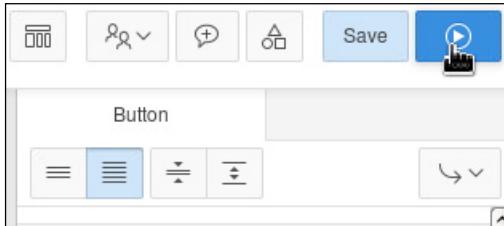


- e. In the Button tab, enter the following value for the respective fields:
- 1) Identification > Button Name = CUSTOMER\_FEEDBACK
  - 2) Layout > Button Position = Right of Interactive Report Search Bar
  - 3) Appearance > Template Options > Common > Size = Large
  - 4) Behavior > Action = Redirect to Page in this Application
  - 5) Behavior > Target > Page = Customer Feedback (Page 12)

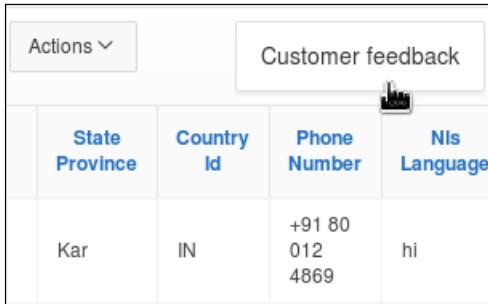




- f. Click the **Save and Run Page** icon.



- g. Click the **Customer feedback** button.



4. Add an **Apply** button on the Customer Feedback page.

- a. You are redirected to the **Customer Feedback** page that you created earlier. You want to create an **Apply** button on this page. Click the **Edit Page 12** link on the Developer toolbar.

Customer Feedback

Customer id

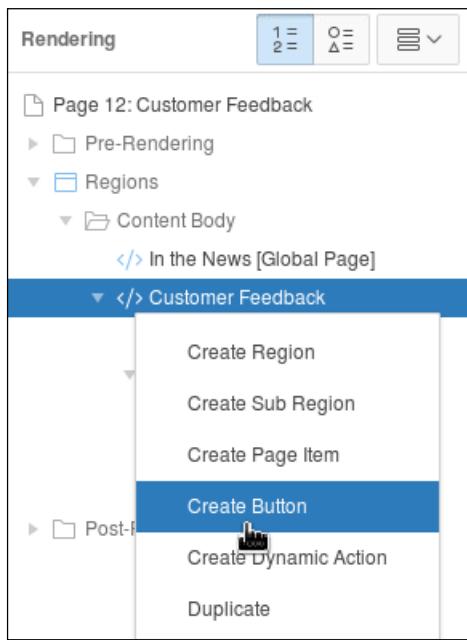
Added on

Feedback

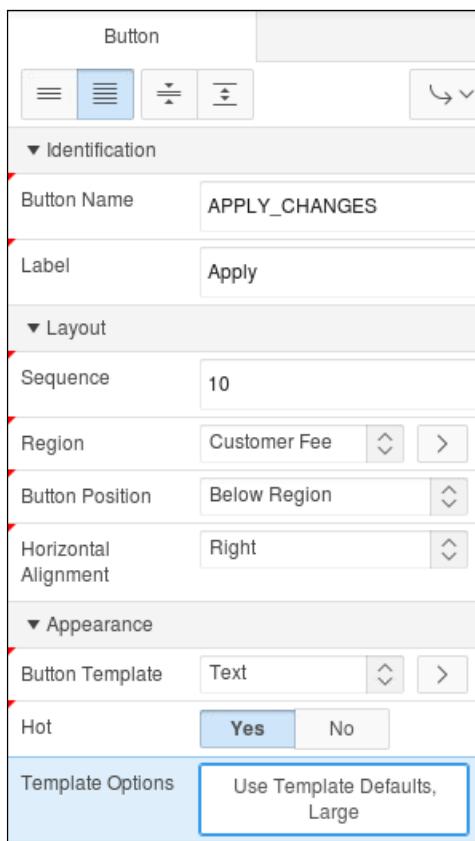
release 1.0 [Set Screen Reader Mode On](#)

Application 1 Edit Page 12 Session View Debug Debug Show

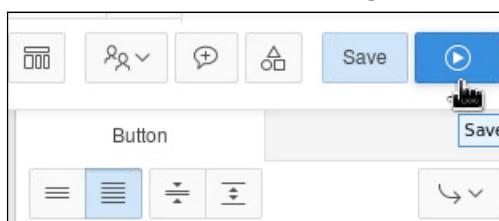
- b. Right-click the **Customer Feedback** region and select **Create Button**.



- c. Ensure that the newly created button is selected. In the Button tab, enter the following value for the respective fields:
- 1) Identification > Button Name = APPLY\_CHANGES
  - 2) Identification > Label = Apply
  - 3) Appearance > Hot = Yes
  - 4) Appearance > Template Options > Common > Size = Large



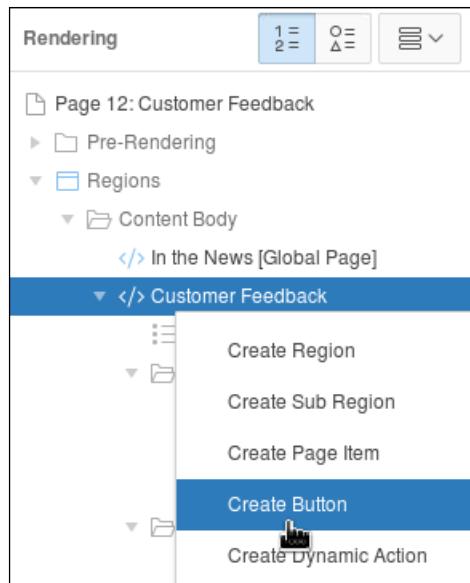
- d. Click the **Save and Run Page** icon.



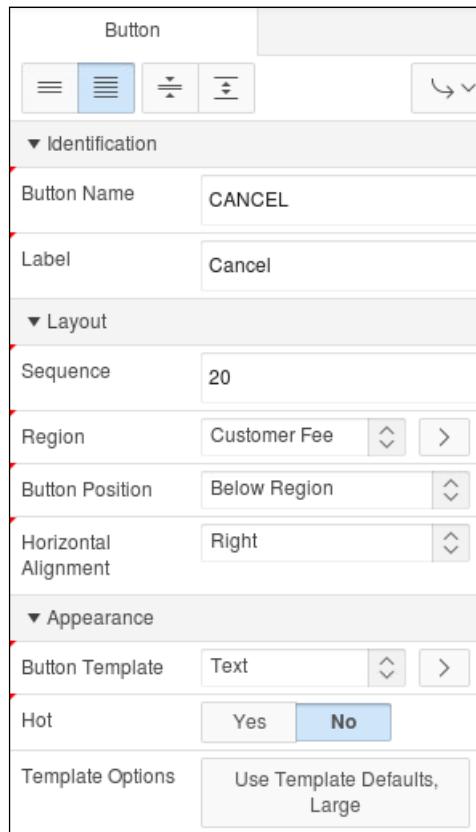
- e. Notice that the **Apply** button is created. Click the **Edit Page 12** link on the Developer toolbar.

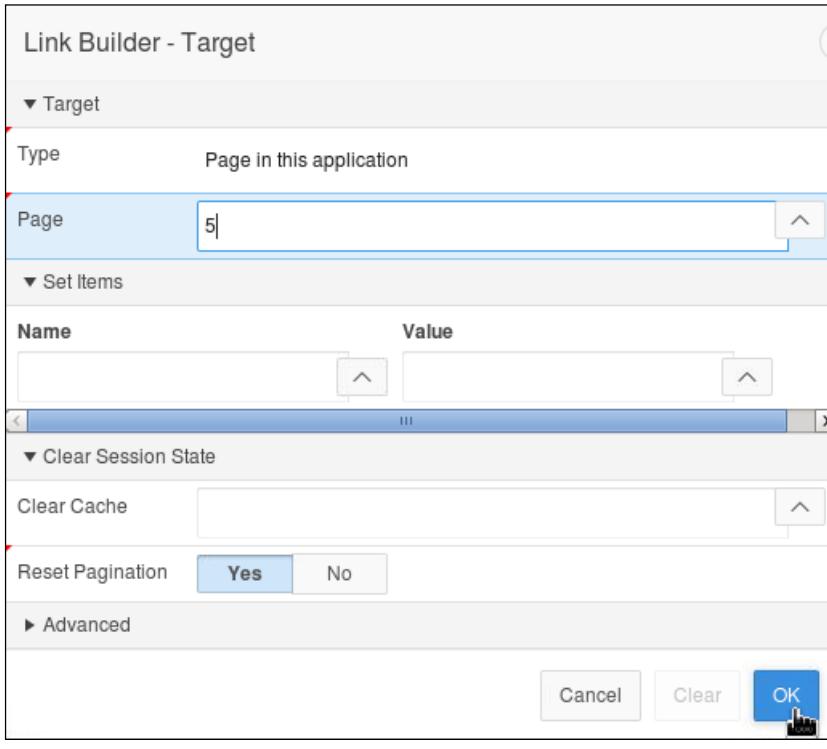
The screenshot shows the Oracle Application Express developer toolbar. The toolbar includes links for Application 1, Edit Page 12 (which is highlighted), Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a settings gear icon. The main area displays a form titled "Customer Feedback" with three fields: "Customer id" (text input), "Added on" (date input with a calendar icon), and "Feedback" (text area). A blue "Apply" button is located at the bottom right of the form area.

5. Add a **Cancel** button on the Customer Feedback page to redirect to the Customers page.  
a. You want to be redirected to the **Customer Feedback** page when the **Cancel** button is clicked. Right-click the **Customer Feedback** region and select **Create Button**.

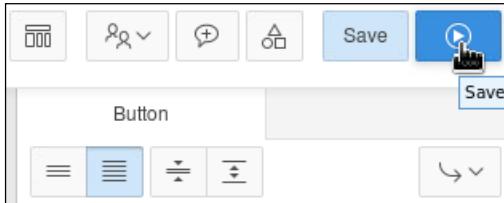


- b. Ensure that the newly created button is selected. In the Button tab, enter the following value for the respective fields:
- 1) Identification > Button Name = CANCEL
  - 2) Identification > Label = Cancel
  - 3) Appearance > Template Options > Common > Size = Large
  - 4) Behavior > Action = Redirect to Page in this Application
  - 5) Behavior > Target > Page = Customers (Page 5)

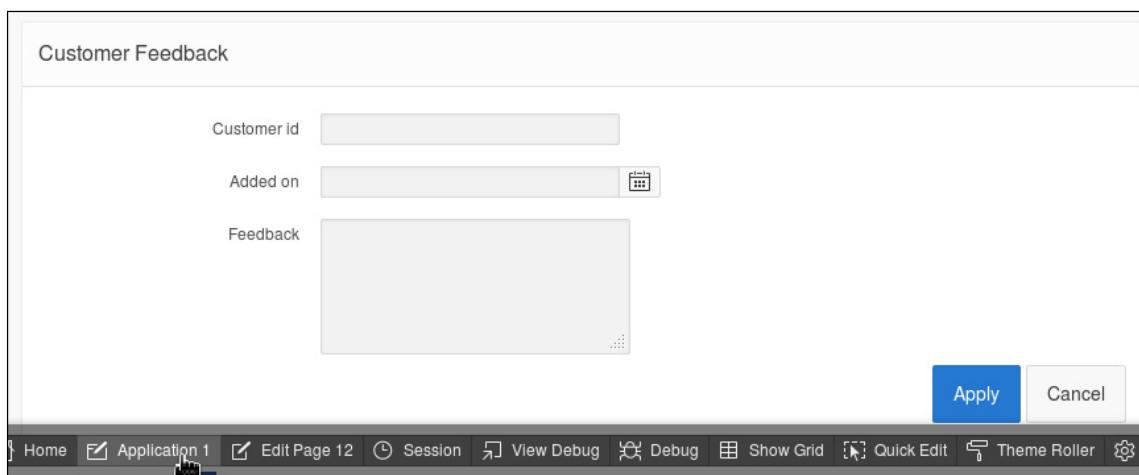




- c. Click the **Save and Run Page** icon.



- d. The **Cancel** button is created successfully. Click the **Application 1** link on the Developer toolbar.



## Solution 8-2: Manipulating Items

### Overview

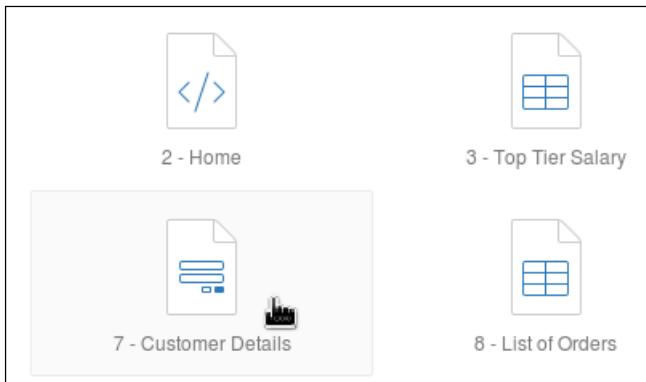
In this practice solution, steps are provided for modifying the items in the GMT application.

### Steps

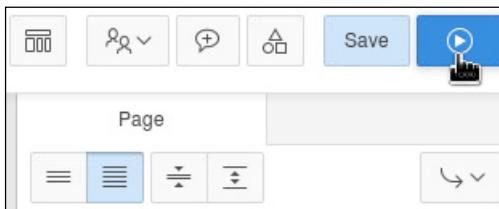
1. Modify the Account Manager item to be a select list with the following query (located in /home/oracle/labs/labs/lab\_08\_02\_01.txt):

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

- a. Navigate to the GMT application home page and click **Customer Details**.



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



- c. You will change the **Account Manager** item to a select list and also add a quick pick list. Click the **Edit Page 7** link on the Developer toolbar,

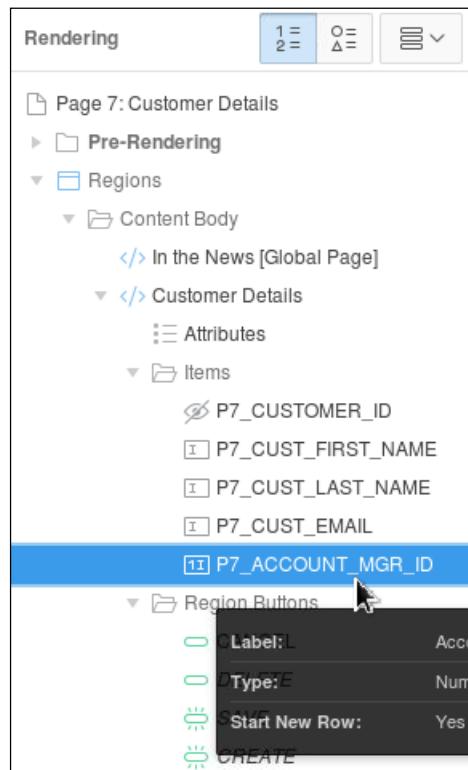
The record created or modified in this form is reflected in the Customer Report.

**Create**

release 1.0 Set Screen Reader Mode On

Location 1 Edit Page 7 Session View Debug Debug Show Grid Quick Edit Themes

- d. Select **Page Items > Customer Details > P7\_ACCOUNT\_MGR\_ID**.



- e. In the Page Item tab, enter the following value for the respective fields:
- 1) Identification > Type = Select List
  - 2) Label > Label = Account Manager
  - 3) List of Values > Type = SQL Query

The screenshot shows the 'Page Item' configuration screen. Under 'Identification', the 'Name' is set to 'P7\_ACCOUNT\_MGR\_ID' and 'Type' is set to 'Select List'. Under 'Label', the 'Label' is set to 'Account Manager'. Under 'List of Values', the 'Type' is set to 'SQL Query' and there is one entry named 'SQL Query'.

- f. You want to build a dynamic list of the names of managers in the Sales department. Enter the following query (located in /home/oracle/labs/labs/lab\_08\_02\_01.txt) to display the last name and first name, and return EMPLOYEE\_ID. Select Yes for Display Null Value and enter - Select Manager - in the Null Display Value field.

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

▼ List of Values

|  |   |
|--|---|
| Type   | SQL Query   |
| SQL Query  |   |
| <pre>select LAST_NAME  ', '  FIRST_NAME display_value, EMPLOYEE_ID return_value from EMPLOYEES where DEPARTMENT_ID=80 order by 1</pre> |   |
| Display Extra Values   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Display Null Value   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Null Display Value   | - Select Manager -  |
| Null Return Value  |   |

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. Select Yes for **Quick Picks > Show Quick Picks** option.

▼ Quick Picks

|                  |   |
|------------------|---|
| Show Quick Picks | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
|------------------|---|

- b. Enter the following labels and values and click the **Save and Run Page** icon.

| Label             | Value |
|-------------------|-------|
| Bates, Elizabeth  | 172   |
| Russell, John     | 145   |
| Cambrault, Gerald | 148   |

The screenshot shows a window titled "Page Item" with various configuration options. At the top, there are icons for document, search, add, delete, save, and a blue button with a play icon. Below the toolbar, there are buttons for column width adjustment and a refresh arrow. A section titled "Quick Picks" has a "Show Quick Picks" toggle set to "Yes". The main area contains several pairs of labels and values:

|         |                   |
|---------|-------------------|
| Label 1 | Bates, Elizabeth  |
| Value 1 | 172               |
| Label 2 | Russell, John     |
| Value 2 | 145               |
| Label 3 | Cambrault, Gerald |
| Value 3 | 148               |
| Label 4 |                   |

- c. Click the **Account Manager** drop-down list to see the list of Account Managers.

Customer Details

Cust First Name \*

Cust Last Name \*

Cust Email

Account Manager

The record created or modified in this form is reflected in the Customer Report.

release 1.0 [Set Screen Reader Mode](#)

A screenshot of a web-based application titled 'Customer Details'. It contains fields for 'Cust First Name' and 'Cust Last Name' with red asterisks indicating required fields. Below these is a field for 'Cust Email'. An 'Account Manager' field has a dropdown arrow icon. A tooltip-like overlay is displayed over the dropdown, containing the text 'The record created or modified in this form is reflected in the Customer Report.' and listing names: Abel, Ellen; Ande, Sundar; Banda, Amit; Bates, Elizabeth; Bernstein, David; Bloom, Harrison; Cambrault, Gerald; Cambrault, Nanette; Doran, Louise; Errazuriz, Alberto; Fox, Tayler; Greene, Danielle; Hall, Peter; Hutton, Alyssa; Johnson, Charles; King, Janette; Kumar, Sundita; Lee, David; Livingston, Jack. The 'Create' button is visible in the bottom right corner.

- d. Click anywhere on the page and then click the **Russell, John** quick pick.

Customer Details

Cust First Name \*

Cust Last Name \*

Cust Email

Account Manager

Bates, Elizabeth, Russell, John, Cambrault, Gerald

The record created or modified in this form is reflected in the Customer Report.

A screenshot of the same web-based application as before. The 'Account Manager' dropdown now shows the selected value 'Bates, Elizabeth, Russell, John, Cambrault, Gerald'. The rest of the interface remains the same, including the 'Customer Details' header, required fields, and the 'Create' button.

- e. Notice how the name is selected for the **Account Manager** drop-down list. Click the **Edit Page 7** link on the Developer toolbar.

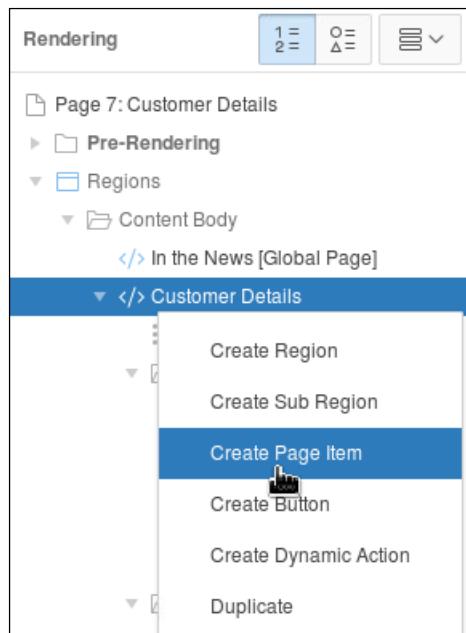
The record created or modified in this form is reflected in the Customer Report.

**Create**

3. Add a select list item called **Country** that contains the following query (located in /home/oracle/labs/labs/lab\_08\_02\_02.txt). This item should allow nulls.

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

- a. Right-click the **Customer Details** region and select **Create Page Item**.



- b. Make sure that the newly created item is selected. In the Page Item tab, enter the following value for the respective fields:
- 1) Identification > Name = P7\_COUNTRY\_ID
  - 2) Identification > Type = Select List
  - 3) Label > Label = Country

- 4) List of Values > Type = SQL Query
- 5) List of Values > SQL Query = <Enter the SQL Query located in /home/oracle/labs/labs/lab\_08\_02\_02.txt in this field>

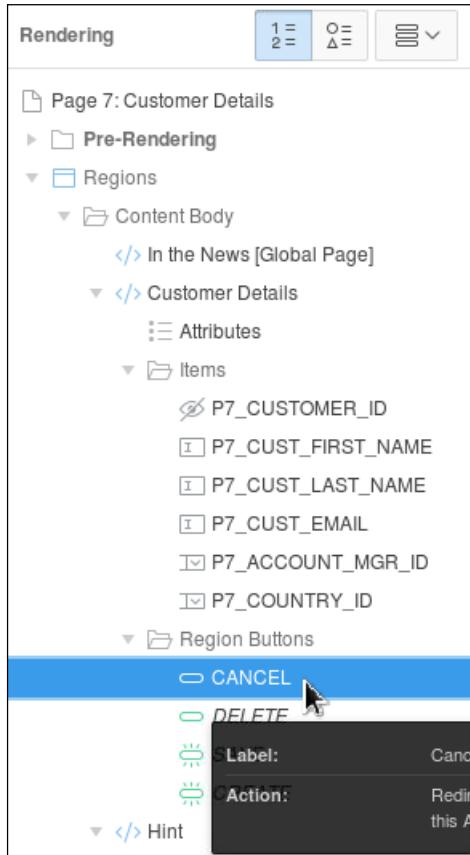
```
select COUNTRY_NAME display_value, COUNTRY_ID return_value
from COUNTRIES
order by 1
```

- 6) List of Values > Null Display Value = - Select Country -
- 7) Source > Type = Database Column = COUNTRY\_ID (Note that the value for this field is automatically populated)

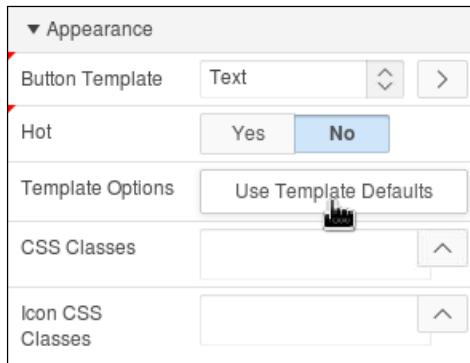
The image shows three vertically stacked panels from an Oracle application interface:

- Top Panel (Page Item):** Shows a "Page Item" section with a "Name" field set to "P7\_COUNTRY\_ID" and a "Type" field set to "Select List". The "Label" field contains "Country".
- Middle Panel (List of Values):** Shows a "List of Values" section with a "Type" field set to "SQL Query". The "SQL Query" field contains the previously shown SQL code. The "Display Extra Values" and "Display Null Value" fields are both set to "Yes". The "Null Display Value" field contains "- Select Country -".
- Bottom Panel (Source):** Shows a "Source" section with a "Type" field set to "Database Col" and a "Database Column" field set to "COUNTRY\_ID". The "Used" field is set to "Always, replacing any".

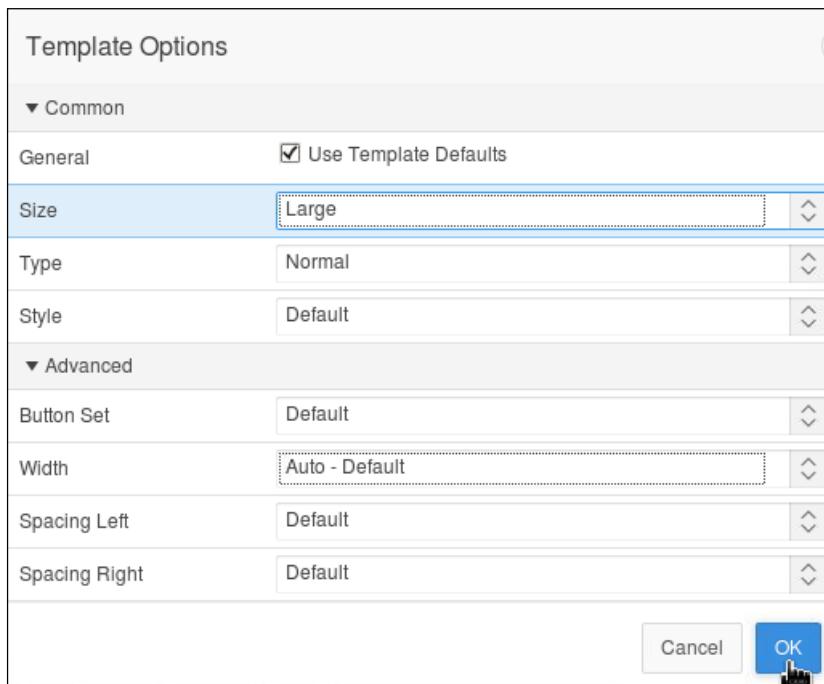
- c. Select **Region Buttons > Cancel** on the Rendering tab.



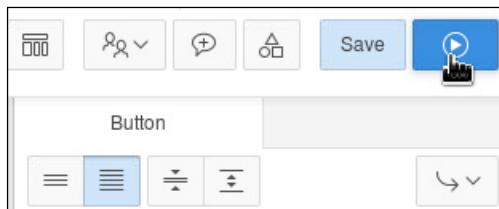
- d. In the Button tab, click **Appearance > Template Options > Use Template Default**.



- e. Select **Large** for **Size** under the **Column** tab and click **OK**.



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



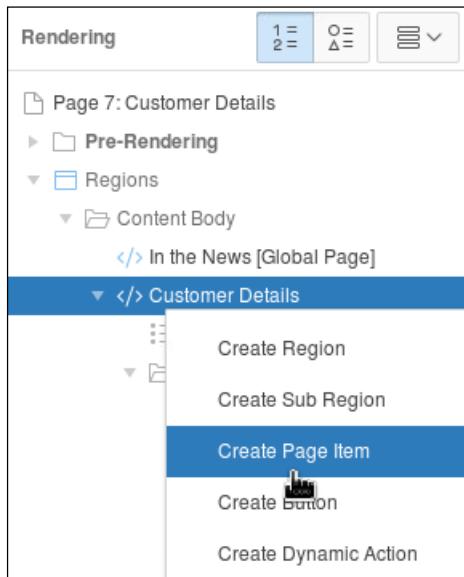
- g. Notice that the **Country** item shows a select list of country names. You want to create an item that shows values based on the country selected (cascading LOV). Click the **Edit Page 7** link on the Developer toolbar.

The screenshot shows the 'Customer Details' form. It contains fields for 'Cust First Name', 'Cust Last Name', 'Cust Email', 'Account Manager' (a dropdown menu listing 'Bates, Elizabeth, Russell, John, Cambrault, Gerald'), and 'Country' (a dropdown menu showing '- Select Country -'). A note at the bottom states 'The record created or modified in this form is reflected in the Customer Report.' The developer toolbar at the bottom includes links for 'Edit Page 7', 'Session', 'View Debug', 'Debug', 'Show Grid', 'Quick Edit', and 'Then'.

4. Add another item, **City**, based on the Country item that you just created with the following query (located in /home/oracle/labs/labs/lab\_08\_02\_03.txt). Select the Country item as the cascading LOV.

```
select CITY display_value, CITY return_value
from LOCATIONS
where country_id = :P7_COUNTRY_ID
order by 1
```

- a. Right-click **Customer Details** under Regions and select **Create Page Item**.



- b. Make sure that the newly created item is selected. In the Page Item tab, enter the following value for the respective fields:

- 1) Identification > Name = P7\_CITY
- 2) Identification > Type = Popup LOV
- 3) List of Values > Type = SQL Query
- 4) List of Values > SQL Query = <Enter the SQL Query located in /home/oracle/labs/labs/lab\_08\_02\_03.txt in this field>
- 5) List of Values > Null Display Value = - Select City -
- 6) List of Values > Cascading LOV Parent Item(s) = P7\_COUNTRY\_ID

Note that this item will be refreshed when the value of P7\_COUNTRY\_ID is changed.



▼ List of Values

Type SQL Query

```
select CITY display_value, CITY  
return_value  
from LOCATIONS  
where country_id = :P7_COUNTRY_ID  
order by 1
```

Display Extra Values Yes No

Display Null Value Yes No

Null Display Value - Select City -

Null Return Value

Cascading LOV Parent Item(s) P7\_COUNTRY\_ID

Page Items to Submit

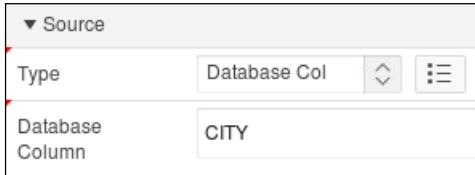


- c. Notice that the Source is automatically populated.

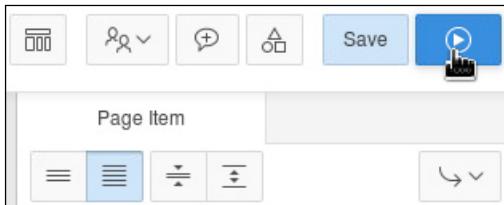
▼ Source

Type Database Col

Database Column CITY



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



- e. Select **Japan** from the list of countries. Click the **Popup List of Values** icon for City.

Customer Details

Cust First Name \*

Cust Last Name \*

Cust Email

Account Manager

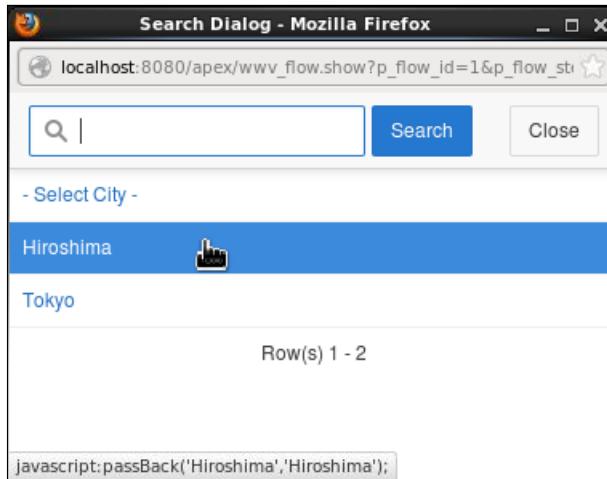
Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country

City  

*The record created or modified in this form is reflected in the Customer Report.*

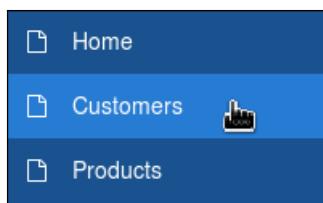
- f. A pop-up window with only the cities from Japan is shown. Click any one city.



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

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

- a. You want to modify an existing record. Click the **Customers** tab.



- b. Click the **Edit** icon for one of the rows.

|  | Customer Id | Cust First Name | Cust Last Name | Street Address   | Postal Code | City      | State Province | Country Id | Phone Numb    |
|--|-------------|-----------------|----------------|------------------|-------------|-----------|----------------|------------|---------------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd | 361168      | Bangalore | Kar            | IN         | +91 8012 4869 |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      | Chennai   | Tam            | IN         | +91 8012 4887 |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St | 361168      | Cochin    | Ker            | IN         | +91 8012 4889 |

- c. 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 Developer toolbar and select the **Apply Changes** button.

Customer Details

Hint  
Use this page to enter and maintain customer information.

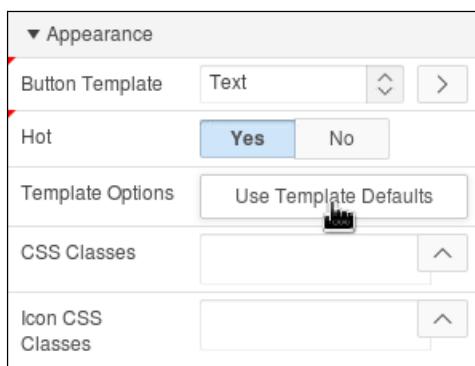
|                   |  |
|-------------------|--|
| Cust First Name * | Scott  |
| Cust Last Name *  | Jordan   |
| Cust Email        | Scott.Jordan@WILLET.COM                            |
| Account Manager   | Cambrault, Gerald                                  |
|                   | Bates, Elizabeth, Russell, John, Cambrault, Gerald |
| Country           | India  |
| City              | Bangalore  |

The record created or modified in this form is reflected in the Customer Report.

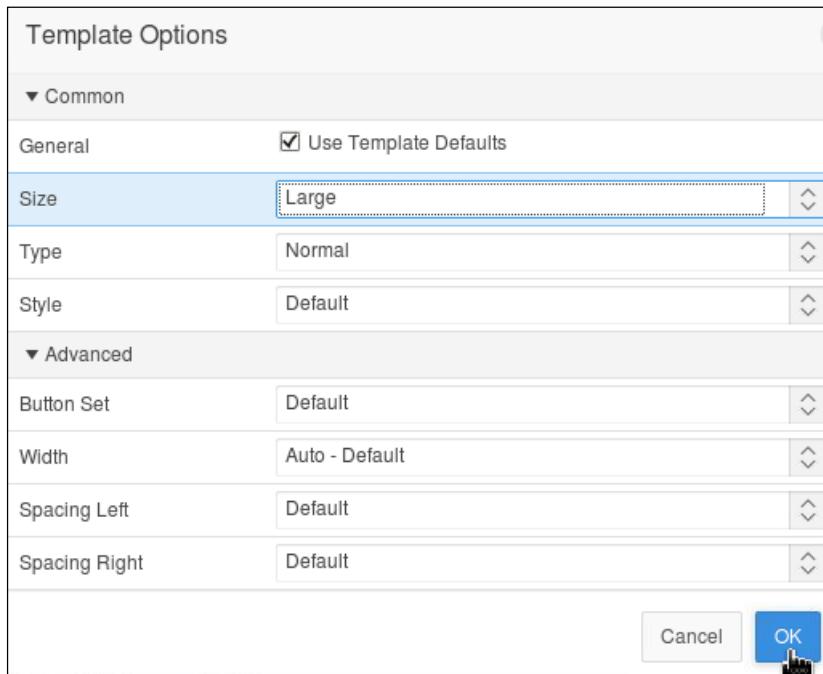
Cancel      Delete      **Apply Changes**

Action 1    Edit Page 7    Session    View Debug    Debug    Show Grid    Quick Edit    Theme Roller    Settings

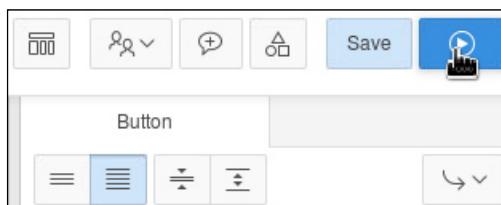
- d. In the Button tab, click the **Use Template Defaults** button under the **Appearance > Template Options** tab.



- e. Select **Large** for **Size** under the **Common** tab and click **OK**.



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



- g. Select **Bates, Elizabeth** from the quick picks for **Account Manager** and click **Apply Changes**.

Customer Details

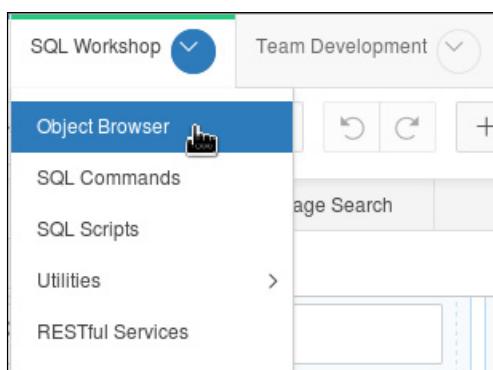
|  |                         |
|--|-------------------------|
| Cust First Name *  | Scott                   |
| Cust Last Name *   | Jordan                  |
| Cust Email   | Scott.Jordan@WILLET.COM |
| Account Manager  | Bates, Elizabeth        |
| <a href="#">Bates, Elizabeth</a> , <a href="#">Russell, John</a> , <a href="#">Cambrault, Gerald</a> |                         |
| Country  | India                   |
| City   | Bangalore               |

*The record created or modified in this form is reflected in the Customer Report.*

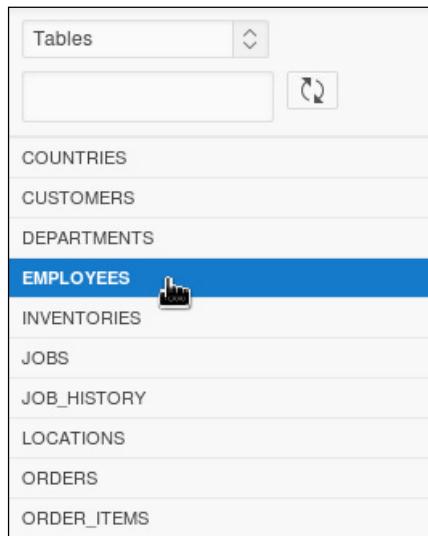
- h. The action is processed. Click the **Edit Page 5** link on the Developer toolbar.



6. Modify the Employee Detail mobile form page to take advantage of some of the new HTML5 item types.
- a. You want to add a new column to the EMPLOYEES table to store whether an employee is active or not. Select **SQL Workshop > Object Browser**.



- b. Select EMPLOYEES from the Tables list.



- c. Click Add Column.

| EMPLOYEES   |   |                               |                               |                             |                        |                    |             |
|-------------|---|-------------------------------|-------------------------------|-----------------------------|------------------------|--------------------|-------------|
| Table       | Data  | Indexes                       | Model                         | Constraints                 | Grants                 | Statistics         | UI Defaults |
|             | <a href="#">Add Column</a>  | <a href="#">Modify Column</a> | <a href="#">Rename Column</a> | <a href="#">Drop Column</a> | <a href="#">Rename</a> | <a href="#">Co</a> |             |
| Column Name |   |                               |                               |                             |                        |                    |             |
| EMPLOYEE_ID | Data Type   |                               | Nullable                      |                             |                        |                    |             |
| FIRST_NAME  | NUMBER(6,0)   |                               | No                            |                             |                        |                    |             |
| LAST_NAME   | VARCHAR2(20)  |                               | Yes                           |                             |                        |                    |             |

- d. Enter ACTIVE\_YN for **Add Column**, select VARCHAR2 for **Type**, enter 1 for **Length**, and click **Next >**.

Add Column

Schema: OEHR [?](#)

Table: EMPLOYEES [?](#)

\* Add Column  [?](#)

Preserve Case

Type  [?](#)

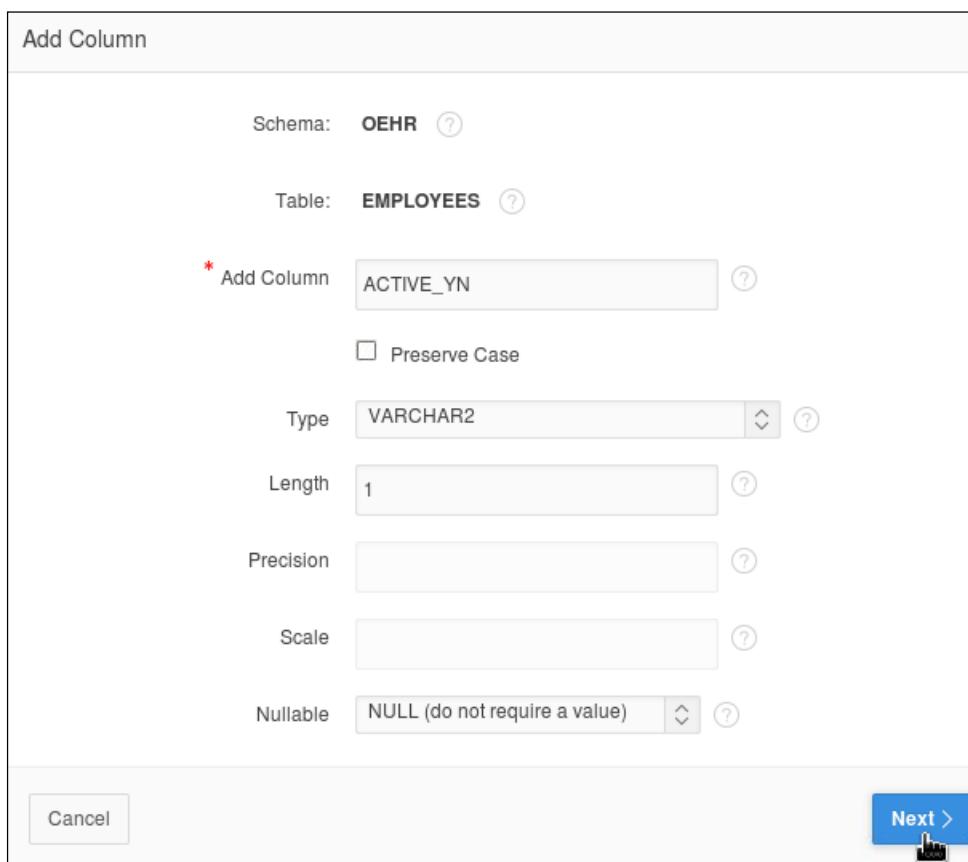
Length  [?](#)

Precision  [?](#)

Scale  [?](#)

Nullable  [?](#)

[Cancel](#) [Next >](#)



- e. Click **Finish**.

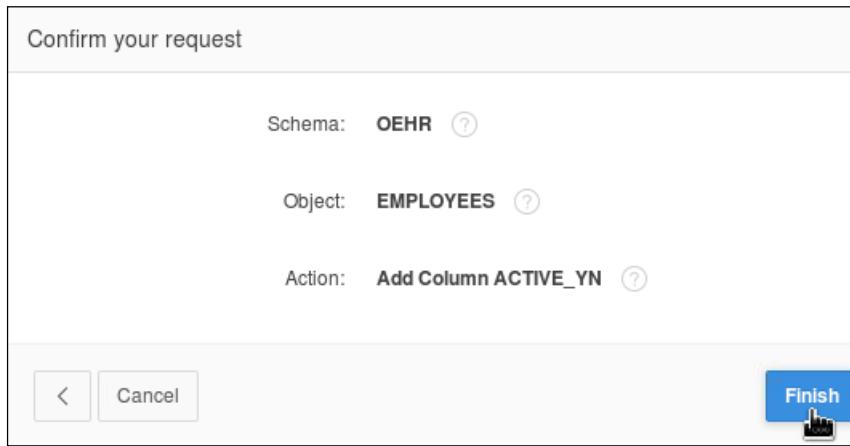
Confirm your request

Schema: OEHR [?](#)

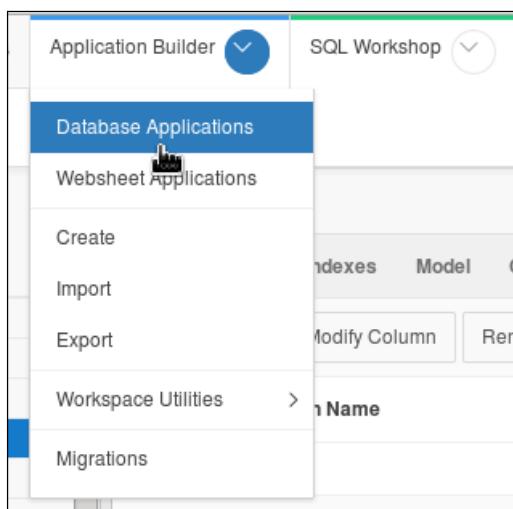
Object: EMPLOYEES [?](#)

Action: Add Column ACTIVE\_YN [?](#)

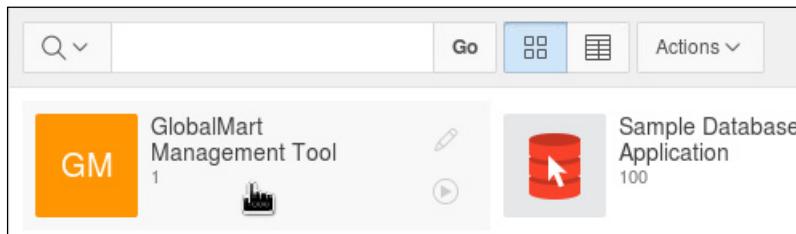
[<](#) [Cancel](#) [Finish](#)



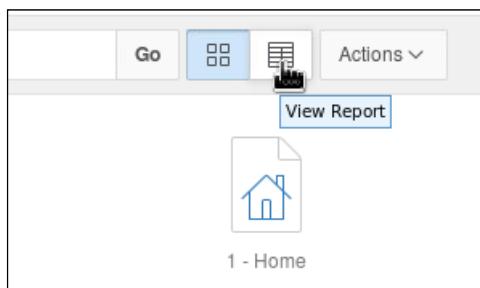
- f. Now you can modify the Employee Detail mobile form page. Click the **Application Builder** pull-down menu and select **Database Applications**.



- g. Navigate to the GMT application page. Click the **GlobalMart Management Tool** icon.



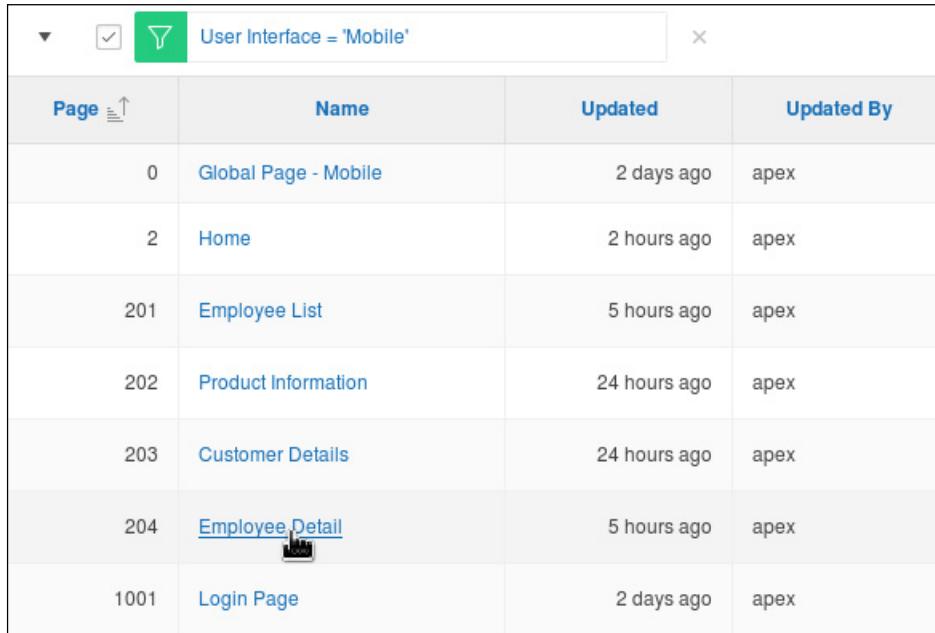
- h. Click the **View Report** icon.



- i. In the report, select the **User Interface** heading, and then select **Mobile**.

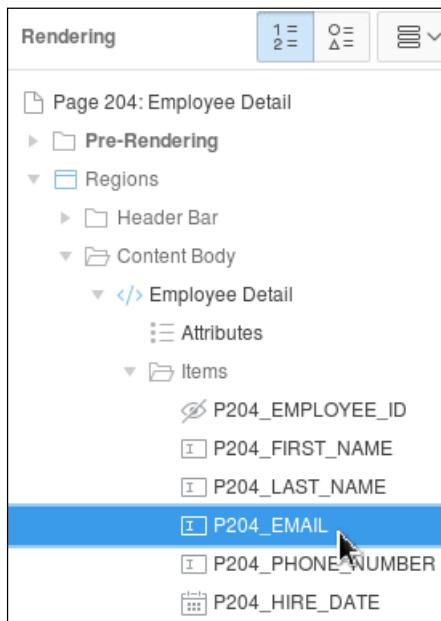
| Page Type   | Group      | User Interface | Lock    | Run |
|-------------|------------|----------------|---------|-----|
| Global Page | Unassigned |                |         |     |
| Home        | Unassigned | Filter...      |         |     |
| Static HTML | Unassigned | Desktop        |         |     |
| Report      | Unassigned | Mobile         | Desktop |     |

- j. Select **Employee Detail** (Page 204).



| Page | Name                            | Updated      | Updated By |
|------|---------------------------------|--------------|------------|
| 0    | Global Page - Mobile            | 2 days ago   | apex       |
| 2    | Home                            | 2 hours ago  | apex       |
| 201  | Employee List                   | 5 hours ago  | apex       |
| 202  | Product Information             | 24 hours ago | apex       |
| 203  | Customer Details                | 24 hours ago | apex       |
| 204  | <a href="#">Employee Detail</a> | 5 hours ago  | apex       |
| 1001 | Login Page                      | 2 days ago   | apex       |

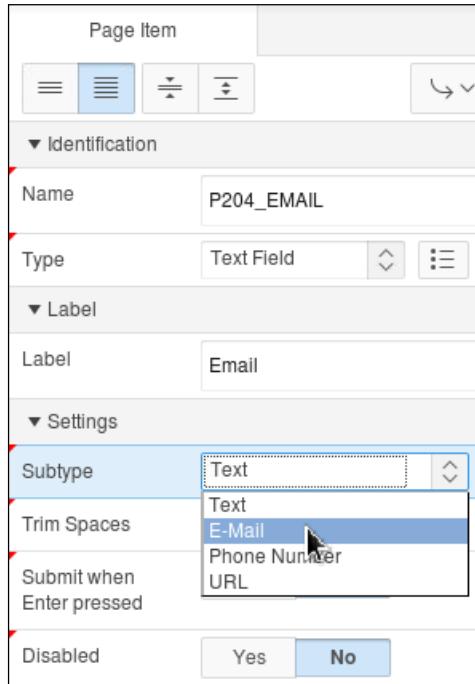
- k. You want to change the setting for email so that it uses the appropriate keyboard for email on a mobile device. In the Rendering tab, select **P204\_EMAIL**.



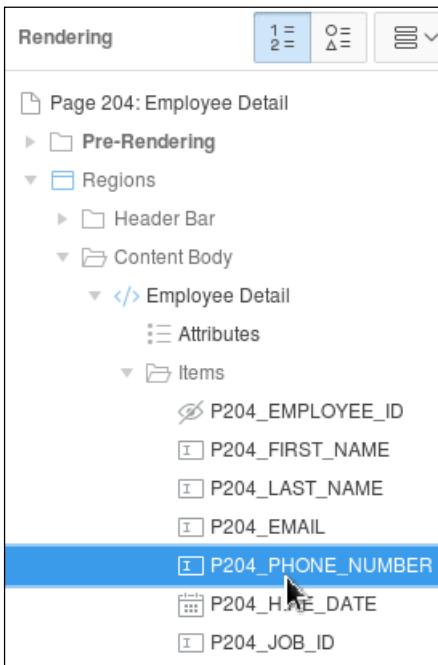
The screenshot shows the Oracle Database application's rendering tab. The tree view displays the structure of Page 204: Employee Detail. The item 'P204\_EMAIL' is selected and highlighted with a blue background.

- Page 204: Employee Detail
- Pre-Rendering
- Regions
  - Header Bar
  - Content Body
    - Employee Detail
      - Attributes
      - Items
        - P204\_EMPLOYEE\_ID
        - P204\_FIRST\_NAME
        - P204\_LAST\_NAME
        - P204\_EMAIL** (highlighted)
        - P204\_PHONE\_NUMBER
        - P204\_HIRE\_DATE

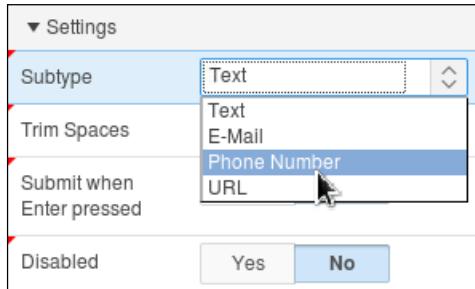
## I. Select E-Mail for Settings &gt; Subtype.



- m. You want to change the subtype for Phone Number. In the Rendering tab, select **P204\_PHONE\_NUMBER**.

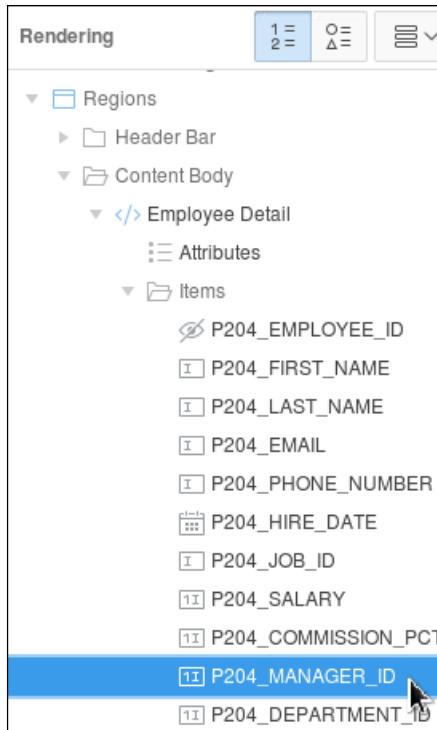


- n. Select **Phone Number** for **Settings > Subtype**.



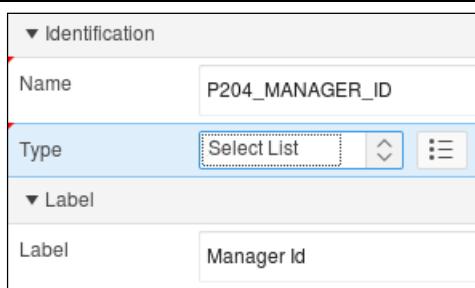
**Note:** To see how subtypes work, you need to run the page on a mobile device. Ask your instructor to show you an example.

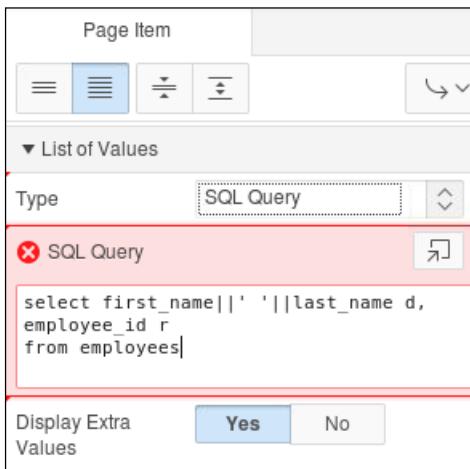
- o. You want to change Manager to show a select list. In the Rendering tab, select **P204\_MANAGER\_ID**.



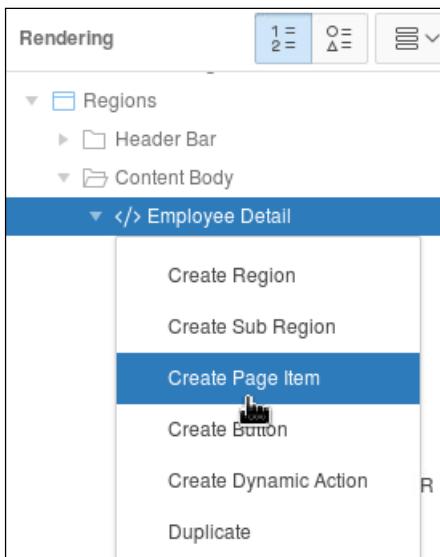
- p. Select **Identification > Type as Select List, List of Values > Type as SQL Query** and enter the following code (located in the /home/oracle/labs/labs\_lab\_08\_02\_04.txt file) in the **List of Values > SQL Query** field.

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

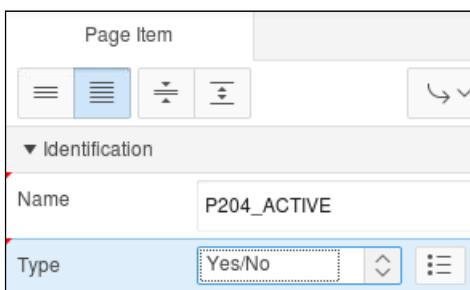


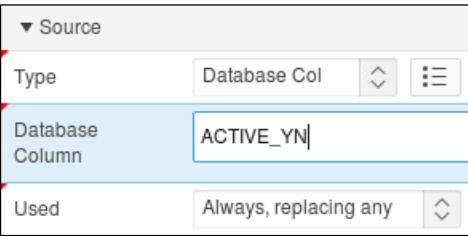


- q. You want to create a new page item for the ACTIVE\_YN column you added to the EMPLOYEES table previously. Right-click **Employee Detail** and select **Create Page Item**.

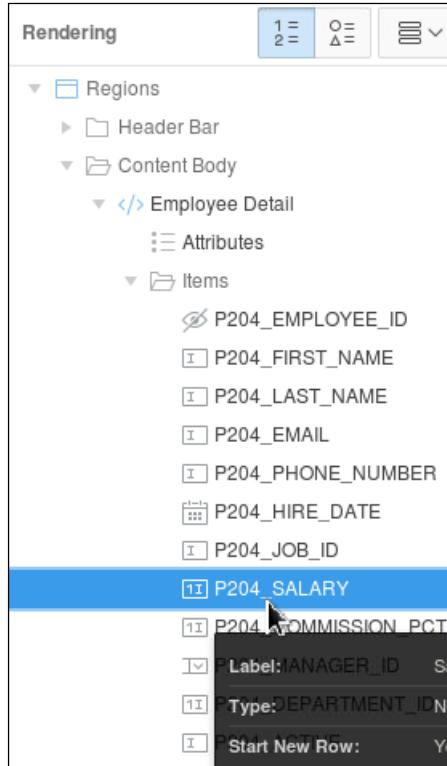


- r. In the Page Item tab, enter the following value for the respective fields:
- 1) Identification > Name = P204\_ACTIVE
  - 2) Identification > Type = Yes/No
  - 3) Source > Type = Database Column
  - 4) Source > Database Column = ACTIVE\_YN

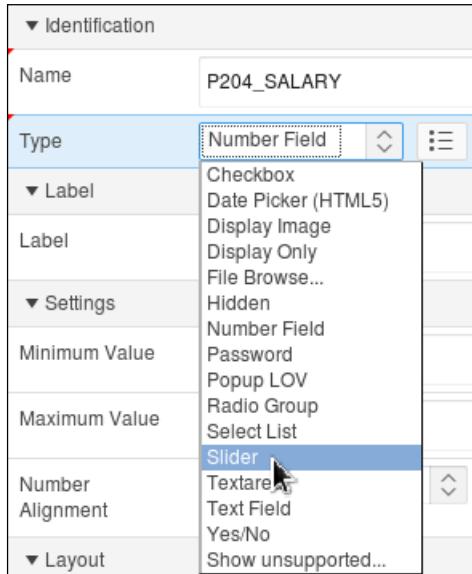




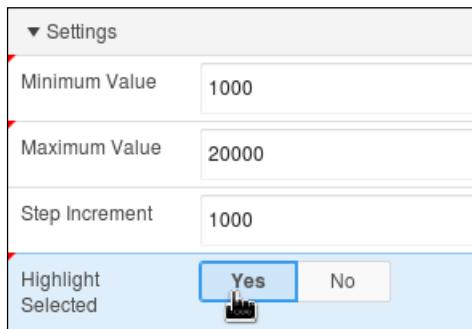
- s. You want to change the Salary so that it appears as a slider. In the Rendering tab, select **P204\_SALARY**.



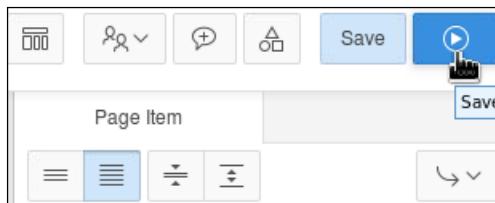
- t. Select **Slider** from the **Identification > Type** drop-down list.



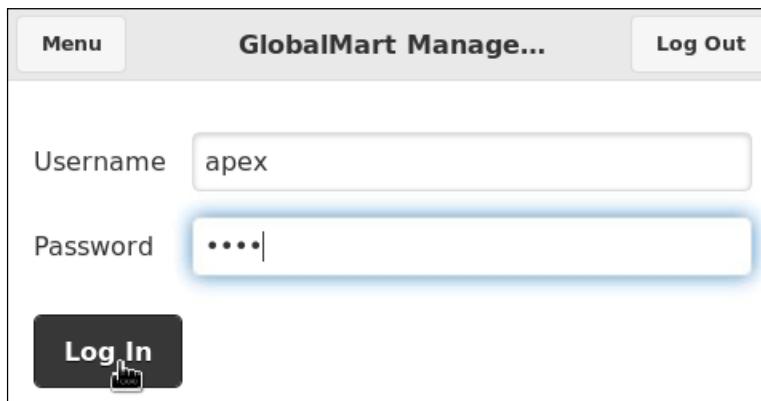
- u. Enter 1000 for **Minimum Value**, 20000 for **Maximum Value**, and 1000 for **Step Increment**. Select **Yes** for **Highlight Selected**.



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

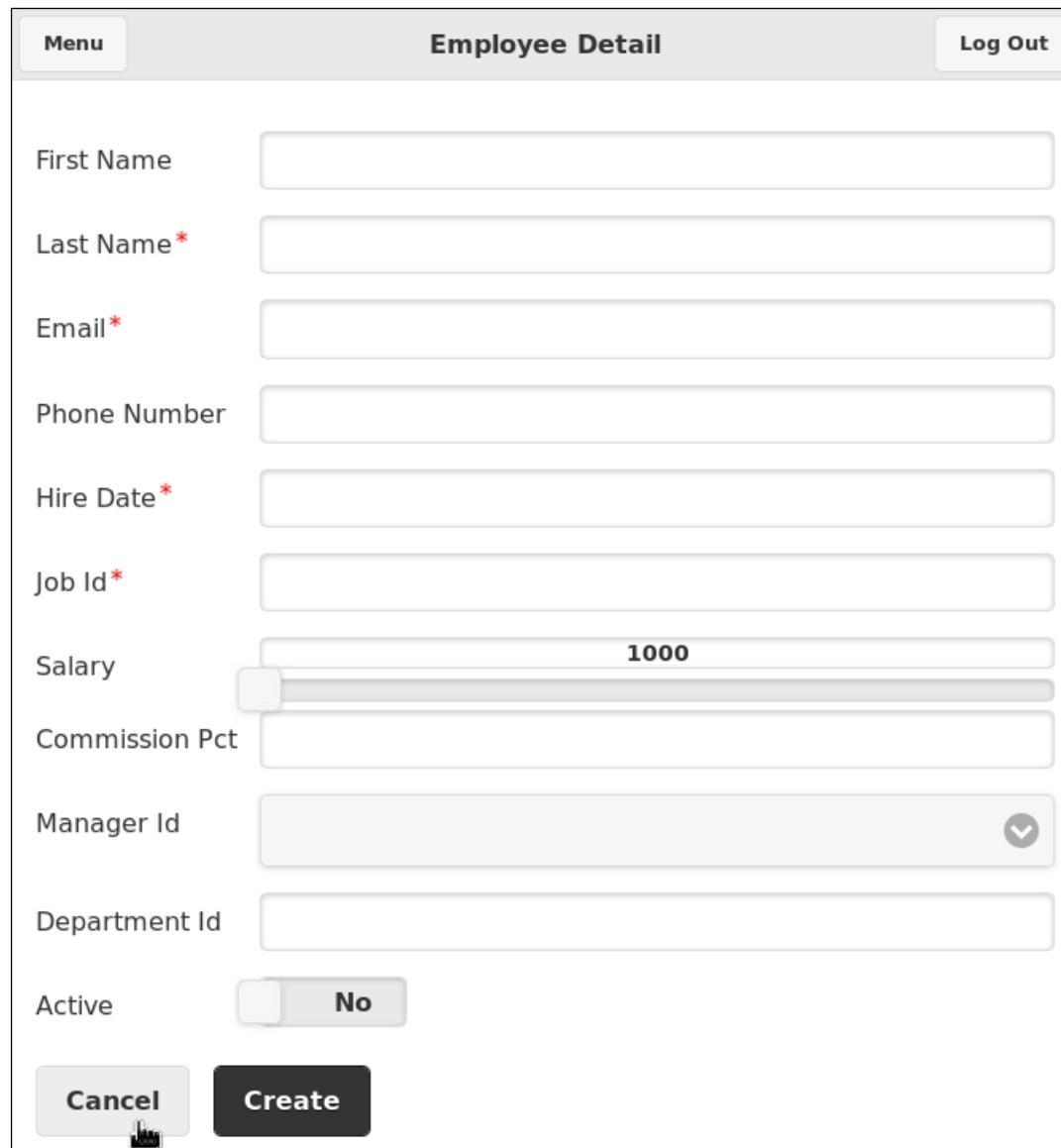


- w. If prompted, enter your developer login credentials and click **Log In**.



The screenshot shows a login interface titled "GlobalMart Manage...". It has three main fields: "Username" with the value "apex", "Password" with the value "\*\*\*\*\*", and a "Log In" button at the bottom.

- x. If the form is empty, click **Cancel** to return to the report.



The screenshot shows an "Employee Detail" form with the following fields and values:

| Field          | Value |
|----------------|-------|
| First Name     |       |
| Last Name*     |       |
| Email*         |       |
| Phone Number   |       |
| Hire Date*     |       |
| Job Id*        |       |
| Salary         | 1000  |
| Commission Pct |       |
| Manager Id     |       |
| Department Id  |       |
| Active         | No    |

At the bottom are two buttons: "Cancel" and "Create".

- y. Select **King** from the list.

The screenshot shows a user interface titled "Employee List". At the top left is a "Menu" button, and at the top right is a "Log Out" button. Below the title is a search bar with a magnifying glass icon. The main area displays a list of names: King, Kochhar, De Haan, Hunold, Ernst, and Austin. Each name is preceded by a small black icon resembling a hand cursor or a selection button. To the right of each name is a vertical column of five circular arrows pointing to the right, likely indicating further actions or details for each employee entry.

- z. The form is populated with the employee information. Move the Salary slider so that the salary is **10000**.

Employee Detail

| First Name                                       | Steven   |
|--|--|
| Last Name*                                       | King   |
| Email*   | SKING  |
| Phone Number                                     | 515.123.4567   |
| Hire Date*                                       | 1987-06-17   |
| Job Id*  | AD_PRES  |
| Salary   | <div style="width: 100px; background-color: #ccc; position: relative;"><div style="width: 10px; height: 10px; background-color: #0070C0; position: absolute; left: -5px; top: -5px; border-radius: 50%;"></div><div style="position: absolute; left: 50%; top: 50%; transform: translate(-50%, -50%); font-size: small;">10000</div></div> |
| Commission Pct                                   | 10000  |
| Manager Id                                       |  |
| Department Id                                    | 90   |
| Active   | No   |
| <b>Cancel</b> <b>Delete</b> <b>Apply Changes</b> |  |

- aa. Change the **Active** item so that the value is **Yes** and click **Apply Changes**.

Employee Detail

|                |   |
|----------------|---|
| First Name     | Steven                                  |
| Last Name *    | King                                    |
| Email *        | SKING                                   |
| Phone Number   | 515.123.4567                            |
| Hire Date *    | 1987-06-17                              |
| Job Id *       | AD_PRES                                 |
| Salary         | 10000                                   |
| Commission Pct |   |
| Manager Id     |   |
| Department Id  | 90                                      |
| Active         | <input checked="" type="checkbox"/> Yes |

**Cancel** **Delete** **Apply Changes**

bb. Your changes are saved.

The screenshot shows a web application titled "Employee List". At the top, there is a "Menu" button, the title "Employee List", and a "Log Out" button. Below the title, a message "Action Processed." is displayed. A search bar with a magnifying glass icon is present. A list of names is shown in a table-like structure: "King", "Kochhar", "De Haan", "Hunold", and "Ernst". To the right of each name are three circular icons with arrows pointing right, likely for navigating through related records.

cc. Switch browser to the Page Designer page. Click the **Application 1** breadcrumb.

The screenshot shows the Oracle Page Designer interface. At the top, there is a breadcrumb navigation bar with "Application 1" highlighted in blue. Below the breadcrumb is a toolbar with various icons. On the left, there is a "Rendering" section with a dropdown menu set to "1 =".



## **Practices for Lesson 9: Understanding Session State**

**Chapter 9**

## Practices for Lesson 9: Overview

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### Practices Overview

There is one practice for this lesson. In this practice, you examine how session state works in an Application Express application.

## Practice 9-1: Understanding Session State

### Overview

In this practice, you:

- Modify the GMT application to add a Create button to the Customers page. When the button is clicked, it redirects to the Customer Details page.
- You clear the cache so that when the button is clicked, the Customer Details form is empty.
- You review what is in session state and also add the current value for first name and last name to the Customer Details region header.

### 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 the Customers page in the GlobalMart Management Tool application, add a **Create** Region button that navigates to the Customer Details page when it is clicked.
2. Run the page and view an existing record. Click Cancel, and then click the Create button. What do you observe?
3. Edit the button and clear the cache for the Customer Details page.
4. Edit an existing record and view the session state. Why do the values for all the items on the Customer Details page not appear?
5. Change the Link Column on the Customer Report to include the value for the P7\_CUST\_FIRST\_NAME item.
6. On the Customer Details page, change the title of the Customer Details region to use the following (located in /home/oracle/labs/labs/lab\_09\_01.txt).  

&P7\_CUST\_FIRST\_NAME. &P7\_CUST\_LAST\_NAME. Customer Details
7. Run the page. What do you observe?

### Catch Up

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

- a. Log 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` user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Make sure that **Yes** is selected for the **Install Supporting Objects** option and click **Next >**.
- i. Click **Install**.
- j. Verify that the application and the supporting objects successfully installed.

## Solution 9-1: Understanding Session State

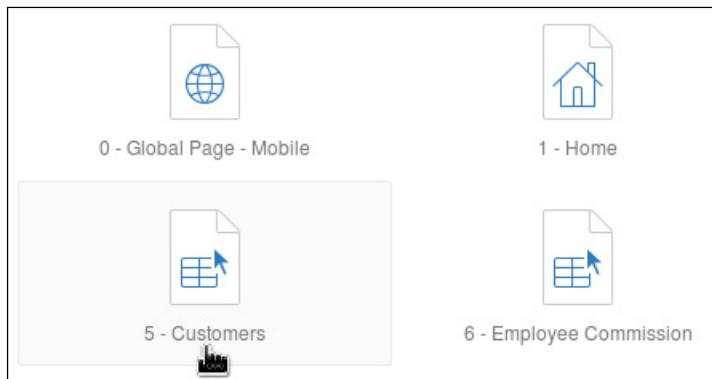
### Overview

In this practice solution, steps are provided for:

- Modifying the GMT application by adding a Create button to the Customers page. When the button is clicked, it redirects to the Customer Details page.
- Clearing the cache so that when the button is clicked, the Customer Details form is empty.
- Reviewing what is in session state and also adding the current value for first name and last name to the Customer Details region header.

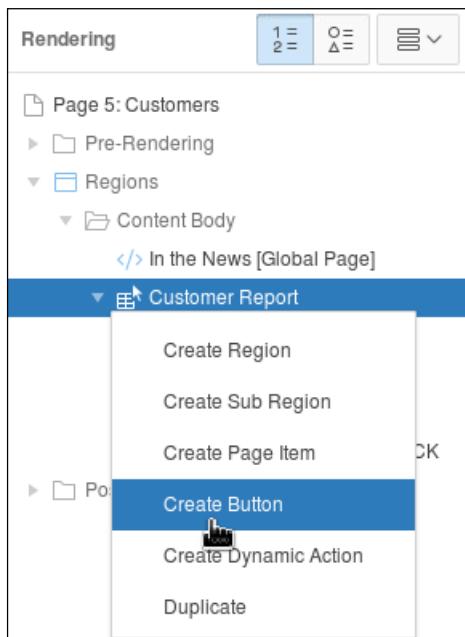
### Steps

1. On the Customers page in the GlobalMart Management Tool application, add a **Create** Region button that navigates to the Customer Details page when it is clicked.
  - a. Navigate to the GMT application home page and select the **Customers** page.



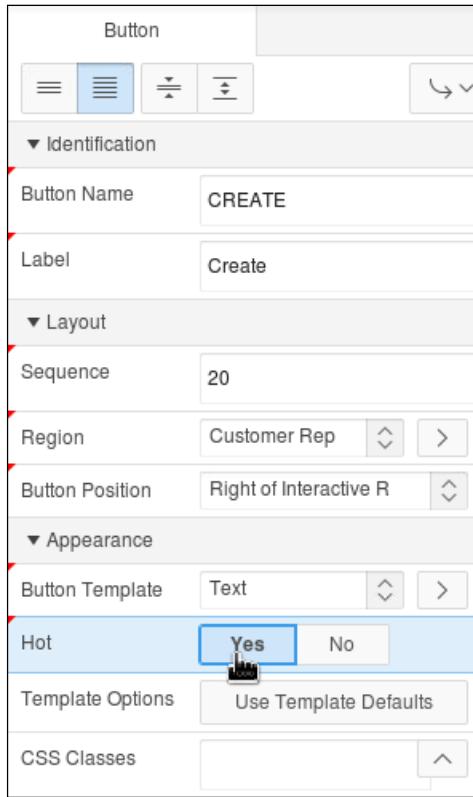
**Note:** You will need to remove the filter you created previously and click the **View Icons** icon to see what is displayed in the screenshot.

- b. Right-click the **Customer Report** region and select **Create Button**.

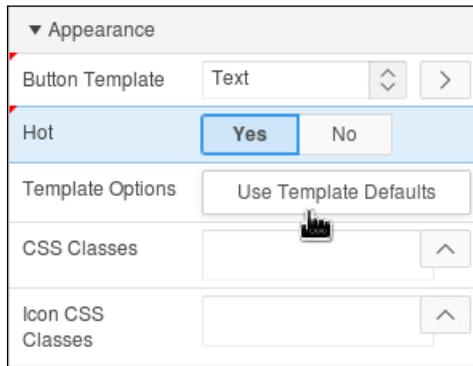


- c. Select the newly created button. In the Button tab, enter the following value for the respective fields:
- 1) Identification > Button Name = CREATE
  - 2) Layout > Button Position = Right of Interactive Report Search Bar
  - 3) Appearance > Hot = Yes

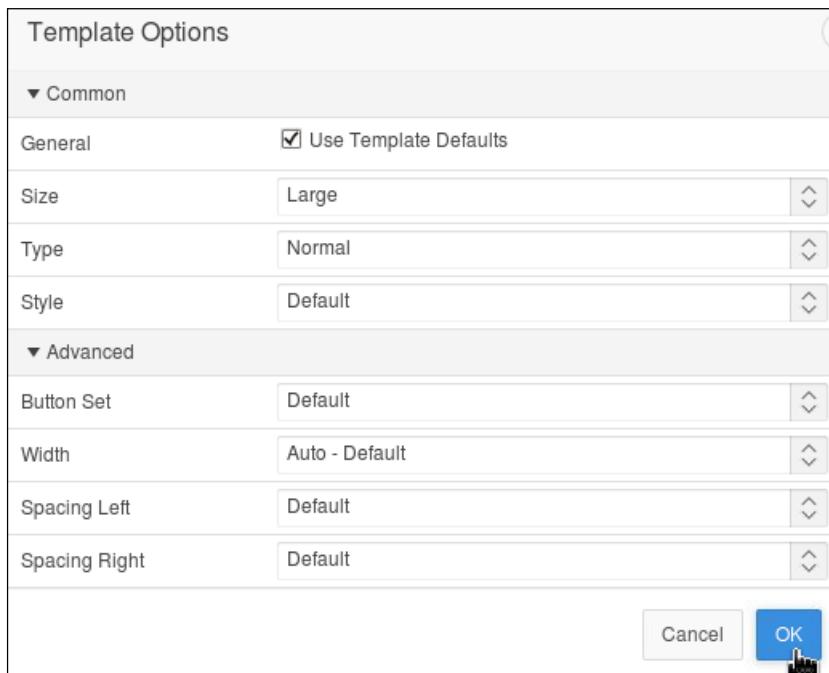
**Note:** The Identification > Label field gets auto-populated.



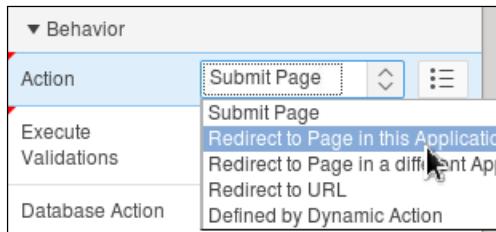
- d. Click the **Use Template Defaults** button under Appearance > Template Options.



- e. Select **Common > Size as Large** and click **OK**.



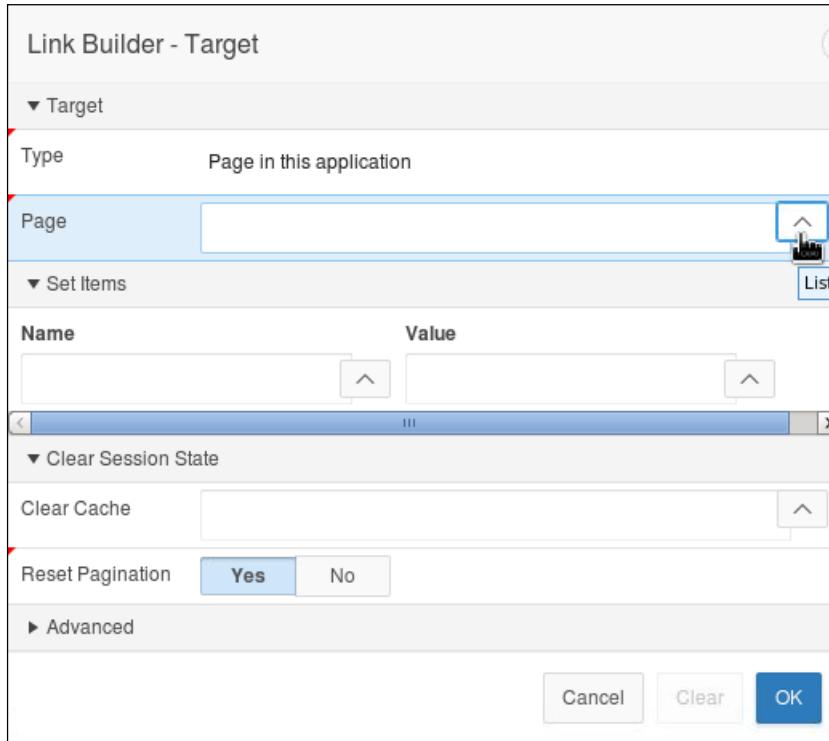
- f. Select **Redirect to Page in this Application** for **Behavior > Action**.



- g. Click **Behavior > Target > No Link Defined**.



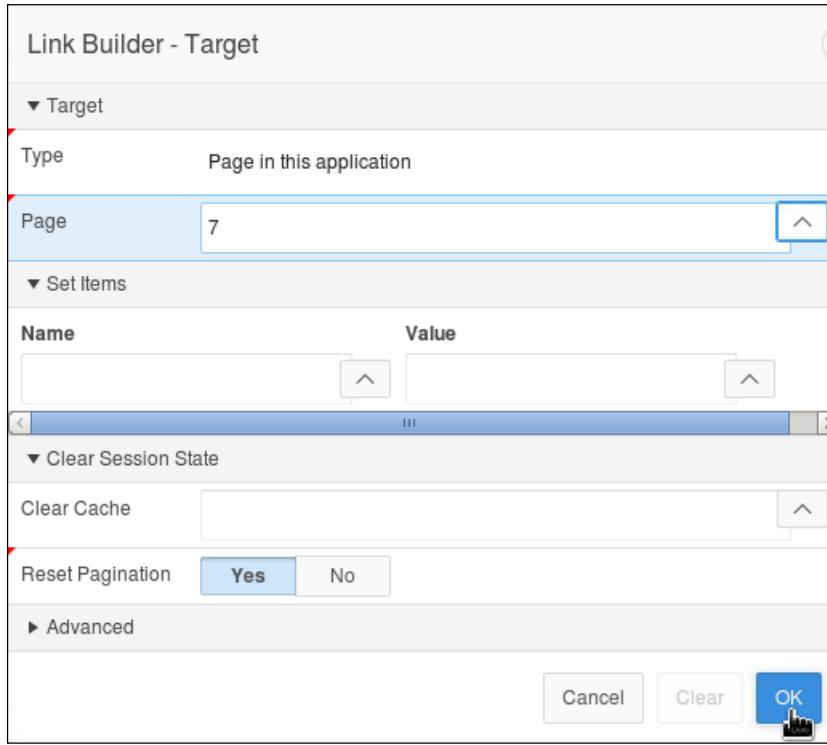
- h. Click the up arrow near the Page field.



- i. Select the **Customer Details** page (Page 7) from the list.

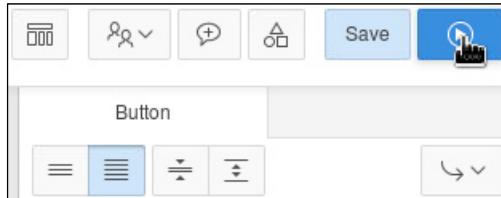
| Page Number | Page Name                   | User Interface |
|-------------|-----------------------------|----------------|
| 1           | Home                        | Desktop        |
| 3           | Top Tier Salary             | Desktop        |
| 4           | Customer Address List       | Desktop        |
| 5           | Customers                   | Desktop        |
| 6           | Employee Commission         | Desktop        |
| 7           | Customer Details            | Desktop        |
| 8           | List of Orders              | Desktop        |
| 9           | Master Detail               | Desktop        |
| 10          | Update Employee Information | Desktop        |

- j. Click **OK**.



2. Run the page and view an existing record. Click Cancel, and then click the Create button. What do you observe?

- a. Run the page. Click the **Save and Run Page** icon.



- b. If you are prompted to enter your login credentials, enter the details and click **Log In**.

The screenshot shows a 'Log In' dialog box. It has fields for 'Username' (apex) and 'Password' (\*\*\*\*). At the bottom right is a 'Log In' button, which is highlighted with a cursor icon.

- c. The report is displayed. Click the **Edit** icon for the first row.

|  |             |                 |                | Go               |             | 1. Primary Report |                | Actions ▾  |                 | Customer feedback |               | Create |
|--|-------------|-----------------|----------------|------------------|-------------|-------------------|----------------|------------|-----------------|-------------------|---------------|--------|
|  | Customer Id | Cust First Name | Cust Last Name | Street Address   | Postal Code | City              | State Province | Country Id | Phone Number    | Nls Language      | Nls Territory |        |
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd | 361168      | Bangalore         | Kar            | IN         | +91 80 012 4869 | hi                | INDIA         |        |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      | Chennai           | Tam            | IN         | +91 80 012 4887 | hi                | INDIA         |        |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St | 361168      | Cochin            | Ker            | IN         | +91 80 012 4889 | hi                | INDIA         |        |

- d. Note that the Customer Details form reflects the data for the customer that you chose. Click **Cancel**.

Customer Details

|                   |   |
|-------------------|---|
| Cust First Name * | Scott   |
| Cust Last Name *  | Jordan  |
| Cust Email        | Scott.Jordan@WILLET.COM   |
| Account Manager   | Cambrault, Gerald<br>Bates, Elizabeth, Russell, John, Cambrault, Gerald |
| Country           | India   |
| City              | Bangalore   |

The record created or modified in this form is reflected in the Customer Report.

Cancel
 Delete
Apply Changes

- e. Click the **Create** button.

| Customer feedback |                 |              |               | Create |
|-------------------|-----------------|--------------|---------------|--------|
| Country Id        | Phone Number    | Nls Language | Nls Territory |        |
| IN                | +91 80 012 4869 | hi           | INDIA         |        |

- f. Note that the values are still cached on the page. You want to change this so that you receive an empty page where the cache is cleared. Click the **Cancel** button.

The screenshot shows a 'Customer Details' form with the following fields and their values:

- Cust First Name: Scott
- Cust Last Name: Jordan
- Cust Email: Scott.Jordan@WILLET.COM
- Account Manager: Cambrault, Gerald (dropdown menu showing Bates, Elizabeth, Russell, John, Cambrault, Gerald)
- Country: India
- City: Bangalore

A message at the bottom states: "The record created or modified in this form is reflected in the Customer Report." Below the form are three buttons: 'Cancel' (with a cancel icon), 'Delete', and a blue 'Apply Changes' button.

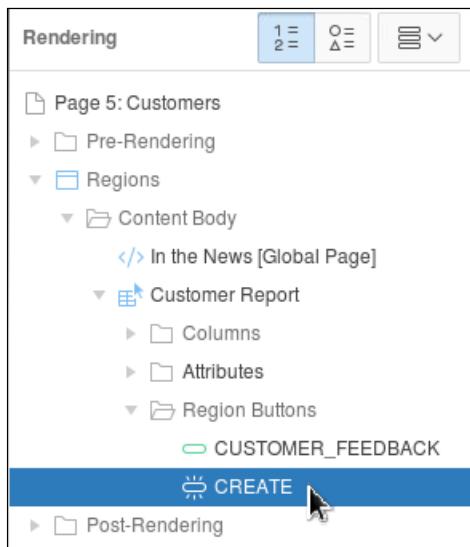
- g. On the **Customers** page, click the **Edit Page 5** link on the Developer toolbar.

The screenshot shows the 'Customers' page in Oracle Application Express. The page has a header with search, go, report, actions, and a 'Customer feedb' link. The main area is a grid with the following columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, Country Id, Phone Number, and NI Lang. There are four rows of data:

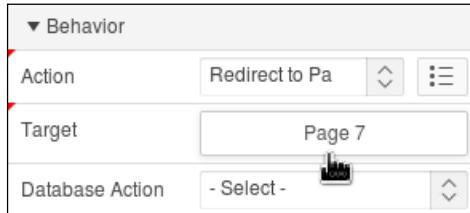
|  | Customer Id | Cust First Name | Cust Last Name | Street Address   | Postal Code | City      | State Province | Country Id | Phone Number    | NI Lang |
|--|-------------|-----------------|----------------|------------------|-------------|-----------|----------------|------------|-----------------|---------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd | 361168      | Bangalore | Kar            | IN         | +91 80 012 4869 | hi      |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      | Chennai   | Tam            | IN         | +91 80 012 4887 | hi      |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St | 361168      | Cochin    | Ker            | IN         | +91 80 012 4889 | hi      |
|  | 607         | Sharmila        | Fonda          | 1648 Anamika St  | 361168      | Cochin    | Ker            | IN         | +91 80 012 4889 | hi      |

The developer toolbar at the bottom includes links for Home, Application 1, Edit Page 5 (highlighted in red), Session, View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a settings gear icon.

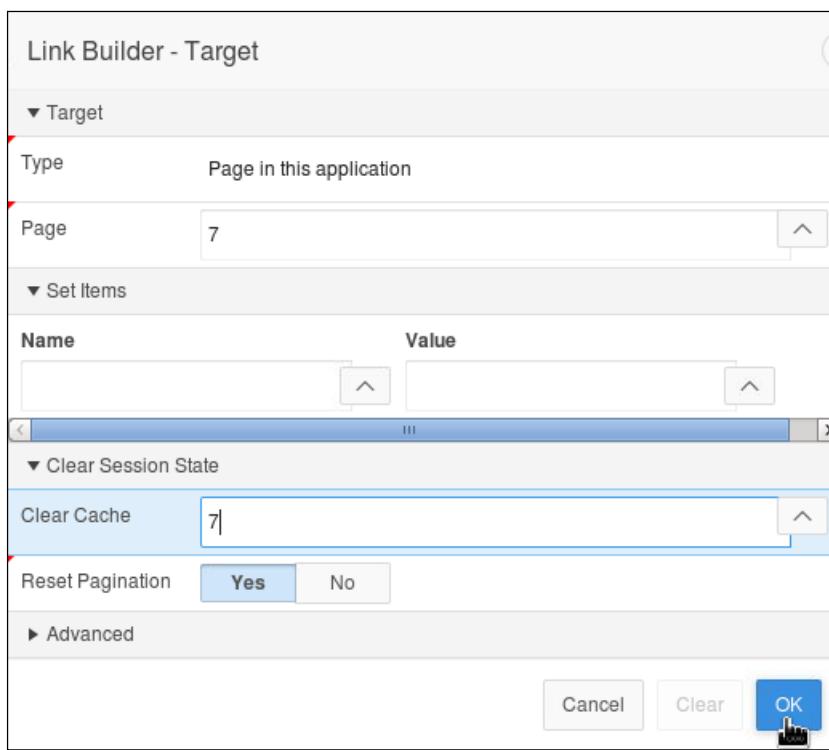
3. Edit the button and clear the cache for the Customer Details page.
- In the Rendering tab, select the **Create** button.



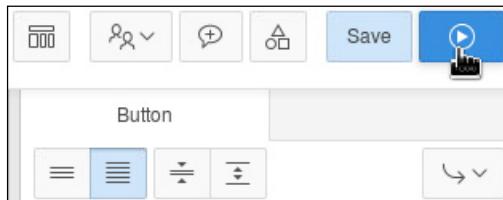
- Click the **Behavior > Target > Page 7** button.



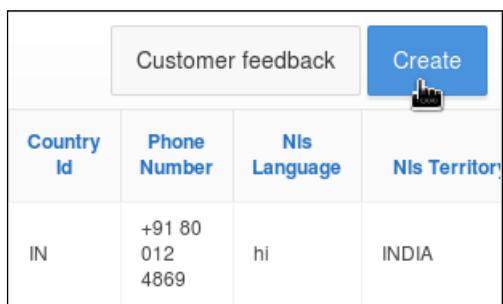
- c. For **Clear Cache**, enter the page number of the **Customer Details** page (Page 7) and click **OK**.



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



- e. Click **Create** again.



- f. Note that the values are no longer cached and the form is now empty. Also note that the application does not display the Delete or Apply Changes button; it displays the **Create** button instead. Click **Cancel**.

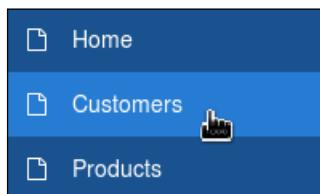
The Customer Details form is displayed. It contains the following fields:

- Cust First Name: Text input field
- Cust Last Name: Text input field
- Cust Email: Text input field
- Account Manager: A dropdown menu showing options: - Select Manager -, Bates, Elizabeth, Russell, John, Cambrault, Gerald
- Country: A dropdown menu showing options: - Select Country -
- City: Text input field with a right-pointing arrow icon

A message at the bottom states: "The record created or modified in this form is reflected in the Customer Report."

At the bottom left is a "Cancel" button with a hand cursor icon over it. At the bottom right is a blue "Create" button.

4. Edit an existing record and view the session state. Why do the values for all the items on the Customer Details page not appear?
- You may want to start a new session to clear the session state. To do this, log out of the application and log back in. Then click the **Customers** tab.



- b. Click the **Edit** icon for the first entry.

| Customer Id | Cust First Name | Cust Last Name | Street Address | Postal Code      |
|-------------|-----------------|----------------|----------------|------------------|
|             | 496             | Scott          | Jordan         | 1636 Pretty Blvd |
|             | 605             | Shammi         | Pacino         | 1646 Brazil Blvd |
|             | 606             | Sharmila       | Kazan          | 1647 Suspense St |

- c. The values for the record are displayed. Click the **Session** link on the Developer toolbar.

The screenshot shows the 'Customer Details' page in Oracle Application Express. The page contains the following form fields:

- Cust First Name: Scott
- Cust Last Name: Jordan
- Cust Email: Scott.Jordan@WILLET.COM
- Account Manager: Cambrault, Gerald (dropdown menu showing Bates, Elizabeth, Russell, John, Cambrault, Gerald)
- Country: India
- City: Bangalore

Below the form, a message states: "The record created or modified in this form is reflected in the Customer Report." At the bottom are buttons for Cancel, Delete, and Apply Changes, along with a link to release 1.0 Set Screen Reader Mode On. The developer toolbar at the bottom includes links for Home, Application 1, Edit Page 7, Session (which is highlighted), View Debug, Debug, Show Grid, Quick Edit, Theme Roller, and a refresh icon.

- d. Notice that the only value in session state is P7\_CUSTOMER\_ID. This value is hidden on this page but the remaining values are displayed based on this value. The reason why the other values are not in session state is because they have not been submitted to the page. The current values are stored in &P<n>\_<item\_name>. You examine how this works later in this practice.

The screenshot shows the 'Page Items' table in the developer toolbar. The table has the following data:

| Application | Page | Item Name      | Display | Item Value | Status   | Encrypted |
|-------------|------|----------------|---------|------------|----------|-----------|
| 1           | 7    | P7_CUSTOMER_ID | Hidden  | 496        | Inserted | No        |

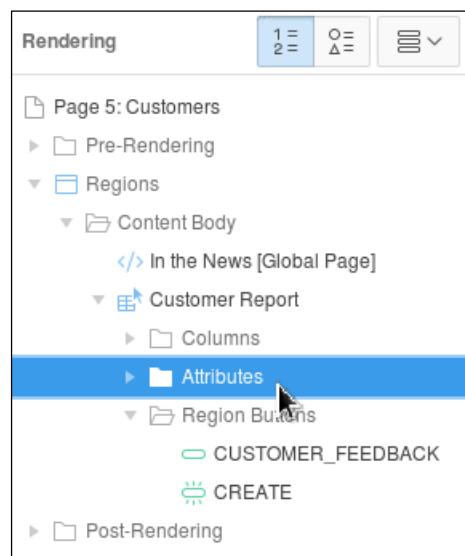
- e. Close the Session State window, switch back to your **Customer Details** page and click **Cancel**.

The record created or modified in this form is reflected in the Customer Report.

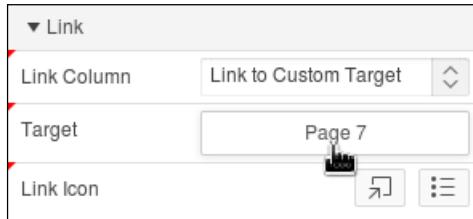
- f. Click the **Edit Page 5** link on the Developer toolbar.



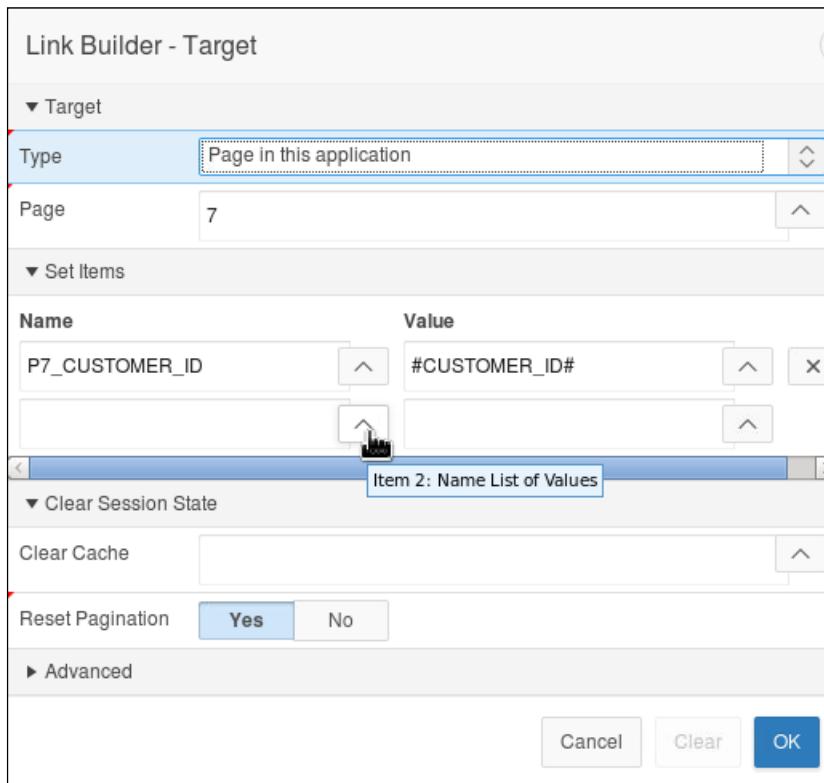
5. Change the Link Column on the Customer Report to include the value for the P7\_CUST\_FIRST\_NAME item.
- a. You want to review how the value for P7\_CUSTOMER\_ID is populated in session state. Select **Regions > Content Body > Customer Report > Attributes**.



- b. In the Attributes tab, click **Link > Target > Page 7**.



- c. Note that the name for **Item 1** is **P7\_CUSTOMER\_ID** and the value is **#CUSTOMER\_ID#**. This is how the value is passed when the Edit icon is clicked. You want to add another item/value. Click the Find Item icon for Item 2.



- d. Select **P7\_CUST\_FIRST\_NAME**.

| Pick Set Items              |                 |
|-----------------------------|-----------------|
| Target Page                 | Current Page    |
| <input type="text"/> Search | >               |
| Name                        | Label           |
| P7_ACCOUNT_MGR_ID           | Account Manager |
| P7_CITY                     | City            |
| P7_COUNTRY_ID               | Country         |
| P7_CUST_EMAIL               | Cust Email      |
| P7_CUST_FIRST_NAME          | Cust First Name |
| P7_CUST_LAST_NAME           | Cust Last Name  |
| P7_CUSTOMER_ID              | Customer Id     |

- e. Click the Find Item icon for Value 2.

Link Builder - Target

▼ Target

Type Page in this application

Page 7

▼ Set Items

| Name               | Value         |
|--------------------|---------------|
| P7_CUSTOMER_ID     | #CUSTOMER_ID# |
| P7_CUST_FIRST_NAME |               |

▼ Clear Session State

Clear Cache

Reset Pagination Yes No

► Advanced

Cancel Clear OK

- f. Select the value **CUST\_FIRST\_NAME**.

| Pick Set Items              |                 |
|-----------------------------|-----------------|
| Columns                     | Current Page    |
| <input type="text"/> Search | >               |
| Name                        | Label           |
| CUSTOMER_ID                 | Customer Id     |
| <b>CUST_FIRST_NAME</b>      | Cust First Name |
| CUST_LAST_NAME              | Cust Last Name  |
| STREET_ADDRESS              | Street Address  |
| POSTAL_CODE                 | Postal Code     |
| CITY                        | City            |
| STATE_PROVINCE              | State Province  |
| COUNTRY_ID                  | Country Id      |
| PHONE_NUMBER                | Phone Number    |
| NLS_LANGUAGE                | Nls Language    |

- g. The Customer First Name, as well as the Customer ID, is passed into session state now. Click **OK**.

Link Builder - Target

▼ Target

Type: Page in this application

Page: 7

▼ Set Items

| Name               | Value             |
|--------------------|-------------------|
| P7_CUSTOMER_ID     | #CUSTOMER_ID#     |
| P7_CUST_FIRST_NAME | #CUST_FIRST_NAME# |

▼ Clear Session State

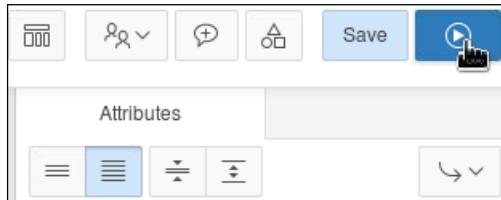
Clear Cache

Reset Pagination: Yes

Advanced

Cancel Clear OK

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

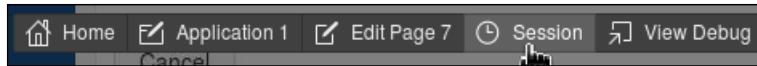


- i. Move your cursor over the **Edit** button for the first row in your report. Notice on the status bar that **CUSTOMER\_ID** and **CUST\_FIRST\_NAME** are being passed in the URL. Click the **Edit** icon.

|  | Customer Id | Cust First Name | Cust Last Name | Street Address   | Postal Code | City      | State Province |
|--|-------------|-----------------|----------------|------------------|-------------|-----------|----------------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd | 361168      | Bangalore | Kar            |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      | Chennai   | Tam            |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St | 361168      | Cochin    | Ker            |
|  | 607         | Sharmila        | Fonda          | 1648 Anamika St  | 361168      | Cochin    | Ker            |

localhost:8080/apex/f?p=1:7:8671755175214::NO:RF:P7\_CUSTOMER\_ID,P7\_CUST\_FIRST\_NAME|496,Sc...s=36RpcMaXF0x137Y995cQ641ECN2sIMLzzLqEshD7uA|

- j. Click the **Session** link on the Developer toolbar.



- k. Notice that this time, the **P7\_CUST\_FIRST\_NAME** value is also passed.

| Page Items  |      |                    |            |            |          |           |  |
|-------------|------|--------------------|------------|------------|----------|-----------|--|
| Application | Page | Item Name          | Display    | Item Value | Status   | Encrypted |  |
| 1           | 7    | P7_CUSTOMER_ID     | Hidden     | 496        | Inserted | No        |  |
| 1           | 7    | P7_CUST_FIRST_NAME | Text Field | Scott      | Inserted | No        |  |

1 - 2

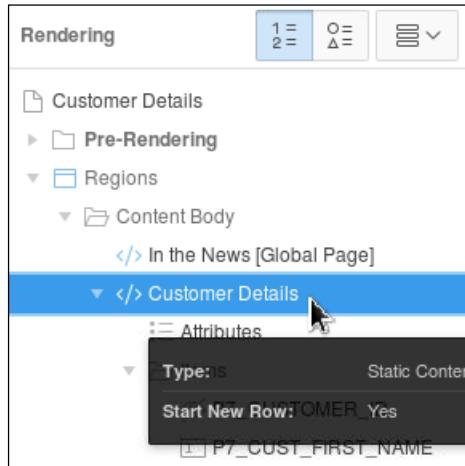
- l. Close the Session State window, switch back to the **Customer Details** page and click the **Edit Page 7** link on the Developer toolbar.



6. On the Customer Details page, change the title of the Customer Details region to use the following (located in /home/oracle/labs/labs/lab\_09\_01.txt).

&P7\_CUST\_FIRST\_NAME. &P7\_CUST\_LAST\_NAME. Customer Details

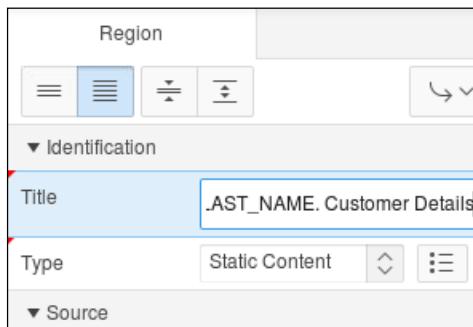
- a. In the Rendering tab, select the **Customer Details** region.



- b. Change the **Identification > Title** from **Customer Details** to the following (located in /home/oracle/labs/labs/lab\_09\_01.txt).

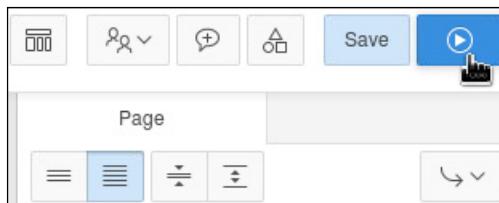
&P7\_CUST\_FIRST\_NAME. &P7\_CUST\_LAST\_NAME. Customer Details

**Note:** In the preceding text, the period (.) at the end of the item name is required.



7. Run the page. What do you observe?

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



- b. Note that the Customer Name for the record being displayed is contained in the title.  
Click the **Application 1** link on the Developer toolbar.

Scott Jordan Customer Details

|                   |   |
|-------------------|---|
| Cust First Name * | Scott   |
| Cust Last Name *  | Jordan  |
| Cust Email        | Scott.Jordan@WILLET.COM   |
| Account Manager   | Cambrault, Gerald<br>Bates, Elizabeth, Russell, John, Cambrault, Gerald |
| Country           | India   |
| City              | Bangalore   |

*The record created or modified in this form is reflected in the Customer Report.*

File Application 1 Edit Page 7 Session View Debug Debug Show Cancel



## **Practices for Lesson 10: Adding Page Processing**

**Chapter 10**

## Practices for Lesson 10: Overview

---

### Practices Overview

There is one practice for this lesson. In this practice, you examine how computations, processes, and validations work.

## Practice 10-1: Creating and Manipulating Computations, Processes, and Validations

### Overview

In this practice, you make the following changes to the Customer Details page in the GlobalMart Management Tool application:

- Create a computation that changes the email address to uppercase after the page is submitted.
- Add a Phone Number item and create a process that populates the item's value when the page is rendered.
- Add a process to insert a record into a table called AUDITS every time a customer is added.
- Create an Item String Comparison validation to make sure that there are no spaces in the Email value.
- Examine the implied validation for required items.
- Create a Tabular Form Level validation. If the JOB\_ID is SA REP, then a commission needs to be entered. If the commission is not entered for the JOB\_ID SA REP, then display an error message.

### 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 **After Submit PL/SQL Expression** computation on the P7\_CUST\_EMAIL item. The PL/SQL expression should be: `upper (:P7_CUST_EMAIL)`. Test the page to see that the email address is stored as uppercase.
2. Add a **Display Only** item called P7\_PHONE\_NUMBER. Create a Before Region process to load the phone number into the item that you just created. The code that you want to specify in the process is as follows (located in `/home/oracle/labs/labs/lab_10_01_01.txt`):

```
for c1 in (
    select phone_number from customers where customer_id =
        :P7_CUSTOMER_ID
)
loop
    :P7_PHONE_NUMBER := c1.phone_number;
end loop;
```

3. Change the Process Row of CUSTOMERS process to add the P7\_CUSTOMER\_ID item in the **Return Key into Item** field.

4. Create an AUDITS table by using the SQL Workshop's Object Browser and add the following details:

| Column Name Data | Type     | Other Details |
|------------------|----------|---------------|
| CUSTOMER_ID      | NUMBER   | Not Populated |
| CREATED_BY       | VARCHAR2 | SCALE 40      |
| CREATED_ON       | DATE     | N/A           |

- Add a **Processing** PL/SQL process called **audit insert** that runs after the **Process Row of CUSTOMERS** process and has the following PL/SQL code (located in /home/oracle/labs/labs/lab\_10\_01\_02.txt). Set the success message to "You have been audited"

```
INSERT INTO audits VALUES (:P7_CUSTOMER_ID, :APP_USER, sysdate);
```

- Create an Item String Comparison validation called **Email Validation** on the P7\_CUST\_EMAIL item to ensure that there are no spaces in the Email value. Test the page to make sure that it works.
- Remove the First Name value from the page and click **Apply Changes**. Note the implied validation. Why is the error message shown if there is no validation on the page?
- Create a Tabular Form Level validation. If the JOB\_ID is SA REP, then a commission needs to be entered. If the commission is not entered for the JOB\_ID SA REP, then display an error message. Use the following PL/SQL code (located in /home/oracle/labs/labs/lab\_10\_01\_03.txt):

```
Declare
begin
    If :JOB_ID = 'SA REP' and :COMMISSION_PCT is not null then
        Return true;
    Else
        Return false;
    End if;
End;
```

## Catch Up

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

- Log in to the Application Express workspace as the **apex\_admin** user.
- Click the arrow next to **SQL Workshop** and select **SQL Scripts**.
- Click the **Upload >** button.
- Browse and upload the **sol\_02\_01.sql** file in the /home/oracle/labs/solutions directory.
- Run the script by clicking the **Run** icon.
- Click **Run Now**.

Make sure that the script executed successfully and the **apex** user is created.

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

- a. Log in to the Application Express workspace as the `apex` 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 1 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Make sure that **Yes** is selected for the **Install Supporting Objects** option and click **Next >**.
- i. Click **Install**.
- j. Verify that the application and the supporting objects successfully installed.

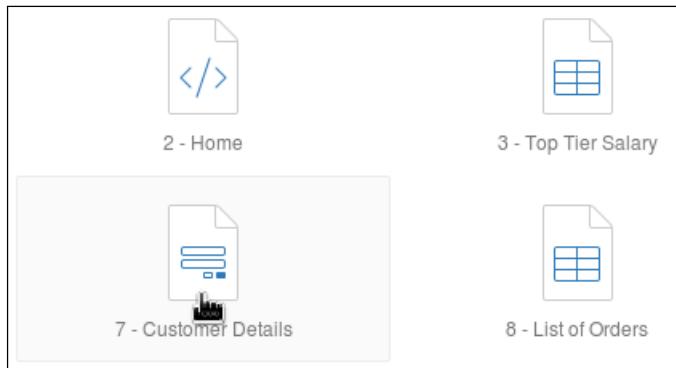
## Solution 10-1: Creating and Manipulating Computations, Processes, and Validations

### Overview

In this practice solution, steps are provided for creating and manipulating computations, processes, and validation.

### Steps

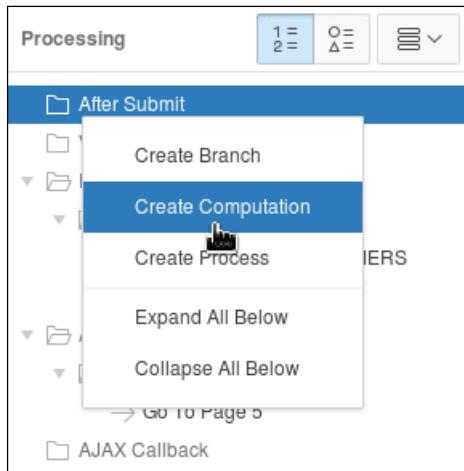
1. Create an **After Submit PL/SQL Expression** computation on the P7\_CUST\_EMAIL item. The PL/SQL expression should be: `upper (:P7_CUST_EMAIL)`. Test the page to see that the email address is stored as uppercase.
  - a. Navigate to the GlobalMart Management Tool application home page and select the **Customer Details** page.



- b. Select the **Processing** tab <> in the Page Designer.



- c. Under Processing, right-click **After Submit** and select **Create Computation**.



- d. Ensure that the new computation is selected in the left panel. On the right panel, enter the following value for the respective fields and click any other textbox to remove the warning:

- 1) Identification > Item Name = P7\_CUST\_EMAIL
- 2) Computation > Type = PL/SQL Expression
- 3) Computation > PL/SQL Expression = upper (:P7\_CUST\_EMAIL)

Computation

Identification

Item Name: P7\_CUST\_EMAIL

Execution Options

Sequence: 10

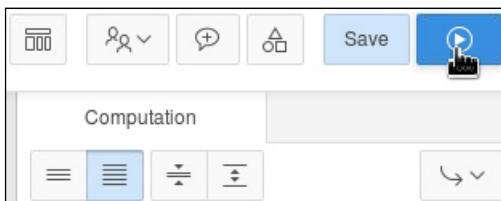
Point: After Submit

Computation

Type: PL/SQL Expression

PL/SQL Expression: `upper(:P7_CUST_EMAIL)`

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



- f. If prompted, enter your developer user credentials and click **Log In**.

Log In

Username: apex

Password: \*\*\*\*

Log In

- g. You need to edit a record. Click **Cancel** to return to the Customer Report.

Customer Details

Cust First Name \*

Cust Last Name \*

Cust Email

Account Manager - Select Manager -

Country - Select Country -

City

*The record created or modified in this form is reflected in the Customer Report.*

- h. Click the **Edit** icon for the first row.

|   | Customer Id | Cust First Name | Cust Last Name | Street Address   | Postal Code |
|---|-------------|-----------------|----------------|------------------|-------------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd | 361168      |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St | 361168      |

- i. Notice that the email is currently in mixed case format. Click **Apply Changes** to invoke the computation.

Scott Jordan Customer Details

|                   |   |
|-------------------|---|
| Cust First Name * | Scott   |
| Cust Last Name *  | Jordan  |
| Cust Email        | Scott.Jordan@WILLET.COM   |
| Account Manager   | Cambrault, Gerald<br>Bates, Elizabeth, Russell, John, Cambrault, Gerald |
| Country           | India   |
| City              | Bangalore   |

*The record created or modified in this form is reflected in the Customer Report.*

- j. The Customer Report is displayed. Scroll to the right to see the **Cust Email** column. Notice that the email for the record (highlighted in red) that you just applied is now in uppercase.

| Country Id | Phone Number    | Nls Language | Nls Territory | Credit Limit | Cust Email                |
|------------|-----------------|--------------|---------------|--------------|---------------------------|
| IN         | +91 80 012 4869 | hi           | INDIA         | 5000         | SCOTT.JORDAN@WILLET.COM   |
| IN         | +91 80 012 4887 | hi           | INDIA         | 500          | Shammi.Pacino@BITTERN.COM |
| IN         | +91 80 012 4889 | hi           | INDIA         | 500          | Sharmila.Kazan@BRANT.COM  |

2. Add a **Display Only** item called **P7\_PHONE\_NUMBER**. Create a Before Region process to load the phone number into the item that you just created. The code that you want to specify in the process is as follows (located in /home/oracle/labs/labs/lab\_10\_01\_01.txt):

```
for c1 in (
  select phone_number from customers where customer_id =
  :P7_CUSTOMER_ID
)
loop
  :P7_PHONE_NUMBER := c1.phone_number;
end loop;
```

- a. You want to make some modifications to the **Customer Details** page. Click the **Edit** icon for the first record.

|  | Customer Id | Cust First Name | Cust Last Name | Street Address   | Postal Code |
|--|-------------|-----------------|----------------|------------------|-------------|
|  | 496         | Scott           | Jordan         | 1636 Pretty Blvd | 361168      |
|  | 605         | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      |
|  | 606         | Sharmila        | Kazan          | 1647 Suspense St | 361168      |

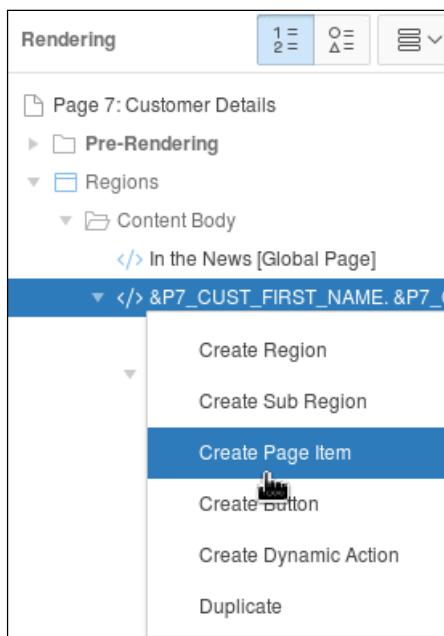
- b. Click the **Edit Page 7** link on the Developer toolbar.



- c. You want to create a page item for Phone Number. Select the **Rendering** tab in the Page Designer.



- d. Right-click the **Customer Details** Region and select **Create Page Item**.



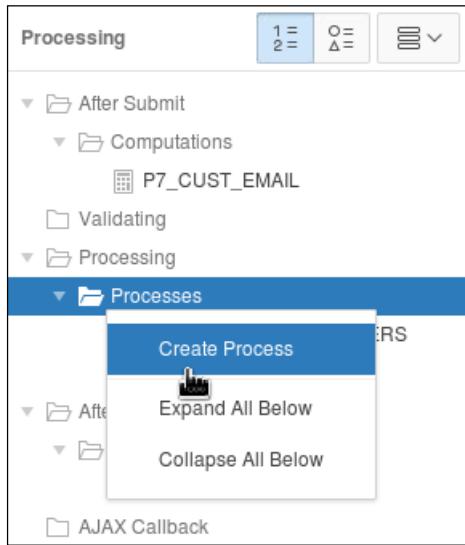
- e. Ensure that the newly created item is selected. In the Page Item tab, enter the following value for the respective fields:
- 1) Identification > Name = P7\_PHONE\_NUMBER
  - 2) Identification > Type = Display Only
  - 3) Source > Type = Database Column (This value gets populated automatically)
  - 4) Source > Database Column = PHONE\_NUMBER (This value gets populated automatically.)

The screenshot shows the 'Page Item' configuration screen. The 'Identification' tab is active, displaying 'Name' as 'P7\_PHONE\_NUMBER' and 'Type' as 'Display Only'. The 'Source' tab is also visible, showing 'Type' as 'Database Col' and 'Database Column' as 'PHONE\_NUMBER'. Both tabs have a red border around them.

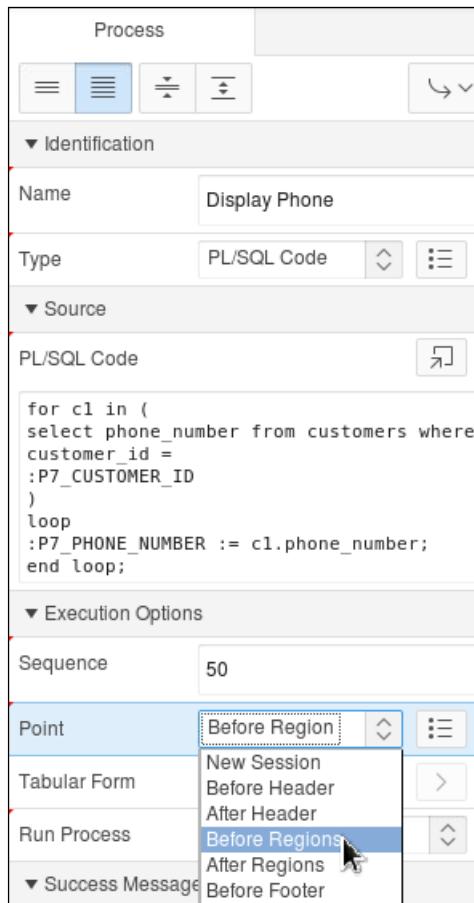
- f. You want to create an **On Load** process that is executed **Before Regions**. This process retrieves PHONE\_NUMBER for display only. Select the **Processing** tab in the Page Designer.



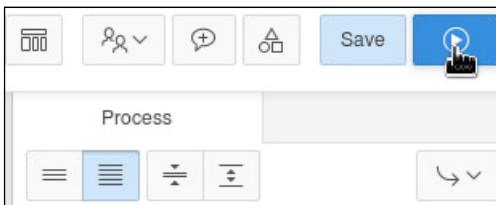
- g. Right-click **Processes** and select **Create Process**.



- h. In the Process tab, enter the following value for the respective fields:
- 1) Identification > Name = Display Phone
  - 2) Identification > Type = PL/SQL Code
  - 3) Source > PL/SQL Code = <Copy and paste from the /home/oracle/labs/labs/lab\_10\_01\_01.txt file>
  - 4) Execution Options > Point = Before Regions



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



- j. Notice that the phone number is displayed for the customer that you selected. Click the **Edit Page** link on the Developer toolbar.

Scott Jordan Customer Details

Cust First Name \* Scott

Cust Last Name \* Jordan

Cust Email SCOTT.JORDAN@WILLET.COM

Account Manager Cambrault, Gerald  
Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country India

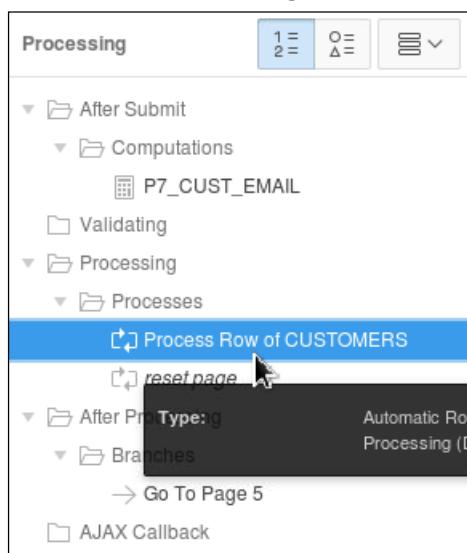
City Bangalore

Phone number +91 80 012 4869

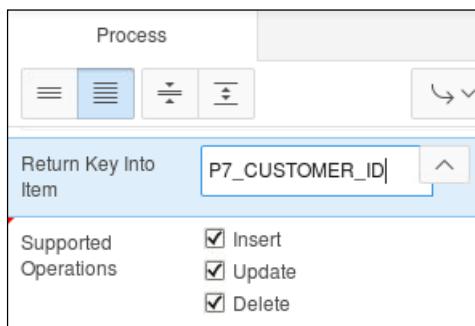
*The record created or modified in this form is reflected in the Customer Report.*

Cancel      Home      Application 1      **Edit Page 7**      Session      View Debug      Debug

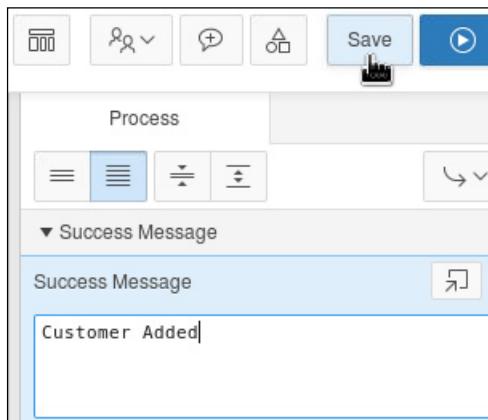
3. Change the Process Row of CUSTOMERS process to add the P7\_CUSTOMER\_ID item in the **Return Key into Item** field.
- You want to create an After Submit process on the Customer Details page. Whenever a new customer is added to the CUSTOMERS table by using the form, the details of the user who created the new customer are stored in the Audits table. In the Processing tab, select **Processing > Processes > Process Row of CUSTOMERS**.



- b. In the Process tab, enter the value P7\_CUSTOMER\_ID for the **Settings > Return Key Into Item** field.



- c. To change the message that is displayed when a new customer is successfully added to the table, change the **Success Message** field to Customer Added and click the **Save** button.



**Note:** Even if you delete or update the record of a customer, the success message would still show **Customer Added**. This is intentional as this step is just to demonstrate that the success message can be altered.

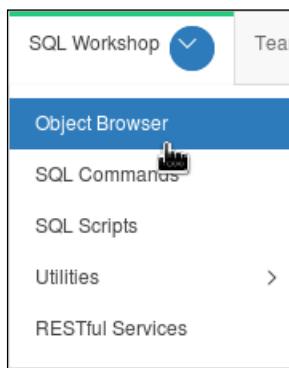
4. Create an AUDITS table by using the SQL Workshop's Object Browser and add the following details:

| Column Name Data | Type     | Other Details |
|------------------|----------|---------------|
| CUSTOMER_ID      | NUMBER   | Not Populated |
| CREATED_BY       | VARCHAR2 | SCALE 40      |
| CREATED_ON       | DATE     | N/A           |

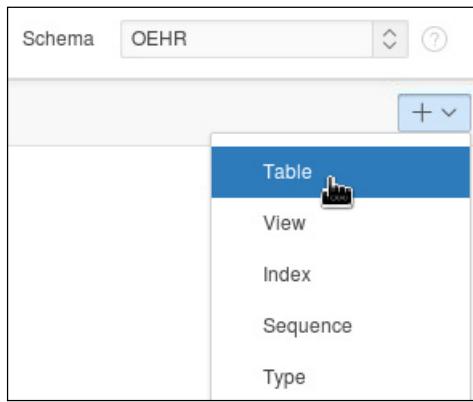
- Add a **Processing** PL/SQL process called **audit insert** that runs after the **Process Row of CUSTOMERS** process and has the following PL/SQL code (located in /home/oracle/labs/labs/lab\_10\_01\_02.txt). Set the success message to "You have been audited."

```
INSERT INTO audits VALUES (:P7_CUSTOMER_ID, :APP_USER, sysdate);
```

- a. To create the AUDITS table, navigate to the Object Browser page by selecting **Object Browser** from the **SQL Workshop** tab menu.



- b. Click the down arrow in the **Create** button < + > and select **Table**.



- c. The Create Table Wizard opens. Enter AUDITS for **Table Name**, and then fill out the columns by using the following details. Then click **Next >**.

| Column Name Data | Type     | Other Details |
|------------------|----------|---------------|
| CUSTOMER_ID      | NUMBER   | Not Populated |
| CREATED_BY       | VARCHAR2 | SCALE 40      |
| CREATED_ON       | DATE     | N/A           |

\* Table Name AUDITS

Preserve Case

| Column Name | Type                | Precision | Scale | Not Null                 | Identity | Move |
|-------------|---------------------|-----------|-------|--------------------------|----------|------|
| CUSTOMER_ID | NUMBER              |           |       | <input type="checkbox"/> | - None - |      |
| CREATED_BY  | VARCHAR2            |           | 40    | <input type="checkbox"/> |          |      |
| CREATED_ON  | DATE                |           |       | <input type="checkbox"/> |          |      |
|             | - Select Datatype - |           |       |                          |          |      |
|             | - Select Datatype - |           |       |                          |          |      |
|             | - Select Datatype - |           |       |                          |          |      |
|             | - Select Datatype - |           |       |                          |          |      |

Add Column

Cancel

Next >

- d. Select **Not populated** for Primary Key. Select CUSTOMER\_ID (NUMBER) from the Primary Key drop-down list and click **Next >**.

Table name: AUDITS [?](#)

Primary Key:  No Primary Key [?](#)  
 Populated from a new sequence [?](#)  
 Populated from an existing sequence [?](#)  
 Not populated [?](#)  
 Populated by Identity column [?](#)

\* Primary Key Constraint Name: AUDITS\_PK [?](#)

\* Primary Key: CUSTOMER\_ID(NUMBER) [?](#)

Composite Primary Key: - Select Composite Primary Key - [?](#)

**Primary Key**  
A primary key allows each row in a table to be uniquely identified.  
If you select to populate your primary key from a new sequence, you will be prompted to enter the new sequence's name. If you select to populate your primary key from an existing sequence, you will be prompted to select the sequence. Both these methods result in the generation of a trigger against your table. You can also select to not populate your primary. This is the only method that allows you to define a composite primary key made up of more than two columns.

[Cancel](#) [Next > !\[\]\(911c709c9d9c5bf2123330da83189dd2\_img.jpg\)](#)

- e. You do not want to create a foreign key. Click **Next >**.

**Foreign Key**  
A foreign key establishes a relationship between a column or columns in one table and a primary or unique key in another table.  
To define a foreign key:

- Select one or more columns and click the **Add** icon.
- Select the table name that has the corresponding primary key.
- Select the corresponding primary key column or columns and click the **Add** icon.
- Select **Disallow Delete** to block delete of rows from the referenced table when there are dependant rows in this table.
- Select **Cascade Delete** to delete the dependant rows from this table when the corresponding parent table row is deleted.
- Select **Set to Null on Delete** to set foreign key column values to null when the corresponding parent table row is deleted.
- Click **Add**.

You can define more than one foreign key on this page but only those displayed in the report at the top of the page will be included in the resulting create table statement.

[<](#) [Cancel](#) [Next > !\[\]\(701f93745418273bf0ef5cea895307da\_img.jpg\)](#)

- f. You do not want to create constraints. Click **Next >**.

[Example Check Constraints](#)

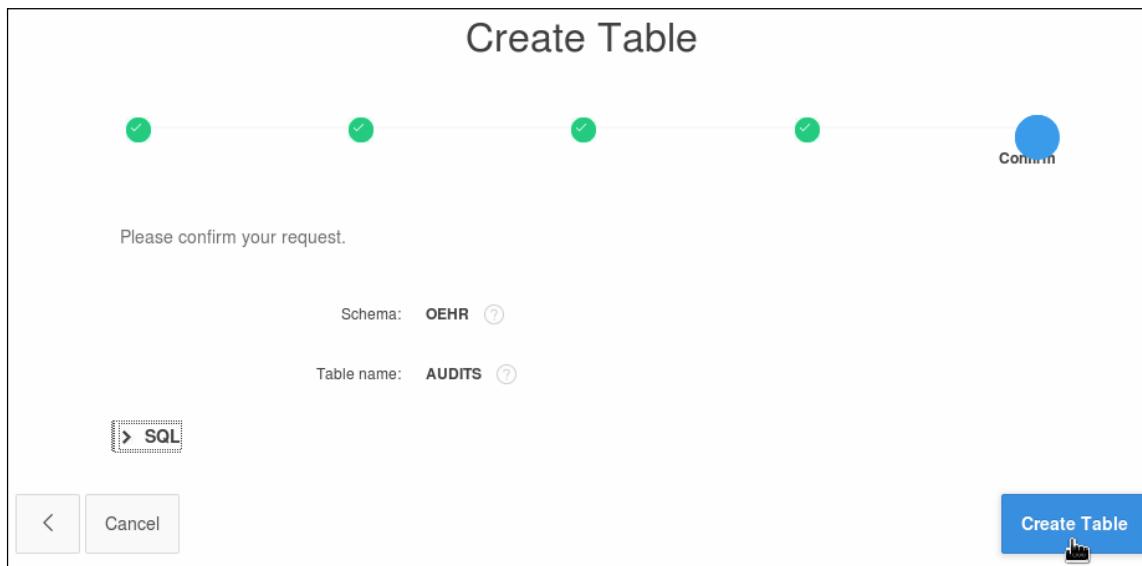
**Constraints**  
Use this page to define constraints for your table. You can create multiple constraints of each type but must **Add** each constraint. Only those constraints displayed in the report at the top of the page will be included in the resulting create table statement.

**Check Constraint**  
A check constraint is a validation check on one or more columns within the table. No value can be inserted or updated in a table which violates an enabled check constraint.

A unique constraint designates a column or a combination of columns as a unique key. To satisfy a unique constraint, no two rows in the table can have the same values for the specified columns.

[<](#) [Cancel](#) [Next > !\[\]\(bde48f6c460619ac7db5149ae0c6d757\_img.jpg\)](#)

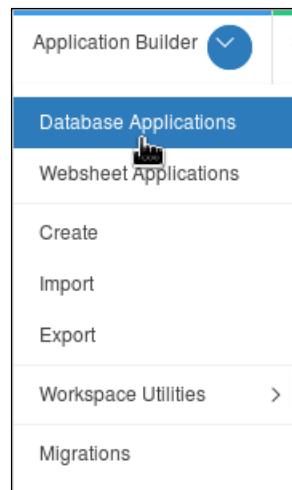
- g. Click **Create Table** to create the table.



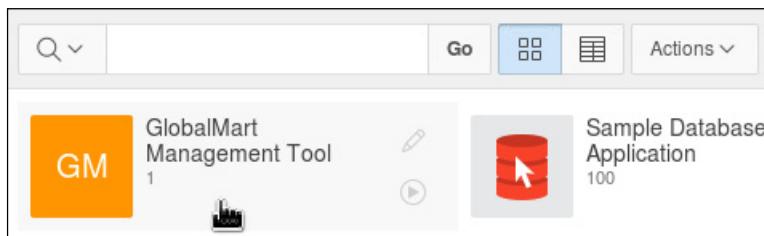
- h. The AUDITS table is created and displayed on the Object Browser page.

| Column Name | Data Type    | Nullable | Default | Primary Key |
|-------------|--------------|----------|---------|-------------|
| CUSTOMER_ID | NUMBER       | No       | -       | 1           |
| CREATED_BY  | VARCHAR2(40) | Yes      | -       | -           |
| CREATED_ON  | DATE         | Yes      | -       | -           |

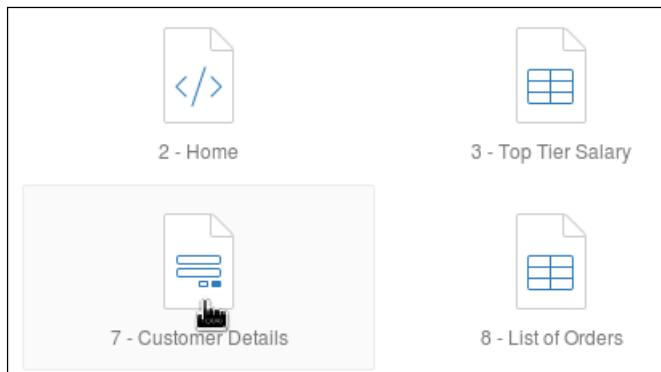
- i. You want to create a new page process on the Customer Details page. Click **Application Builder** and select **Database Applications**.



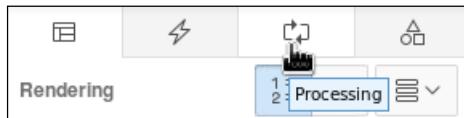
- j. Click the **GlobalMart Management Tool** icon.



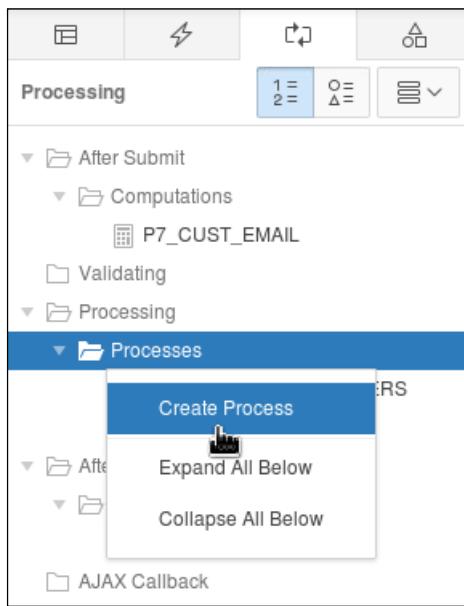
- k. Click the **Customer Details** page.



- l. Select the **Processing** tab in the Page Designer.



- m. In the Processing tab, right-click **Processes** and select **Create Process**.

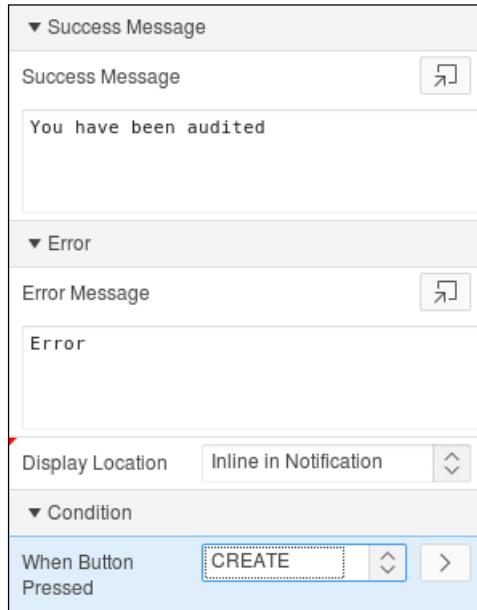


- n. Ensure that the newly created process is selected. In the Process tab, enter the following values for the respective fields:
- 1) Identification > Name = audit insert
  - 2) Identification > Type = PL/SQL Code
  - 3) Source > PL/SQL Code = <Copy and paste the code from the /home/oracle/labs/labs/lab\_10\_01\_02.txt file>
  - 4) Execution Options > Point = Processing
  - 5) Success Message > Success Message = You have been audited
  - 6) Error > Error Message = Error
  - 7) Condition > When Button Pressed = **CREATE**

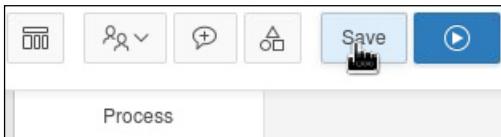
The screenshot shows the 'Process' configuration screen. The 'Identification' section has 'Name' set to 'audit insert' and 'Type' set to 'PL/SQL Code'. The 'Source' section contains the PL/SQL code: 

```
INSERT INTO audits
VALUES (:P7_CUSTOMER_ID,:APP_USER,
sysdate);
```

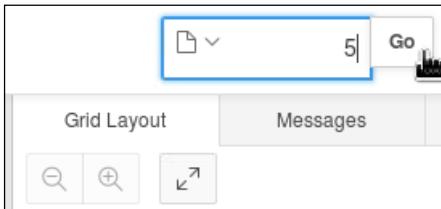
. The 'Execution Options' section has 'Point' set to 'Processing', 'Sequence' set to '50', and 'Run Process' set to 'Once Per Page Visit ('.



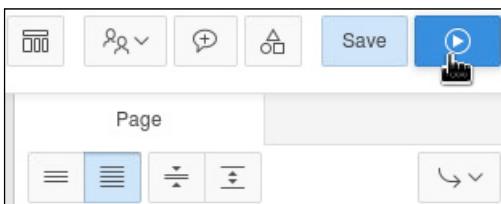
- o. Click the **Save** button.



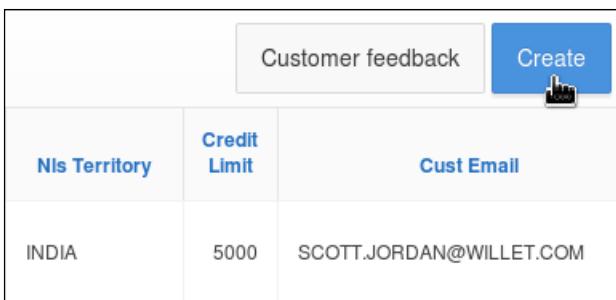
- p. To verify that the processes are working, navigate to the **Customers** page. Enter the **Customers** page number (Page 5) in the **Page Finder** field and click **Go**.



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



- r. Click the **Create** button.



- s. Enter the following information and click **Create**.

| Item            | Value                    |
|-----------------|--------------------------|
| First Name      | Amit                     |
| Last Name       | Paul                     |
| Email           | amit.paul@oracle.com     |
| Account Manager | Russell, John            |
| Country         | United States of America |
| State           | South San Francisco      |

**Customer Details**

|   |   |
|---|---|
| Cust First Name *   | Amit  |
| Cust Last Name *  | Paul  |
| Cust Email  | amit.paul@oracle.com  |
| Account Manager   | Russell, John<br>Bates, Elizabeth, Russell, John, Cambrault, Gerald |
| Country   | United States of America  |
| City  | South San Francisco   |
| Phone number  |   |
| <i>The record created or modified in this form is reflected in the Customer Report.</i> |   |
| <input type="button" value="Cancel"/>   | <input type="button" value="Create"/>                               |

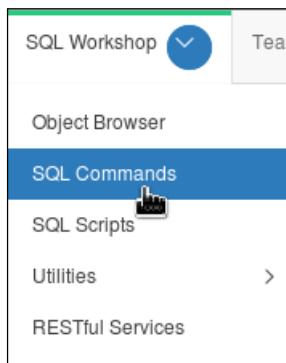
- t. Notice the success messages for the audit and processing of the new customer. Enter Amit in the search area and click **Go**.

| In the News  |                 |                |                  |             |           |                |            |                 |              |               |              | Customer Added You have been audited |  |
|--|-----------------|----------------|------------------|-------------|-----------|----------------|------------|-----------------|--------------|---------------|--------------|--------------------------------------|--|
| News and Events  |                 |                |                  |             |           |                |            |                 |              |               |              |                                      |  |
| Visit us at <a href="http://www.oracle.com">www.oracle.com</a> |                 |                |                  |             |           |                |            |                 |              |               |              |                                      |  |
| Customer Id  | Cust First Name | Cust Last Name | Street Address   | Postal Code | City      | State Province | Country Id | Phone Number    | Nls Language | Nls Territory | Credit Limit | Customer feedback                    |  |
| 496  | Scott           | Jordan         | 1636 Pretty Blvd | 361168      | Bangalore | Kar            | IN         | +91 80 012 4869 | hi           | INDIA         | 5000         | SCOTT.JORDAN@WILLET.COM              |  |
| 605  | Shammi          | Pacino         | 1646 Brazil Blvd | 361168      | Chennai   | Tam            | IN         | +91 80 012 4887 | hi           | INDIA         | 500          | Shammi.Pacino@BITTERN.COM            |  |

- u. You want to review what is in the AUDITS table. Click the **Home** link on the Developer toolbar.

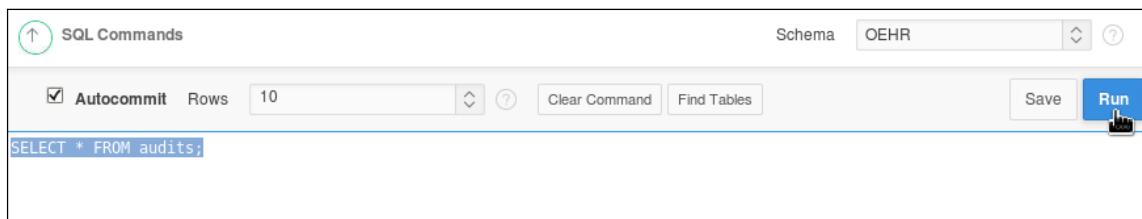


- v. Click **SQL Workshop > SQL Commands**.



- w. In the text area, enter the following and click **Run**.

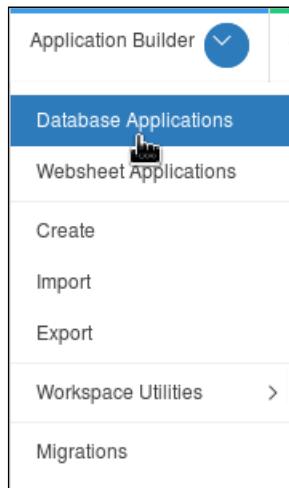
```
SELECT * FROM audits;
```



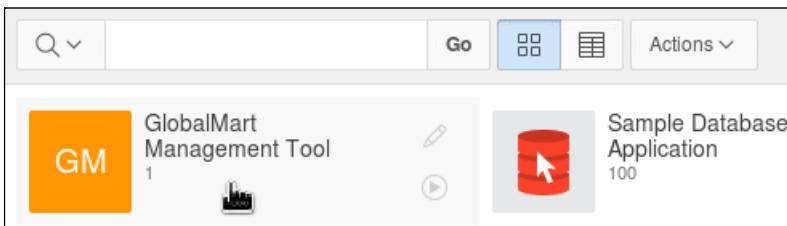
- x. Note that the details have been added to the AUDITS table.

| Results                         | Explain | Describe                 | Saved SQL  | History    |
|---------------------------------|---------|--------------------------|------------|------------|
|                                 |         | CUSTOMER_ID              | CREATED_BY | CREATED_ON |
| 1315                            |         | APEX                     | 05/21/2015 |            |
| 1 rows returned in 0.00 seconds |         | <a href="#">Download</a> |            |            |
|                                 |         |                          |            |            |

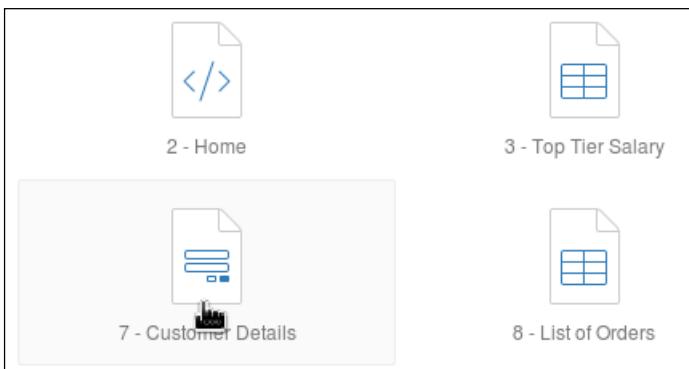
5. Create an Item String Comparison validation called **Email Validation** on the P7\_CUST\_EMAIL item to ensure that there are no spaces in the Email value. Test the page to make sure that it works.
  - a. You want to add a validation to the Customer Details page in your application. Click **Application Builder > Database Applications**.



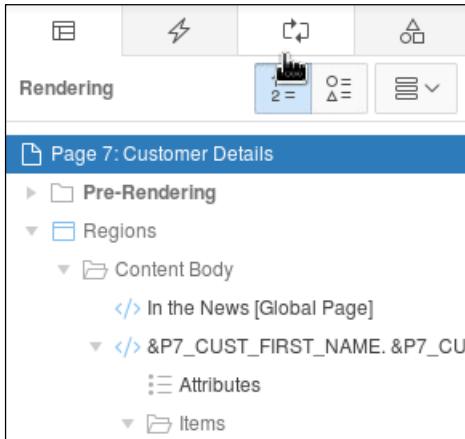
- b. Click the **GlobalMart Management Tool** icon.



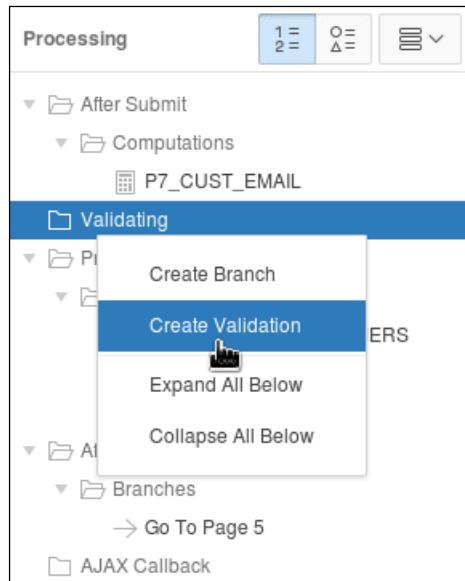
- c. Select the **Customer Details** page.



- d. Click the **Processing** tab.



- e. Right-click **Validating** and select **Create Validation**.



- f. In the Processing tab, ensure that the newly created validation is selected. In the Validation tab, enter the following value for the respective fields:

- 1) Identification > Name = Email Validation
- 2) Validation > Type = Item contains no spaces
- 3) Validation > Item = P7\_CUST\_EMAIL
- 4) Error > Error Message = Email must not contain spaces
- 5) Condition > Type = Item is NOT NULL

**Note:** You want this validation to fire only when the item is not null.

## 6) Condition &gt; Item = P7\_CUST\_EMAIL

The screenshot shows two stacked configuration pages from Oracle APEX.

**Validation Page:**

- Name:** Email Validation
- Sequence:** 10
- Type:** Item contains
- Item:** P7\_CUST\_EMAIL
- Always Execute:** No (selected)
- Error Message:** Email must not contain spaces

**Condition Page:**

- When Button Pressed:** - Select -
- Type:** Item is NOT N
- Item:** P7\_CUST\_EMAIL

- g. To see how the validation works, run the page. Click the **Save and Run Page** icon.



- h. You want to edit the email field of a record. Add a space to the email and click **Apply Changes**.

Amit Paul Customer Details

|   |  |
|---|--|
| Cust First Name *   | <input type="text" value="Amit"/>  |
| Cust Last Name *  | <input type="text" value="Paul"/>  |
| Cust Email  | <input type="text" value="AMIT.PAUL@ ORACLE.COM"/>   |
| Account Manager   | <input type="text" value="Russell, John"/> <small>Bates, Elizabeth, Russell, John, Cambrault, Gerald</small> |
| Country   | <input type="text" value="United States of America"/> <small>▲</small>                                       |
| City  | <input type="text" value="South San Francisco"/> <small>▲</small>  |
| Phone number  |  |
| <i>The record created or modified in this form is reflected in the Customer Report.</i> |  |
| <input type="button" value="Cancel"/>   | <input type="button" value="Delete"/> <input type="button" value="Apply Changes"/>                           |

- i. Notice that you receive an error message inline and also at the top of the page.

**⚠ 1 error has occurred**

- Email must not contain spaces ([Go to error](#))

In the News

News and Events

Visit us at [www.oracle.com](http://www.oracle.com)

Amit Paul Customer Details

|   |  |
|---|--|
| Cust First Name *   | <input type="text" value="Amit"/>  |
| Cust Last Name *  | <input type="text" value="Paul"/>  |
| Cust Email  | <input type="text" value="AMIT.PAUL@ ORACLE.COM"/><br><small>Email must not contain spaces</small>           |
| Account Manager   | <input type="text" value="Russell, John"/> <small>Bates, Elizabeth, Russell, John, Cambrault, Gerald</small> |
| Country   | <input type="text" value="United States of America"/> <small>▲</small>                                       |
| City  | <input type="text" value="South San Francisco"/> <small>▲</small>  |
| Phone number  |  |
| <i>The record created or modified in this form is reflected in the Customer Report.</i> |  |
| <input type="button" value="Cancel"/>   | <input type="button" value="Delete"/> <input type="button" value="Apply Changes"/>                           |

6. Remove the First Name value from the page and click **Apply Changes**. Note the implied validation. Why is the error message shown if there is no validation on the page?
- a. Notice that items such as First Name and Last Name have an asterisk (\*) next to their labels. This means that the items must have a value. Remove the space in the email, delete what is contained in the First Name field, and click **Apply Changes**.

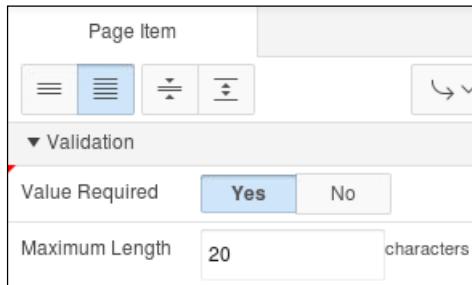
Amit Paul Customer Details

|   |  |
|---|--|
| Cust First Name *   | <input type="text"/>   |
| Cust Last Name *  | <input type="text" value="Paul"/>  |
| Cust Email  | <input type="text" value="AMIT.PAUL@ORACLE.COM"/><br><small>Email must not contain spaces</small>  |
| Account Manager   | <input type="text" value="Russell, John"/><br><small>Bates, Elizabeth, Russell, John, Cambrault, Gerald</small>  |
| Country   | <input type="text" value="United States of America"/>  |
| City  | <input type="text" value="South San Francisco"/>    |
| Phone number  |  |
| <i>The record created or modified in this form is reflected in the Customer Report.</i> |  |
| <input type="button" value="Cancel"/>   | <input type="button" value="Delete"/> <input style="background-color: #0070C0; color: white; font-weight: bold; border: 1px solid #0070C0; padding: 2px 10px; border-radius: 5px;" type="button" value="Apply Changes"/> |

- b. Notice that you receive an error stating that you must enter a value. This is an implied validation, which means that you do not have to explicitly define a Not Null validation on fields that are not-null columns. You want to look at the definition for this item. Click the **Quick Edit** link on the Developer toolbar and select the **Cust First Name** textbox.

The screenshot shows a user interface for managing customer details. At the top, a yellow warning icon indicates "1 error has occurred" with the message "Cust First Name must have some value. (Go to error)". Below this, there are sections for "In the News", "News and Events", and "Paul Customer Details". In the "Paul Customer Details" section, there are several input fields: "Cust First Name" (marked with a red asterisk), "Cust Last Name" (marked with a red asterisk), "Cust Email" (containing "AMIT.PAUL@ORACLE.COM"), "Account Manager" (dropdown menu showing "Russell, John" and "Bates, Elizabeth, Russell, John, Cambrault, Gerald"), "Country" (dropdown menu showing "United States of America"), and "City" (dropdown menu showing "South San Francisco"). The "Cust First Name" field is highlighted with a red border and contains a red error message: "Cust First Name must have some value.". At the bottom of the form, a note states "The record created or modified in this form is reflected in the Customer Report." and includes "Cancel", "Delete", and "Apply Changes" buttons.

- c. Notice that the **Validation > Value Required** item is set to **Yes**. You can, alternatively, set this item to No and create a Not Null validation on this item. Doing this will allow you to specify the error message to be displayed.



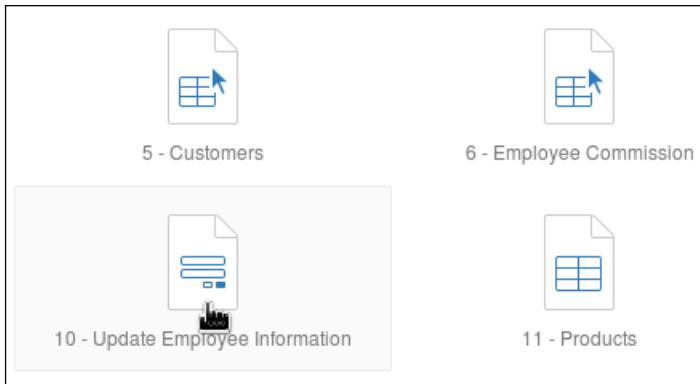
- d. Click the **Application 1** breadcrumb.



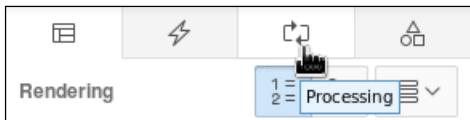
7. Create a Tabular Form Level validation. If the `JOB_ID` is `SA_REP`, then a commission needs to be entered. If the commission is not entered for the `JOB_ID` `SA_REP`, then display an error message. Use the following PL/SQL code (located in `/home/oracle/labs/labs/lab_10_01_03.txt`):

```
Declare
begin
    If :JOB_ID = 'SA_REP' and :COMMISSION_PCT is not null then
        Return true;
    Else
        Return false;
End if;
End;
```

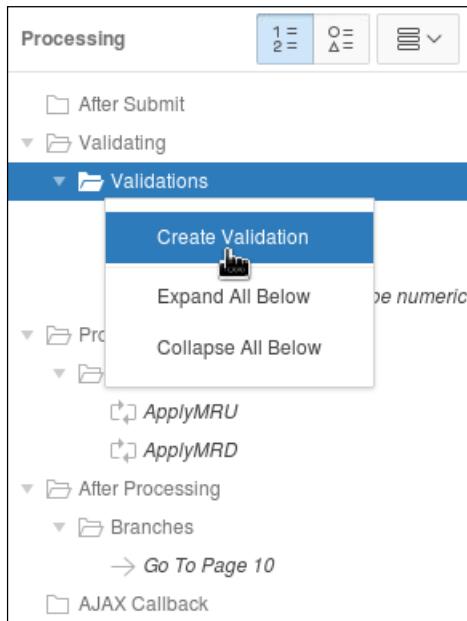
- a. Select the **Update Employee Information** page.



- b. Click the **Processing** tab.



- c. Right-click **Validations** and select **Create Validation**.



- d. Ensure that the newly created validation is selected. In the Validation tab, enter the following value for the respective fields:
- 1) Identification > Name = Job Commission
  - 2) Validation > Tabular Form = Update Employee Information
  - 3) Validation > Type = PL/SQL Function Body (returning Boolean)
  - 4) Validation > PL/SQL Function Body Returning Boolean = <Copy and paste from the file /home/oracle/labs/labs/lab\_10\_01\_03.txt>
  - 5) Error > Error Message = Please enter the commission percentage

## 6) Condition &gt; When Button Pressed = SUBMIT

The screenshot shows the Oracle Forms Validation dialog. The validation rule is named "Job Commission" and has a sequence of 70. The PL/SQL Function Body Returning Boolean contains the following code:

```

Declare
begin
  If :JOB_ID = 'SA_REP' and
  :COMMISSION_PCT is not null then
    Return true;
  Else
    Return false;
End if;
End;

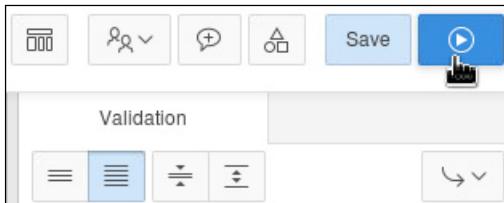
```

The "Always Execute" option is set to "No".

**Error**

The error message is "Please enter the commission percentage". The display location is "Inline with Field and i". The associated column is "- Select -". The condition is set to "When Button Pressed" with the value "SUBMIT". The execution scope is "For Created and Modified Rows". The type is "- Select -".

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



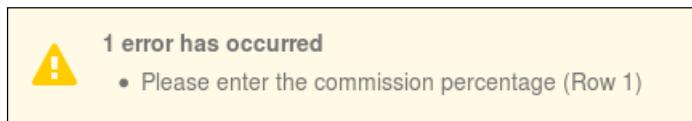
- f. Edit the first employee's information. Change the **Job\_Id** to **SA\_REP** and click **Apply Changes**.

Update Employee Information

| <input type="checkbox"/> | First Name | Last Name | Email    | Job Id     | Commission Pct |
|--------------------------|------------|-----------|----------|------------|----------------|
| <input type="checkbox"/> | Steven     | King      | SKING    | SA_REP     |                |
| <input type="checkbox"/> | Neena      | Kochhar   | NKOCHHAR | AD_VP      |                |
| <input type="checkbox"/> | Lex        | De Haan   | LDEHAAN  | AD_VP      |                |
| <input type="checkbox"/> | Alexander  | Hunold    | AHUNOLD  | IT_PROG    |                |
| <input type="checkbox"/> | Bruce      | Ernst     | BERNST   | IT_PROG    |                |
| <input type="checkbox"/> | David      | Austin    | DAUSTIN  | IT_PROG    |                |
| <input type="checkbox"/> | Valli      | Pataballa | VPATABAL | IT_PROG    |                |
| <input type="checkbox"/> | Diana      | Lorentz   | DLORENTZ | IT_PROG    |                |
| <input type="checkbox"/> | Nancy      | Greenberg | NGREENBE | FI_MGR     |                |
| <input type="checkbox"/> | Daniel     | Faviet    | DFAVIET  | FI_ACCOUNT |                |

row(s) 1 - 10 of 107

- g. An error message is displayed because the commission percentage is not entered.

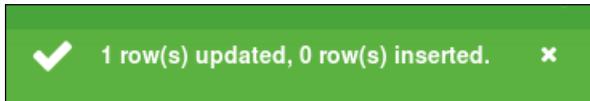


- h. Enter the commission percentage for the employee and click **Apply Changes**.

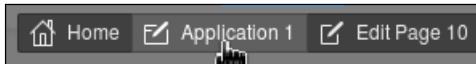
Update Employee Information

| <input type="checkbox"/> | First Name | Last Name | Email    | Job Id     | Commission Pct |
|--------------------------|------------|-----------|----------|------------|----------------|
| <input type="checkbox"/> | Steven     | King      | SKING    | SA_REP     | 0.05           |
| <input type="checkbox"/> | Neena      | Kochhar   | NKOCHHAR | AD_VP      |                |
| <input type="checkbox"/> | Lex        | De Haan   | LDEHAAN  | AD_VP      |                |
| <input type="checkbox"/> | Alexander  | Hunold    | AHUNOLD  | IT_PROG    |                |
| <input type="checkbox"/> | Bruce      | Ernst     | BERNST   | IT_PROG    |                |
| <input type="checkbox"/> | David      | Austin    | DAUSTIN  | IT_PROG    |                |
| <input type="checkbox"/> | Valli      | Pataballa | VPATABAL | IT_PROG    |                |
| <input type="checkbox"/> | Diana      | Lorentz   | DLORENTZ | IT_PROG    |                |
| <input type="checkbox"/> | Nancy      | Greenberg | NGREENBE | FI_MGR     |                |
| <input type="checkbox"/> | Daniel     | Faviet    | DFAVIET  | FI_ACCOUNT |                |

The employee information is successfully updated.



- i. Click the **Application 1** link on the Developer toolbar.



# **Practices for Lesson 11: Validating and Debugging Your Application**

**Chapter 11**

## Practices for Lesson 11: Overview

---

### Practices Overview

In these practices, you use the Advisor to validate your application, update the Attribute Dictionary based on items and report columns on your page, and examine how to use, debug, and resolve some common issues during application development.

## Practice 11-1: Using the Advisor

---

### Overview

In this practice, you use the Advisor to validate the GMT 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. Run the Advisor and correct the warning on the **Top Tier Salary** page by specifying a sort order.
2. Run the Advisor for the **Top Tier Salary** page only.

### Catch Up

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

- a. Log 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` user is created.

If you haven't completed **Practice 10-1**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` 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 1 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Make sure that **Yes** is selected for the **Install Supporting Objects** option and click **Next >**.
- i. Click **Install**.
- j. Verify that the application and the supporting objects successfully installed.

## Practice 11-2: Modifying the Attribute Dictionary

### Overview

In this practice, you update the Attribute Dictionary based on the items and report columns on your 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. Change the widths of items on the Customer Details page of the GlobalMart Management Tool application to the following:

| Item               | Attribute | Value |
|--------------------|-----------|-------|
| P7_CUST_FIRST_NAME | Width     | 18    |
| P7_CUST_LAST_NAME  | Width     | 18    |
| P7_CUST_EMAIL      | Width     | 18    |

2. Add the items on the Customer Details page to the Attribute Dictionary.
3. Review the UI defaults in SQL Workshop. Change the help text for CUST\_FIRST\_NAME to Customer First Name and add a Synonym called FIRST\_NAME.
4. Check whether CUSTOMERS is in Table Dictionary or not.
5. Update the Attribute Dictionary for the items on the **Customer Details** page.
6. Update the **Customers** page to use the Attribute Dictionary defaults. Verify by showing the help text for the First Name column in the report.
7. Create a new forms page based on the CUSTOMERS table. Make sure that UI Defaults is enabled. Run the page to see that the Attribute Dictionary is used.

### Catch Up

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

- a. Log 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` user is created.

If you haven't completed **Practice 11-1**, perform the following steps:

- a. Log in to the Application Express workspace as the `apex` 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 1 From Export File** for the **Install As Application** option and click **Install Application**.
- g. Click **Replace Application** (if prompted).
- h. Make sure that **Yes** is selected for the **Install Supporting Objects** option and click **Next >**.
- i. Click **Install**.
- j. Verify that the application and the supporting objects are successfully installed.

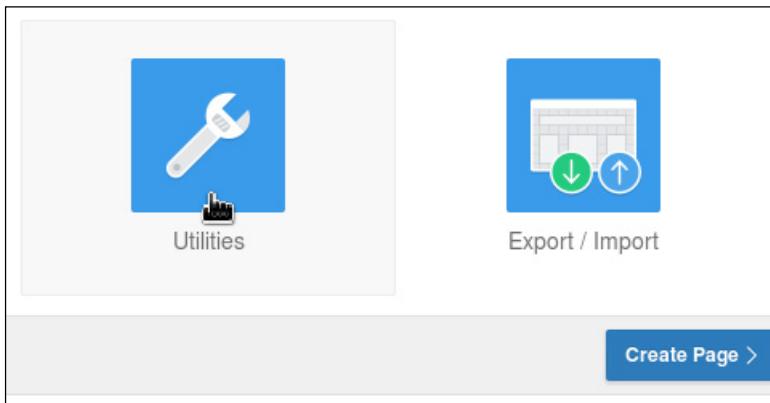
## Solution 11-1: Using the Advisor

### Overview

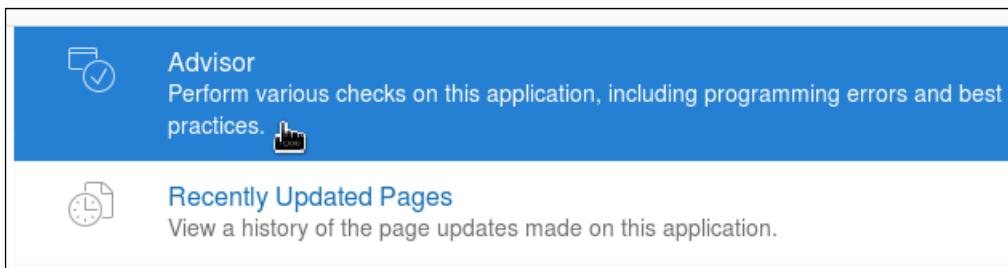
In this practice solution, steps are provided for using the advisor to validate the GMT application.

### Steps

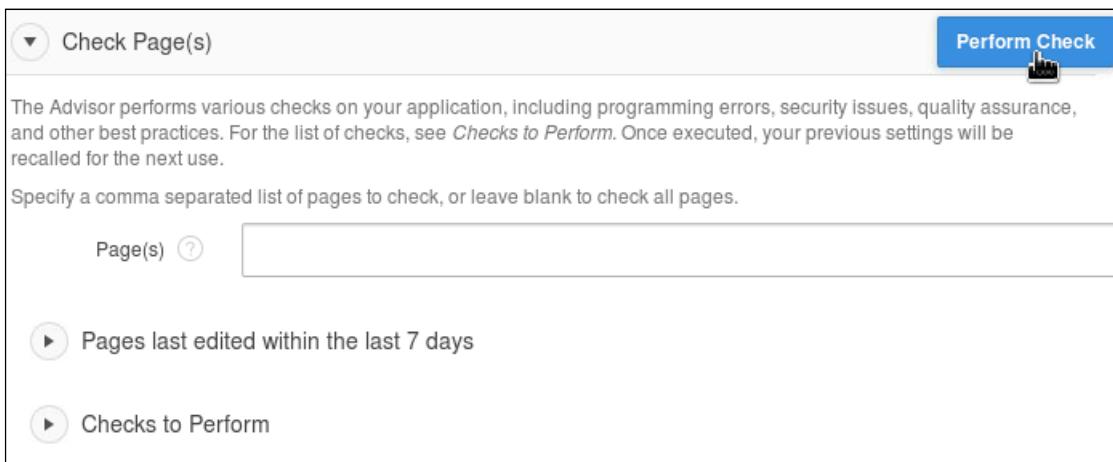
1. Run the Advisor and correct the warning on the **Top Tier Salary** page by specifying a sort order.
  - a. In the GlobalMart Management Tool application home page, select **Utilities**.



- b. Click **Advisor**.



- c. Click **Perform Check**.

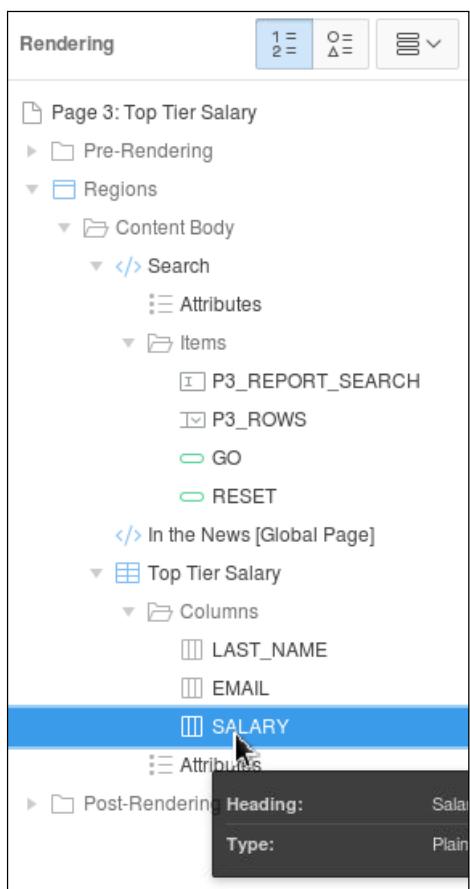


- d. The list of violations appears. In the Filter Result area, you see the number of violations by category. You want to fix the warning on the **Top Tier Salary** page. Scroll down and locate the warning **Message “Report does not have a default order”** and click the **View** button.

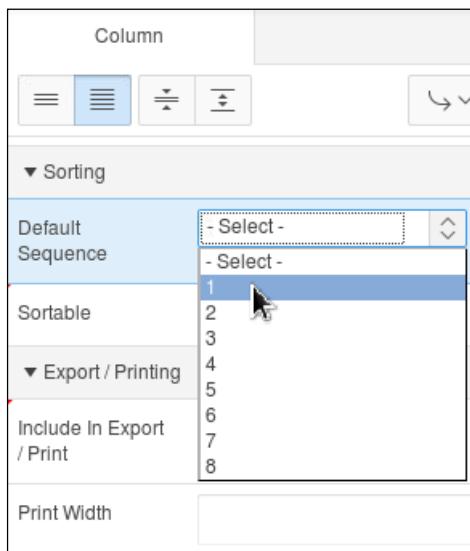
| Applications > 1 - GlobalMart Management Tool > Pages > 3 - Top Tier Salary > Regions > Top Tier Salary |   |
|---|---|
| Attribute   | Region Source (Identifies the source of the region, reference Region Source Type)   |
| Check   | Report has Default Order  |
| Category  | Quality Assurance   |
| Message   | Report does not have a default order.   |
| Value   | <pre>select * from ( select EMPLOYEES.LAST_NAME as LAST_NAME,        EMPLOYEES.EMAIL as EMAIL,        EMPLOYEES.SALARY as SALARY   from EMPLOYEES EMPLOYEES  where EMPLOYEES.SALARY BETWEEN 5000 and 12000 ) where ( instr(upper("LAST_NAME"),upper(nvl(:P3_REPORT_SEARCH,"LAST_NAME")))) &gt; 0 or instr(upper("EMAIL"),upper(nvl(:P3_REPORT_SEARCH,"EMAIL")))) &gt; 0 )</pre> |
|   |  View  |

**Note:** Close the Advisor window open in your browser.

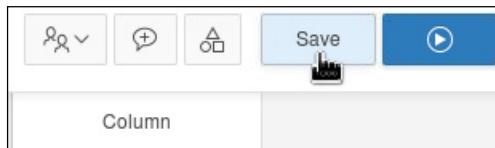
- e. In the Rendering tab, expand to **Regions > Content Body > Top Tier Salary > Columns > SALARY**.



- f. In the Column tab, select **1** for **Sorting > Default Sequence**.

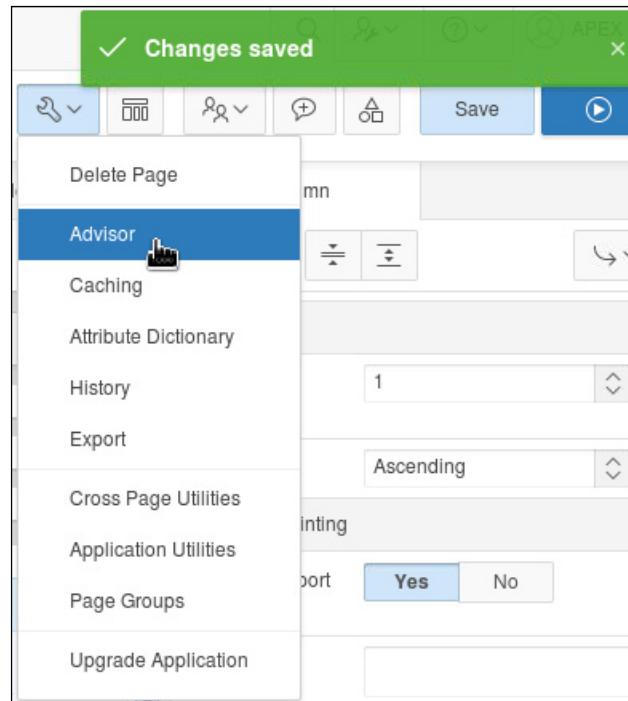


- g. Click the **Save** button.

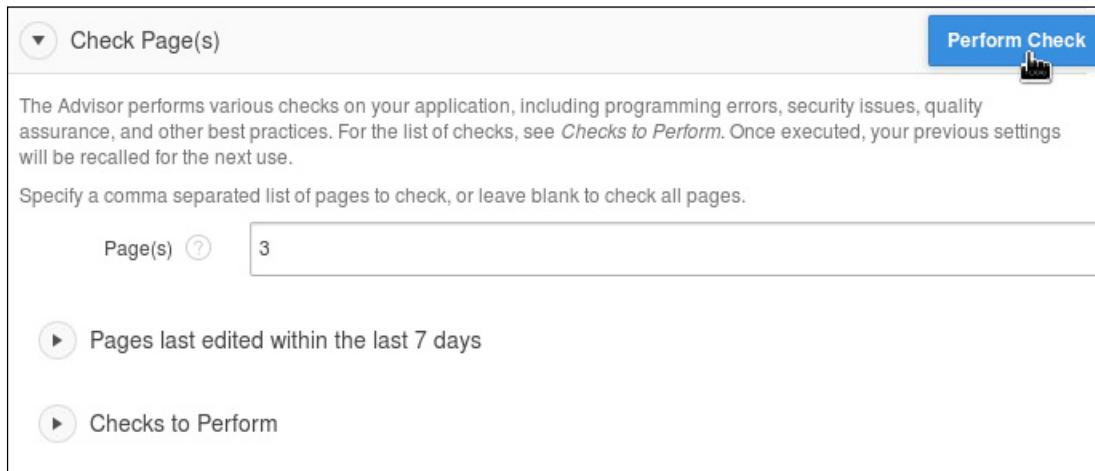


2. Run the Advisor for the **Top Tier Salary** page only.

- a. Run the advisor again just for the current page. Click the **Utilities** icon < > and select **Advisor**.



- b. You see the page number of the Top Tier Salary page filled in the **Page(s)** field. Click the **Perform Check** button.



- c. The violation for not having a default order for the report has been resolved. There is another violation for Security which can be safely ignored now. This violation will be resolved in the upcoming practices.

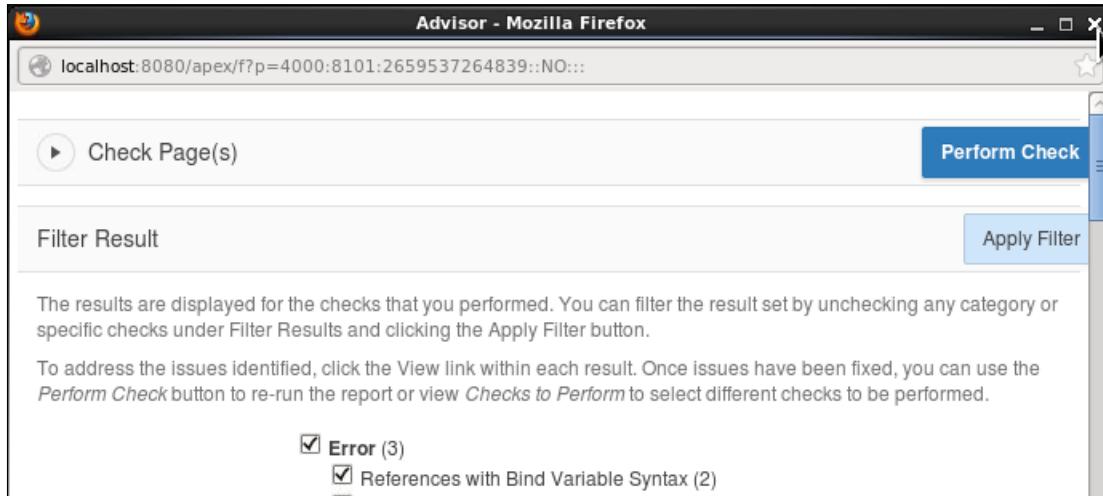
The screenshot shows a 'Filter Result' dialog box. At the top right is an 'Apply Filter' button. Below it, a message says: 'The results are displayed for the checks that you performed. You can filter the result set by unchecking any category or specific checks under Filter Results and clicking the Apply Filter button.' To address issues, it suggests clicking 'View' within each result and using the 'Perform Check' button to re-run the report or view 'Checks to Perform'. Under 'Category', 'Security' is checked. The main section displays the following details:

| Applications > 1 - GlobalMart Management Tool > Pages > 3 - Top Tier Salary |   |
|---|---|
| Attribute   | Authorization Scheme (An authorization scheme must evaluate to TRUE in order for this page to be displayed) |
| Check   | Authorization   |
| Category  | Security  |
| Message   | Page is not protected by an authorization scheme.   |
| Value   |   |
| View  |   |

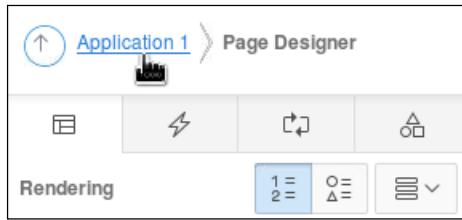
- d. To run the Advisor again for the entire application, in the Advisor window, click the **Check Page(s)** collapsible tab and remove the number in the **Page(s)** field. Click the **Perform Check** button.

The screenshot shows the Oracle Advisor window with the 'Check Page(s)' tab selected. At the top right is a 'Perform Check' button with a hand cursor icon. A message below it states: 'The Advisor performs various checks on your application, including programming errors, security issues, quality assurance, and other best practices. For the list of checks, see Checks to Perform. Once executed, your previous settings will be recalled for the next use.' Below this, a text input field is labeled 'Specify a comma separated list of pages to check, or leave blank to check all pages.' A 'Page(s)' field contains a question mark icon and an empty input field. Below the input field are two options: 'Pages last edited within the last 7 days' and 'Checks to Perform'.

- e. Close the Advisor window open in your browser.



- f. Click the **Application 1** breadcrumb in the Page Designer.



## Solution 11-2: Modifying the Attribute Dictionary

### Overview

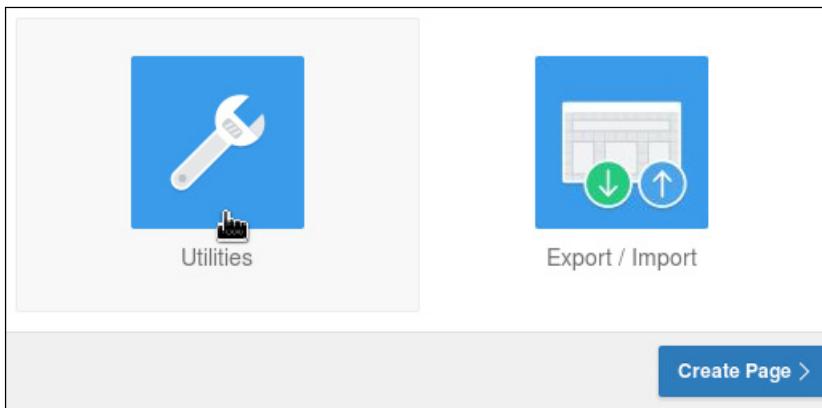
In this practice solution, steps are provided for updating the Attribute Dictionary based on the items and report columns on your page.

### Steps

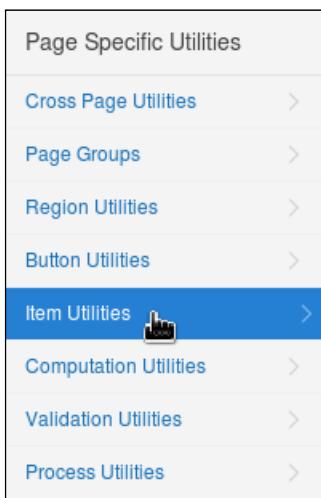
1. Change the widths of items on the Customer Details page of the GlobalMart Management Tool application to the following:

| Item               | Attribute | Value |
|--------------------|-----------|-------|
| P7_CUST_FIRST_NAME | Width     | 18    |
| P7_CUST_LAST_NAME  | Width     | 18    |
| P7_CUST_EMAIL      | Width     | 18    |

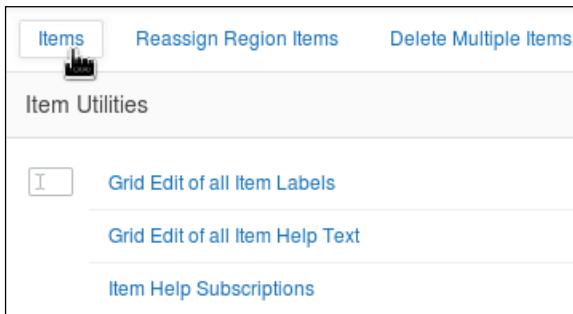
- a. In the GlobalMart Management Tool application home page, click the **Utilities** icon.



- b. Under **Page Specific Utilities**, select **Item Utilities**.



- c. Click the **Items** tab.



- d. Enter the **Customer Details** page number (Page 7) for **Page** and select the **Customer Details** region from the **Region** select list. Click **Go**.

**Note:** If the Customer Details region is not available in the Region list, click Go and then check for the Customer Details region again.

- e. Change the **Width** for **P7\_CUST\_FIRST\_NAME**, **P7\_CUST\_LAST\_NAME**, and **P7\_CUST\_EMAIL** to **18** and click **Apply Changes**.

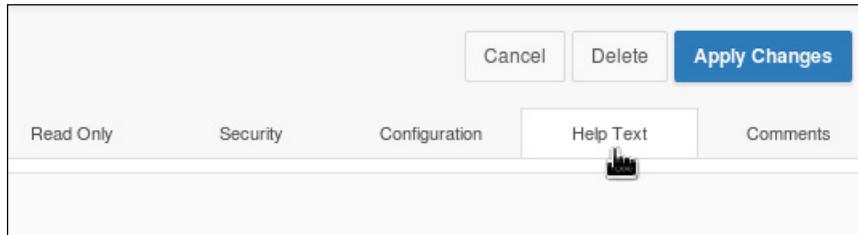
| Edit | Sequence | Name               | Label           | Width | Display As  | Conditional |
|------|----------|--------------------|-----------------|-------|-------------|-------------|
|      | 10       | P7_CUSTOMER_ID     | Customer Id     |       | Hidden      | -           |
|      | 20       | P7_CUST_FIRST_NAME | Cust First Name | 18    | Text Field  | -           |
|      | 30       | P7_CUST_LAST_NAME  | Cust Last Name  | 18    | Text Field  | -           |
|      | 40       | P7_CUST_EMAIL      | Cust Email      | 18    | Text Field  | -           |
|      | 50       | P7_ACCOUNT_MGR_ID  | Account Manager |       | Select List | -           |
|      | 60       | P7_COUNTRY_ID      | Country         |       | Select List | -           |

**Note:** The screenshot is truncated to reduce the size. You will not see all the fields in the screenshot.

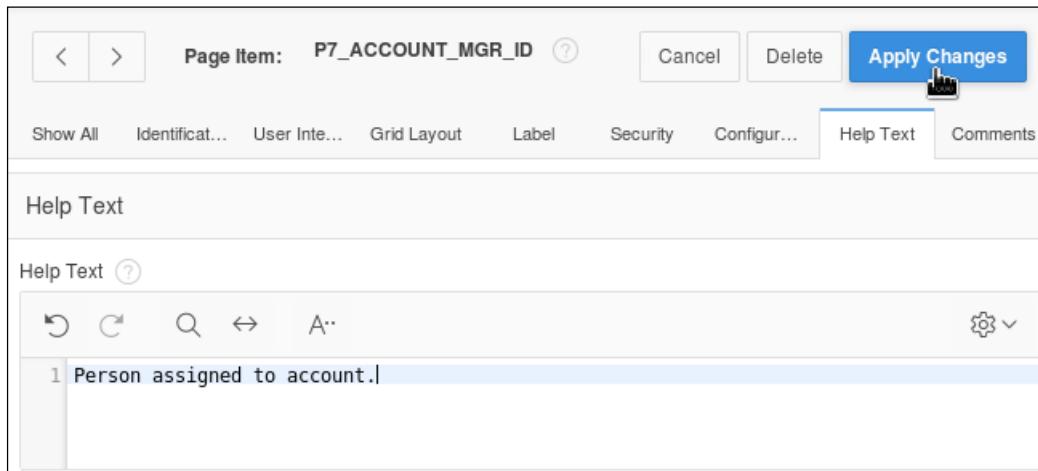
- f. The three rows are updated. You want to add help text for P7\_ACCOUNT\_MGR\_ID. Click the **Edit** icon for that row.

|  |    |                   |                 |
|--|----|-------------------|-----------------|
|  | 40 | P7_CUST_EMAIL     | Cust Email      |
|  | 50 | P7_ACCOUNT_MGR_ID | Account Manager |
|  | 60 | P7_COUNTRY_ID     | Country         |

- g. Click the **Help Text** subtab.



- h. Enter Person assigned to account. for **Help Text** and click **Apply Changes**.



- i. Click the **Run Page 7** icon.



- j. Note that the three items for which you changed the width are displayed correctly. Click the **Question Mark** icon < ? > next to the **Account Manager** field.

The screenshot shows a 'Customer Details' form. The 'Account Manager' field has a dropdown menu open, displaying a list of names: Bates, Elizabeth, Russell, John, Cambrault, Gerald. A question mark icon (Help Text) is positioned next to the dropdown. Below the dropdown, a tooltip window titled 'Help Text: Account Manager' is visible, containing the text: 'Person assigned to account.' The 'Create' button is located at the bottom right of the form.

**Note:** If you see values in the Customer Details field, log out of the application and run the page again. The value appears in these fields due to values in the session state.

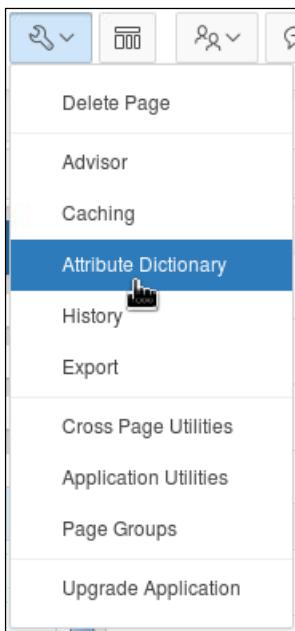
- k. The Help Text window is displayed. Click the **Close** icon.

The screenshot shows the same 'Customer Details' form. A 'Help Text' window is now overlaid on the form, centered over the 'Account Manager' field. The window title is 'Account Manager' and contains the text: 'Person assigned to account.' It includes a 'close' button in the top right corner. The 'Create' button is still visible at the bottom right of the form.

- l. Click the **Edit Page 7** link on the Developer toolbar.



2. Add the items on the Customer Details page to the Attribute Dictionary.
  - a. Click the **Utilities** icon and select **Attribute Dictionary**.



- b. You need to review the items that you want to add to the Attribute Dictionary. Click the **Review 7 items for insert into the Attribute Dictionary** link.

A screenshot of a software application's update page interface. The top section is titled 'Page Items' and contains a single item: 'Update Page'. Below this is a message: '0 Items for update'. The next section is titled 'Update Attribute Dictionary' and contains a prominent blue button labeled 'Review 7 Items for insert into the Attribute Dictionary' with a cursor icon over it. Below this button is the message '0 Items for update of the Attribute Dictionary'. The final section is titled 'Summary' and provides a breakdown of items:

|                       |   |
|-----------------------|---|
| Total Page Items      | 8 |
| Displayed Items       | 7 |
| Potential New Entries | 7 |
| Potential Updates     | 0 |
| Identical Attributes  | 0 |

- c. The items that you have on the page consist of all the changes that you made previously. Select the check box in the header to the left of the Region header to select all the entries in the list, and click **Update Attribute Dictionary**.

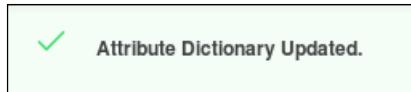
Page: 7 - Customer Details 

Include in Update: 

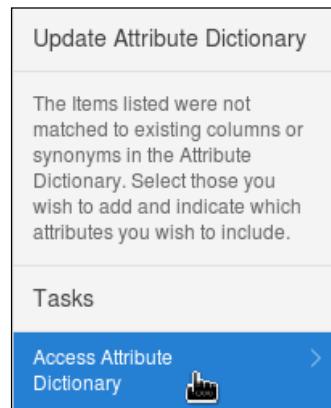
| <input checked="" type="checkbox"/> | Region  | Item               | Default | Width | Height | Data Type |
|-------------------------------------|--|--------------------|---------|-------|--------|-----------|
| <input checked="" type="checkbox"/> | &P7_CUST_FIRST_NAME.<br>&P7_CUST_LAST_NAME. Customer Details                             | P7_ACCOUNT_MGR_ID  | -       | 30    | 1      | VARCHAR   |
| <input checked="" type="checkbox"/> | &P7_CUST_FIRST_NAME.<br>&P7_CUST_LAST_NAME. Customer Details                             | P7_CITY            | -       | 30    | -      | -         |
| <input checked="" type="checkbox"/> | &P7_CUST_FIRST_NAME.<br>&P7_CUST_LAST_NAME. Customer Details                             | P7_COUNTRY_ID      | -       | -     | 1      | -         |
| <input checked="" type="checkbox"/> | &P7_CUST_FIRST_NAME.<br>&P7_CUST_LAST_NAME. Customer Details                             | P7_CUST_EMAIL      | -       | 18    | -      | VARCHAR   |
| <input checked="" type="checkbox"/> | &P7_CUST_FIRST_NAME.<br>&P7_CUST_LAST_NAME. Customer Details                             | P7_CUST_FIRST_NAME | -       | 18    | -      | VARCHAR   |
| <input checked="" type="checkbox"/> | &P7_CUST_FIRST_NAME.<br>&P7_CUST_LAST_NAME. Customer Details                             | P7_CUST_LAST_NAME  | -       | 18    | -      | VARCHAR   |
| <input checked="" type="checkbox"/> | &P7_CUST_FIRST_NAME.<br>&P7_CUST_LAST_NAME. Customer Details                             | P7_PHONE_NUMBER    | -       | -     | -      | -         |

**Note:** The screenshot is truncated in size.

- d. The Attribute Dictionary is updated.



3. Review the UI defaults in SQL Workshop. Change the help text for CUST\_FIRST\_NAME to Customer First Name and add a Synonym called FIRST\_NAME.
- a. Click **Access Attribute Dictionary** under Tasks.



- b. You see the attributes that you added to the dictionary. You can modify them here.  
Click CUST\_FIRST\_NAME.

A screenshot of a table interface. At the top, there is a search bar with a magnifying glass icon, a 'Go' button, and an 'Actions' dropdown menu. The table has two columns: 'Column Name' and 'Synonym of'. The 'Column Name' column contains the following entries: ACCOUNT\_MGR\_ID, CITY, COUNTRY\_ID, CUST\_EMAIL, CUST\_FIRST\_NAME, CUST\_LAST\_NAME, and PHONE\_NUMBER. The 'Synonym of' column contains '-' for all entries. The row for 'CUST\_FIRST\_NAME' is highlighted with a light gray background.

| Column Name            | Synonym of |
|------------------------|------------|
| ACCOUNT_MGR_ID         | -          |
| CITY                   | -          |
| COUNTRY_ID             | -          |
| CUST_EMAIL             | -          |
| <u>CUST_FIRST_NAME</u> | -          |
| CUST_LAST_NAME         | -          |
| PHONE_NUMBER           | -          |

- c. Change the **Label** to First Name and enter Customer First Name for **Help Text**.  
Click **Apply Changes**.

A screenshot of the Oracle Database Dictionary Details page. The top navigation bar shows 'Column: 5 of 7'. On the right, there are buttons for 'Cancel', 'Delete', and 'Apply Changes' (highlighted with a blue border). Below the navigation, there are tabs: 'Show All', 'Details' (selected), 'Synonyms', 'Form Specific Attributes', and 'Report Specific Attributes'. The 'Details' section contains fields for 'Column Name' (CUST\_FIRST\_NAME), 'Label' (First Name), 'Format Mask' (empty), 'Default Value' (empty), and 'Help Text' (Customer First Name). The 'Help Text' field is currently selected.

- d. The changes are reflected in the list. You also want to change the CUST\_LAST\_NAME. Click CUST\_LAST\_NAME.

| Column Name           | Synonym of | Label           | Help Text                   |
|-----------------------|------------|-----------------|-----------------------------|
| ACCOUNT_MGR_ID        | -          | Account Manager | Person assigned to account. |
| CITY                  | -          | City            | -                           |
| COUNTRY_ID            | -          | Country         | -                           |
| CUST_EMAIL            | -          | Cust Email      | -                           |
| CUST_FIRST_NAME       | -          | First Name      | Customer First Name         |
| <u>CUST_LAST_NAME</u> | -          | Cust Last Name  | -                           |
| PHONE_NUMBER          | -          | Phone number    | -                           |

- e. Change the **Label** to Last Name and enter Customer Last Name for **Help Text**. Click **Apply Changes**.

Column: 6 of 7

Details

Column Name: CUST\_LAST\_NAME

Label: Last Name

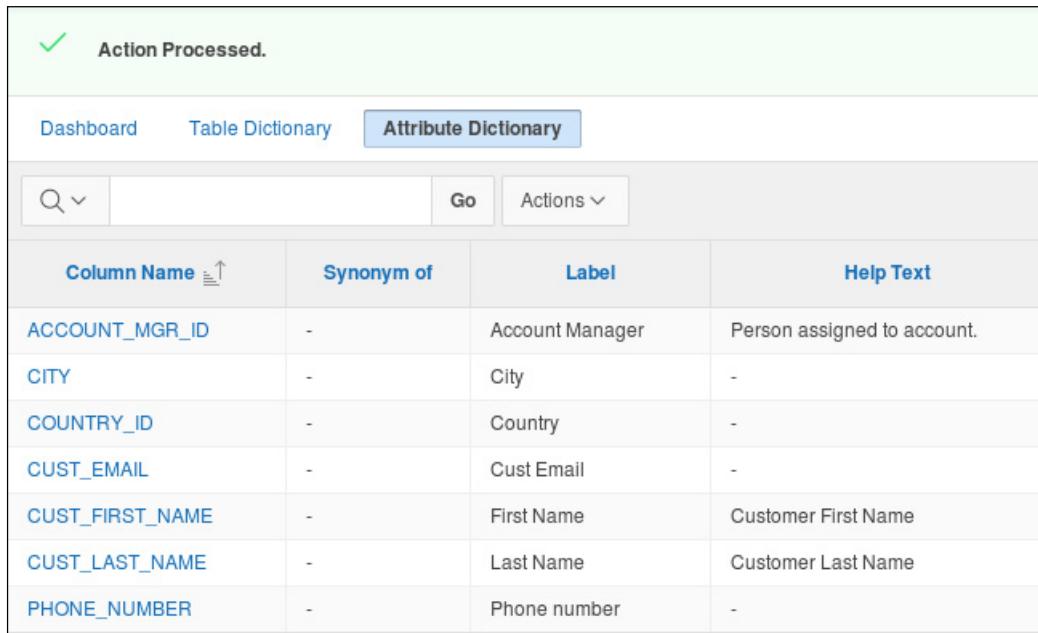
Format Mask:

Default Value:

Help Text: Customer Last Name

Buttons: Cancel, Delete, Apply Changes

The changes are reflected in the list.



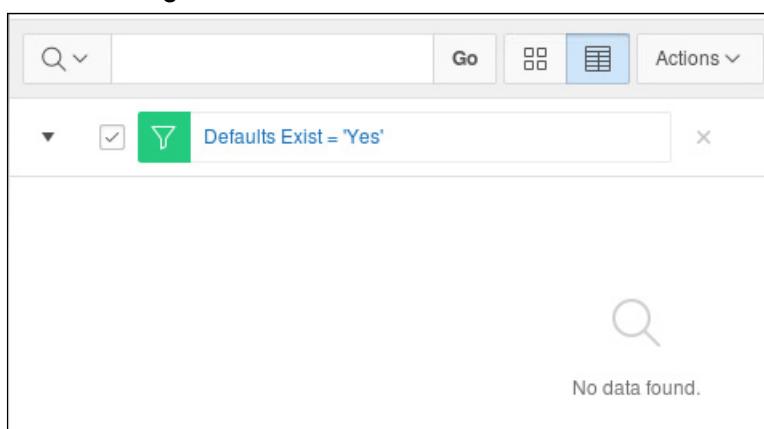
A screenshot of the Attribute Dictionary page. At the top, a green checkmark icon and the text "Action Processed." are displayed. Below this, there are tabs for "Dashboard", "Table Dictionary", and "Attribute Dictionary", with "Attribute Dictionary" being the active tab. A search bar with a magnifying glass icon, a "Go" button, and an "Actions" dropdown menu are also present. The main area is a table with four columns: "Column Name", "Synonym of", "Label", and "Help Text". The data rows are:

| Column Name     | Synonym of | Label           | Help Text                   |
|-----------------|------------|-----------------|-----------------------------|
| ACCOUNT_MGR_ID  | -          | Account Manager | Person assigned to account. |
| CITY            | -          | City            | -                           |
| COUNTRY_ID      | -          | Country         | -                           |
| CUST_EMAIL      | -          | Cust Email      | -                           |
| CUST_FIRST_NAME | -          | First Name      | Customer First Name         |
| CUST_LAST_NAME  | -          | Last Name       | Customer Last Name          |
| PHONE_NUMBER    | -          | Phone number    | -                           |

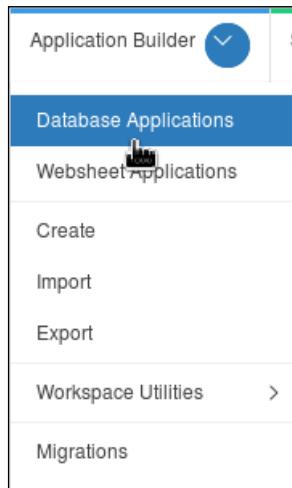
4. Check whether CUSTOMERS is in Table Dictionary or not.
  - a. Click the **Table Dictionary** tab.



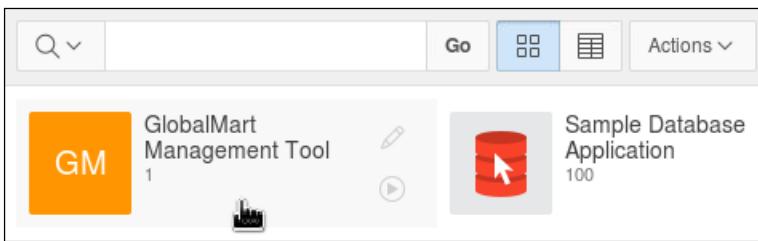
- b. Notice that there is a filter on **Default Exist equals 'Yes'**. In the list, you do not see the CUSTOMERS table, which means that CUSTOMERS table doesn't have a user interface default configured and, therefore, doesn't exist in the Table Dictionary.



- c. Select **Application Builder > Database Applications**.

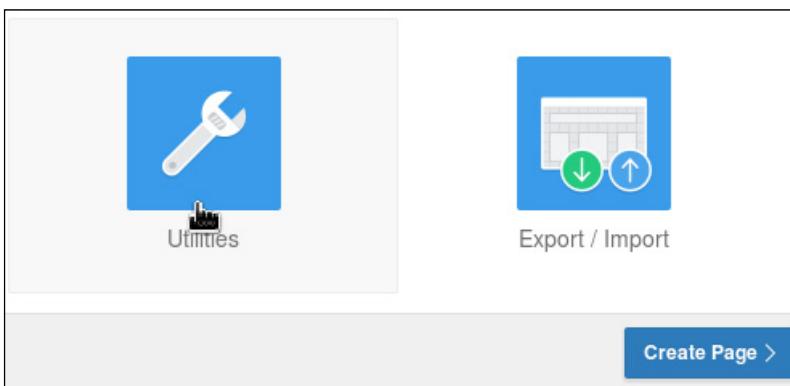


- d. Select the **GlobalMart Management Tool** application.

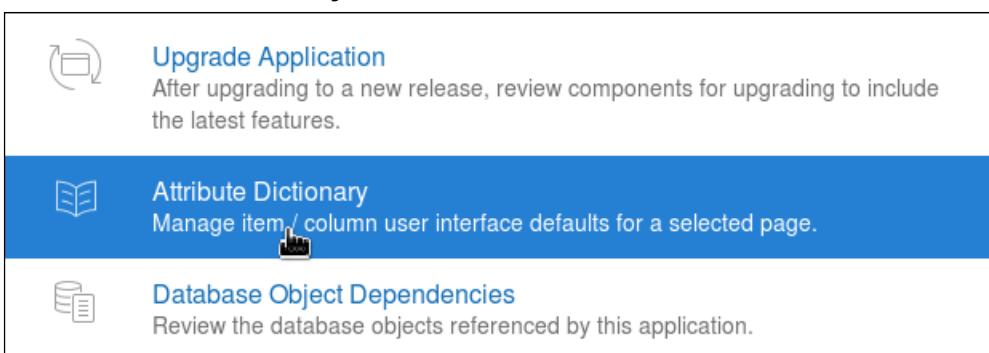


5. Update the Attribute Dictionary for the items on the **Customer Details** page.

- a. Click **Utilities**.



- b. Click **Attribute Dictionary**.



- c. Click the link for the **Customer Details** page.

|    |                             |
|----|-----------------------------|
| 4  | Customer Address List       |
| 5  | Customers                   |
| 6  | Employee Commission         |
| 7  | Customer Details            |
| 8  | List of Orders              |
| 9  | Master Detail               |
| 10 | Update Employee Information |

- d. Notice that you have two items to review for update to the Attribute Dictionary. Click the **Review 2 Items for update of the Attribute Dictionary** link.

|   |
|---|
| Page Items  |
| Update Page   |
| <a href="#">Review 2 Items for update</a>                             |
| Update Attribute Dictionary   |
| 0 Items for insert into the Attribute Dictionary                      |
| <a href="#">Review 2 Items for update of the Attribute Dictionary</a> |

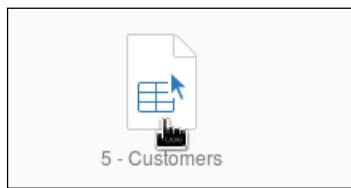
- e. Notice that the column in the Attribute Dictionary is the one that you want, rather than the help text for the item. You will leave it as is.

| <input type="checkbox"/> | Source  | Name               | Label           | Help Text           |
|--------------------------|--|--------------------|-----------------|---------------------|
| <input type="checkbox"/> | Region: &P7_CUST_FIRST_NAME. &P7_CUST_LAST_NAME.<br>Customer Details                       | P7_CUST_FIRST_NAME | Cust First Name | -                   |
|                          | from Attribute Dictionary  | CUST_FIRST_NAME    | First Name      | Customer First Name |
| <input type="checkbox"/> | Region: &P7_CUST_FIRST_NAME. &P7_CUST_LAST_NAME.<br>Customer Details                       | P7_CUST_LAST_NAME  | Cust Last Name  | -                   |
|                          | from Attribute Dictionary  | CUST_LAST_NAME     | Last Name       | Customer Last Name  |

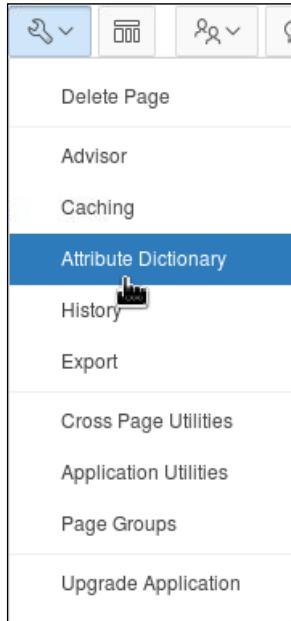
- f. Click the **Application 1** breadcrumb.

|   |        |                      |                    |
|---|--------|----------------------|--------------------|
|  Application 1   | Page 7 | Attribute Dictionary | Update using Items |
| Page: <b>7 - Customer Details</b> <br>Include in Update: <br><input checked="" type="checkbox"/> Label <input checked="" type="checkbox"/> Help Text <input checked="" type="checkbox"/> General Format Mask <input checked="" type="checkbox"/> Form Format Mask<br><input checked="" type="checkbox"/> Default <input checked="" type="checkbox"/> Width <input checked="" type="checkbox"/> Height <input checked="" type="checkbox"/> Data Type |        |                      |                    |

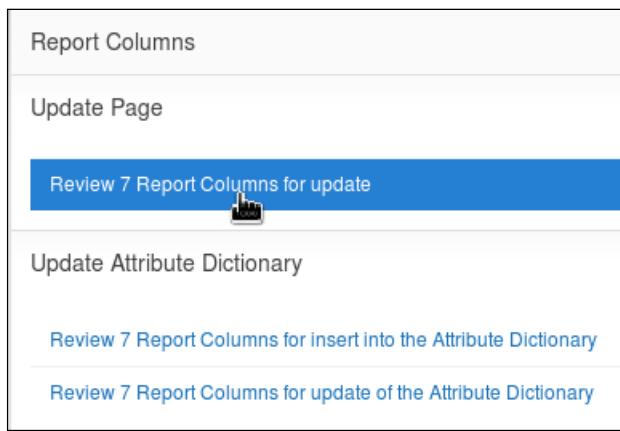
6. Update the **Customers** page to use the Attribute Dictionary defaults. Verify by showing the help text for the First Name column in the report.
  - a. Click the **Customers** icon (Page 5).



- b. Click **Utilities** and select **Attribute Dictionary**.



- c. Because you want to update the page, you want to review the columns for update. Click the **Review 7 Report Columns for update** link.



- d. Review the list. Select the check box in front of the CUST\_FIRST\_NAME item and click **Update Report Columns**.

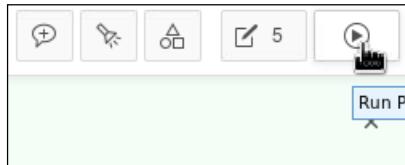
Page: 5 - Customers 

Include in Update: 

| <input type="checkbox"/> Source  | Name            | Label           | Help Text   |
|---|-----------------|-----------------|---|
| <input type="checkbox"/> Region:<br>Customer Report   | ACCOUNT_MGR_ID  | Account Mgr Id  | -   |
| from Attribute Dictionary   |                 | Account Manager | Person assigned to a<a href="javascript:popupURL('f?p=4000:908:13264377954765::908:P908_DISPLAY,P908_CUSTOMER_ID')&quot; title=&quot;View&quot;>...</a> |
| <input type="checkbox"/> Region:<br>Customer Report   | CITY            | City            | -   |
| from Attribute Dictionary   |                 | City            |   |
| <input type="checkbox"/> Region:<br>Customer Report   | COUNTRY_ID      | Country Id      | -   |
| from Attribute Dictionary   |                 | Country         |   |
| <input type="checkbox"/> Region:<br>Customer Report   | CUST_EMAIL      | Cust Email      | -   |
| from Attribute Dictionary   |                 | Cust Email      |   |
| <input checked="" type="checkbox"/> Region:<br>Customer Report  | CUST_FIRST_NAME | Cust First Name | -   |
| from Attribute Dictionary   |                 | First Name      | Customer First Name   |



- e. You can run the page to see the results. Click the **Run Page 5** icon.



- f. To see the help text, select the **First Name** header in the report and click the **Question Mark** icon.

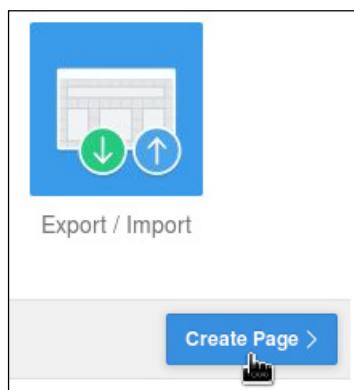
**Note:** To view all the records, you may need to remove the filter (on “Amit Paul”) that you created in Practice 10.

| Customer Id | First Name | Cust Last Name | Street Address |
|-------------|------------|----------------|----------------|
| 496         | Ajay       | Pretty Blvd    |                |
| 605         | Alain      | Brazil Blvd    |                |
| 606         | Alan       | Suspense       |                |
| 607         | Albert     |                |                |
|             | Alec       |                | Namika St      |
|             | Alexander  |                |                |

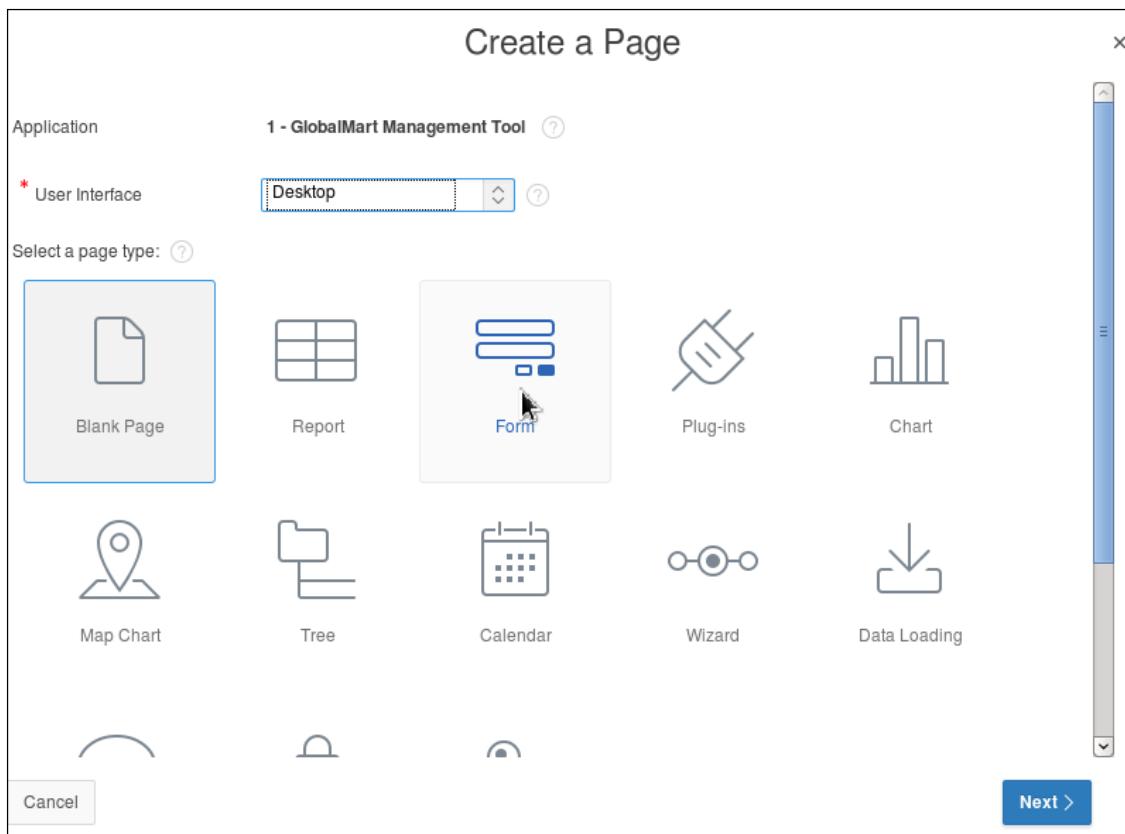
- g. The help text from the Attribute Dictionary is displayed. You can also create a new page and use the UI defaults from the Attribute Dictionary. Click the **Application 1** link on the Developer toolbar.

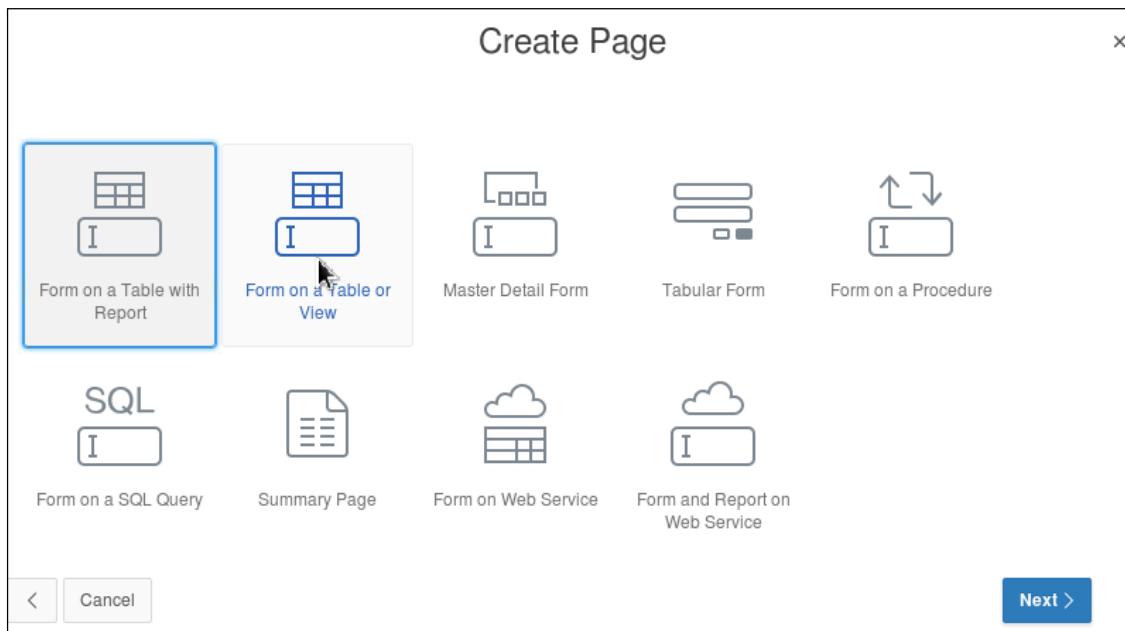
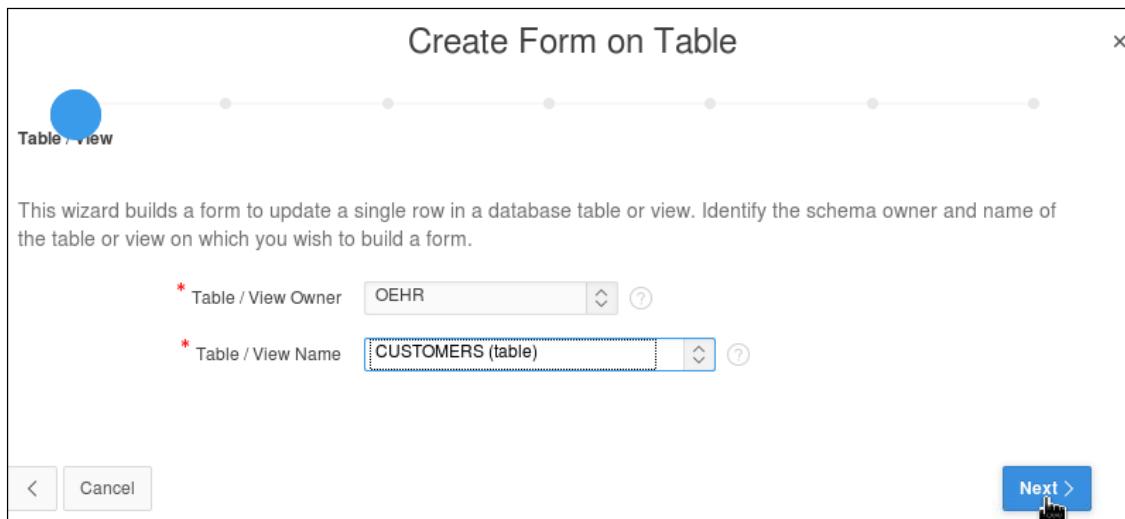
| First Name | Cust Last Name | Street    |
|------------|----------------|-----------|
| Ajay       | Pretty Blvd    |           |
| Alain      | Brazil Blvd    |           |
| Alan       | Suspense       |           |
| Albert     |                |           |
| Alec       |                | Namika St |
| Alexander  |                |           |

7. Create a new forms page based on the CUSTOMERS table. Make sure that UI Defaults is enabled. Run the page to see that the Attribute Dictionary is used.
- Click **Create Page >**.



- Ensure that **Desktop** is selected for **User Interface** and select **Form**.



c. Select **Form on a Table or View**.d. Select **CUSTOMERS (table)** for **Table / View Name** and click **Next >**.

- e. Enter 13 for **Page Number**, and Maintain Customers for **Page Name** and **Region Title**. Notice that **Use User Interface Defaults** is set to **Yes**. Click **Next >**.

Create Form on Table

Page and Region

Use this page to specify page and region information.

\* Page Number  [?](#)

Use User Interface Defaults:  Yes  No [?](#)

\* Page Name  [?](#)

\* Page Mode  [?](#)

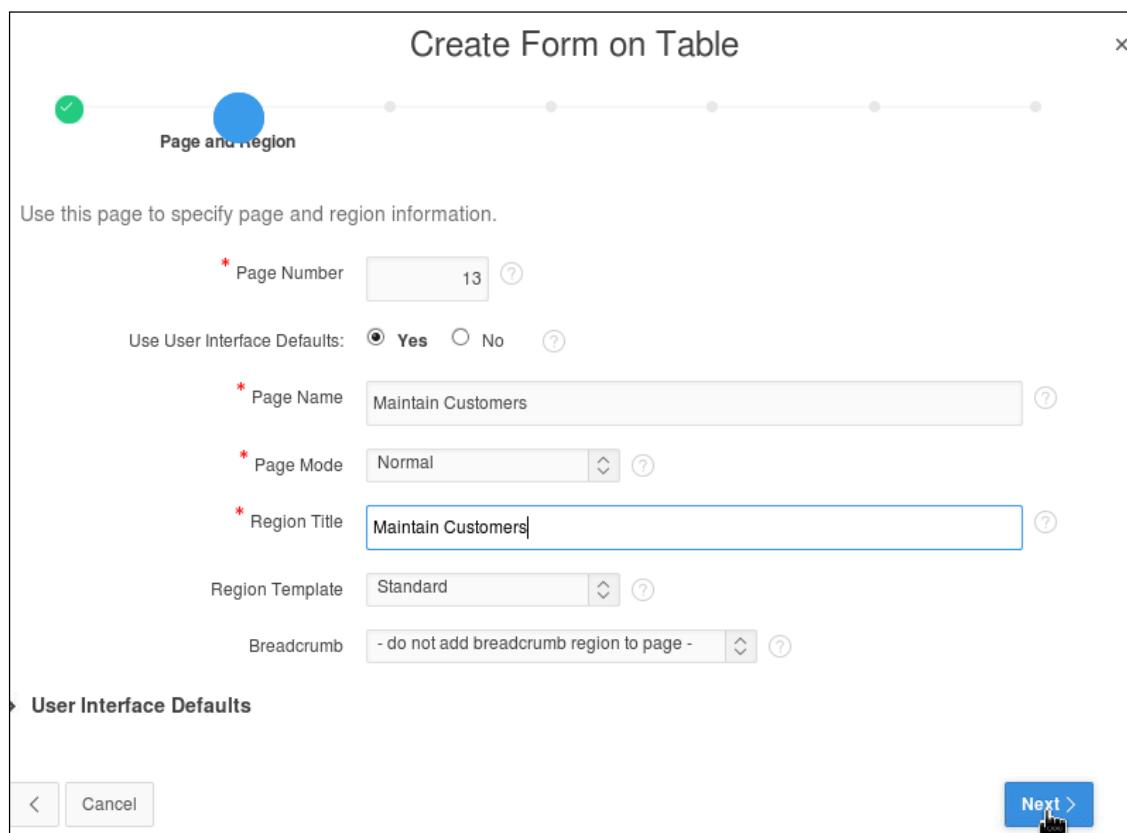
\* Region Title  [?](#)

Region Template  [?](#)

Breadcrumb  [?](#)

User Interface Defaults

< Cancel [Next >](#)

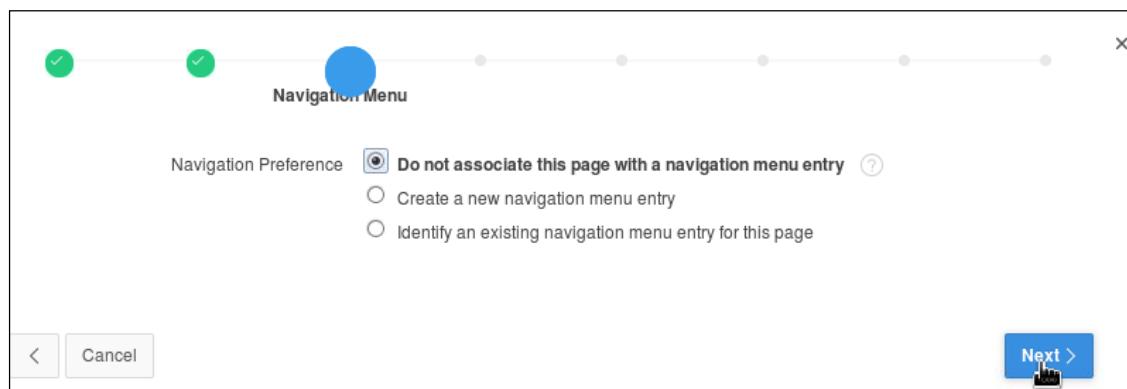


- f. Accept the default and click **Next >**.

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

< Cancel [Next >](#)



- g. Select **Select Primary Key Column(s) for Primary Key Type** and click **Next >**.

Create Form on Table

Forms perform insert, update and delete operations on table rows in the database. The rows are identified using either a Primary Key defined on the table, or the ROWID pseudo column, which uniquely identifies a row in a table. Select "Managed by Database" if you would like to use the ROWID. Otherwise select the Primary Key column(s) defined for your table. Forms support up to two columns in the Primary Key. For tables using Primary Keys with more than two columns, the ROWID option should be used.

\* Primary Key Type:  Managed by Database (ROWID) [?](#)  
 Select Primary Key Column(s) [?](#)

\* Primary Key Column 1: CUSTOMER\_ID (Number) [?](#)

Primary Key Column 2: - Select Primary Key 2 - [?](#)

< Cancel Next >

Notice that **CUSTOMER\_ID (Number)** is automatically selected for **Primary Key Column 1**.

- h. Select **Existing sequence for Source Type**, select CUSTOMERS\_SEQ from the **Sequence** list, and click **Next >**.

Create Form on Table

Select the method by which the primary key is populated.

- Choose Existing Trigger if there is already a trigger to populate the primary key.
- Choose Custom PL/SQL Function to define custom PL/SQL logic to generate the primary key value.
- Choose Existing Sequence if an existing sequence will be used to generate the primary key.

Primary Key Column 1: CUSTOMER\_ID [?](#)

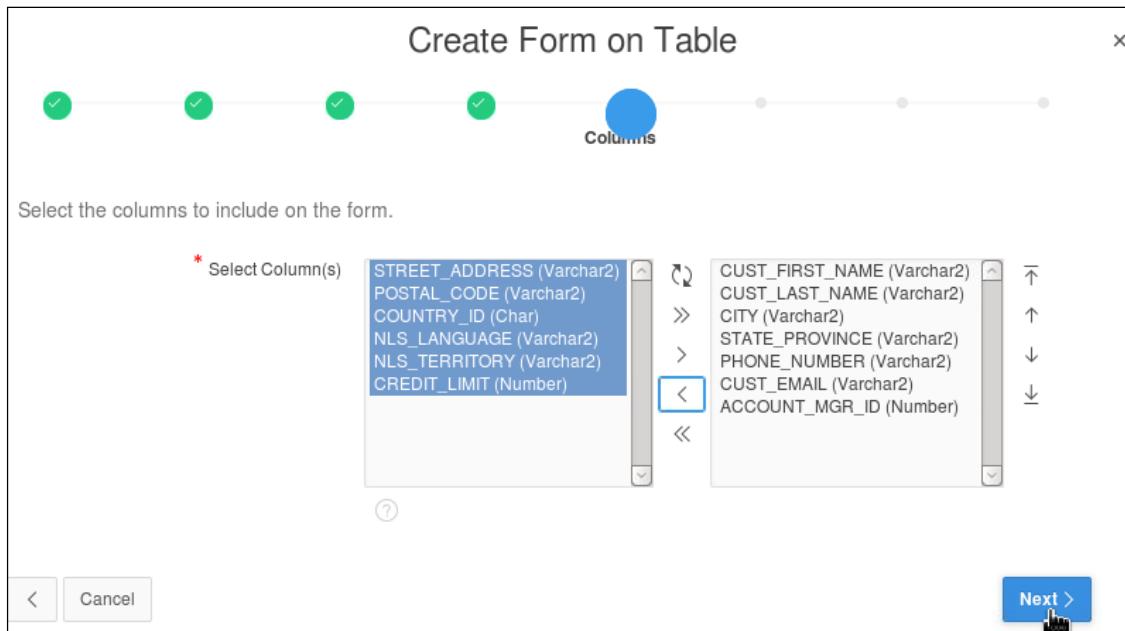
\* Source Type:  Existing trigger [?](#)  
 Custom PL/SQL function [?](#)  
 Existing sequence [?](#)

\* Sequence: CUSTOMERS\_SEQ [?](#)

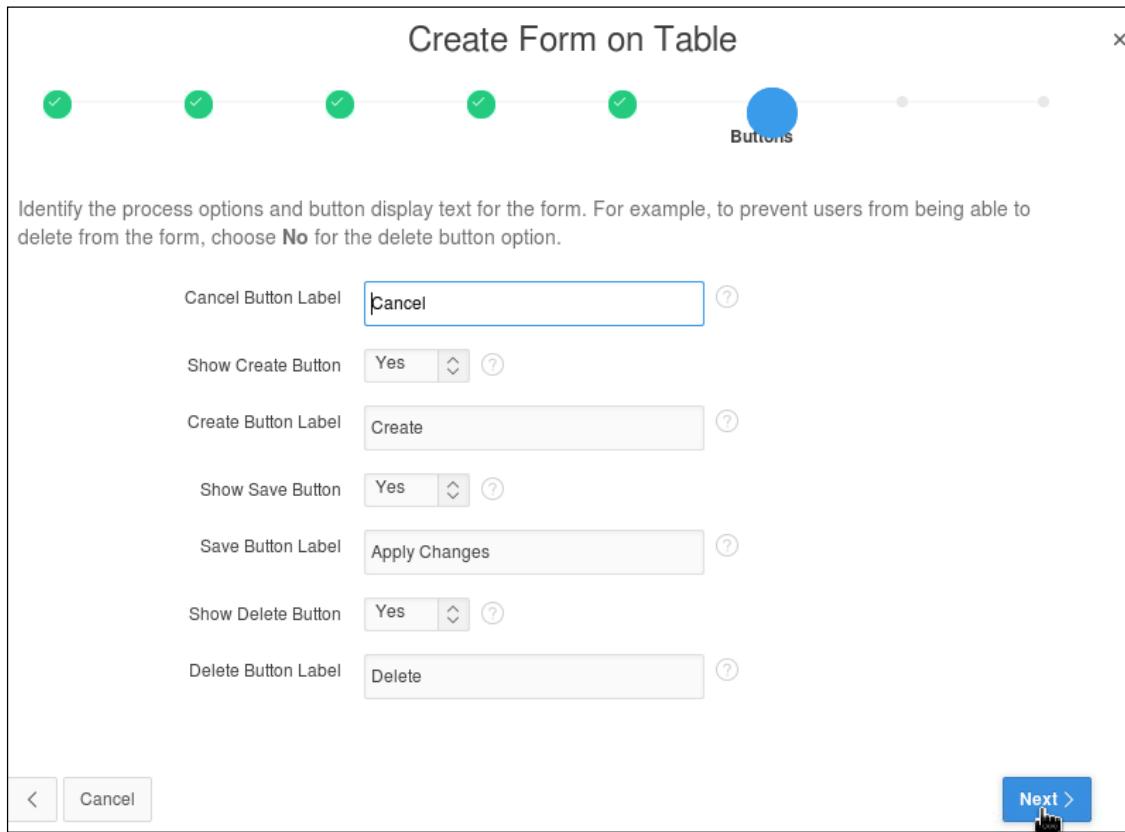
Custom PL/SQL Function Example  
Existing Triggers

< Cancel Next >

- i. Ctrl-select all the columns except CUST\_FIRST\_NAME, CUST\_LAST\_NAME, CITY, STATE\_PROVINCE, PHONE\_NUMBER, CUST\_EMAIL, and ACCOUNT\_MGR\_ID, and click the left arrow (<). Click **Next >**.



- j. Accept the default and click **Next >**.



- k. Enter the page number of the **Customers** page (Page 5) for both branches and click **Next >**.

Select the pages to branch to after the page processing is submitted or cancelled.

\* Branch here on Submit: 5

\* Branch here on Cancel: 5

**Next >**

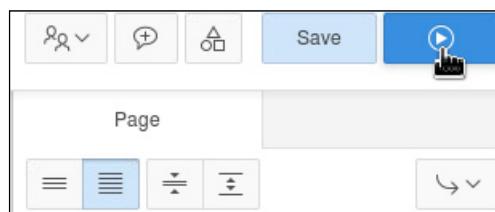
- l. Click **Create**.

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

|                      |                    |
|----------------------|--------------------|
| Application          | 1                  |
| Page                 | 13                 |
| Page Name            | Maintain Customers |
| Region Title         | Maintain Customers |
| Region Template      | Standard           |
| Table / View Owner   | OEHR               |
| Table / View Name    | CUSTOMERS          |
| Primary Key Column 1 | CUSTOMER_ID        |
| Primary Key Column 2 |                    |

**Create**

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



- n. Notice that the labels are the same as from the Attribute Dictionary. Select the **Question Mark** next to the Account Manager to see the Help text.

The screenshot shows the 'Maintain Customers' page. It has fields for First Name, Last Name, City, State Province, Phone number, Cust Email, and Account Manager. The 'Account Manager' field contains a question mark icon. A tooltip window titled 'Account Manager' appears, stating 'Person assigned to account.' There are 'Cancel' and 'Create' buttons at the bottom.

The tooltip window is titled 'Account Manager' and contains the text 'Person assigned to account.' It has a close button ('x') and a 'Cancel' button at the bottom right.

- o. Click the **Application 1** link on the Developer toolbar.

