

Oracle Application Express Workshop I

Acticity Guide – Volume I

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Table of Contents

Practices for Lesson 1: Oracle Application Express Workshop I.....	1-1
Practices for Lesson 1.....	1-2
Practices for Lesson 2: Introducing Oracle Application Express.....	2-1
Practices for Lesson 2: Overview.....	2-2
Practice 2-1: Using Oracle Application Express as a Workspace Administrator	2-3
Practice 2-2: Using Oracle Application Express as a Developer	2-4
Solution 2-1: Using Oracle Application Express as a Workspace Administrator	2-5
Solution 2-2: Using Oracle Application Express as a Developer	2-9
Practices for Lesson 3: Creating a Database Application.....	3-1
Practice 3-1: Creating Database Applications	3-2
Solution 3-1: Creating Database Applications	3-3
Practices for Lesson 4: Using and Creating Interactive Reports.....	4-1
Practices for Lesson 4: Overview.....	4-2
Practice 4-1: Building and Manipulating an Interactive Report.....	4-3
Practice 4-2: Customizing an Interactive Report	4-5
Solution 4-1: Building and Manipulating an Interactive Report.....	4-6
Solution 4-2: Customizing an Interactive Report	4-38
Practices for Lesson 5: Creating Classic Reports, Wizard Reports, and Reports for Mobile Applications	5-1
Practices for Lesson 5: Overview.....	5-2
Practice 5-1: Creating Classic and Wizard Reports	5-3
Practice 5-2: Creating a List View	5-4
Solution 5-1: Creating Classic and Wizard Reports	5-5
Solution 5-2: Creating a List View	5-22
Practices for Lesson 6: Creating Forms	6-1
Practices for Lesson 6: Overview.....	6-2
Practice 6-1: Creating a Form on a Table	6-3
Practice 6-2: Creating a Master Detail Form	6-4
Practice 6-3: Creating a Tabular Form	6-5
Practice 6-4: Create a Form on a Table for Mobile Applications	6-6
Solution 6-1: Creating a Form on a Table	6-7
Solution 6-2: Creating a Master Detail Form	6-17
Solution 6-3: Creating a Tabular Form	6-29
Solution 6-4: Create a Form on a Table for Mobile Applications	6-36
Practices for Lesson 7: Working with Pages and Regions	7-1
Practices for Lesson 7: Overview.....	7-2
Practice 7-1: Creating and Modifying Pages and Regions	7-3
Practice 7-2: Creating a Global Page and Adding a Region	7-4
Practice 7-3: Modify the Mobile Home Page	7-5
Solution 7-1: Creating and Modifying Pages and Regions	7-6
Solution 7-2: Creating a Global Page and Adding a Region	7-26
Solution 7-3: Modify the Mobile Home Page	7-34
Practices for Lesson 8: Adding Items and Buttons	8-1
Practices for Lesson 8: Overview.....	8-2
Practice 8-1: Adding Items and Buttons	8-3
Practice 8-2: Manipulating Items	8-4

Solution 8-1: Adding Items and Buttons	8-6
Solution 8-2: Manipulating Items.....	8-25
Practices for Lesson 9: Understanding Session State	9-1
Practices for Lesson 9: Overview.....	9-2
Practice 9-1: Understanding Session State.....	9-3
Solution 9-1: Understanding Session State.....	9-4
Practices for Lesson 10: Adding Page Processing.....	10-1
Practices for Lesson 10: Overview.....	10-2
Practice 10-1: Creating and Manipulating Computations, Processes, and Validations	10-3
Solution 10-1: Creating and Manipulating Computations, Processes, and Validations	10-5
Practices for Lesson 11: Validating and Debugging Your Application	11-1
Practices for Lesson 11: Overview.....	11-2
Practice 11-1: Using the Advisor	11-3
Practice 11-2: Managing Your Attribute Dictionary.....	11-4
Practice 11-3: Debugging and Troubleshooting Common Issues in Your Application.....	11-5
Solution 11-1: Using the Advisor	11-6
Solution 11-2: Managing Your Attribute Dictionary.....	11-13
Solution 11-3: Debugging and Troubleshooting Common Issues in Your Application.....	11-33
Practices for Lesson 12: Adding Shared Components That Aid Navigation	12-1
Practices for Lesson 12: Overview.....	12-2
Practice 12-1: Creating Lists and List Regions	12-3
Practice 12-2: Creating and Editing Standard Tabs	12-4
Practice 12-3: Adding Navigation Bar Entries	12-5
Practice 12-4: Adding Breadcrumbs and Tabs to an Existing Page.....	12-6
Solution 12-1: Creating Lists and List Regions	12-7
Solution 12-2: Creating and Editing Standard Tabs	12-16
Solution 12-3: Adding Navigation Bar Entries	12-24
Solution 12-4: Adding Breadcrumbs and Tabs to an Existing Page.....	12-34
Practices for Lesson 13: Working with Themes, Templates, and Files.....	13-1
Practices for Lesson 13: Overview.....	13-2
Practice 13-1: Working with Themes, Templates, and Files	13-3
Solution 13-1: Working with Themes, Templates, and Files	13-4
Practices for Lesson 14: Implementing Security	14-1
Practices for Lesson 14: Overview.....	14-2
Practice 14-1: Creating an Authentication Scheme.....	14-3
Practice 14-2: Restricting Users by Using Access Control	14-4
Practice 14-3: Using Session State Protection.....	14-5
Solution 14-1: Creating an Authentication Scheme.....	14-6
Solution 14-2: Restricting Users by Using Access Control	14-11
Solution 14-3: Using Session State Protection.....	14-31
Practices for Lesson 15: Managing Application Navigation	15-1
Practices for Lesson 15: Overview.....	15-2
Practice 15-1: Building a Hierarchical List with Images.....	15-3
Practice 15-2: Building a Database-Driven Report.....	15-4
Practice 15-3: Building a Site Map	15-5
Practice 15-4: Enforcing Authorization in Site Map	15-6
Solution 15-1: Building a Hierarchical List with Images.....	15-7
Solution 15-2: Building a Database-Driven Navigation Report.....	15-24

Solution 15-3: Building a Site Map	15-31
Solution 15-4: Enforcing Authorization in Site Map	15-44
Practices for Lesson 16: Extending Your Application.....	16-1
Practices for Lesson 16: Overview.....	16-2
Practice 16-1: Adding a Data Upload Wizard	16-3
Practice 16-2: Creating an Upload and Download Page	16-4
Practice 16-3: Using BLOB Data in a Report and Form	16-5
Solution 16-1: Adding a Data Upload Wizard	16-6
Solution 16-2: Creating an Upload and Download Page	16-14
Solution 16-3: Using BLOB Data in a Report and Form	16-26
Practices for Lesson 17: Creating and Editing Charts	17-1
Practices for Lesson 17: Overview.....	17-2
Practice 17-1: Creating and Editing Charts	17-3
Practice 17-2: Creating an HTML5 Chart for Mobile Applications	17-4
Practice 17-3: Creating Additional Charts	17-5
Solution 17-1: Creating and Editing Charts	17-6
Solution 17-2: Creating an HTML5 Chart for Mobile Applications	17-14
Solution 17-3: Creating Additional Charts	17-18
Practices for Lesson 18: Adding Calendars and Trees	18-1
Practices for Lesson 18: Overview.....	18-2
Practice 18-1: Creating a Calendar	18-3
Practice 18-2: Creating a Tree Whose Nodes Link to a Different Page	18-4
Solution 18-1: Creating a Calendar	18-5
Solution 18-2: Creating a Tree Whose Nodes Link to a Different Page	18-17
Practices for Lesson 19: Using Dynamic Actions and Plug-ins	19-1
Practices for Lesson 19: Overview.....	19-2
Practice 19-1: Using Dynamic Actions on Your Page	19-3
Practice 19-2: Importing and Using Plug-ins	19-4
Solution 19-1: Using Dynamic Actions on Your Page	19-5
Solution 19-2: Importing and Using Plug-Ins	19-26
Practices for Lesson 20: Utilizing Application Express Printing.....	20-1
Practices for Lesson 20: Overview.....	20-2
Practice 20-1: Printing a Standard Report with Derived Output	20-3
Practice 20-2: Creating a PDF Report with Multiple Queries	20-4
Solution 20-1: Printing a Standard Report with Derived Output	20-5
Solution 20-2: Creating a PDF Report with Multiple Queries	20-19
Practices for Lesson 21: Managing Application Feedback	21-1
Practices for Lesson 21: Overview.....	21-2
Practice 21-1: Adding and Monitoring Feedback in Your Application.....	21-3
Solution 21-1: Adding and Monitoring Feedback in Your Application.....	21-4

Practices for Lesson 1: Oracle Application Express Workshop I

Chapter 1

Practices for Lesson 1

Practices Overview

There are no practices for lesson 1.

Practices for Lesson 2: Introducing Oracle Application Express

Chapter 2

Practices for Lesson 2: Overview

Practices Overview

There are two practices for this lesson. In these practices, you log in to Oracle Application Express and create the user that you will need for the rest of the practices in this course. You run a sample database application, install and use a packaged application by unlocking it, and import the OEHR packaged database application.

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

Overview

In this practice, you log in to the Oracle Application Express workspace and create a developer user.

Assumptions

N/A

Tasks

- a. Log in to Oracle Application Express with the following details:
Workspace: `ora<n>`
Username: `ora<n>_admin`
Password: `ora<n>`

- b. Create a developer user with the following details:
Username and Password: `ora<n>`
Email: `ora<n>@oracle.com`

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

Overview

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
- Import the OEHR database application and its supporting objects

Assumptions

You have created the `ora<n>` user from the previous practice.

Tasks

- a. Log in to Oracle Application Express with the following details:
Workspace: `ora<n>`
Username: `ora<n>`
Password: `ora<n>`
- b. Run the sample database application.
- c. Install, unlock, and use a packaged application.
- d. Install the OEHR packaged database application and its supporting objects from the following location:
`/home/oracle/labs/oehr/oehr_object_app_installer.sql`

Note: This application installs the database objects required for the rest of the practices in this course.

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

Overview

In this solution, the steps to log in to the Oracle Application Express workspace and create a developer user are provided.

Tasks

- Log in to Oracle Application Express with the following details:

Workspace: **ora<n>**

Username: **ora<n>_admin**

Password: **ora<n>**

- Enter the following URL in your browser address bar:
http://<instructor_machine_name>:8080/apex
- On the Login page, enter **ora<n>** for Workspace, **ora<n>_admin** for Username, and **ora<n>** for Password. Click **Login to Application Express**.

Application Express Login

Workspace
ora01

Username
ora01_admin

Password
• • • •

[Reset Password](#)

Login to Application Express

[Facebook](#) [LinkedIn](#) [Twitter](#) [Google+](#)

Workspace	Getting Started	Community
<ul style="list-style-type: none"> • Reset Password • Find My Workspace • Administration 	<ul style="list-style-type: none"> • Learn ... • Oracle Technology Network • apex.oracle.com • Oracle by Example's 	<ul style="list-style-type: none"> • Discussion Forum • Partners • BLOGs

- 3) If you are prompted to change your password, enter the old and new passwords and click **Apply Changes**. (Make sure that the new password contains at least six characters, differs from the old password by at least two characters, contains at least one punctuation character, and contains at least one uppercase alphabetic character.)

The password for this account must be changed.

Change Password

Username: ORA01_ADMIN

* Enter Current Password:

* Enter New Password:

* Confirm New Password:

Apply Changes

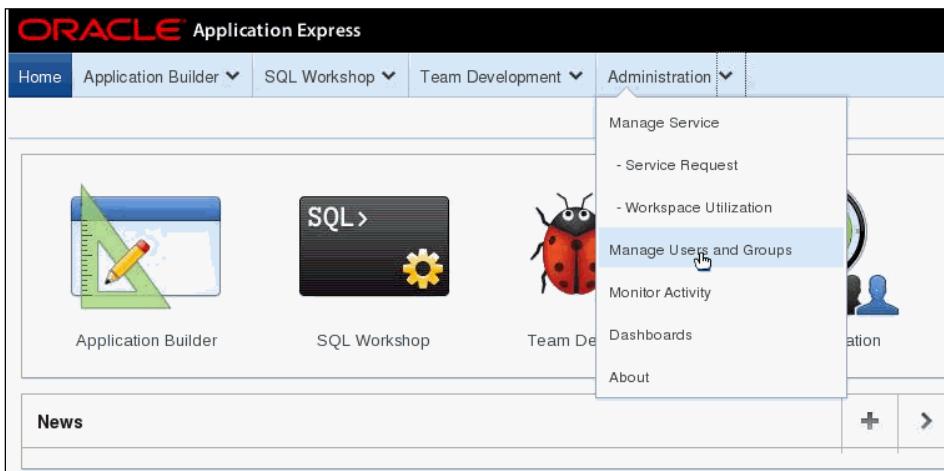
- 4) Click **Return**.
- 5) You will be directed to log in again. Enter the new password and click **Login**.
You have successfully logged in to the Oracle Application Express application as an administrator user.

- b. Create a developer user with the following details:

Username and Password: ora<n>

Email: ora<n>@oracle.com

- 1) Click the down arrow on the **Administration** tab and select **Manage Users and Groups**.



- 2) Click **Create User >**.

Create User >

- 3) Enter ora<n> for **Username** and ora<n>@oracle.com for **Email Address**.

User Identification

* Username	ora01
* Email Address	ora01@oracle.com
First Name	
Last Name	
Description	
Default Date Format	

- 4) Scroll down and verify the account privileges. Make sure that “**User is a workspace administrator**” is set to **No** and “**User is a developer**” is set to **Yes**.

Account Privileges

Default Schema	ORA01
Accessible Schemas (null for all)	
User is a workspace administrator:	<input type="radio"/> Yes <input checked="" type="radio"/> No
User is a developer:	<input checked="" type="radio"/> Yes <input type="radio"/> No
Application Builder Access	Yes
SQL Workshop Access	Yes
Team Development Access	Yes
Set Account Availability	Unlocked

- 5) Scroll down and enter ora<n> for **Password** and **Confirm Password**. Select **No** for **Require Change of Password on First Use**.

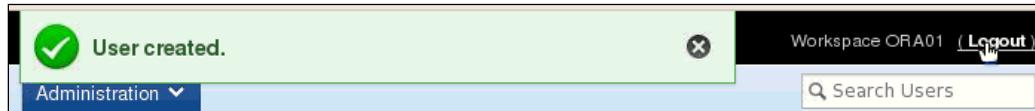
Password

* Password	*****	Passwords are case sensitive
* Confirm Password	*****	
Require Change of Password on First Use	No	

- 6) Scroll up to the top of the page and click **Create User**.



- 7) Click **Logout**.



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

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

Overview

In this practice solution, the steps to log in to Oracle Application Express as a developer, run a sample database application, import the OEHR sample database application and its supporting objects, and install a packaged application and use it are provided.

Tasks

- Log in to Oracle Application Express with the following details:

Workspace: ora<n>

Username: ora<n>

Password: ora<n>

- Enter ora<n> for **Workspace**, **Username**, and **Password**. Click **Login to Application Express**.

Application Express Login

Workspace
ora01

Username
ora01

Password
• • • •

[Reset Password](#)

Login to Application Express

[Facebook](#) [LinkedIn](#) [Twitter](#) [Google+](#)

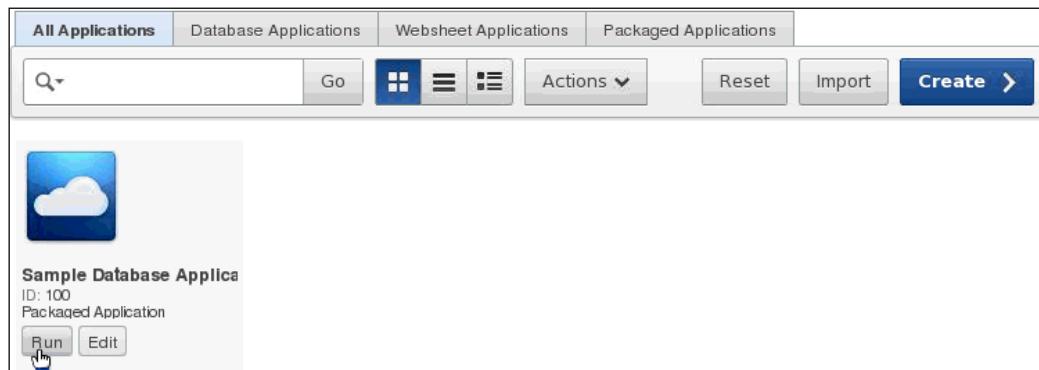
Workspace	Getting Started	Community
<ul style="list-style-type: none"> Reset Password Find My Workspace Administration 	<ul style="list-style-type: none"> Learn ... Oracle Technology Network apex.oracle.com Oracle by Example's 	<ul style="list-style-type: none"> Discussion Forum Partners BLOGs

You have successfully logged in to Oracle Application Express as a developer.

- b. Run the sample database application.
- 1) Click the **Application Builder** icon on the Oracle Application Express home page.



- 2) Click **Run** to run the **Sample Database Application**.



- 3) You will be prompted to enter your login credentials to log in to the application. Enter your Application Express Username and Password. Enter `ora<n>` for both Username and Password, and click **Login**.

The screenshot shows the login page for the Sample Database Application. It has fields for 'Username' (containing 'ora01') and 'Password' (containing five dots). A large blue 'Login' button is at the bottom. Below the form, there is a message: 'To log in to the Sample Database application, please use your Application Express Workspace username and password.' and 'For further information, please refer to "Utilizing Packaged Applications" in the Oracle Application Express Application Builder User's Guide.'

- 4) The Sample Database Application is displayed. Click the various tabs and try to understand what the application does.

The screenshot shows the Oracle Database Application Express interface for the Sample Database Application. The main content area displays several dashboards and lists:

- Sales for this Month:** A gauge chart showing sales of 1,600.
- Top Customers:** A list of customers with their total orders and amounts:

Bradley, Eugene - 2 Order(s)	\$2,760.00
Logan, Edward - 2 Order(s)	\$2,420.00
Dulles, John - 1 Order(s)	\$2,380.00
Hartsfield, William - 2 Order(s)	\$2,370.00
LaGuardia, Fiorello - 1 Order(s)	\$1,090.00
- Top Orders by Date:** A list of orders by date and amount:

October 17, 2012	2,380
October 03, 2012	1,890
October 28, 2012	1,640
- Top Products:** A list of products with their quantities and amounts:

Jacket - 18 x \$1.50	\$2,700.00
Bag - 16 x \$1.25	\$2,000.00
Trousers - 21 x \$0.80	\$1,680.00

- 5) Click the Home button on the toolbar at the bottom.

The screenshot shows the Oracle Application Express toolbar with the following buttons:

- Home
- Application 100
- Edit Page 1
- Create
- Session
- Caching
- View Debug
- Debug
- Show Edit Links
- Show Grid

The "Home" button is highlighted.

You have successfully run the sample database application.

- c. Install, unlock, and use a packaged application.
- 1) Navigate to the Application Builder page by clicking the Application Builder icon.

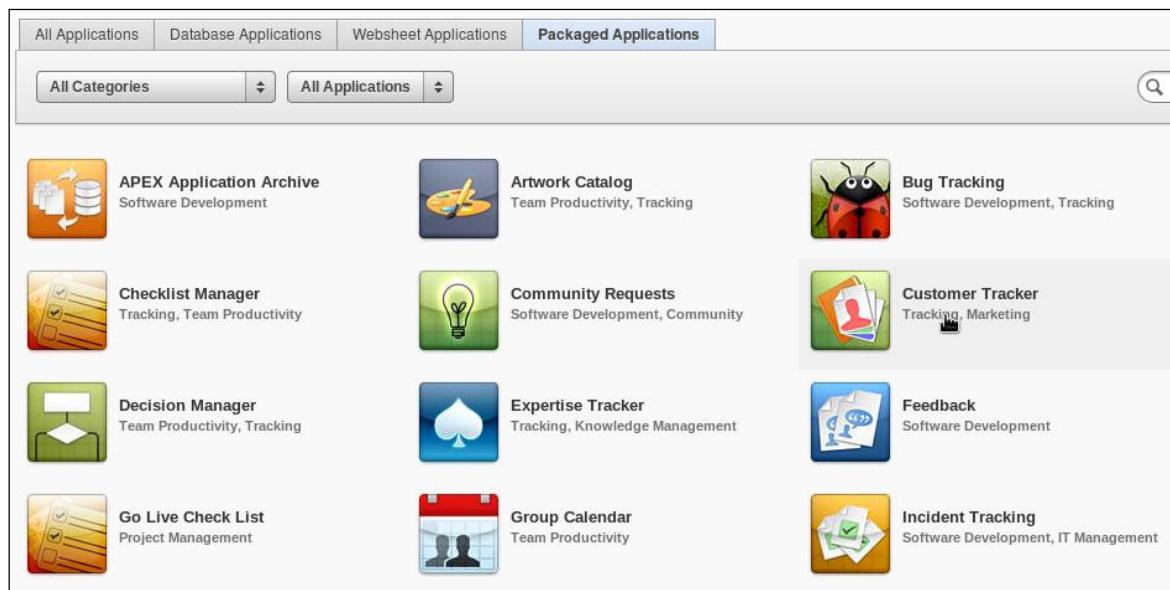
The screenshot shows the Oracle Application Express Application Builder page. The top navigation bar includes links for Home, Application Builder, SQL Workshop, Team Development, and Administration. Below the navigation bar are four icons representing different features:

- Application Builder:** An icon of a ruler and pencil.
- SQL Workshop:** An icon of a gear.
- Team Development:** An icon of a ladybug, a speech bubble, and a lightbulb.
- Administration:** An icon of two people and a gauge.

- 2) Click Packaged Applications.

The screenshot shows the Oracle Application Express Application Builder page with the "Application Builder" link in the breadcrumb trail. The top navigation bar is identical to the previous screenshot. Below the navigation bar, there is a toolbar with tabs for All Applications, Database Applications, Websheet Applications, and Packaged Applications. The "Packaged Applications" tab is currently selected. The toolbar also includes search, go, and actions buttons.

- 3) 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**.



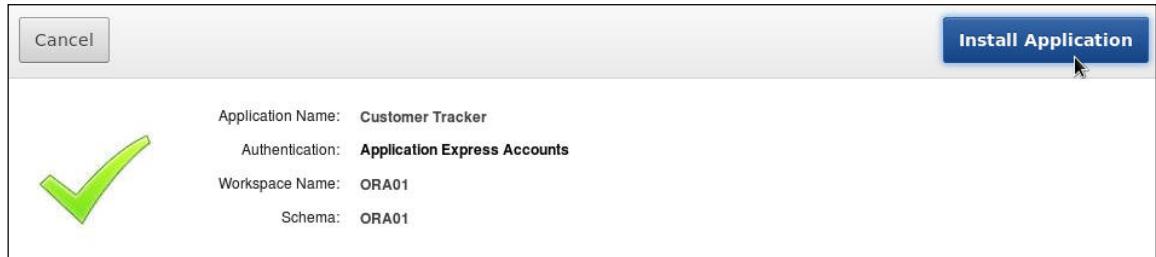
- 4) A description about the application is available. Read the description and click **Install Application**.

The screenshot shows the 'Customer Tracker' application details page. It includes a summary, a description stating 'Customer Tracker helps you improve your customer interactions by offering a centralized repository of information about your customers.', and a preview of the application's interface showing various reports and data tables.

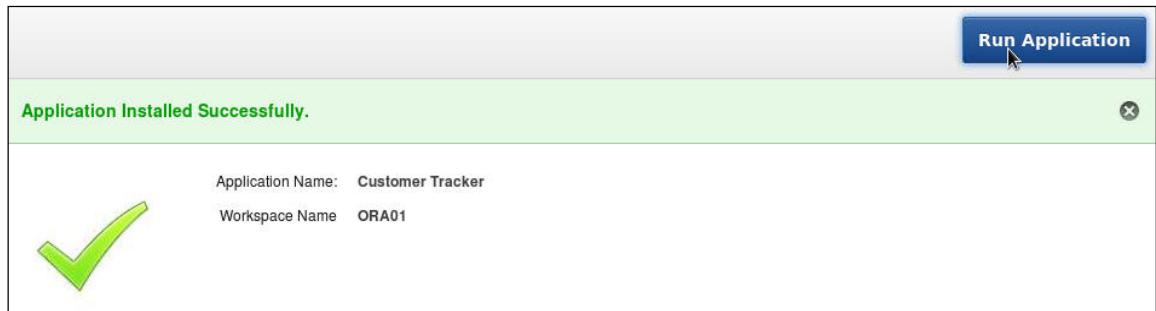
- 5) Retain the default authentication and click **Next >**.

The screenshot shows the 'Create Application' setup screen. The 'Application Name' is set to 'Customer Tracker' and the 'Authentication' dropdown is set to 'Application Express Accounts'. The 'Next >' button is highlighted with a mouse cursor.

- 6) Click **Install Application**.



- 7) After installing the application, click **Run Application**.



- 8) Enter your login credentials to log in to the application.

The login page has the following fields:
Username: ora01
Password: (represented by five dots)
Login

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

Customer Summary		Customers	
10	0	WebEx Communications	7 minutes ago
Total	Marquee	Sonic Solutions	7 minutes ago
0	5	Cephalon	7 minutes ago
Referenceable	Products Used	Euronet Worldwide	7 minutes ago
		Martek Biosciences	7 minutes ago
		Altiris	7 minutes ago
		Monolithic Power Systems	7 minutes ago

Summary		Customer Updates	
Number of Customers	10	Product changed from "" to "Peregrine Enterprise Edition" - Eur	7 minutes ago
New last 7 days	10	Product changed from "" to "Symmetric 2100" - Martek Bioscienc	7 minutes ago
Referencable	0	Product changed from "" to "Symmetric 2100" - Altiris	7 minutes ago

- 10) Click **Add Customer>** to add customer data.

View	Customer Name	Summary	Category	Marquee Customer	Referencable	Product Uses	Location	Status	Tags
AAAF	Altiris	Software.	Corporate	No	No	Symmetric 2100	-	Partner	SAMP CUST

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

Customer Details

Customer Name *	Terri Brew		
Status	Customer	Category	Consumer
Geography	North America	Industry	Automotive
Tags			
Referencable	Yes		
Marquee Customer	Yes		
Classification			
Stock Symbol			
DUNS #			
SIC			
Web Site			
LinkedIn			
Facebook			
Twitter (userid)			
Cancel Add Customer 			

- 12) Similarly, you can try similar activities with the different tabs available. Click **Logout** to log out of the application.

Customer Tracker

Home	Customers	Contacts	Products	Reports			Logout		
Home > Customers									
<input type="text"/> Go Actions ▾		Reset Report Upload Customers		Add Customer >					
View	Customer Name	Summary	Category	Marquee Customer	Referencable	Product Uses	Location	Status	Tags
AAAF	Altiris	Software.	Corporate	No	No	Symmetric 2100	-	Partner	SAMPLE CUSTOM

- d. Install the OEHR packaged database application and its supporting objects from the following location:

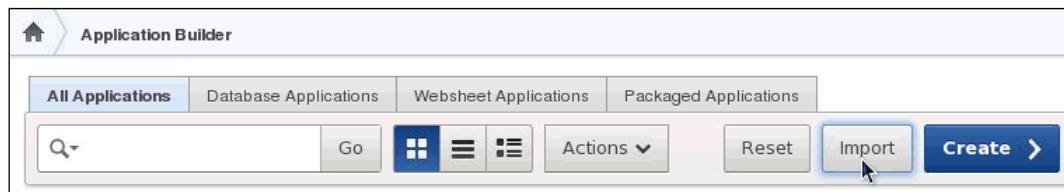
`/home/oracle/labs/oehr/oehr_object_app_installer.sql`

Note: This application installs the database objects required for the rest of the practices in this course.

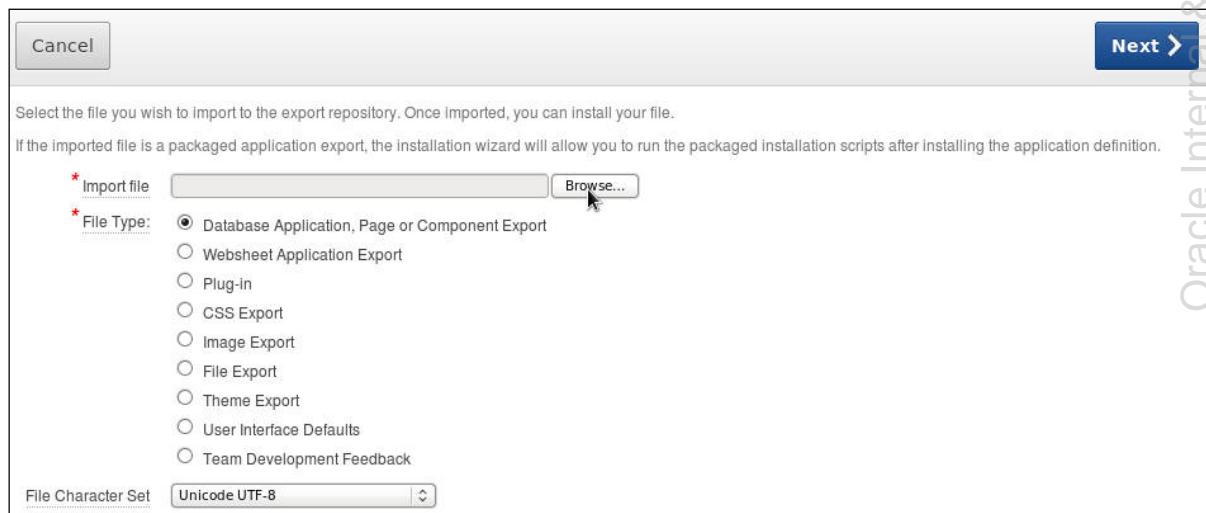
- 1) Navigate to the **Application Builder** page by clicking the **Application Builder** icon.



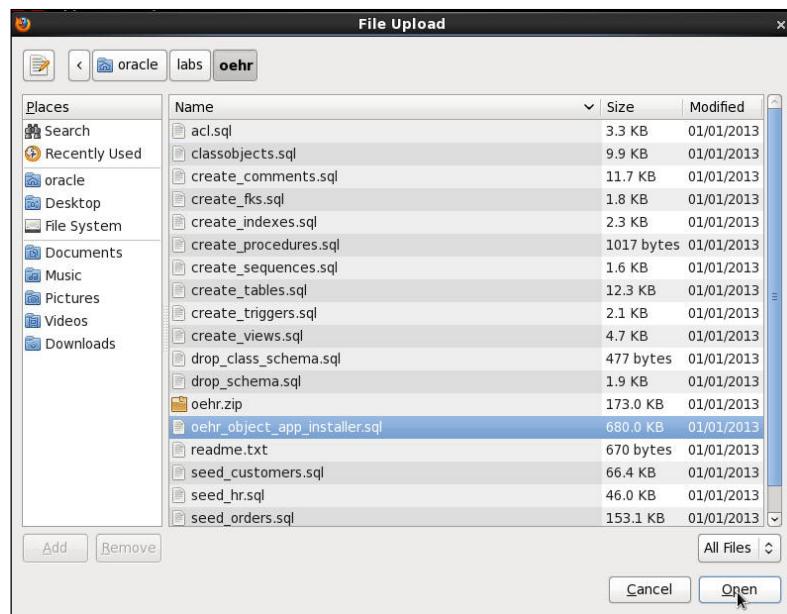
- 2) Click the **Import** button.



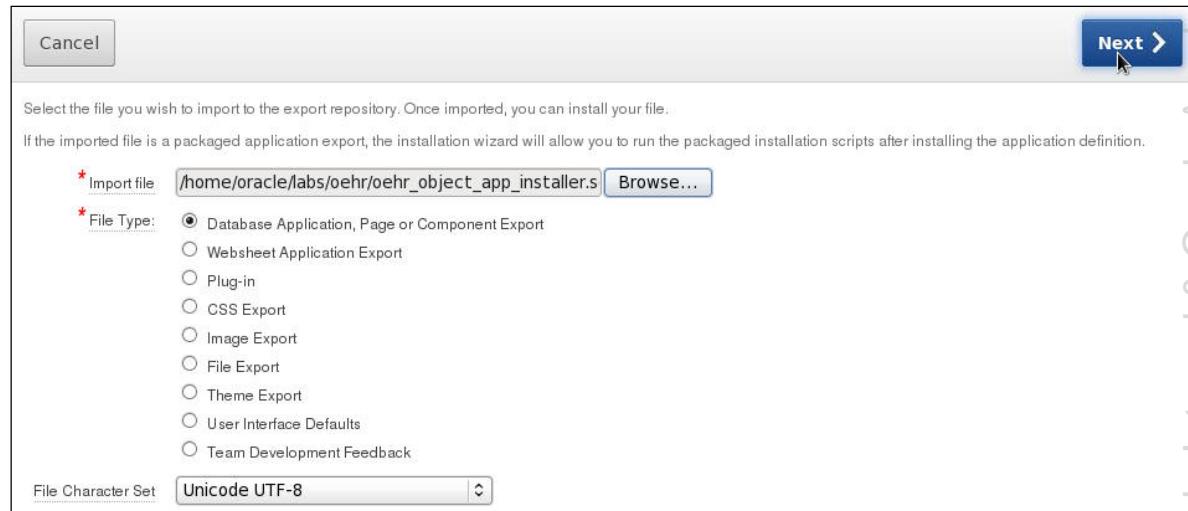
- 3) Click the **Browse** button.



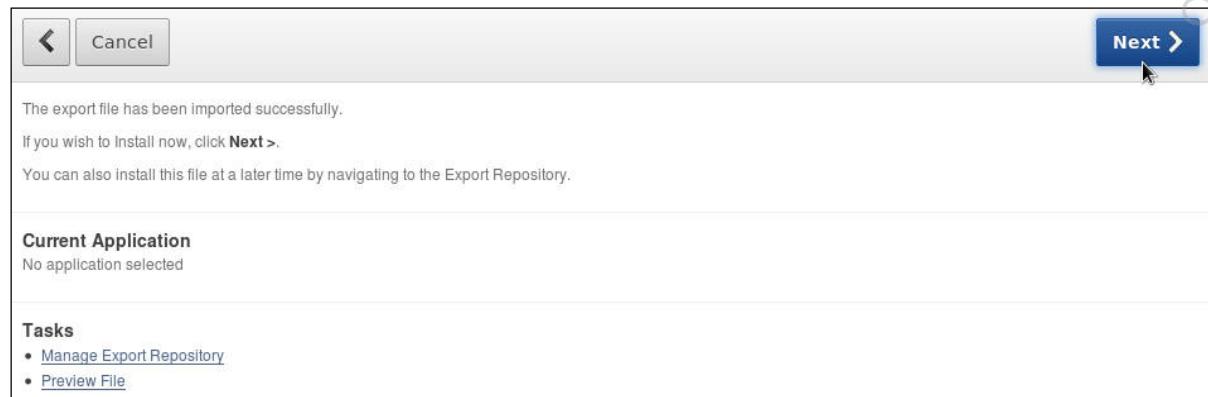
- 4) Browse to the `/home/oracle/labs/oehr` folder, select the `oehr_object_app_installer.sql` script file, and click **Open**.



- 5) Click **Next >** to import the file.



- 6) You have successfully imported the file. To install the application, click **Next >**.



- 7) Select `ora<n>` for the parsing schema and click **Install Application**.

When you install an application having the same ID as an existing application in the current workspace, the existing application is deleted and then replaced by the new application. If you attempt to install an application having the same ID as an existing application in a different workspace, a benign error message displays. If you are importing a packaged Application Express application, the installation wizard will allow you to install supporting objects.

Current Workspace: ORA01
 Export File Workspace ID: 56013809141722139
 Export File Application ID: 654
 Export File Version: 2006.02.24
 Export File Parsing Schema: OEHR
 Application Origin: This application was exported from another workspace.
 * Parsing Schema: ORA01
 * Build Status: Run and Build Application
 * Install As Application:
 Auto Assign New Application ID
 Reuse Application ID 654 From Export File
 Change Application ID

- 8) To install the supporting objects for the application, ensure that **Install Supporting Objects is Yes** and click **Next >**.

The installation of this application creates the objects and loads the data necessary for the Oracle University Introduction to Oracle Application Express course. Deleting this application and selecting to deinstall supporting objects will completely remove all objects that were created.

Application: 124 - OEHR Sample Objects for OU
 Parsing Schema: ORA01
 Free Space Required in KB: 4,096
 Install Supporting Objects: Yes

Tasks
[Preview Installation Script](#)

- 9) Click **Install**.

Please confirm that you would like to install this application's supporting objects.

Tasks
[Preview Installation Script](#)

10) Click **Install Summary**.

Your application's supporting objects have been installed.

Tasks
Your imported file is located in the export repository. Unless you plan to install again, you should remove it.

- [Manage Export Repository](#)
- [Export](#)
- [Component Export](#)

11) Review the **Install Summary**.

Install Summary					
Script Name	Status	Statements Successful	Statements with Errors	Total Statements	
create tables	Success	17	0	17	
create procedures	Success	1	0	1	
create sequences	Success	8	0	8	
create indexes	Success	28	0	28	
create fks	Success	10	0	10	
create triggers	Success	7	0	7	
create views	Success	9	0	9	
create comments	Success	88	0	88	
seed hr	Success	218	0	218	
seed customers	Success	341	0	341	
seed products	Success	576	0	576	
seed orders	Success	1889	0	1889	
report total:		3192	0	3192	
1 - 12					

You have successfully imported and installed the OEHR sample database application and its supporting objects.

Practices for Lesson 3: Creating a Database Application

Chapter 3

Practice 3-1: Creating Database Applications

Overview

In this practice, you:

- Create a database application from a spreadsheet
- Create a desktop application
- Add a mobile user interface to the application

Assumptions

You have performed Practice 2-1 and Practice 2-2.

Tasks

- a. Create an application named Tasks based on the `tasks.txt` file available in the `/home/oracle/labs/files` 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.
- b. Create a database desktop application named Order Management. In the rest of the practices in this course, you will enhance and complete this application by creating pages, regions, processes, and so on.
- c. Add a mobile user interface to the Order Management desktop application.

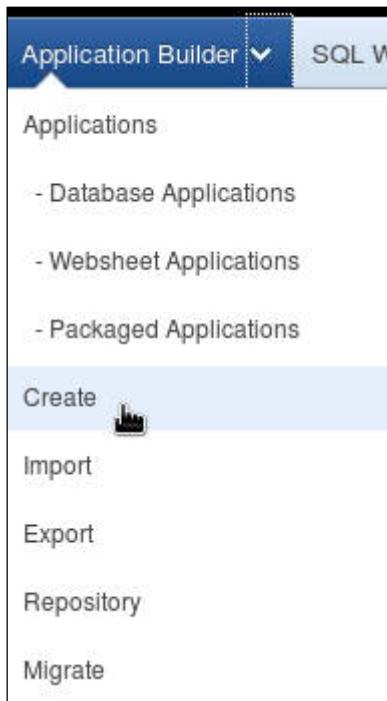
Solution 3-1: Creating Database Applications

Overview

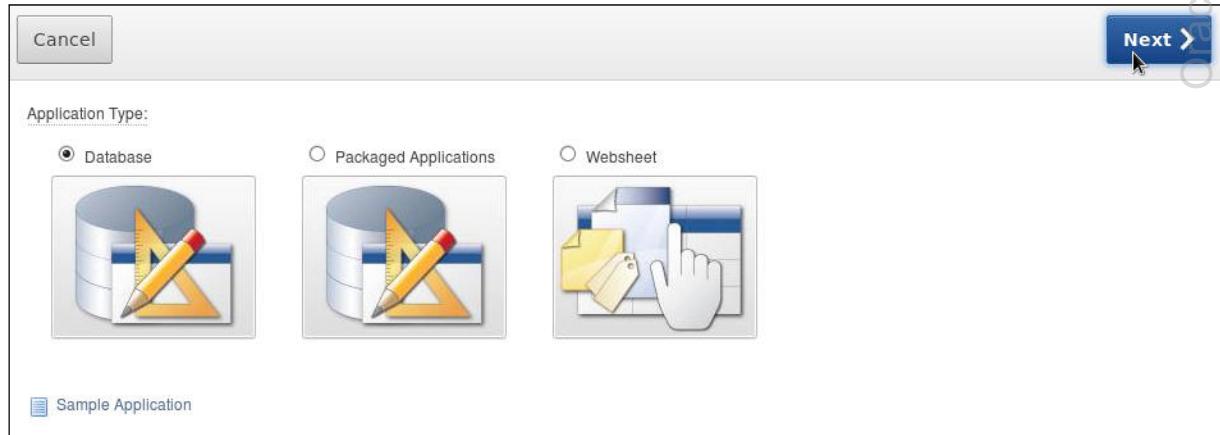
In this practice solution, the steps to create a database application from a spreadsheet and steps to create a desktop application and add a mobile user interface to the application are provided.

Tasks

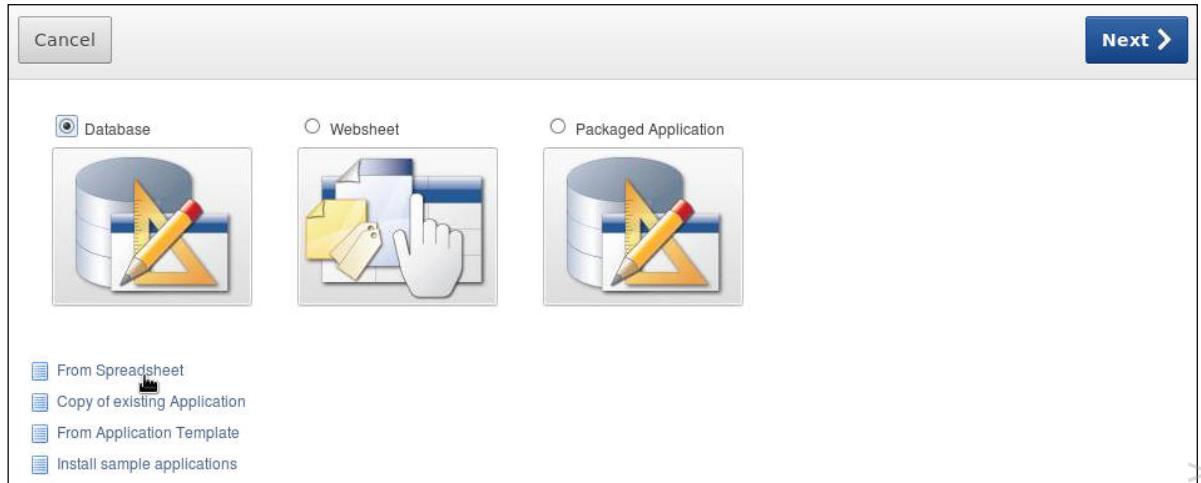
- a. Create an application named TASKS based on the `tasks.txt` file available in the `/home/oracle/labs/files` folder. The file has tab-delimited information and the first row contains the column names. Name the table, where the data from the file is uploaded, Tasks.
 - 1) Select the **Application Builder**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



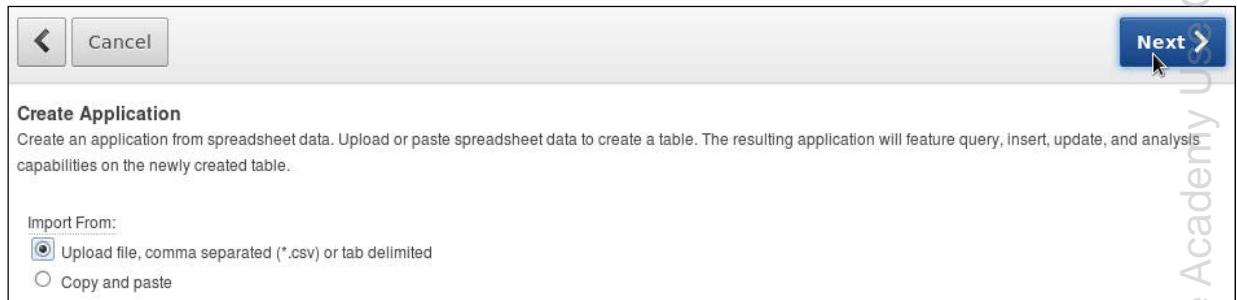
- 2) In the Create Application Wizard, make sure **Database** is selected and click **Next**.



3) Select **From Spreadsheet**.



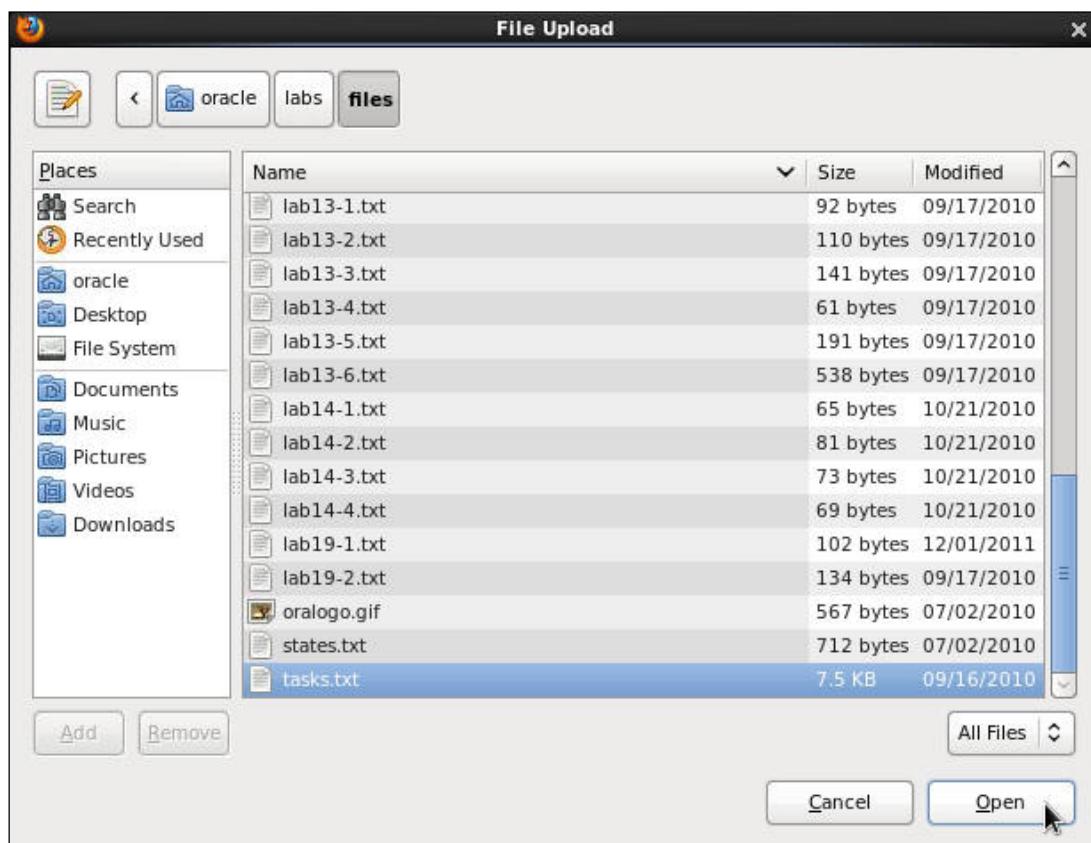
4) Select **Upload file, comma separated (*.csv) or tab delimited** and click **Next >**.



5) Click the **Browse** button to select the file in the **Text File** field or enter the file name in the field.



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



- 7) 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 >**.

Your file is being uploaded

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

* Text File:

* Separator:

Optionally Enclosed By:

First row contains column names.

File Character Set:

Buttons: Back, Cancel, Next > (highlighted with a mouse cursor).

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

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: ORA01
Table Name: TASKS Preserve Case

Set Table Properties

Column Names	PROJECT	TASK_NAME	START_DATE	END_DATE	STATUS
Data Type	VARCHAR2	VARCHAR2	DATE	DATE	VARCHAR
Format					
Column Length	30	255	7	7	30
Upload	Yes	Yes	Yes	Yes	Yes
Row 1	Maintain Support Systems	HR software upgrades	1-Jan-10	27-Feb-10	Closed
Row 2	Maintain Support Systems	Apply Billing System updates	1-Jan-10	28-Feb-10	closed

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

Schema: ORA01
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

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

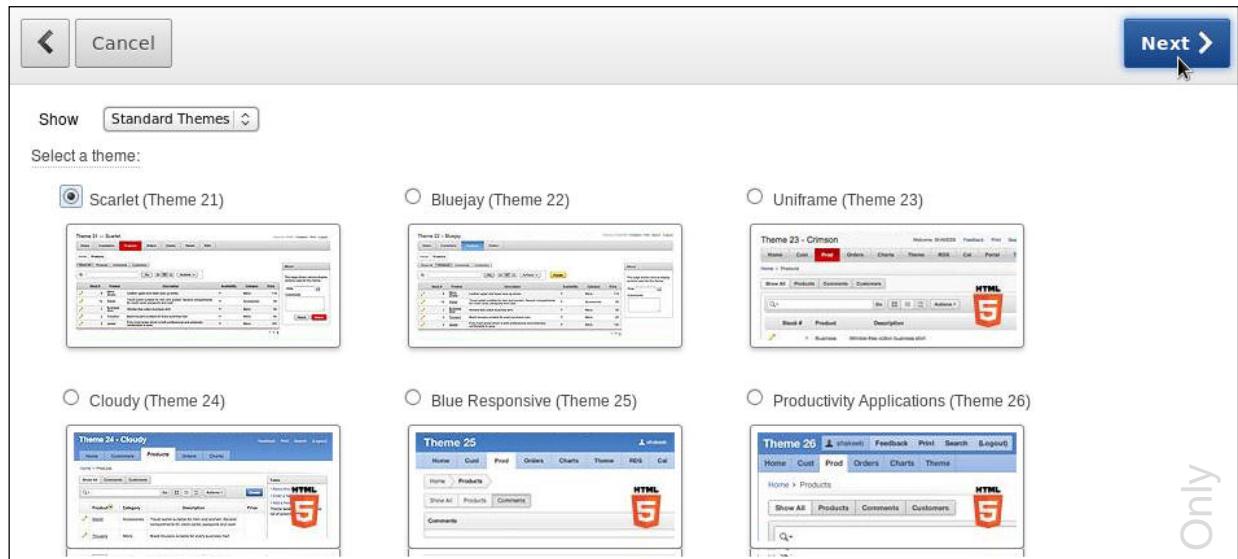
Schema: ORA01
Table Name: TASKS

Application Name: TASKS

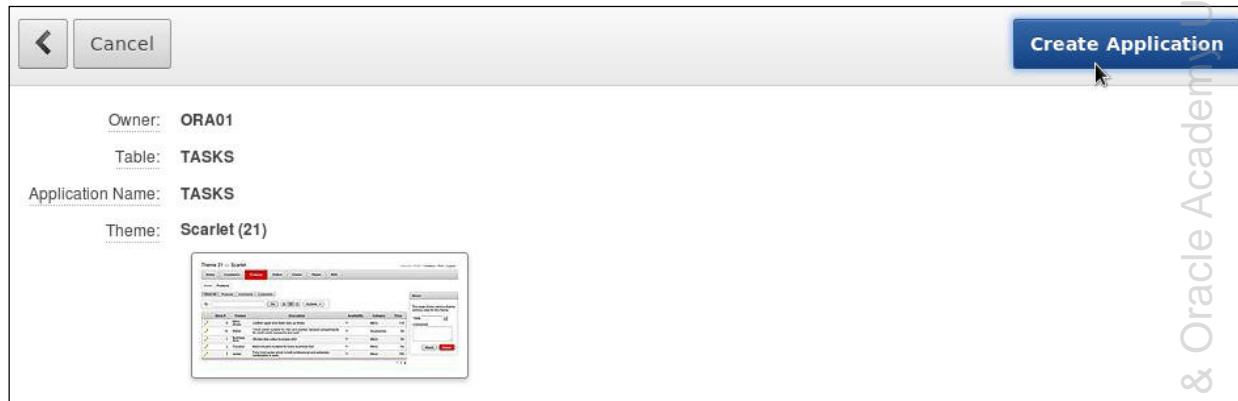
Create Mode: Read and Write Read Only

Report Implementation: Interactive

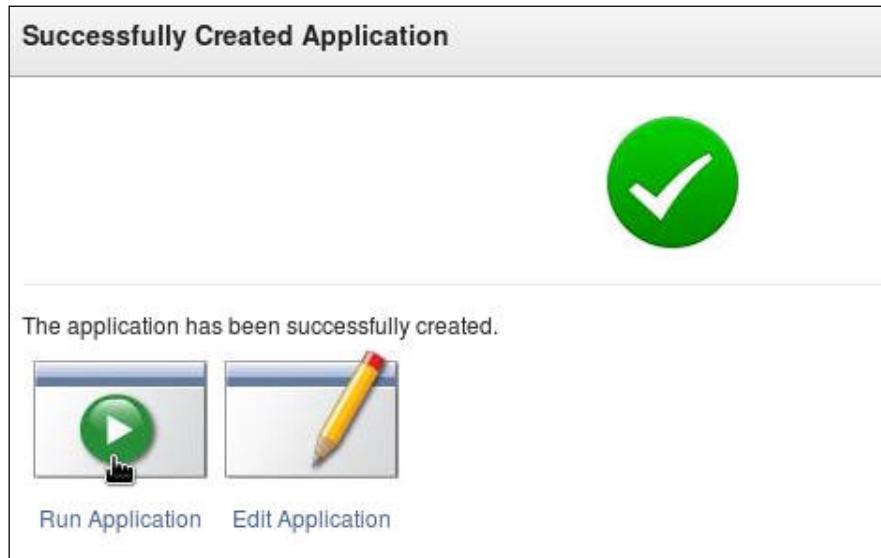
11) Select Scarlet (Theme 21). Click Next >.



12) Click Create Application.



13) To view the application, click Run Application.



- 14) For Username and Password, use `ora<n>` (where `n` is the number that you are assigned). Click **Login**.

- 15) 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.

Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget
Maintain Support Systems	HR software upgrades	01-JAN-10	27-FEB-10	Closed	Pam King	8000	7000
Maintain Support Systems	Apply Billing System updates	01-JAN-10	28-FEB-10	closed	Russ Sanders	5000	7000
Maintain Support Systems	Investigate new Virus Protection software	15-FEB-10	23-MAR-10	Open	Pam King	1700	1500
Maintain Support Systems	Arrange for holiday coverage	10-JAN-10	12-JAN-10	Closed	Al Bines	300	500
Email Integration	Complete plan	08-FEB-10	14-FEB-10	Closed	Mark Nile	500	750
Email Integration	Check software licenses	12-FEB-10	13-FEB-10	Closed	Mark Nile	200	200
Email Integration	Get RFPs for new server	19-FEB-10	03-MAY-10	Open	Mark Nile	4000	1000
Email Integration	Purchase backup server	12-MAY-10	07-JUL-10	Pending	Al Bines	3200	3000
APEX Environment Configuration	Identify server requirements	19-FEB-10	20-FEB-10	Pending	John Watson	100	200
APEX Environment Configuration	Specify security authentication scheme(s)	20-FEB-10	22-FEB-10	Pending	Scott Spencer	200	300
APEX Environment Configuration	Determine Web listener configuration(s)	20-FEB-10	20-FEB-10	On-Hold	James Cassidy	100	100
APEX Environment Configuration	"Select servers for Development, Test, Production"	21-FEB-10	24-FEB-10	Pending	Al Bines	200	600
APEX Environment Configuration	Run installation	28-FEB-10	01-MAR-10	Pending	John Watson	100	100
APEX Environment Configuration	Configure Workspace provisioning	28-FEB-10	02-MAR-10	Pending	Scott Spencer	100	100

- b. Create a database desktop application named Order Management. In the rest of the practices in this course, you will enhance and complete this application by creating pages, regions, processes, and so on.

- 1) Navigate to the **Application Builder** home page and click the **Database Applications** subtab. Click **Create >**.

- 2) Enter **Order Management** for Name, and make sure that ORA<n> (where n is the number that you are assigned) is selected for Schema and **Desktop** for User Interface. Click **Next >**.

Enter an unique application ID and an application name and. Then, select a create option, user interface and database schema.

* Application	130
* Name	Order Management
Schema	ORA01
Create Options	Include Home Page
User Interface	Desktop

Sample Applications

[Install sample applications](#)

- 3) Notice that a Home page will be created. Click **Next >**.

Page	Page Name	Page Type	Source Type	Source	Delete
1	Home	Blank	-	-	X

Add Page

Select Page Type:

<input checked="" type="radio"/> Blank	<input type="radio"/> Report	<input type="radio"/> Report and Form	<input type="radio"/> Form
<input type="radio"/> Tabular Form	<input type="radio"/> Master Detail	<input type="radio"/> Chart	

[Add Page](#)

- 4) Accept the default and click **Next >**.

Shared components are common application elements that can be displayed or applied across multiple pages in an application. To save time or maintain consistency between applications, copy the shared components from an existing application.

Copy Shared Components from Another Application:

<input type="radio"/> Yes
<input checked="" type="radio"/> No

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

The screenshot shows the Oracle Application Express configuration interface. At the top, there are buttons for 'Cancel' and 'Next >'. Below them are several dropdown menus and input fields:

- Authentication Scheme: Application Express
- Tabs: One Level of Tabs
- Language: English (en)
- User Language Preference Derived From: Application Primary Language
- Date Format: (empty field)
- Date Time Format: (empty field)
- Timestamp Format: (empty field)
- Timestamp Time Zone Format: (empty field)

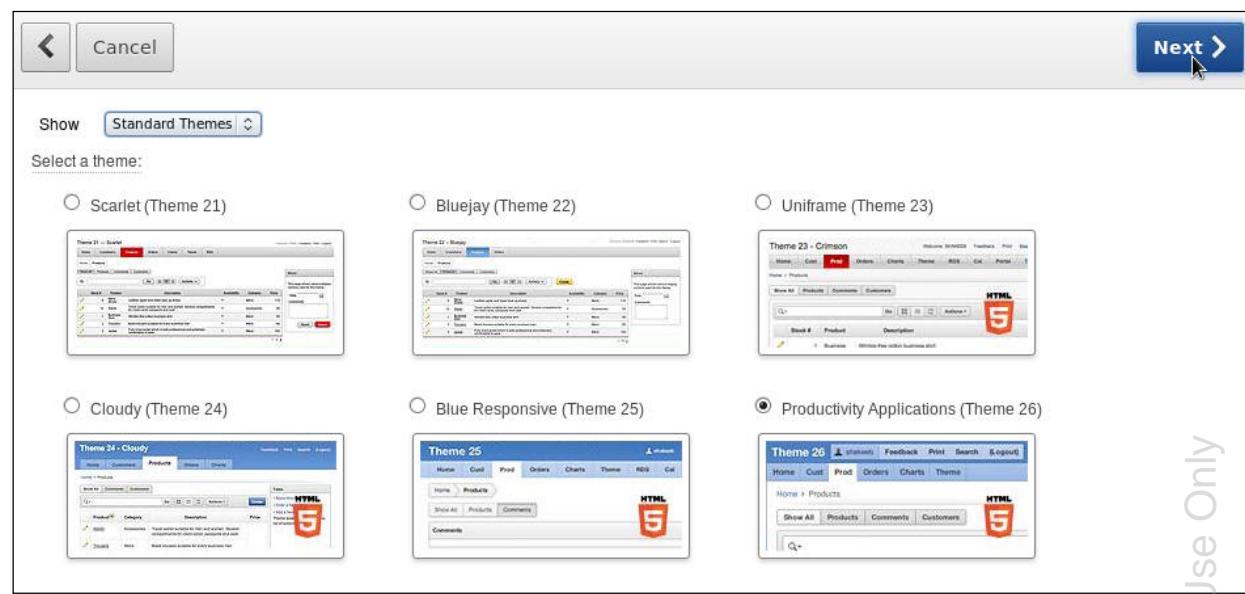
A search bar with a magnifying glass icon and buttons for 'Search' and 'Close' are located above the list of date formats. A tooltip for the Date Format field says 'Popup List of Values: Date Format'. The list of date formats includes:

- 12-JAN-04
- 12-JAN-2004
- 12-JAN
- 04-JAN-12
- 2004-01-12
- Monday, 12 January, 2004
- 12-JAN-2004 14:30
- 12-JAN-2004 14:30:00
- 12-JAN-2004 02:30PM
- January

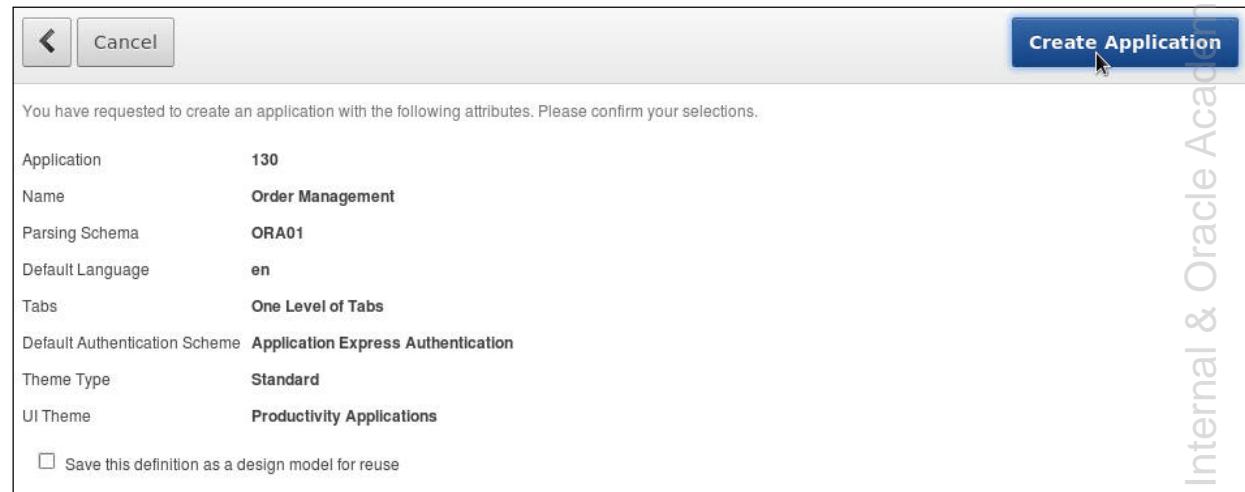
At the bottom of the list, it says 'Row(s) 1 - 10'.

The second part of the screenshot shows the same configuration interface after selecting 'DD-MON-YYYY' from the Date Format dropdown. The 'Date Format' field now contains 'DD-MON-YYYY|'. The 'Next >' button is highlighted with a mouse cursor.

- 6) Accept the default theme **Productivity Applications (Theme 26)** and click **Next >**.



- 7) Click **Create Application**.



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

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Lock	Run
1	Home	1 seconds ago	-	Home	Desktop	Unassigned		
101	Login	1 seconds ago	-	Login	Desktop	Unassigned		

- c. Add a mobile user interface to the Order Management desktop application.

1) Click **Edit Application Properties**.

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Lock	Run
1	Home	1 seconds ago	-	Home	Desktop	Unassigned		
101	Login	1 seconds ago	-	Login	Desktop	Unassigned		

- 2) Click the **User Interface** tab.

The screenshot shows the Oracle Database Application Development interface. The top navigation bar has tabs: Definition, Security, Globalization, and User Interface. The User Interface tab is selected and highlighted in blue. Below the tabs, there is a toolbar with buttons for User Interface, Cancel, Delete, and Apply Changes. The main area is titled "Application 130". A sub-toolbar below the title includes Show All, Name, Properties, Availability, Error Handling, Global Notification, Substitutions, and Build Options. The "Name" section contains fields for Application (set to 130), Name (set to Order Management), Application Alias (set to F_130), Version (set to release 1.0), and Application Group (set to - Unassigned -). The "Properties" section contains a Logging field set to Yes. The "User Interface" tab is currently active.

- 3) Click the **User Interfaces** subtab.

The screenshot shows the Oracle Database Application Development interface. The top navigation bar has tabs: Definition, Security, Globalization, and User Interface. The User Interface tab is selected and highlighted in blue. Below the tabs, there is a toolbar with buttons for User Interface, Cancel, and Apply Changes. The main area is titled "Application 130". A sub-toolbar below the title includes Show All, General Properties, Logo, JavaScript, User Interface Detection, and User Interfaces. The "General Properties" section contains fields for Image Prefix (set to /i/), Content Delivery Network (set to None (use Web Server)), and Media Type. The "Logo" section contains a "Logo Type:" field with a radio button for "Image" selected. The "User Interfaces" tab is currently active.

4) Click **Add New User Interface >**

The screenshot shows the 'User Interfaces' section of the Oracle Application Express interface. A table lists a single user interface entry:

Name	Type	Sequence	Auto Detect	Default	Home	Login	Theme	Global Page
Desktop	Desktop	10	No	Yes	f?p=&APP_ID.:1:&SESSION.	f?p=&APP_ID.:LOGIN_DESKTOP:&SESSION.	Productivity Applications - 26 *	-

At the bottom left, there is a blue button labeled 'Add New User Interface' with a right-pointing arrow icon.

5) For Type, select **jQuery Mobile Smartphone** and click **Next >**.

The screenshot shows the 'Add User Interface' configuration screen. The 'Type' field is set to 'jQuery Mobile Smartphone'. Other fields include:

- Display Name: jQuery Mobile Smartphone
- 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.

A 'Next >' button is visible at the top right.

6) Select **jQuery Mobile Smartphone (Theme 50)** and click **Next >**.

The screenshot shows the 'Theme' selection screen. The 'Theme Type' is set to 'Standard Themes'. Under 'Theme:', 'jQuery Mobile Smartphone (Theme 50)' is selected. A preview window shows a mobile application interface with a navigation bar and various menu items. A 'Next >' button is visible at the top right.

7) Click **Create**.

The screenshot shows a confirmation screen with a 'Create' button at the top right. The 'Theme' field contains 'jQuery Mobile Smartphone (50)' and a preview window shows the mobile application interface. A 'Create' button is visible at the top right.

- 8) 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, page 1 will be displayed. When running the application on a mobile device, page 2 will be displayed. This capability will be discussed in later lessons in the class.

The screenshot shows the Oracle Application Express Application Builder interface. At the top, there is a green banner with a checkmark icon and the text "Theme created.". Below the banner, the navigation bar includes "Home", "Application Builder", "SQL Workshop", "Team Development", "Administration", and "Edit A". The main content area is titled "Application 130 - Order Management". It features four icons: "Run Application" (blue card with play button), "Supporting Objects" (database with files), "Shared Components" (calendar with pencil and lock), and "Utilities" (ruler, hammer, wrench). Below these are search and filter controls. A table lists four mobile pages:

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Lock	Run
0	Global Page - jQuery Mobile Smartphone	Now	ora01	Global Page	jQuery Mobile Smartphone	Unassigned		
1	Home	8 minutes ago	-	Home	Desktop	Unassigned		
2	Home	Now	ora01	Static HTML	jQuery Mobile Smartphone	Unassigned		
101	Login	8 minutes ago	-	Login	Desktop	Unassigned		

Practices for Lesson 4: Using and Creating Interactive Reports

Chapter 4

Practices for Lesson 4: Overview

Practices Overview

There are two practices for this lesson. In these practices, you build and manipulate an interactive report, and customize it.

Practice 4-1: Building and Manipulating an Interactive Report

Overview

In this practice, you create and manipulate two interactive reports.

Assumptions

You have performed the previous practices or imported the `LAB031_SOLN.sql` exported application.

Tasks

- a. Create an interactive report to display all the columns from the `OEHR_CUSTOMERS` table on a new page in the Order Management 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 Name, Address, and Credit Limit.
 - Delete the filter that you created previously.
 - 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.

- b. Create an interactive report on a new page in the Order Management application to display details (`employee_id`, `first_name`, `last_name`, `manager_id`, and `commission_pct`) from the `OEHR_CUSTOMERS` 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 managers, but is not the default report. Name the saved report as Commission Proposal.
- Reset the Primary Report.

Practice 4-2: Customizing an Interactive Report

Overview

In this practice, you customize the interactive report that you created in the previous practice.

Assumptions

You have performed the previous practices.

Tasks

- a. 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.

Solution 4-1: Building and Manipulating an Interactive Report

Overview

In this practice, you create and manipulate two interactive reports.

Tasks

- a. Create an interactive report to display all the columns from the OEHR_CUSTOMERS table on a new page in the Order Management application. Name the page **Customers** and give the region the **Customer Report**. Do not create a tab for the page now.
 - 1) Navigate to the Order Management application home page and click **Create Page >**.

The screenshot shows the 'Application 130 - Order Management' interface. At the top, there are five icons: 'Run Application', 'Supporting Objects', 'Shared Components', 'Utilities', and 'Export / Import'. Below the icons is a search bar and a toolbar with 'Go', 'Actions', and a 'Create Page' button. A vertical sidebar on the right says 'Oracle Internet & Oracle Academy Use Only'. The main area is a table listing pages:

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Lock	Run
0	Global Page - jQuery Mobile Smartphone	26 minutes ago	ora01	Global Page	jQuery Mobile Smartphone	Unassigned		
1	Home	34 minutes ago	-	Home	Desktop	Unassigned		
2	Home	26 minutes ago	ora01	Static HTML	jQuery Mobile Smartphone	Unassigned		
101	Login	34 minutes ago	-	Login	Desktop	Unassigned		

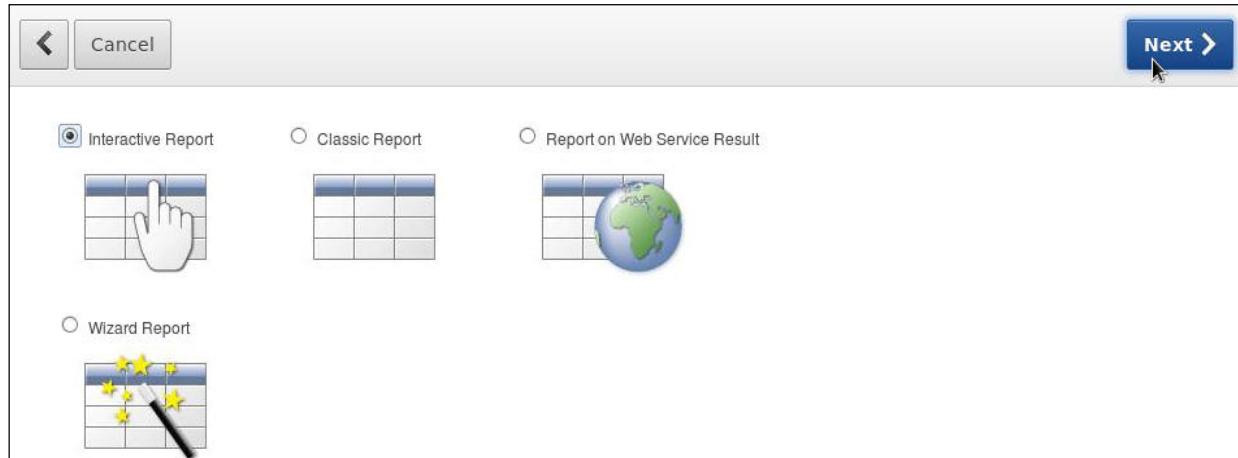
- 2) Select **Report** and click **Next >**.

The screenshot shows a dialog box for selecting a page type. It includes fields for 'Application' (set to '130 - Order Management') and 'User Interface' (set to 'Desktop'). Below these, a section titled 'Select a page type:' contains several options with corresponding icons:

- Blank Page
- Multiple Blank Pages
- Report** (selected)
- Form
- Plug-ins
- Chart
- Map
- Tree

The 'Report' option is highlighted with a blue selection box. At the bottom right of the dialog is a 'Next >' button, which is also highlighted with a blue selection box.

- 3) Select **Interactive Report** and click **Next >**.



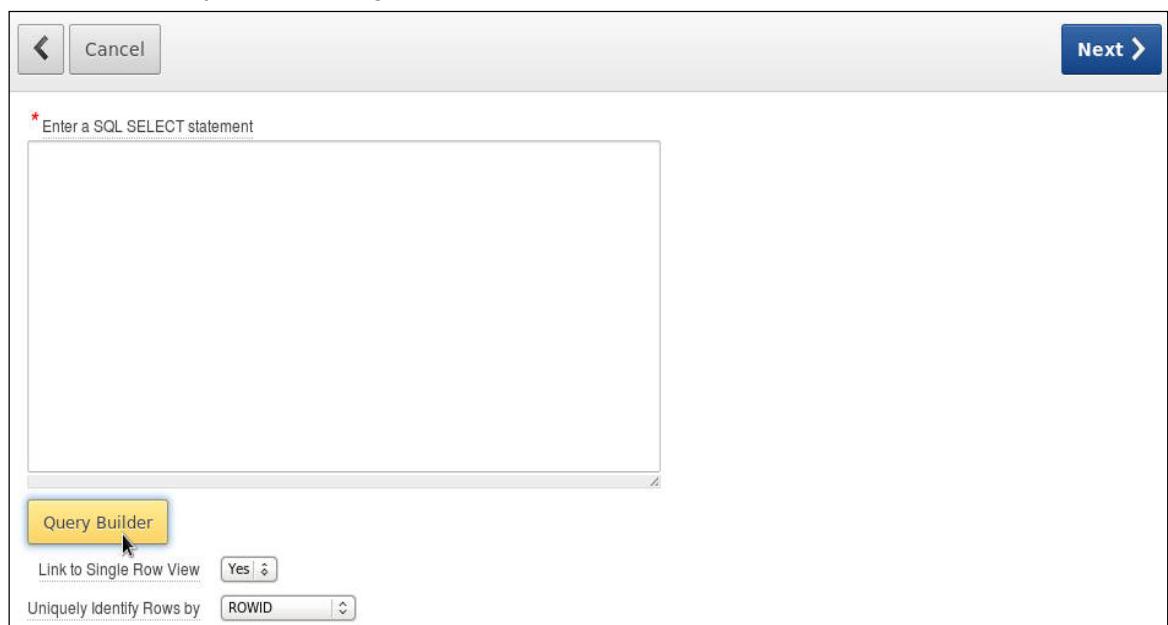
- 4) Enter **Customers** for **Page Name** and **Customer Report** for **Region Name**. Click **Next >**.

The screenshot shows a window titled 'Page Number and Name'. It includes fields for 'Application' (set to '130 - Order Management'), 'Page Number' (set to '3'), 'Page Name' (set to 'Customers'), 'Region Template' (set to 'Interactive Report Region'), 'Region Name' (set to 'Customer Report'), and 'Breadcrumb' (set to '- do not use breadcrumbs on page -'). At the top left is a 'Cancel' button, and at the top right is a 'Next >' button.

- 5) Select **Use an existing tab set and create a new tab within the existing tab set** for Tab Options, enter **Customers** for New tab Label, and click **Next >**.

The screenshot shows a window titled 'Tab Options'. It features a 'Page' field (set to '3'), a 'Tab Options' section with three radio button choices ('Do not use tabs', 'Use an existing tab set and create a new tab within the existing tab set' (selected), and 'Use an existing tab set and reuse an existing tab within that tab set'), a 'Tab Set' dropdown (set to 'T51 (Home)'), and a 'New Tab Label' field (set to 'Customers'). At the top left is a 'Cancel' button, and at the top right is a 'Next >' button.

- 6) You can either directly enter the query to create the report or use Query Builder to create the query. Click **Query Builder**.



- 7) In the left pane, click the **OEHR_CUSTOMERS** table name.

- 8) Click the **Table Actions** icon.

The screenshot shows the Oracle SQL Developer interface. The left sidebar lists various database objects: EBA_CUST_VIEWS_LOG, EMP, OEHR_ACCOUNT_MANAGERS, OEHR_BOMBAY_INVENTORY, OEHR_COUNTRIES, OEHR_CUSTOMERS, OEHR_CUSTOMERS_VIEW, OEHR_DEPARTMENTS, OEHR_EMPLOYEES, OEHR_EMP_DETAILS_VIEW, OEHR_INVENTORIES, OEHR_JOBS, OEHR_JOB_HISTORY, OEHR_LOCATIONS, OEHR_ORDERS, OEHR_ORDERS_VIEW, OEHR_ORDER_ITEMS, OEHR_PRODUCTS, OEHR_PRODUCT_DESCRIPTIONS, OEHR_PRODUCT_INFORMATION, and OEHR_PRODUCT_PRICES. The central pane displays the OEHR_CUSTOMERS table with columns: CUSTOMER_ID, CUST_FIRST_NAME, CUST_LAST_NAME, STREET_ADDRESS, POSTAL_CODE, and CITY. The first row is selected. A context menu is open over the first row, with the 'Table Actions' option highlighted. Below the table, there are tabs for Conditions, SQL, Results, and Saved SQL. At the bottom, there is a toolbar with buttons for Column, Alias, Object, Condition, Sort Type, Sort Order, Show, and Function.

- 9) Select the **Check All** check box and close the dialog box.



10) Click the **Run** button.

The screenshot shows the Oracle SQL Developer interface. The schema is set to ORA01. On the left, there is a list of tables and views. In the center, a report builder window for 'OEHR_CUSTOMERS' is open. The 'Run' button is highlighted with a mouse cursor. Below the report builder, there is a table definition with columns CUSTOMER_ID, CUST_FIRST_NAME, CUST_LAST_NAME, STREET_ADDRESS, POSTAL_CODE, and CITY, each with an alias and object name. At the bottom, there are tabs for Conditions, SQL, Results, and Saved SQL, with the Results tab selected. The results pane shows the following data:

CUSTOMER_ID	CUST_FIRST_NAME	CUST_LAST_NAME	STREET_ADDRESS
789	A	A	A

11) Click the **Return** button.

The screenshot shows the Oracle SQL Developer interface. The schema is set to ORA01. On the left, there is a list of tables and views. In the center, a report builder window for 'OEHR_CUSTOMERS' is open. The 'Return' button is highlighted with a mouse cursor. Below the report builder, there is a table definition with columns CUSTOMER_ID, CUST_FIRST_NAME, CUST_LAST_NAME, STREET_ADDRESS, POSTAL_CODE, and CITY, each with an alias and object name. At the bottom, there are tabs for Conditions, SQL, Results, and Saved SQL, with the Results tab selected. The results pane shows the following data:

CUSTOMER_ID	CUST_FIRST_NAME	CUST_LAST_NAME	STREET_ADDRESS
218	Bryan	Dvrrie	3376 Perrysville Ave
219	Ajay	Sen	220 Penn Ave # 300
220	Carol	Jordan	135 S 18Th St # 1
221	Carol	Bradford	522 Swede St
222	Carv	Stockwell	7708 City Ave

12) Click **Next >**.

Note: You may receive an error when redirected back to this page. Ignore the error and click Next.

The screenshot shows a SQL query editor window. At the top right is a blue 'Next >' button with a mouse cursor pointing at it. The main area contains a SQL statement:

```
select OEHR_CUSTOMERS.CUSTOMER_ID as CUSTOMER_ID,  
       OEHR_CUSTOMERS.CUST_FIRST_NAME as CUST_FIRST_NAME,  
       OEHR_CUSTOMERS.CUST_LAST_NAME as CUST_LAST_NAME,  
       OEHR_CUSTOMERS.STREET_ADDRESS as STREET_ADDRESS,  
       OEHR_CUSTOMERS.POSTAL_CODE as POSTAL_CODE,  
       OEHR_CUSTOMERS.CITY as CITY,  
       OEHR_CUSTOMERS.STATE_PROVINCE as STATE_PROVINCE,  
       OEHR_CUSTOMERS.COUNTRY_ID as COUNTRY_ID,  
       OEHR_CUSTOMERS.PHONE_NUMBER as PHONE_NUMBER,  
       OEHR_CUSTOMERS.NLS_LANGUAGE as NLS_LANGUAGE,  
       OEHR_CUSTOMERS.NLS_TERRITORY as NLS_TERRITORY,  
       OEHR_CUSTOMERS.CREDIT_LIMIT as CREDIT_LIMIT,  
       OEHR_CUSTOMERS.CUST_EMAIL as CUST_EMAIL,  
       OEHR_CUSTOMERS.ACCOUNT_MGR_ID as ACCOUNT_MGR_ID  
  from OEHR_CUSTOMERS OEHR_CUSTOMERS
```

Below the query are several configuration options:

- Query Builder** button
- Link to Single Row View**: Yes
- Uniquely Identify Rows by**: ROWID
- Unique Column**: (empty)

13) Click **Create**.

The screenshot shows a confirmation dialog box. At the top right is a blue 'Create' button with a mouse cursor pointing at it. The text inside the box reads:

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

Application	130
Page	3
Page Name	Customers
Tab Set	TS1
Tab Name	
Tab Label	Customers
Region Title	Customer Report
Region Template	Interactive Report Region

14) The report is created. To view the report, click **Run Page**.

The screenshot shows a success message dialog. At the top right is a blue 'Run Page' button with a mouse cursor pointing at it. In the center is a large green circle with a white checkmark inside. Below the button is the text:

The Interactive Report page has been created successfully.

- 15) When you run the page, the Login window opens. Enter ora<n> for **Username** and **Password** and click **Login**.

The image shows a login interface with a light gray header containing the word "Login". Below it is a form with two input fields: "Username" containing "ora01" and "Password" containing five black dots. To the right of the password field is a blue rectangular button with the word "Login" in white. A hand cursor icon is positioned over the "Login" button.

- 16) The interactive report is displayed.

The image shows a screenshot of an "Order Management" application. At the top, there's a blue header bar with the title "Order Management" and navigation tabs for "Home" and "Customers". On the far right of the header are user profile icons for "ora01" and "Logout". Below the header is a search bar with a magnifying glass icon, a "Go" button, and an "Actions" dropdown menu. The main content area displays a table of customer data with the following columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, Country Id, Phone Number, and Nls Language. There are 8 rows of data, each with a small thumbnail icon in the first column. The data is as follows:

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number	Nls Language
101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	+1 317 123 4104	us
102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	+1 317 123 4111	us
103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	+1 812 123 4115	us
104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US	+1 317 123 4126	us
105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US	+1 812 123 4129	us
106	Matthias	Hannah	1608 Portage Ave	46616	South Bend	IN	US	+1 219 123 4136	us
107	Matthias	Cruise	23943 Us Highway 33	46517	Elkhart	IN	US	+1 219 123 4138	us

- **Create a filter on the city of Philadelphia.**

- 17) 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	City	State Province	Country Id	Phone Number	Nls Language	Nls Territory	Credit Limit	Cust Email	Account Mgr Id
		Welles	514 W Superior	Philadelphia	PA	US	(215) 555-1212	ENGLISH	US	1000	REINHOLD.WELLES@PEPSICO.COM	REINHOLD.WELLES@PEPSICO.COM
		Pacino	2515 Bloyd Ave	Philadelphia	PA	US	(215) 555-1234	ENGLISH	US	1000	MARIA.PACINO@PEPSICO.COM	MARIA.PACINO@PEPSICO.COM
		Taylor	8768 N State Rd 37	Philadelphia	PA	US	(215) 555-1234	ENGLISH	US	1000	JAMES.TAYLOR@PEPSICO.COM	JAMES.TAYLOR@PEPSICO.COM
		Sutherland	6445 Bay Harbor Ln	Philadelphia	PA	US	(215) 555-1234	ENGLISH	US	1000	KATHLEEN.SUTHERLAND@PEPSICO.COM	KATHLEEN.SUTHERLAND@PEPSICO.COM
		MacGraw	4019 W 3Rd St	Philadelphia	PA	US	(215) 555-1234	ENGLISH	US	1000	JOHN.MACGRAW@PEPSICO.COM	JOHN.MACGRAW@PEPSICO.COM
		Hannah	1608 Portage Ave	Philadelphia	PA	US	(215) 555-1234	ENGLISH	US	1000	ANITA.HANNAH@PEPSICO.COM	ANITA.HANNAH@PEPSICO.COM
		Cruise	23943 Us Highway 33	Philadelphia	PA	US	(215) 555-1234	ENGLISH	US	1000	CHRISTOPHER.CRUISE@PEPSICO.COM	CHRISTOPHER.CRUISE@PEPSICO.COM

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

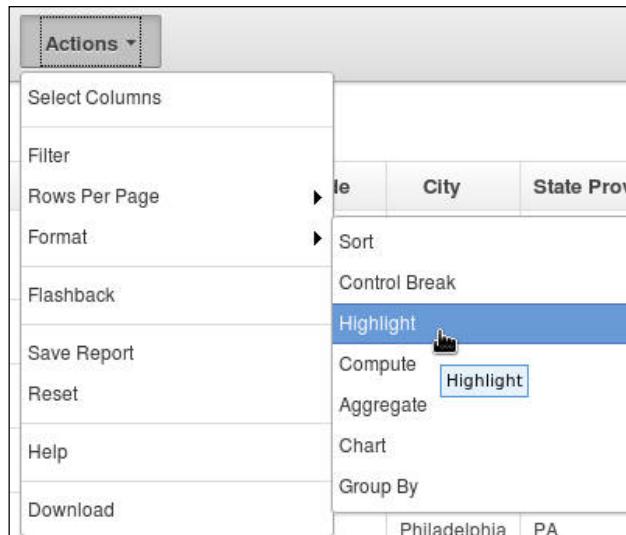
Customer Id	Cust First Name	Cust Last Name	Street Address	City	State Province	Country Id	Phone Number	Nls Language	Nls Territory	Credit Limit	Cust Email	Account Mgr Id
101	Constantin	Welles	514 W Superior St	Philadelphia	PA	US	(215) 555-1212	ENGLISH	US	1000	REINHOLD.WELLES@PEPSICO.COM	REINHOLD.WELLES@PEPSICO.COM
102	Harrison	Pacino	2515 Bloyd Ave	Philadelphia	PA	US	(215) 555-1234	ENGLISH	US	1000	MARIA.PACINO@PEPSICO.COM	MARIA.PACINO@PEPSICO.COM

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

Order Management								
Home		Customers						
<input style="width: 150px; height: 20px; border: 1px solid #ccc; padding: 2px; margin-right: 10px;" type="text" value="Q"/> <input style="border: 1px solid #ccc; padding: 2px 10px;" type="button" value="Go"/>			<input style="border: 1px solid #ccc; padding: 2px 10px;" type="button" value="Actions ▾"/>					
<input checked="" type="checkbox"/> City contains 'phil' <input type="checkbox"/> <input type="button" value="X"/>								
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country
	191	Maureen	Sanders	6432 Rising Sun Ave	19111	Philadelphia	PA	US
	199	Clint	Chapman	115 Chestnut St	19106	Philadelphia	PA	US
	209	Cyndi	Collins	100 N Peach St	19139	Philadelphia	PA	US
	212	Luchino	Falk	5643 N 5Th St	19120	Philadelphia	PA	US
	216	Orson	Koivula	810 Race St	19107	Philadelphia	PA	US
	280	Rob	MacLaine	5344 Haverford Ave	19139	Philadelphia	PA	US
	281	Don	Barkin	6959 Tulip St	19135	Philadelphia	PA	US

- **Create a highlight where credit limit is greater than 2500.**

19) To highlight only those customers whose credit limit is greater than 2500, click **Actions** and select **Format > Highlight**.



- 20) 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**.

The dialog has the following settings:

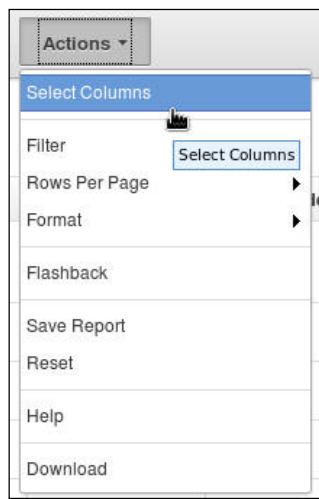
- Name: Good Credit Rating
- Sequence: 10
- Enabled: Yes
- Highlight Type: Row
- Background Color: #FFFF99
- Text Color: white
- Condition: Credit Limit > 2500

The records that meet the criteria are highlighted.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number	Nls Lang
	191	Maureen	Sanders	6432 Rising Sun Ave	19111	Philadelphia	PA	US	+1 215 123 4644	us
	199	Clint	Chapman	115 Chestnut St	19106	Philadelphia	PA	US	+1 215 123 4676	us
	209	Cyndi	Collins	100 N Peach St	19139	Philadelphia	PA	US	+1 215 123 4708	us
	212	Luchino	Falk	5643 N 5Th St	19120	Philadelphia	PA	US	+1 215 123 4721	us
	216	Orson	Koirlala	810 Race St	19107	Philadelphia	PA	US	+1 215 123 4738	us
	220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia	PA	US	+1 215 123 4743	us
	222	Cary	Stockwell	7708 City Ave	19151	Philadelphia	PA	US	+1 215 123 4745	us
	224	Clara	Krige	101 E Olney Ave	19120	Philadelphia	PA	US	+1 215 123 4748	us
	229	Ian	Chapman	601 Market St	19106	Philadelphia	PA	US	+1 215 123 4768	us
	230	Danny	Wright	5565 Baynton St	19144	Philadelphia	PA	US	+1 215 123 4771	us
	264	George	Adjani	1136 Arch St	19107	Philadelphia	PA	US	+1 215 123 4702	us
	265	Irene	Laughton	6Th And Master St	19122	Philadelphia	PA	US	+1 215 123 4749	us

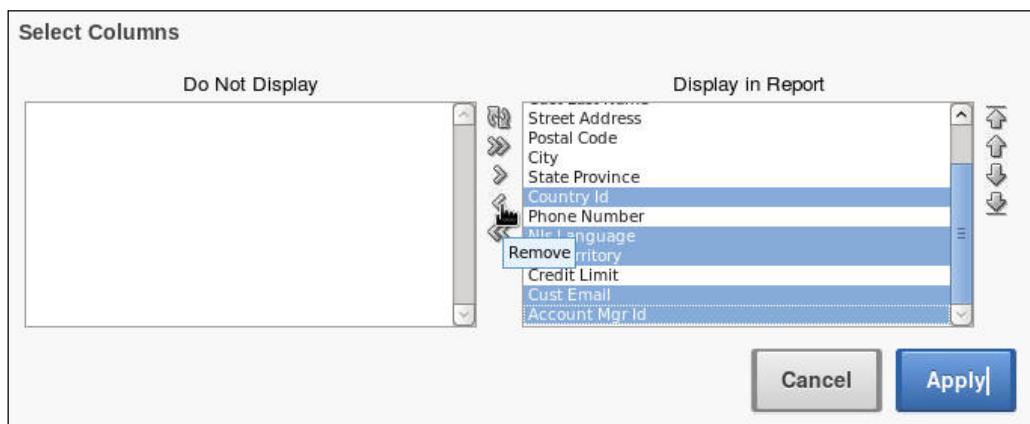
- Display only the Customer Name, Address, and Credit Limit.

- 21) You do not want some of the columns to appear on the report. Click **Actions** and select **Select Columns**.

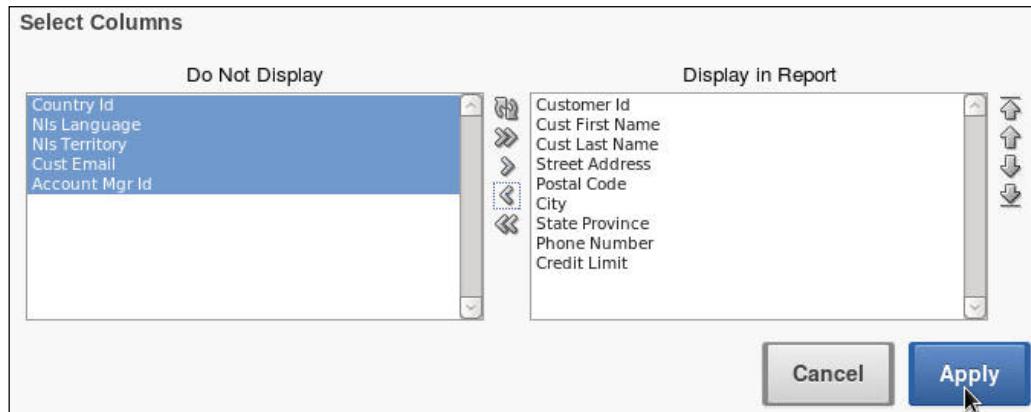


- 22) Ctrl-select the following columns and click **Remove (<)** to move them to the **Do Not Display** area. Note that you will still be able to perform other actions against these columns even though they are not displayed in the report.

Country ID
NLS Language
NLS Territory
Cust Email
Account Mgr ID



23) Click **Apply**.



Only the columns you selected 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	Koira	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
222	Cary	Stockwell	7708 City Ave	19151	Philadelphia	PA	+1 215 123 4745	2300
224	Clara	Krige	101 E Olney Ave	19120	Philadelphia	PA	+1 215 123 4748	2300
229	Ian	Chapman	601 Market St	19106	Philadelphia	PA	+1 215 123 4768	2400
230	Danny	Wright	5565 Baynton St	19144	Philadelphia	PA	+1 215 123 4771	2400
264	George	Adjani	1136 Arch St	19107	Philadelphia	PA	+1 215 123 4702	3600
265	Irene	Laughton	6Th And Master St	19122	Philadelphia	PA	+1 215 123 4749	3600

- Delete the filter that you created previously.

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

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
	191	Maureen	Sanders	6432 Rising Sun Ave	19111	Philadelphia
	199	Clint	Chapman	115 Chestnut St	19106	Philadelphia
	209	Cyndi	Collins	100 N Peach St	19139	Philadelphia
	212	Luchino	Falk	5643 N 5Th St	19120	Philadelphia
	216	Orson	Koirlala	810 Race St	19107	Philadelphia
	280	Rob	MacLaine	5344 Haverford Ave	19139	Philadelphia
	281	Don	Barkin	6959 Tulip St	19135	Philadelphia
	220	Carol	Jordan	135 S 18Th St # 1	19103	Philadelphia

- Display the rows in ascending order by state.

- 25) 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
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	AG	10
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	BE	11
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	GR	12
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	Har	13
	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IA	14
	106	Matthias	Hannah	1608 Portage Ave	46616	South Bend	IL	15
	107	Matthias	Cruise	23943 Us Highway 33	46517	Elkhart	IN	16
	108	Meenakshi	Mason	136 E Market St # 800	46204	Indianapolis	Kar	17

- Display only five rows to see how pagination works.

- 26) 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 15.

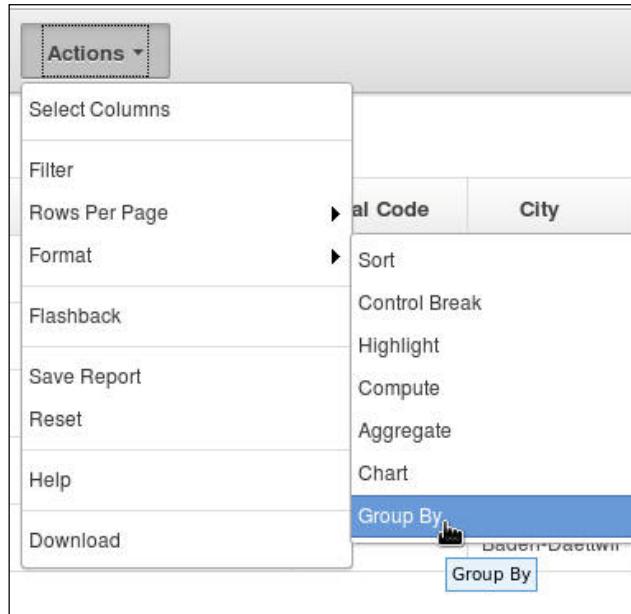
The screenshot shows a report interface with a search bar, a 'Go' button, and an 'Actions' dropdown menu. The 'Actions' menu is open, showing various options like 'Select Columns', 'Filter', and 'Rows Per Page'. The 'Rows Per Page' option is highlighted with a blue selection bar, and the value '5' is selected. Below the menu, the report table displays five rows of customer data: 825 (Alain Dreyfuss), 826 (Alain Barkin), 827 (Alain Siegel), 828 (Alan Minnelli), and 830 (Albert Dutt).

- 27) 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 report interface, but now only the first five rows of data are visible. At the bottom right of the report area, there is a pagination indicator showing '1 - 5 of 10' and a 'Next' link.

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

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



- 29) You want to show a list of states and how many customers are contained in 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**.

The 'Group By' dialog box is open. It has three dropdown menus for 'Group By Column': 1. State Province, 2. - Select Column -, 3. - Select Column -. Below these are three rows for defining functions:

Functions	Column	Label	Format Mask	Sum
1 Count	Customer Id	Number of Customers		<input checked="" type="checkbox"/> <input type="checkbox"/>
2 - Select Function -	- Select Column -			<input checked="" type="checkbox"/> <input type="checkbox"/>
3 - Select Function -	- Select Column -			<input checked="" type="checkbox"/> <input type="checkbox"/>

At the bottom right are 'Cancel' and 'Apply' buttons, with 'Apply' being the one currently selected.

- 30) Your **Group By** report is displayed. Because the report does not have many rows, you want to show them all. Click **Actions**, select **Rows Per Page**, and select **All**.

State Province	Number of Customers
MN	12
-	67
ZH	10
SG	2
Har	2

1 - 5 (1)

Filter
Rows Per Page ► 1
Format ► 5
Flashback
Save Report
Reset
Help
Download
10
15
20
25
50
100
1000
All
All

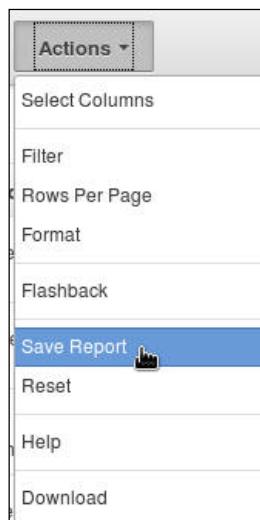
- 31) The state provinces and the number of customers per state are displayed. To return to the detail report, click the **View Report** icon.

State Province	Number of Customers
MN	12
-	67
ZH	10
SG	2
Har	2
WI	25
Tam	6
BE	1
MD	18

View Report

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

- 32) You want to save this report as a private report that is available only to you. Click **Actions** and select **Save Report**.



- 33) Enter **My Report** for Name and click **Apply**.

A screenshot of a 'Save Report' dialog box. It has fields for 'Save' (set to 'As Named Report'), 'Name' (set to 'My Report'), and 'Description'. At the bottom are 'Cancel' and 'Apply' buttons, with 'Apply' having a cursor icon over it.

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

A screenshot of the Oracle Database interface. At the top, there's a search bar, a 'Go' button, and a 'Reports' button. A dropdown menu is open next to 'Reports', showing '1. My Report' under the 'Private' section. Below the dropdown, there's a table with columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, and City. The table contains three rows of data.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
	825	Alain	Dreyfuss	Harmoniegasse 3	3413	Baden-Daettwil
	826	Alain	Barkin	Sonnenberg 4	3413	Baden-Daettwil
	827	Alain	Ciegel	Alfred E.	3413	Baden

- **Reset the Primary Report to its original state.**

35) Select Primary Report.

The screenshot shows a report interface with a search bar, a 'Go' button, and a 'Reports' section. A dropdown menu is open under the 'Reports' section, showing options: 'Default' (selected), '1. Primary Report', 'Private' (disabled), and '1. My Report'. Below the menu is a table with columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, and City. The table contains three rows of data:

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
	825	Alain	Dreyfuss	Harmoniegasse 3	3413	Baden-Daettwil
	826	Alain	Barkin	Sonnenberg 4	3413	Baden-Daettwil
	827	Alain	Siegel	Alfred E. Neumann-Weg 3	3413	Baden-Daettwil

36) To return to the default settings, click **Actions** and select **Reset**.

The screenshot shows a report interface with a search bar, a 'Go' button, and a 'Reports' section. A dropdown menu is open under the 'Actions' button, listing various options: 'Select Columns', 'Filter', 'Rows Per Page', 'Format', 'Flashback', 'Save Report', 'Reset' (selected), 'Help', 'Reset', 'Download', and 'Print'. Below the menu is a table with columns: Cust Last Name, Street Address, and Postal Code. The table contains four rows of data:

Cust Last Name	Street Address	Postal Code
Dreyfuss	Harmoniegasse 3	3413
Barkin	Sonnenberg 4	3413
Siegel	Alfred E. Neumann-Weg 3	3413
Minnelli	Dr. Herbert Bitto Str 32	3413

37) Click **Apply**.

The screenshot shows a 'Reset' dialog box with the following text: 'Reset' and 'Restore report to the default settings.' It contains two buttons: 'Cancel' and 'Apply', with 'Apply' being highlighted.

38) You see the original report without customizations.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US
	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US
	106	Matthias	Hannah	1608 Portage Ave	46616	South Bend	IN	US
	107	Matthias	Cruise	23943 Us Highway 33	46517	Elkhart	IN	US

- **Display a single row view.**

39) You can view a row at a time. Click a **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
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US

- 40) 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** link at the bottom of the page.

The screenshot shows a report view with the following data:

	Customer Id	101
Cust First Name	Constantin	
Cust Last Name	Welles	
Street Address	514 W Superior St	
Postal Code	46901	
City	Kokomo	
State Province	IN	
Country Id	US	
Phone Number	+1 317 123 4104	
Nls Language	us	
Nls Territory	AMERICA	
Credit Limit	100	
Cust Email	Constantin.Welles@ANHINGA.COM	
Account Mgr Id	145	

At the bottom of the report view, there is a navigation bar with links: Home, Application 130, Edit Page 3, Create, Session, and Ca.

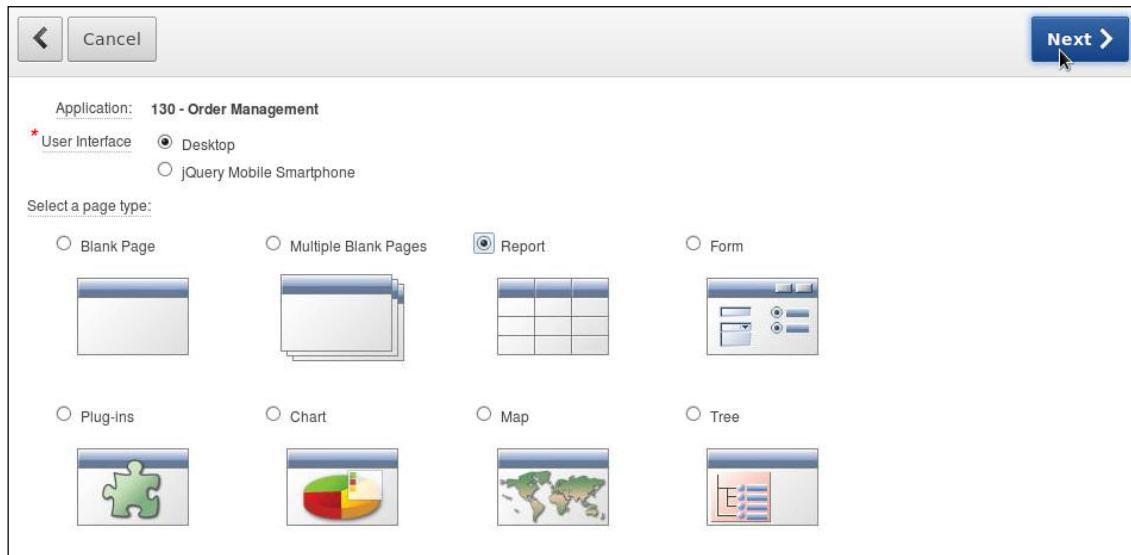
- b. Create an interactive report on a new page in the Order Management application to display details (`employee_id`, `first_name`, `last_name`, `manager_id`, and `commission_pct`) from the `OEHR_CUSTOMERS` table about who earns a commission. Name the page and the report **Employee Commissions**. From the Create Report Wizard, create a breadcrumb for the page and select the Home page as the parent page.

- 1) Navigate to the **Order Management** application page. Click **Create Page >**.

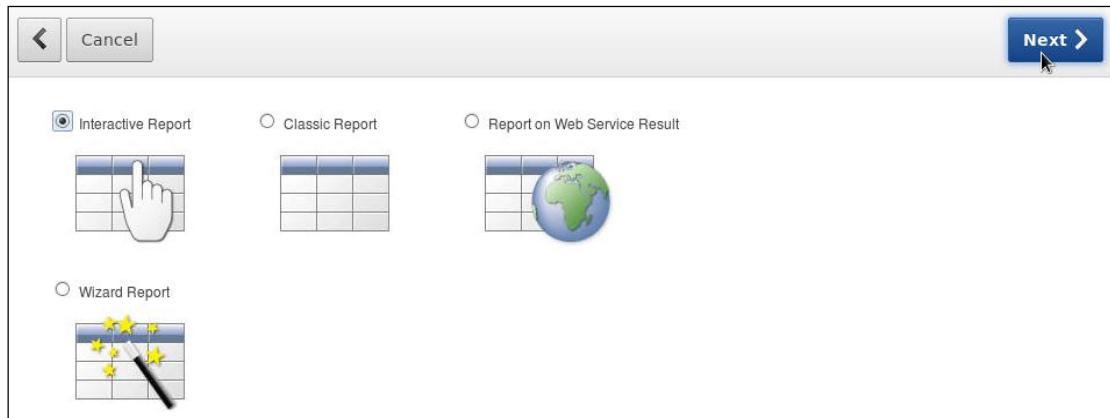
The screenshot shows the Order Management application home page with the following interface elements:

- Application 130 - Order Management**: The title bar.
- Edit Application Properties**: A button in the top right corner.
- Run Application**: An icon with a play button.
- Supporting Objects**: An icon with a database and files.
- Shared Components**: An icon with a calendar, pen, and padlock.
- Utilities**: An icon with a hammer, wrench, and ruler.
- Export / Import**: An icon with a document and arrows.
- Actions**: A toolbar with icons for search, go, and list.
- Create Page >**: A prominent blue button on the right side.

2) Select Report and click Next >.



3) Select Interactive Report and click Next >.



- 4) Enter **Employee Commission** for both **Page Name** and **Region Name**. Select **Breadcrumb** for **Breadcrumb** and select **Home** for **Parent Entry** and click **Next >**.

Identify a page number and name. If the page number you specify does not exist, the wizard creates the page for you.

Application: 130 - Order Management

* Page Number: 4

* Page Name: Employee Commission

* Region Template: Interactive Report Region

* Region Name: Employee Commission

Breadcrumb: Breadcrumb

Create Breadcrumb Entry

Entry Name: Employee Commission

Parent Entry: Home

[No parent breadcrumb entry]

Select Parent Entry:

Name	Page
Home	1

row(s) 1 - 1 of 1

- 5) Accept the default and click **Next >**.

Page: 4

Tab Options: Do not use tabs
 Use an existing tab set and create a new tab within the existing tab set.
 Use an existing tab set and reuse an existing tab within that tab set.

- 6) Enter the following SQL SELECT statement and click **Next >**. You can copy and paste the SQL statement from `/home/oracle/labs/files/commission.sql`. Alternatively, you can use the Query Builder button to create the report query.

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

* Enter a SQL SELECT statement

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

7) Click **Create**.

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

Application	130
Page	4
Page Name	Employee Commission
Tab Set	TS1
Tab Name	
Tab Label	
Region Title	Employee Commission
Region Template	Interactive Report Region

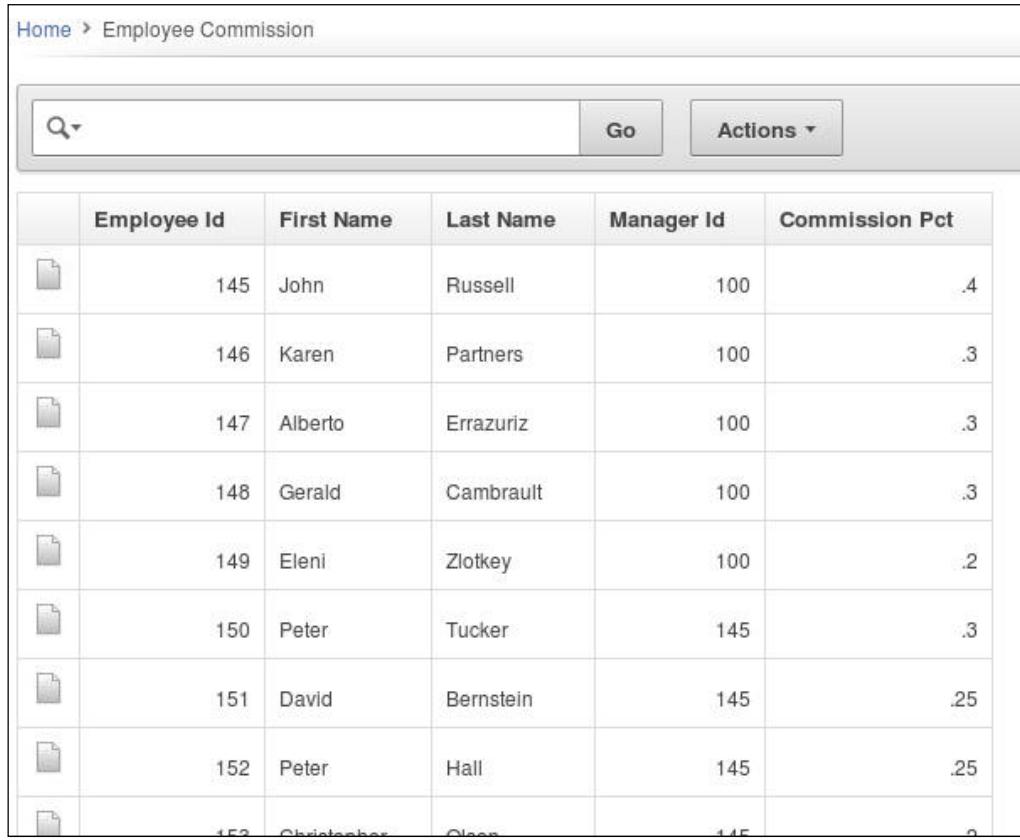
Create

8) Click **Run Page**.

Edit Page **Run Page**

The Interactive Report page has been created successfully.

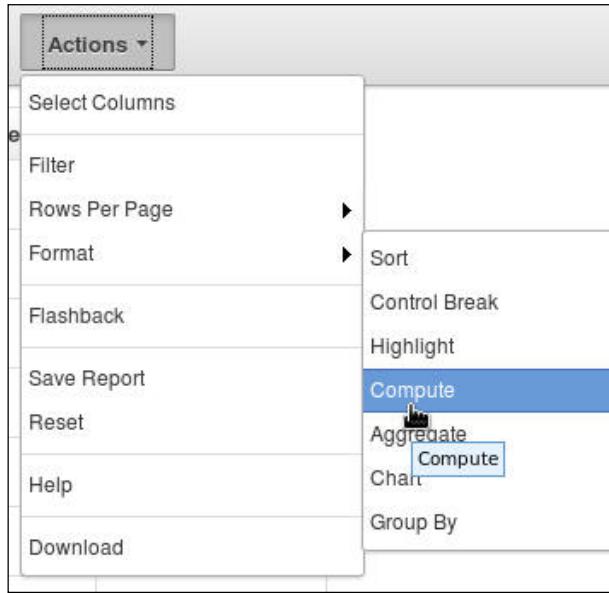
- 9) If prompted, enter your login credentials. Your report is displayed.



	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	Christophe	Olsen	145	0

- 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.

- 10) To create a new computation, click **Actions** and select **Format > Compute**.



- 11) 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/files/lab4_1_1.txt):

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

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

Compute

Computation	- New Computation -	
Column Heading	New Commission	
Format Mask		
Computation Expression 		
<code>CASE E WHEN 0.1 THEN E+0.15 WHEN 0.15 THEN E+0.05 ELSE E END</code>		
Columns	Keypad	Function
A. Employee Id	() .	ABS
B. First Name	7 8 9 -	ADD_MONTHS
C. Last Name	4 5 6 +	CASE
D. Manager Id	1 2 3 *	CEIL
E. Commission Pct	0 . /	CHR
	space	COALESCE
		COS
		CURRENT_DATE

Create a computation using column aliases.
Examples:
1. (B+C)*100
2. INITCAP(B)||', ''||INITCAP(C)
3. CASE WHEN A = 10 THEN B + C ELSE B END

Cancel **Apply**

Note that the computed column now appears in the report.

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

- **Create a control break on Manager ID.**

- 12) 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**.

Name	Last Name	Manager Id	Commission
	Russell		
n	Partners		
to	Errazuriz		
d	Cambrault		
	Zlotkey		
	Tucker	145	



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

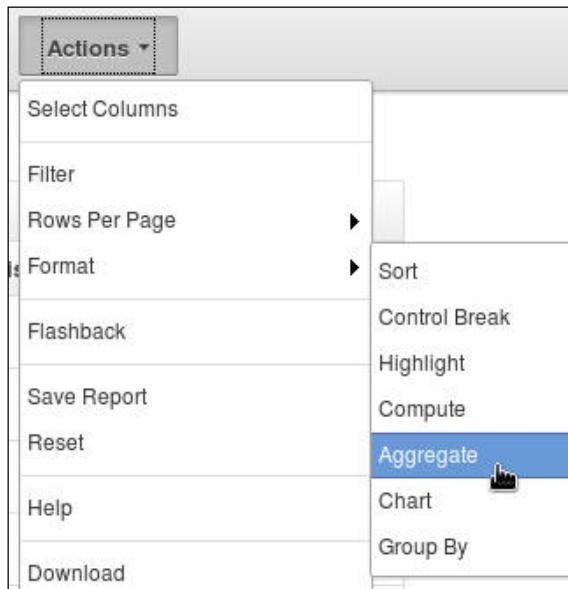
Manager Id : 100

	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

Manager Id : 145

	Employee Id	First Name	Last Name	Commission Pct	New Commission
	150	Peter	Tucker	.3	.3
	151	David	Bernstein	.25	.25
	152	Peter	Hall	.25	.25
	153	Christopher	Olsen	.2	.2
	154	Manotha	Cambrault	.2	.2

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



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

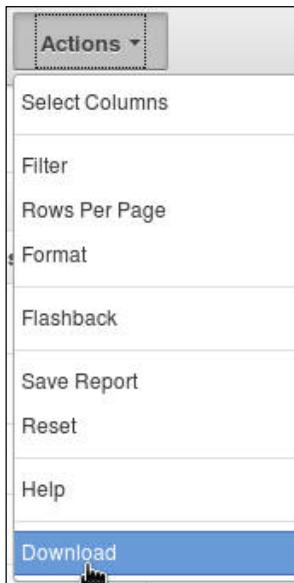


The report now includes the maximum commission earned by employees under each manager.

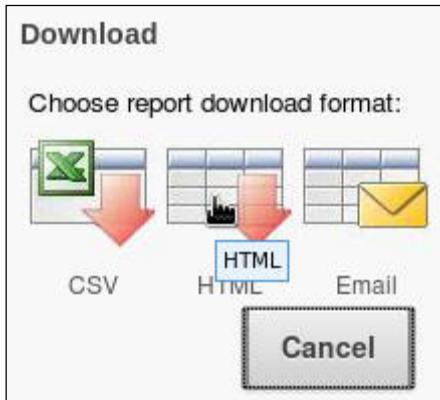
Manager Id : 100					
	Employee Id	First Name	Last Name	Commission Pct	New Commission
	145	John	Russell	.4	.4
	146	Karen	Partners	.3	.3
	147	Alberto	Errazuriz	.3	.3
	148	Gerald	Cambrault	.3	.3
	149	Eleni	Zlotkey	.2	.2
					Maximum: .4
Manager Id : 145					
	Employee Id	First Name	Last Name	Commission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

- Download the **HTML report**.

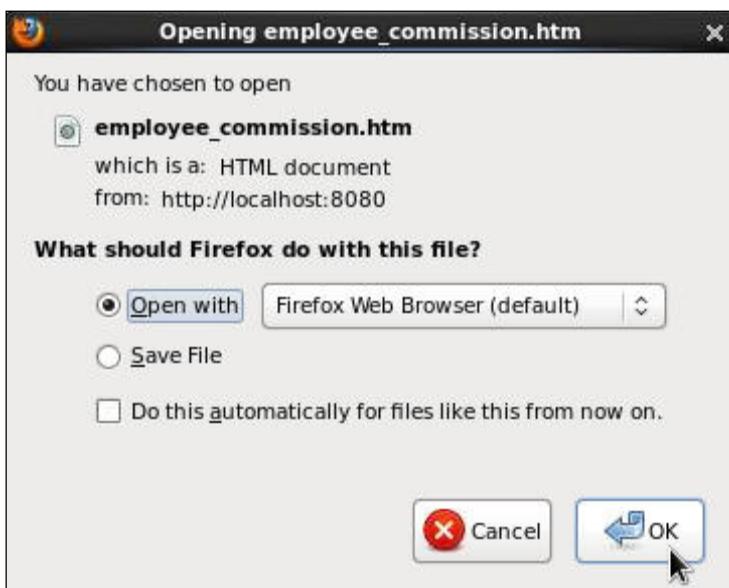
- 15) To download a report in multiple formats, click **Actions** and select **Download**.



- 16) Click **HTML**.



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



The HTML report is displayed on a new tab.

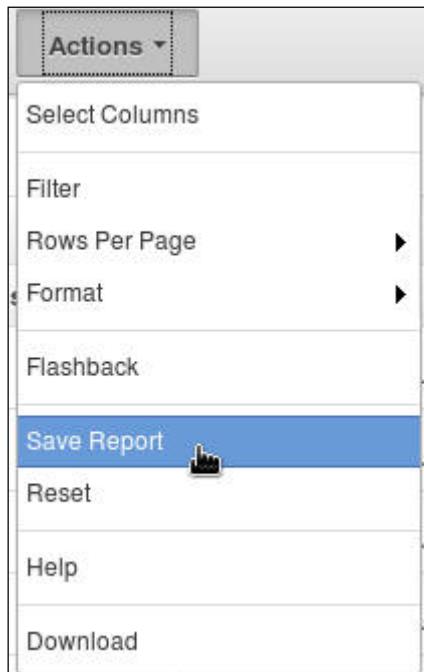
Copyright © 2013, Oracle and/or its affiliates. All rights reserved.

The screenshot shows two windows titled "Employee Commission". The left window contains a search bar with a "Search" button. The right window displays a table with the following data:

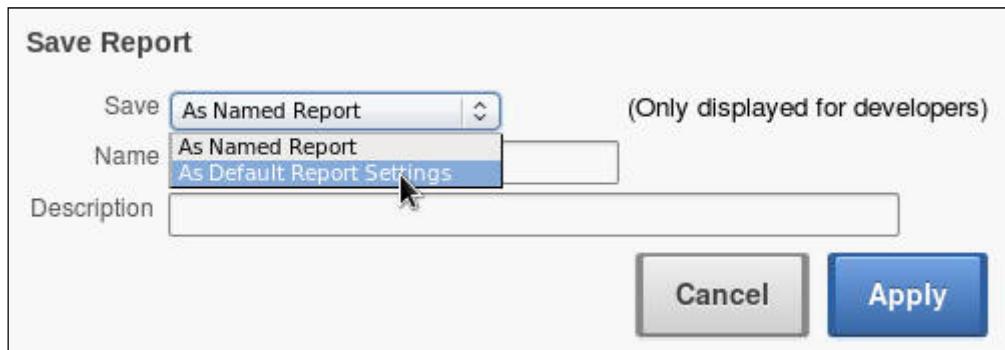
Manager Id	Employee Id	First Name	Last Name	Commission Pct	New Commission
100	145	John	Russell	.4	.4
100	146	Karen	Partners	.3	.3
100	147	Alberto	Errazuriz	.3	.3
100	148	Gerald	Cambrault	.3	.3
100	149	Eleni	Zlotkey	.2	.2
145	150	Peter	Tucker	.3	.3
145	151	David	Bernstein	.25	.25
145	152	Peter	Hall	.25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

- Save all the customizations that you made to this report so that it is available to other managers but is not the default report. Name the saved report Commission Proposal.

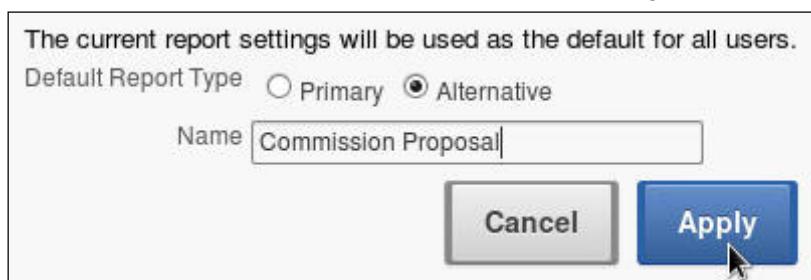
- 18) Click the Interactive Report tab. To save all the customizations that you made to this report and to make it available to other managers, click **Actions** and select **Save Report**.



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



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

Manager Id : 100

	Employee Id	First Name	Last Name	Commission Pct	New Commission
	145	John	Russell	.4	.4

- **Reset the Primary Report.**

21) Select **Primary Report** from the Reports drop-down list.

22) To reset this primary report to its original settings, click **Actions** and select **Reset**.

Manager Id : 100

	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

Actions

- Select Columns
- Filter
- Rows Per Page
- Format
- Flashback
- Save Report
- Reset**
- Help
- Reset
- Download

23) Click **Apply**.



The primary report is reset to its original settings.

A screenshot of an 'Employee Commission' report page. At the top, there is a navigation bar with 'Home > Employee Commission' and search/filter options. Below the navigation 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

Solution 4-2: Customizing an Interactive Report

Overview

In this practice, you customize the Employee Commission interactive report that you created in the previous practice.

Tasks

- a. Make the following customizations to the Employee Commission report:
 - Hide the **EMPLOYEE_ID** column and change the **MANAGER_ID** to be the **FIRST_NAME** and **LAST_NAME** of the manager.
- 1) Navigate to the Employee Commission report page in the Order Management application. Under **Regions > Body**, double-click **Employee Commission**.



- 2) Click the **Source** tab.

The screenshot shows the 'Region Definition' dialog box. The 'Source' tab is selected. The 'Identification' tab is active. The 'Region' field shows 'Region: 2 of 2 Name: Employee Commission'. At the bottom, there are buttons for 'Cancel', 'Delete', 'Apply Changes', and navigation arrows.

- 3) Change Region Source to the following query (located in /home/oracle/labs/files/lab4_2_1.txt) and click **Apply Changes**:

```

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

```

Region Definition Report Attributes Saved Reports Print Attributes

Region: 2 of 2 Name: Employee Commission Cancel Delete Apply Changes

Show All Identification Source User Interface Grid Layout Attributes Header and Footer Conditions Read Only Security

Identification

Page: 4 Employee Commission

Title exclude title translation

Type Interactive Report

Source

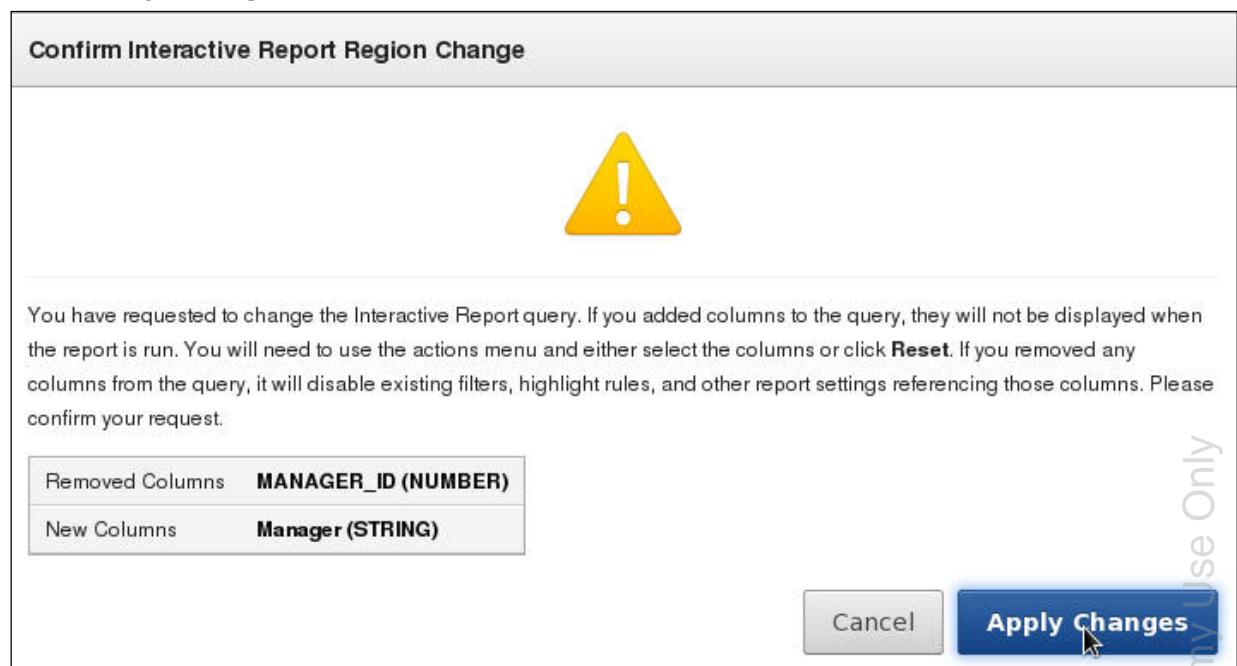
Region Source

```

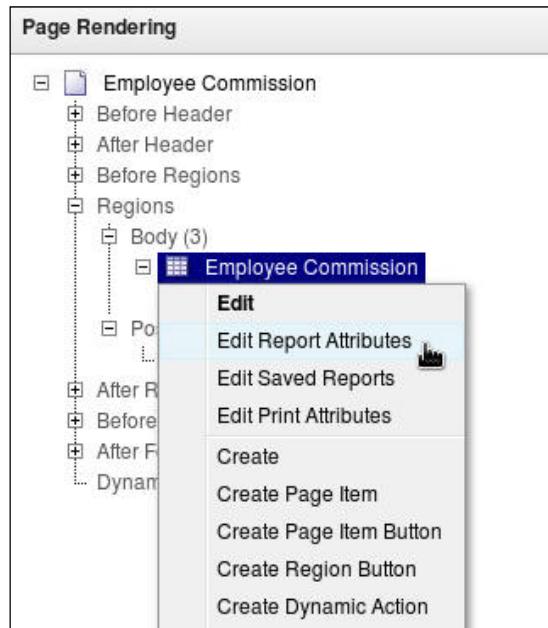
SELECT e.employee_id,
       e.first_name,
       e.last_name,
       (SELECT e1.first_name||' '||e1.last_name FROM OEHR_EMPLOYEES e1 WHERE e1.
employee_id = e.manager_id) as "Manager",
       e.commission_pct
  FROM OEHR_EMPLOYEES e
 where e.commission_pct IS NOT NULL;

```

- 4) A window appears to confirm the changes to the columns in your interactive report. Click **Apply Changes**.



- 5) In **Region > Body**, right-click **Employee Commission** and select **Edit Report Attributes**.



- 6) Under Column Attributes, select **Hidden** from the **Display Text As** drop-down list for **EMPLOYEE_ID**.

	Heading	Type	Link	Display Text As
	EMPLOYEE_ID	Employee Id	NUMBER	<input type="button" value="Display as Text (escape special characters)"/> <input type="button" value="Standard Report Column"/> <input type="button" value="Display as Text (escape special characters)"/> <input type="button" value="Display as Text (based on LOV, escape special characters)"/> <input type="button" value="Remove HTML and escape special characters"/> <input checked="" type="button" value="Hidden"/> <input type="button" value="Display as Text (escape special characters)"/>
	FIRST_NAME	First Name	STRING	
	LAST_NAME	Last Name	STRING	
	COMMISSION_PCT	Commission Pct	NUMBER	
	Manager	Manager	STRING	

- Remove the **Highlight** option from the **Actions menu**.

- 7) Click the **Search Bar** tab.

	Heading	Type	Link	Display Text As
	EMPLOYEE_ID	Employee Id	NUMBER	<input checked="" type="button" value="Hidden"/>
	FIRST_NAME	First Name	STRING	<input type="button" value="Display as Text (escape special characters)"/>
	LAST_NAME	Last Name	STRING	<input type="button" value="Display as Text (escape special characters)"/>
	COMMISSION_PCT	Commission Pct	NUMBER	<input type="button" value="Display as Text (escape special characters)"/>

- 8) Deselect the **Highlight** check box so that it is not displayed in the Actions menu.

Region Definition	Report Attributes	Saved Reports	Print Attributes																				
Region Name: Employee Commission Cancel																							
Show All Column Attributes Column Groups Pagination Sorting Search Bar Download Link Column Advanced																							
Search Bar																							
Include Search Bar Yes <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Search Field <input checked="" type="checkbox"/> Finder Drop Down <input checked="" type="checkbox"/> Reports Select List <input type="checkbox"/> Rows Per Page Selector <input checked="" type="checkbox"/> Actions Menu 																							
Include in Actions Menu (* for authenticated pages only): <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><input checked="" type="checkbox"/> Select Columns</td> <td style="width: 25%;"><input checked="" type="checkbox"/> Filter</td> <td style="width: 25%;"><input checked="" type="checkbox"/> Rows Per Page</td> <td style="width: 25%;"><input checked="" type="checkbox"/> Sort</td> <td><input checked="" type="checkbox"/> Control Break</td> </tr> <tr> <td><input checked="" type="checkbox"/> Highlight</td> <td><input checked="" type="checkbox"/> Compute</td> <td><input checked="" type="checkbox"/> Aggregate</td> <td><input checked="" type="checkbox"/> Chart</td> <td><input checked="" type="checkbox"/> Group By</td> </tr> <tr> <td><input checked="" type="checkbox"/> Flashback</td> <td><input checked="" type="checkbox"/> Save Report*</td> <td><input type="checkbox"/> Save Public Report*</td> <td><input checked="" type="checkbox"/> Reset</td> <td><input checked="" type="checkbox"/> Help</td> </tr> <tr> <td><input checked="" type="checkbox"/> Download</td> <td colspan="4"><input type="checkbox"/> Subscription *</td> </tr> </table>				<input checked="" type="checkbox"/> Select Columns	<input checked="" type="checkbox"/> Filter	<input checked="" type="checkbox"/> Rows Per Page	<input checked="" type="checkbox"/> Sort	<input checked="" type="checkbox"/> Control Break	<input checked="" type="checkbox"/> Highlight	<input checked="" type="checkbox"/> Compute	<input checked="" type="checkbox"/> Aggregate	<input checked="" type="checkbox"/> Chart	<input checked="" type="checkbox"/> Group By	<input checked="" type="checkbox"/> Flashback	<input checked="" type="checkbox"/> Save Report*	<input type="checkbox"/> Save Public Report*	<input checked="" type="checkbox"/> Reset	<input checked="" type="checkbox"/> Help	<input checked="" type="checkbox"/> Download	<input type="checkbox"/> Subscription *			
<input checked="" type="checkbox"/> Select Columns	<input checked="" type="checkbox"/> Filter	<input checked="" type="checkbox"/> Rows Per Page	<input checked="" type="checkbox"/> Sort	<input checked="" type="checkbox"/> Control Break																			
<input checked="" type="checkbox"/> Highlight	<input checked="" type="checkbox"/> Compute	<input checked="" type="checkbox"/> Aggregate	<input checked="" type="checkbox"/> Chart	<input checked="" type="checkbox"/> Group By																			
<input checked="" type="checkbox"/> Flashback	<input checked="" type="checkbox"/> Save Report*	<input type="checkbox"/> Save Public Report*	<input checked="" type="checkbox"/> Reset	<input checked="" type="checkbox"/> Help																			
<input checked="" type="checkbox"/> Download	<input type="checkbox"/> Subscription *																						

- Remove the Single Row View icon for each row in the report.

- 9) Click the **Link Column** tab.

Region Definition	Report Attributes	Saved Reports	Print Attributes
Region Name: Employee Commission Cancel			
Show All Column Attributes Column Groups Pagination Sorting Search Bar Download Link Column Advanced			
Search Bar			
Include Search Bar Yes <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Search Field <input checked="" type="checkbox"/> Finder Drop Down <input checked="" type="checkbox"/> Reports Select List <input type="checkbox"/> Rows Per Page Selector <input checked="" type="checkbox"/> Actions Menu 			
Include in Actions Menu (* for authenticated pages only):			

- 10) To not display the Single Row View, select **Exclude Link Column** from the Link Column drop-down list.

Region Name: Employee Commission

Link Column

Link Column: **Exclude Link Column**

Single Row View: Allow Exclude Null Values
 Allow Displayed Columns

Uniquely Identify Rows by: ROWID

Unique Column: []

* Link Icon:

[Icon 1] [Icon 2] [Icon 3] [Icon 4] [Icon 5] [Icon 6] [Icon 7] [Icon 8]

- 11) Click **Apply Changes**.

Region Name: Employee Commission

Link Column

Link Column: **Exclude Link Column**

Single Row View: Allow Exclude Null Values
 Allow Displayed Columns

Uniquely Identify Rows by: ROWID

Unique Column: []

* Link Icon:

[Icon 1] [Icon 2] [Icon 3] [Icon 4] [Icon 5] [Icon 6] [Icon 7] [Icon 8]

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

- 12) Click **Run**.

Page Rendering: Employee Commission

Page Processing: After Submit

Run

- 13) Note that Employee ID and the single row view are also excluded from the report. You need to add the Manager column to the report. Click **Actions**, and then **Select Columns**.

First Name	Last Name	Commission Pct
John	Russell	.4
Karen	Partners	.3
Alberto	Errazuriz	.3
Gerald	Cambrault	.3
Eleni	Zlotkey	.2
Peter	Tucker	.3
David	Bernstein	.25
Peter	Hall	.25

- 14) Select **Manager** and click the Move > icon.

Do Not Display

Display in Report

Manager

First Name
Last Name
Commission Pct
Manager

Move

Cancel Apply

- 15) Click **Apply**.

Do Not Display

Display in Report

Manager

First Name
Last Name
Commission Pct
Manager

Cancel Apply

- 16) Note that the Manager column is now displayed. Click **Actions** and select **Format**. Notice that the **Highlight** option is not there.

The screenshot shows a report interface with a table of data. The columns are labeled: First Name, Last Name, Commission Pct, and Manager. The Manager column contains values like Steven King, Steven King, etc. An Actions menu is open on the right, and the Format option is highlighted. The menu also includes other options like Select Columns, Filter, Rows Per Page, Sort, Flashback, Save Report, Reset, Help, and Download.

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

Practices for Lesson 5: Creating Classic Reports, Wizard Reports, and Reports for Mobile Applications

Chapter 5

Practices for Lesson 5: Overview

Practices Overview

There are two practices for this lesson. In these practices, you create a classic report and a wizard report. You add a page with a List View in your application.

Practice 5-1: Creating Classic and Wizard Reports

Overview

In this practice, you create a classic report and a wizard report and edit the attributes of the reports.

Assumptions

You have performed the previous practices or imported `LAB042_SOLN.sql`.

Tasks

- a. On a new page in the Order Management application, create a SQL report. Name the new page and the report Top Tier Salary. The report should display the last name, email, and salary of employees who earn between \$5000 and \$12000 from the `OEHR_EMPLOYEES` table. The report should contain a search bar.
- b. On a new page in the Order Management application, create a wizard report. Name the page and the report Customer Address List. The report should display the address information of the customers, such as the first and last names, address, city, and state from the `OEHR_CUSTOMERS` table.
- c. 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 `OEHR_COUNTRIES.COUNTRY_NAME` column to the report. **Hint:** You will need to create a join.

Practice 5-2: Creating a List View

Overview

In this practice, you create a page with a List View in the Order Management application.

Assumptions

You have performed the previous practices.

Tasks

- a. On a new page in the Order Management 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 205. The list view should select all the columns from the `OEHR_EMPLOYEES` table and should display the last names as the text column. The list view should also be enabled to search the last name column with the Search Type “Like & Ignore Case.” Open the application on a separate tab to view the list view.

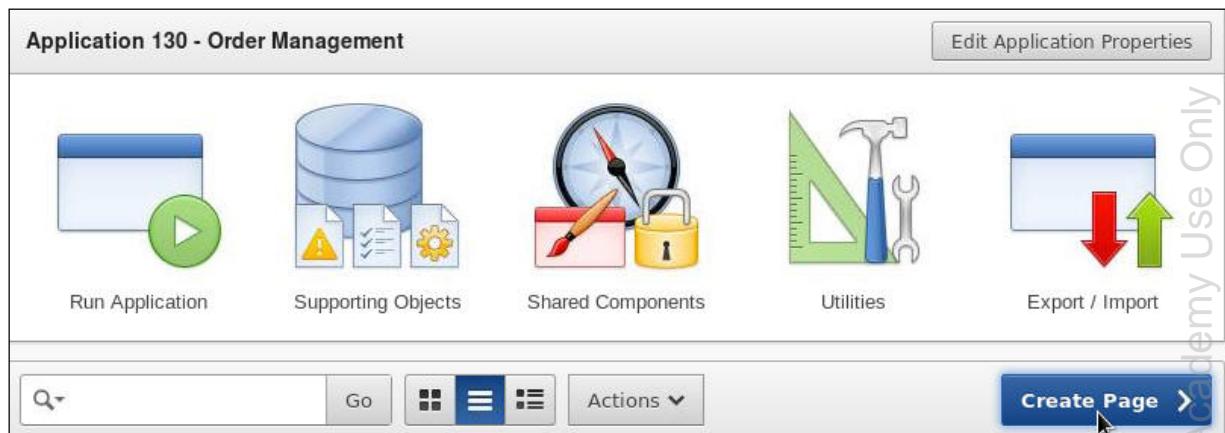
Solution 5-1: Creating Classic and Wizard Reports

Overview

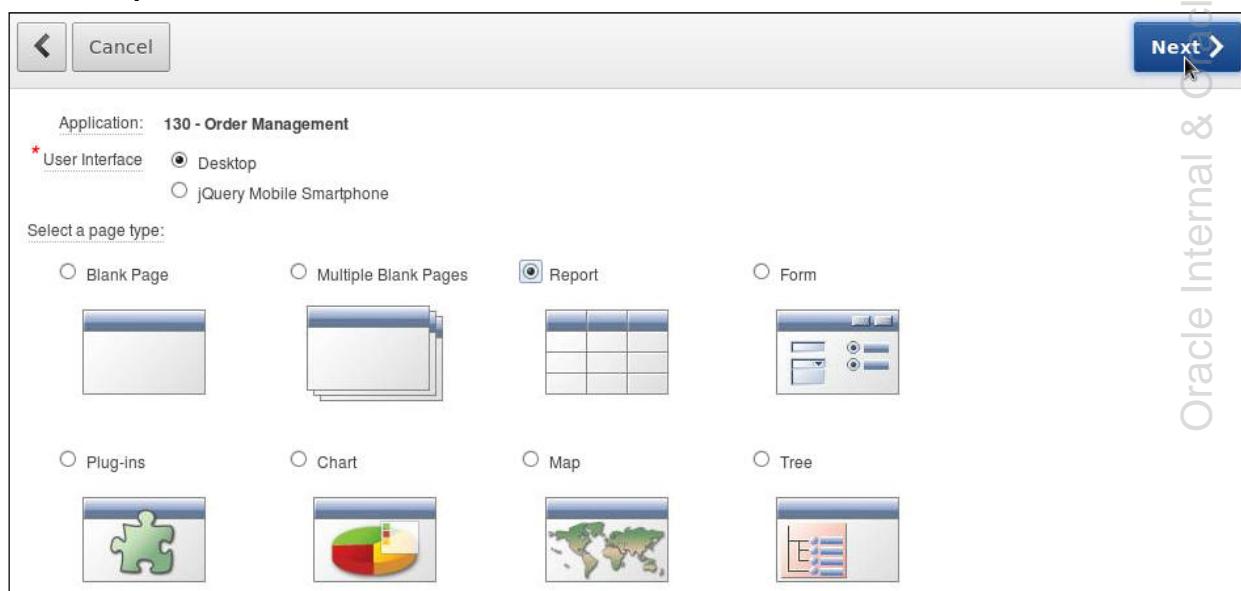
In this practice, you create two classic reports and edit the attributes of the report.

Tasks

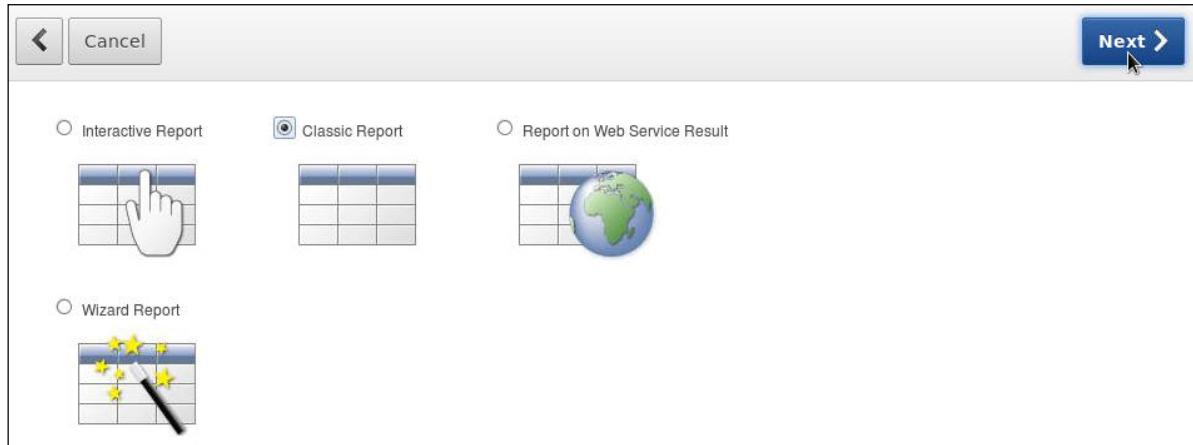
- a. On a new page in the Order Management application, create a SQL report. Name the new page and the report Top Tier Salary. The report should display the last name, email, and salary of employees who earn between \$5000 and \$12000 from the **OEHR_EMPLOYEES** table. The report should contain a search bar.
- 1) Navigate to the Order Management application page and click **Create Page**.



- 2) Select Report and click **Next >**.



- 3) Select **Classic Report** and click **Next >**.



- 4) Enter **Top Tier Salary** for both Page Name and Region Name. Click **Next >**.

- 5) Accept the default and click **Next >**.

- 6) For **Report Source**, select **SQL Query** from the drop-down list.

- 7) You will create the query using the Query Builder. Click **Query Builder**.



- 8) From the Object Selection pane, select **OEHR_EMPLOYEES**.

A screenshot of the Oracle Database Object Selection pane. At the top left is a search bar with a magnifying glass icon. To its right are 'Schema' and a dropdown menu set to 'ORA01'. On the far right are 'Cancel', 'Return', and a large blue 'Run' button. The main pane shows a list of database objects on the left and a detailed view of the 'OEHR_EMPLOYEES' table on the right. The table has six columns: 'EMPLOYEE_ID', 'FIRST_NAME', 'LAST_NAME', 'EMAIL', 'PHONE_NUMBER', and 'HIRE_DATE'. The 'FIRST_NAME' column is currently selected, indicated by a blue border. At the bottom of the pane are tabs for 'Conditions', 'SQL', 'Results', and 'Saved SQL', with 'Conditions' being the active tab. Below the tabs is a header row with columns: 'Column', 'Alias', 'Object', 'Condition', 'Sort Type', 'Sort Order', 'Show', and 'Function'. A vertical watermark on the right side of the screen reads 'Oracle Internal & Oracle Academy Only'.

- 9) Select the **LAST_NAME**, **EMAIL**, **SALARY** columns. For the **SALARY** column, enter the condition **BETWEEN 5000 and 12000**. Click in another field to confirm the condition, and then click **Run**.

The screenshot shows the Oracle SQL Developer Report Wizard interface. The 'Run' button is highlighted in blue. The 'Conditions' tab is selected, showing the following conditions:

Column	Alias	Object	Condition	Sort Type	Sort Order
LAST_NAME	LAST_NAME	OEHR_EMPLOYEES		Asc	
EMAIL	EMAIL	OEHR_EMPLOYEES		Asc	
SALARY	SALARY	OEHR_EMPLOYEES	between 5000 and 12000	Asc	

10) Click **Return**.

The screenshot shows the Oracle SQL Developer interface. At the top, there's a schema dropdown set to "ORA01". Below it is a search bar and three buttons: "Cancel", "Return", and "Run". The "Return" button is highlighted with a mouse cursor. To the left is a list of tables under the schema. In the center, a table named "OEHR_EMPLOYEES" is displayed with the following data:

	LAST_NAME	EMAIL	SALARY
<input checked="" type="checkbox"/>	A		
<input checked="" type="checkbox"/>	A		
<input type="checkbox"/>	A		
<input type="checkbox"/>	81		
<input type="checkbox"/>	A		
<input checked="" type="checkbox"/>	789		
<input type="checkbox"/>	789		

Below the table, there are tabs for "Conditions", "SQL", "Results" (which is selected), and "Saved SQL".

11) Click **Next >**.

The screenshot shows the "Report Source" configuration screen. It includes a "Report Source" section with a "SQL Query" dropdown and a "Query Builder" button. Below it is a text area containing the following SQL query:

```
select OEHR_EMPLOYEES.LAST_NAME as LAST_NAME,
       OEHR_EMPLOYEES.EMAIL as EMAIL,
       OEHR_EMPLOYEES.SALARY as SALARY
  from OEHR_EMPLOYEES OEHR_EMPLOYEES
 where OEHR_EMPLOYEES.SALARY between 5000 and 12000
```

At the top right of the screen, there is a "Next >" button.

- 12) Select **No** for **Column Heading Sorting**, select **No** for **CSV Output**, and select **Yes** for **Enable Search**. Select the **LAST_NAME** and **EMAIL** columns and click the double right arrow (**>>**) to search on those columns. Click **Next >**.

Column Heading Sorting: No
CSV Output: No
Report Printing: No
Enable Search: Yes
Select Columns for Search:
LAST_NAME
EMAIL

- 13) Click **Create**.

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

Application	130
Page	5
Tab Set	TS1
Tab Name	
Tab Label	
Region Title	Top Tier Salary
Region Template	Reports Region
Report Template	template: Standard
Region Column	1
Column Headings	Derived from query columns
Maximum Number of Columns	60

- 14) Click **Run Page**.

The report has been created successfully.

Edit Page Run Page

- 15) If the login window opens, enter **ora<n>** for Username and Password, and click **Login**.

The image shows a 'Login' window. It has two input fields: 'Username' containing 'ora01' and 'Password' containing four asterisks ('****'). To the right of the password field is a blue 'Login' button with a white hand cursor icon pointing at it.

- 16) Review the report. Enter **Green** in the Search area and click **Go**.

The image shows an 'Order Management' report titled 'Top Tier Salary'. At the top, there is a search bar with 'Search' and 'Green' entered, a 'Display' dropdown set to 15, and a 'Go' button with a hand cursor icon. Below the search bar is a table titled 'Top Tier Salary' with columns 'LAST_NAME', 'EMAIL', and 'SALARY'. The table lists 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
Urman	JMURMAN	7800
Popp	LPOPP	6900
Raphaely	DRAPHEAL	11000
Weiss	MWEISS	8000
Fripp	AFRIPP	8200
Kaufling	PKAUFLIN	7900

- 17) Review the search results. Note that you can make changes to the SQL with this report type. Click **Application<n>**.

The screenshot shows the Order Management application interface. At the top, there is a navigation bar with 'Home' and 'Customers' tabs. Below the navigation bar is a search bar with the text 'Green'. To the right of the search bar are buttons for 'Display', a dropdown menu set to '15', 'Go', and 'Reset'. The main content area is titled 'Top Tier Salary' and contains a table with two rows of data:

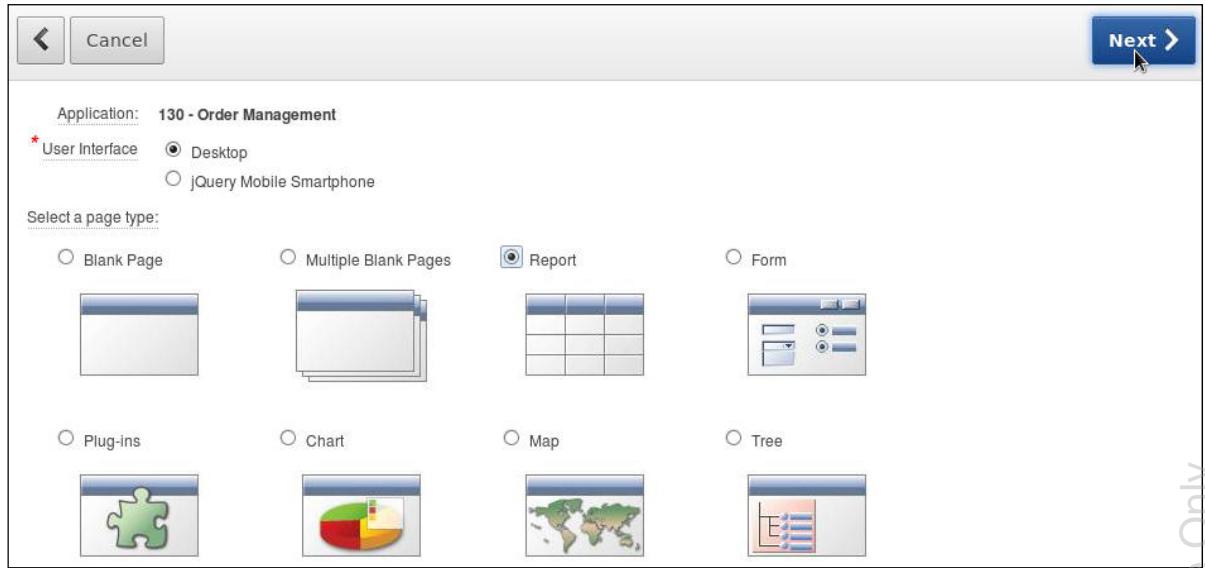
LAST_NAME	EMAIL	SALARY
Greenberg	NGREENBE	12000
Greene	DGREENE	9500

Below the table, a page number '1 - 2' is displayed. At the bottom of the screen, there is a footer bar with links: 'Home', 'Application 130' (which is highlighted), 'Edit Page 5', 'Create', 'Session', and 'Caching'.

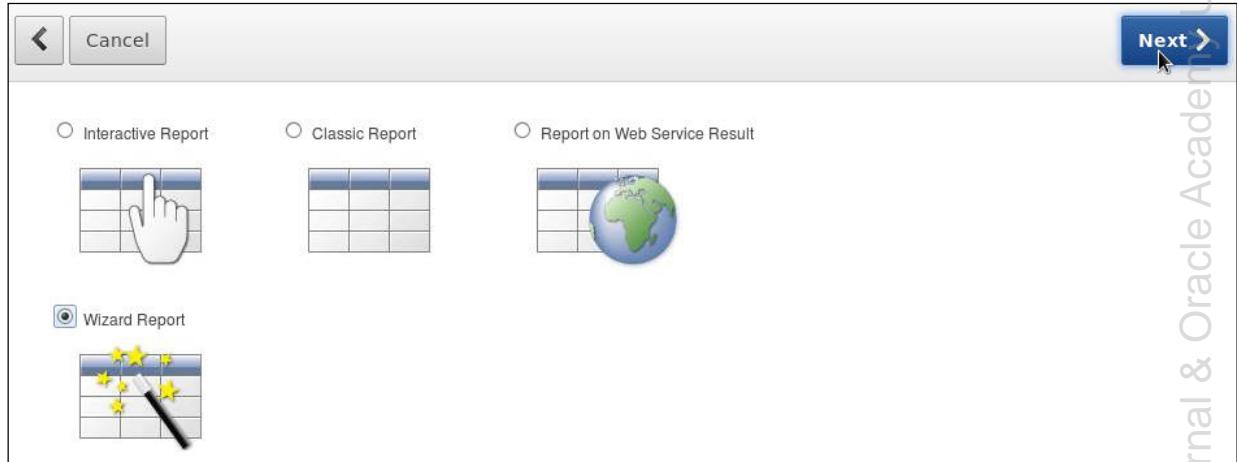
- b. On a new page in the Order Management application, create a wizard report. Name the page and the report Customer Address List. The report should display the address information of the customers, such as the first and last names, address, city, and state from the `OEHR_CUSTOMERS` table.
- 1) Navigate to the Order Management application page and click **Create Page**.

The screenshot shows the 'Application 130 - Order Management' page. At the top, there is a button labeled 'Edit Application Properties'. Below the header are five icons with labels: 'Run Application', 'Supporting Objects', 'Shared Components', 'Utilities', and 'Export / Import'. At the bottom of the page is a toolbar with a search bar, a 'Go' button, and several other buttons. On the far right of the toolbar is a blue button labeled 'Create Page >' with a cursor pointing at it.

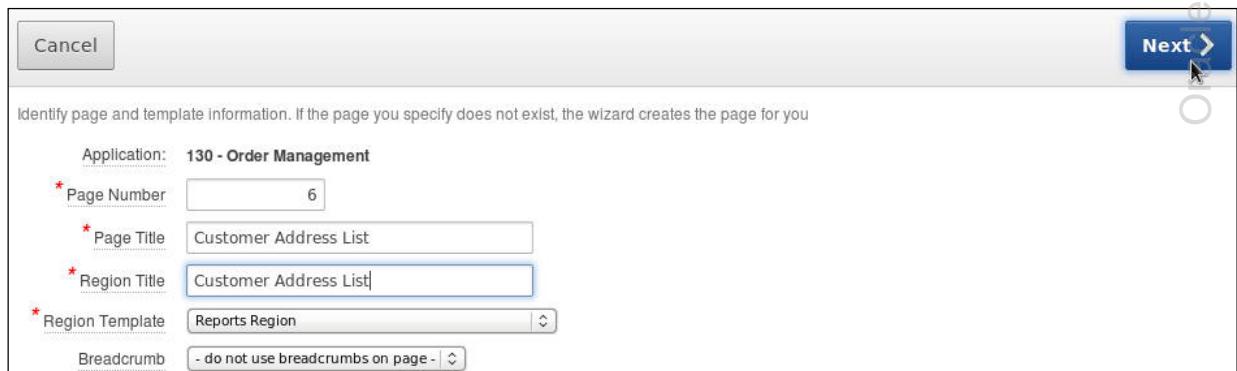
2) Select Report and click Next >.



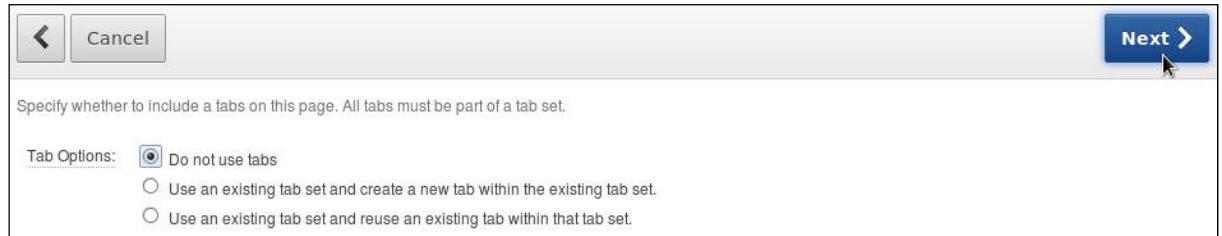
3) Select Wizard Report and click Next >.



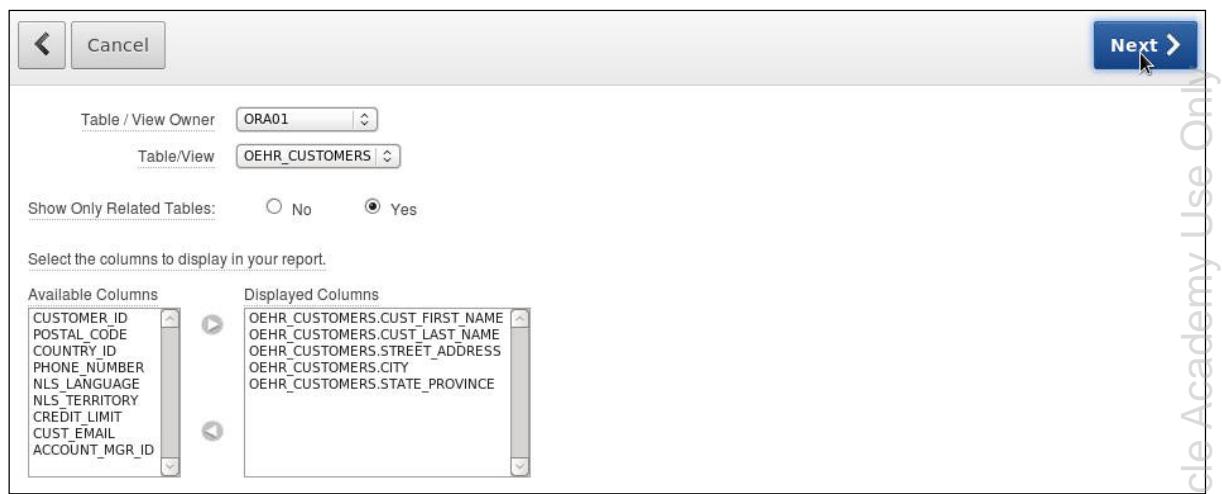
4) Enter Customer Address List for Page Title and Region Title and click Next >.



- 5) Accept the default and click **Next >**.



- 6) From the Table/View drop-down list, select **OEHR_CUSTOMERS (table)**. Ctrl-click to select **CUST_FIRST_NAME**, **CUST_LAST_NAME**, **STREET_ADDRESS**, **CITY**, and **STATE_PROVINCE**. Click the right arrow (>) to move the columns to the Displayed Columns area. Click **Next >**.



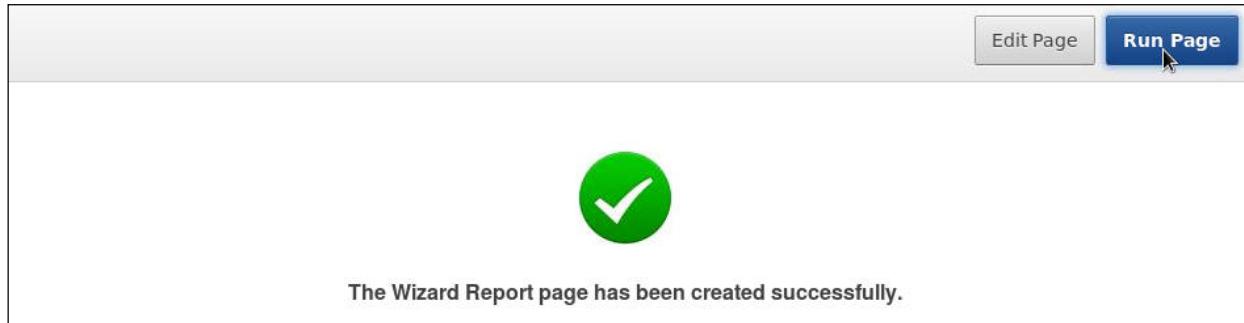
- 7) Accept the defaults and click **Next >**.



- 8) Click **Create Report Page**.



- 9) Click **Run Page**.



- 10) Review the report. To make changes to the report, click the **Edit Page <n>** link.

Customer Address List				
Cust First Name	Cust Last Name	Street Address	City	State Province
Constantin	Welles	514 W Superior St	Kokomo	IN
Harrison	Pacino	2515 Bloyd Ave	Indianapolis	IN
Manisha	Taylor	8768 N State Rd 37	Bloomington	IN
Harrison	Sutherland	6445 Bay Harbor Ln	Indianapolis	IN
Matthias	MacGraw	4019 W 3Rd St	Bloomington	IN
Matthias	Hannah	1608 Portage Ave	South Bend	IN
Matthias	Cruise	23943 Us Highway 33	Elkhart	IN
Meenakshi	Mason	136 E Market St # 800	Indianapolis	IN
Christian	Cage	1905 College St	South Bend	IN
Charlie	Sutherland	3512 Rockville Rd # 137C	Indianapolis	IN
Charlie	Pacino	1303 E University St	Bloomington	IN
Guillaume	Jackson	115 N Weinbach Ave	Evansville	IN
Daniel	Costner	2067 Rollett Ln	Evansville	IN
Dianne	Derek	1105 E Allendale Dr	Bloomington	IN
Geraldine	Schneider	18305 Van Dyke St	Detroit	MI

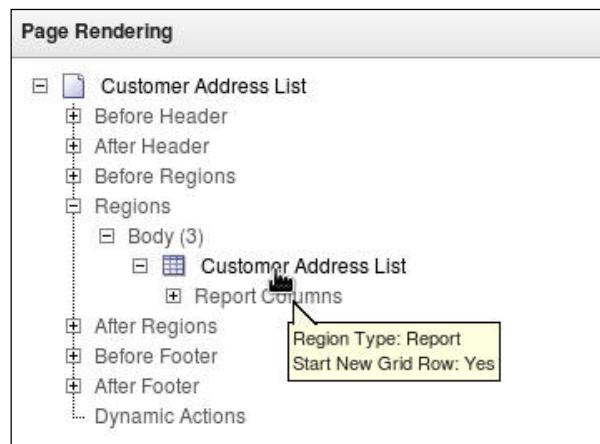
row(s) 1 - 15 of 319 | [Next >](#)

[Home](#) [Application 130](#) [Edit Page 6](#) [Create](#) [Session](#) [Caching](#) [View](#)

- c. 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.**

- 1) Under **Regions > Body**, double-click **Customer Address List** to open the report settings.



- 2) Click the **[Show Source]** link.

Region Definition		Report Attributes	Query Definition	Print Attributes
Region: 1 of 1 Name: Customer Address List				
Show All Identification Source User Interface Grid Layout Attributes Header and F				
Identification				
Page:	6 Customer Address List			
Title	<input type="text" value="Customer Address List"/>			
Type	SQL Query (Structured Query)			
Source				
[Show Source]				
User Interface				
* Sequence	<input type="text" value="10"/>			
Parent Region	<input type="button" value="- Select a Parent -"/>			

- 3) Note that you cannot edit the query definition here. Click the **Report Attributes** tab.

Region Definition Report Attributes Query Definition Print Attributes

Report Attributes

Region: 1 of 1 Name: Customer Address List

Cancel Delete Apply Changes < >

Show All Identification Source User Interface Grid Layout Attributes Header and Footer Conditions Read Only Security Configuration

Identification

Page: 6 Customer Address List

Title: Customer Address List exclude title from translation

Type: SQL Query (Structured Query)

Source

[Hide Source]

```

SELECT
  "OEHR_CUSTOMERS"."CUST_FIRST_NAME" "CUST_FIRST_NAME",
  "OEHR_CUSTOMERS"."CUST_LAST_NAME" "CUST_LAST_NAME",
  "OEHR_CUSTOMERS"."STREET_ADDRESS" "STREET_ADDRESS",
  "OEHR_CUSTOMERS"."CITY" "CITY",
  "OEHR_CUSTOMERS"."STATE_PROVINCE" "STATE_PROVINCE"
FROM
  "OEHR_CUSTOMERS"

```

- 4) Change the Heading for **CUST_FIRST_NAME** to **First Name** and **CUST_LAST_NAME** to **Last Name**.

The screenshot shows the 'Column Attributes' section of the Oracle Reports dialog. The 'Region Name' is set to 'Customer Address List'. The 'Heading' column is currently selected for editing, indicated by a blue border around its header row. The 'Alias' column contains 'CUST_FIRST_NAME', 'CUST_LAST_NAME', 'STREET_ADDRESS', and 'CITY'. The 'Heading' column contains 'First Name', 'Last Name', 'Street Address', and 'City'. Other columns include 'Link', 'Edit', 'Column Width', 'Column Alignment', 'Heading Alignment', 'Show', 'Sum', and 'Sort'. The 'Heading Alignment' dropdown for 'First Name' is set to 'center'. The 'Show' checkbox for 'First Name' is checked.

Alias	Link	Edit	Heading	Column Width	Column Alignment	Heading Alignment	Show	Sum	Sort
CUST_FIRST_NAME			First Name		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUST_LAST_NAME			Last Name		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STREET_ADDRESS			Street Address		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CITY			City		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Change the Pagination to Row Ranges X to Y of Z (with pagination).

- 5) Click the **Layout and Pagination** tab.

The screenshot shows the 'Layout and Pagination' tab of the Oracle Reports dialog. The 'Region Name' is set to 'Customer Address List'. The 'Layout and Pagination' tab is highlighted with a blue border. Below it, the 'Column Attributes' section is visible, though mostly empty.

6) Select **Row Ranges X to Y of Z (with pagination)** for Pagination Scheme.

Region Definition	Report Attributes	Query Definition	Print Attributes
Region Name: Customer Address List			
Show All Column Attributes Layout and Pagination Sorting Messages Report Export Break Formatting			
Layout and Pagination			
Report Template	template: 26. Standard		
[HTML] [Look 1] [Look 2] [Look 3] [Look 4] [CSV] [XML]			
Report Attributes Substitution	<input type="text"/>		
Show Null Values as	<input type="text"/>		
Pagination Scheme	<input type="button" value="Row Ranges 1-15 16-30 in select list (with pagination)"/> <input type="button" value="Row Ranges X to Y of Z (with pagination)"/> - No Pagination Selected - Row Ranges 1-15 16-30 (with set pagination) Row Ranges 1-15 16-30 in select list (with pagination) Row Ranges X to Y (no pagination) Row Ranges X to Y of Z (no pagination) Row Ranges X to Y of Z (with pagination) <input checked="" type="button"/> Search Engine 1,2,3,4 (set based pagination) Use Externally Created Pagination Buttons Row Ranges X to Y (with next and previous links)		
Enable Partial Page Refresh	<input type="checkbox"/>		
Display Position	<input type="button" value="Bottom - Right"/>		
Number of Rows	<input type="text" value="500"/>		
Maximum Row Count	<input type="text" value="500"/>		

- **Review the query definition and add the Oehr_Countries.Country_Name column to the report. Hint: You will need to create a join.**

7) Click the **Query Definition** tab.

Region Definition	Report Attributes	Query Definition	Print Attributes
Region Name: Customer Address List			
Query Definition Cancel			
Show All Column Attributes Layout and Pagination Sorting Messages Report Export Break Formatting Edit			
Layout and Pagination			
Report Template	template: 26. Standard		
[HTML] [Look 1] [Look 2] [Look 3] [Look 4] [CSV] [XML]			
Report Attributes Substitution	<input type="text"/>		
Show Null Values as	<input type="text"/>		
Pagination Scheme	<input type="button" value="Row Ranges X to Y of Z (with pagination)"/> <input type="button" value="Row Ranges X to Y of Z (with pagination)"/> [None] [Use pagination buttons] [Rows X to Y] [Select List] [Search Engine]		
Enable Partial Page Refresh	<input type="checkbox" value="Yes"/>		
Display Position	<input type="button" value="Bottom - Right"/>		

- 8) Note that you can change the query from this tab. You want to add another column to the query. Click **Add/Remove Columns**.

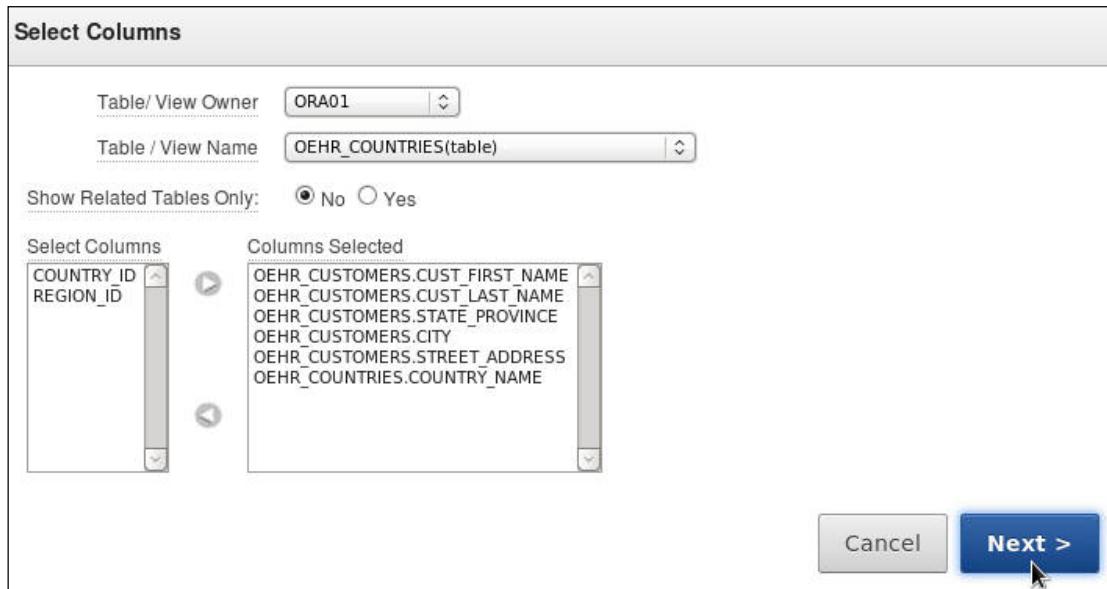
The screenshot shows the 'Query Definition' tab selected in a software interface. Below it is the 'Query Columns' section. A table lists five columns from the 'OEHR_CUSTOMERS' table: CUST_FIRST_NAME, CUST_LAST_NAME, STREET_ADDRESS, CITY, and STATE_PROVINCE. At the top right of the 'Query Columns' section is a blue button labeled 'Add/Remove Columns' with a cursor pointing at it. Other tabs like 'Region Definition', 'Report Attributes', and 'Print Attributes' are visible at the top.

Number	Column
1	OEHR_CUSTOMERS.CUST_FIRST_NAME
2	OEHR_CUSTOMERS.CUST_LAST_NAME
3	OEHR_CUSTOMERS.STREET_ADDRESS
4	OEHR_CUSTOMERS.CITY
5	OEHR_CUSTOMERS.STATE_PROVINCE

- 9) You want to add the country name to the report. Select **OEHR_COUNTRIES** (table) from the drop-down list for Table / View Name. (Ensure that No is selected for Show Related Tables Only.) Select **COUNTRY_NAME** from the Select Columns list and click the right arrow (>) to select the column.

The screenshot shows the 'Select Columns' dialog box. In the 'Table / View Name' field, 'OEHR_COUNTRIES(table)' is selected. The 'Show Related Tables Only' option has 'No' selected. On the left, under 'Select Columns', there is a list of columns: COUNTRY_ID, COUNTRY_NAME, and REGION_ID. The 'COUNTRY_NAME' column is highlighted with a blue selection bar. An 'ADD' button with a right-pointing arrow is located between the two lists. On the right, under 'Columns Selected', the columns listed are: OEHR_CUSTOMERS.CUST_FIRST_NAME, OEHR_CUSTOMERS.CUST_LAST_NAME, OEHR_CUSTOMERS.STATE_PROVINCE, OEHR_CUSTOMERS.CITY, and OEHR_CUSTOMERS.STREET_ADDRESS. At the bottom right are 'Cancel' and 'Next >' buttons.

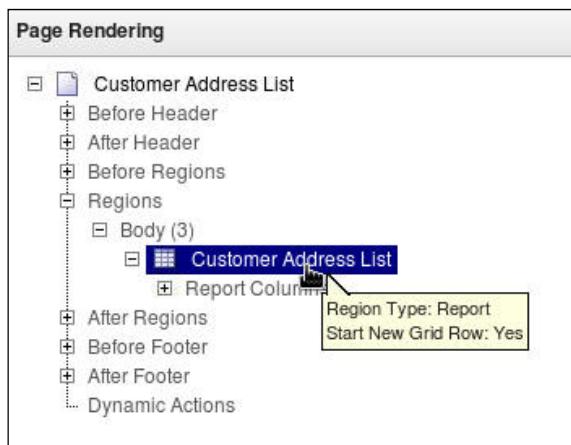
- 10) Click **Next >**.



- 11) Because you are selecting a column from a different table, you must specify a join. Enter "OEHR_CUSTOMERS"."COUNTRY_ID" = "OEHR_COUNTRIES"."COUNTRY_ID" and click **Apply Changes**.



- 12) You can view the changes in the source. Double-click the **Customer Address List** region again.



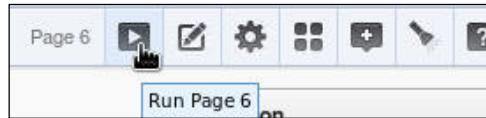
- 13) Click the **Source** tab and select [**Show Source**].

Source

[Hide Source]

```
SELECT
    "OEHR_CUSTOMERS"."CUST_FIRST_NAME" "CUST_FIRST_NAME",
    "OEHR_CUSTOMERS"."CUST_LAST_NAME" "CUST_LAST_NAME",
    "OEHR_CUSTOMERS"."STREET_ADDRESS" "STREET_ADDRESS",
    "OEHR_CUSTOMERS"."CITY" "CITY",
    "OEHR_CUSTOMERS"."STATE_PROVINCE" "STATE_PROVINCE",
    "OEHR_COUNTRIES"."COUNTRY_NAME" "COUNTRY_NAME"
FROM
    "OEHR_CUSTOMERS",
    "OEHR_COUNTRIES"
WHERE "OEHR_CUSTOMERS"."COUNTRY_ID" = "OEHR_COUNTRIES"."COUNTRY_ID"
```

- 14) Click the **Run Page** icon.



- 15) Note the changes that you made to the report. Click **Application <n>**.

Customer Address List					
First Name	Last Name	Country Name	Street Address	City	State Province
Constantin	Welles	United States of America	514 W Superior St	Kokomo	IN
Harrison	Pacino	United States of America	2515 Bloyd Ave	Indianapolis	IN
Manisha	Taylor	United States of America	8768 N State Rd 37	Bloomington	IN
Harrison	Sutherland	United States of America	6445 Bay Harbor Ln	Indianapolis	IN
Matthias	MacGraw	United States of America	4019 W 3Rd St	Bloomington	IN
Matthias	Hannah	United States of America	1608 Portage Ave	South Bend	IN
Matthias	Cruise	United States of America	23943 Us Highway 33	Elkhart	IN
Meenakshi	Mason	United States of America	136 E Market St # 800	Indianapolis	IN
Christian	Cage	United States of America	1905 College St	South Bend	IN
Charlie	Sutherland	United States of America	3512 Rockville Rd # 137C	Indianapolis	IN
Charlie	Pacino	United States of America	1303 E University St	Bloomington	IN
Guillaume	Jackson	United States of America	115 N Weinbach Ave	Evansville	IN
Daniel	Costner	United States of America	2067 Rollett Ln	Evansville	IN
Dianne	Derek	United States of America	1105 E Allendale Dr	Bloomington	IN

Home Application 130 Edit Page 6 Create Session Caching View Debug Deb

Solution 5-2: Creating a List View

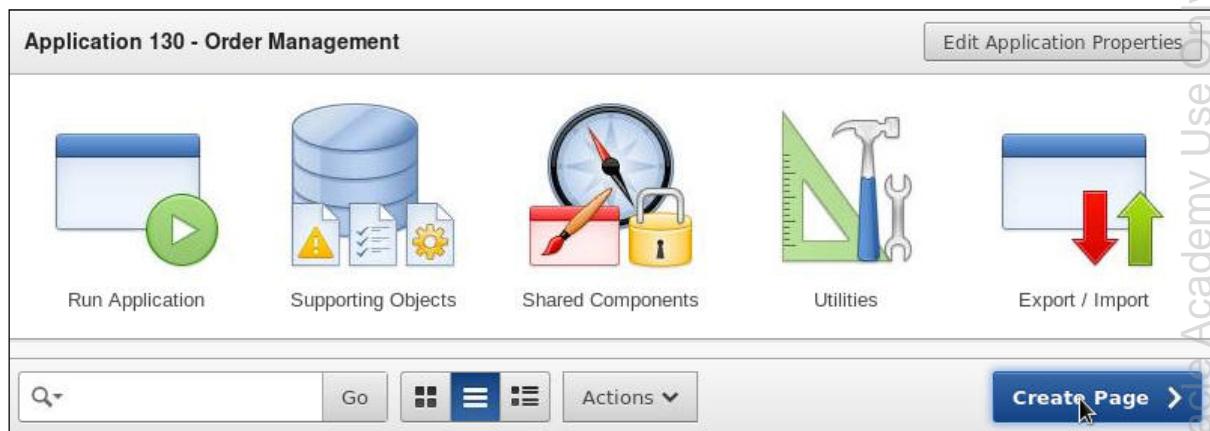
Overview

In this practice, you create a page with a List View in the Order Management application.

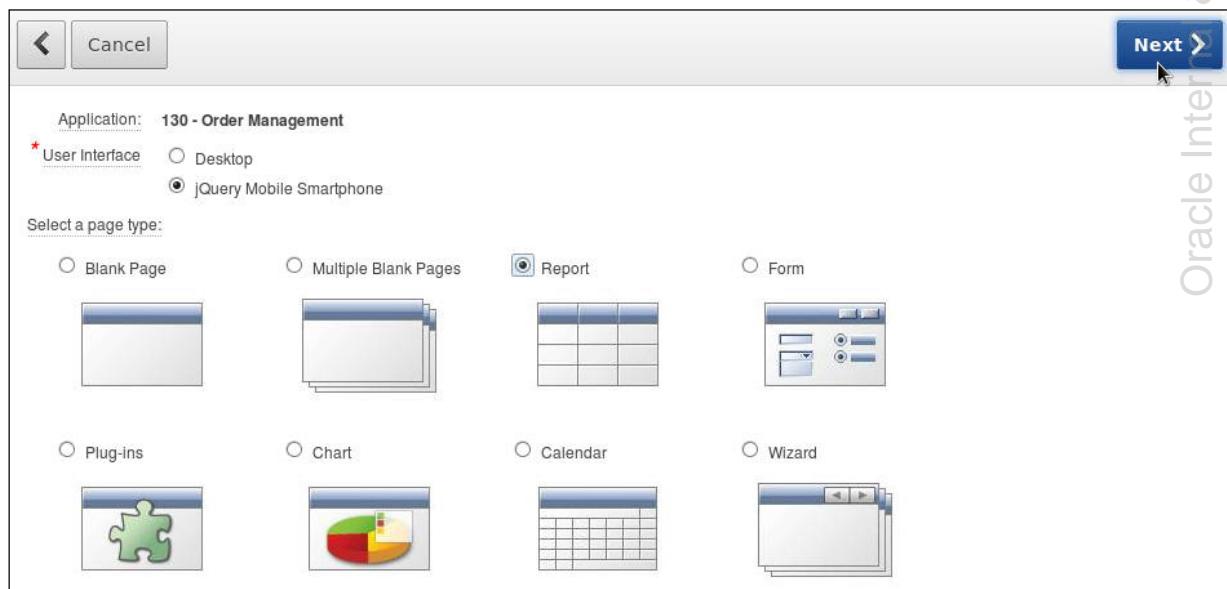
Tasks

- a. On a new page in the Order Management 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 205. The list view should select all the columns from the **OEHR_EMPLOYEES** table and should display the last names as the text column. The list view should also be enabled to search the last name column with the Search Type “Like & Ignore Case.” Open the application on a separate tab to view the list view.

- 1) Navigate to the Order Management application page and click **Create Page**.



- 2) Select **jQuery Mobile Smartphone** for **User Interface** and select **Report**. Click **Next**.



- 3) Select **List View** and click **Next >**.

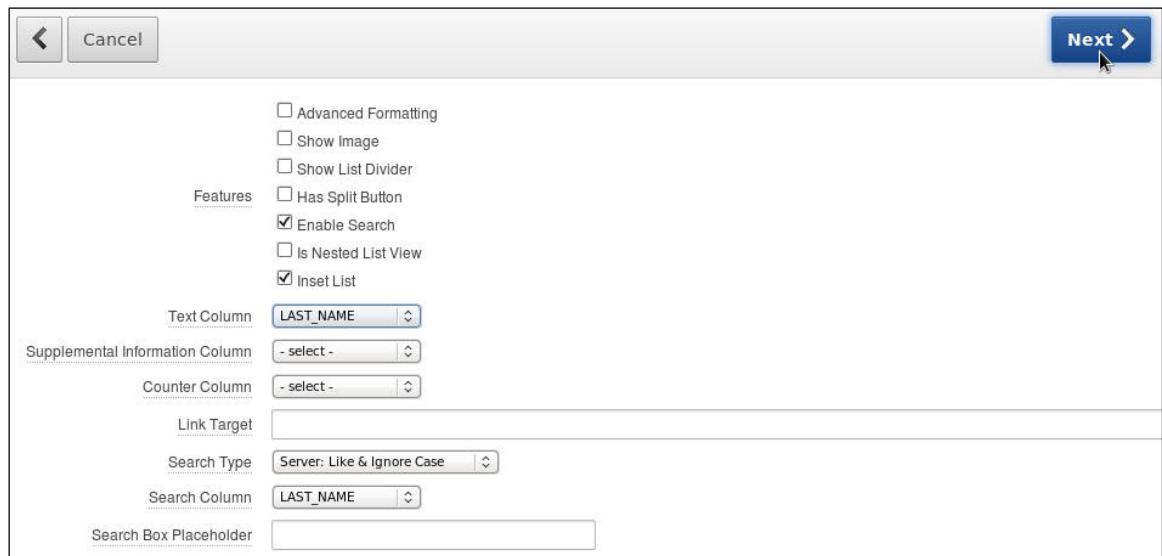


- 4) Change the Page Number to **205** and enter **Employee List** as the Page Name and Region Name. Click **Next >**.

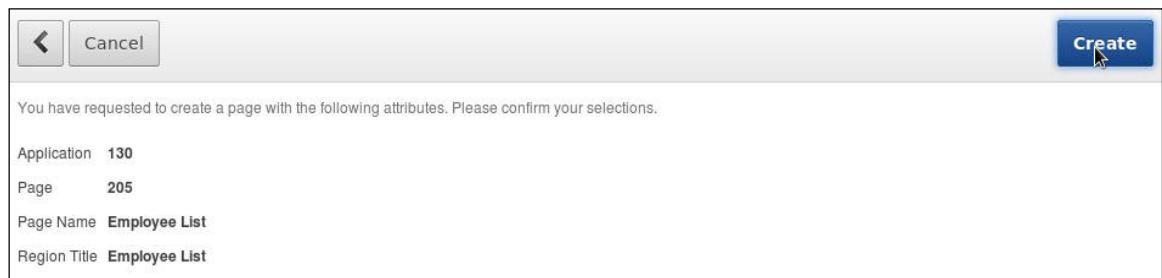
- 5) In the Region Source, enter the following SQL statement and click **Next >**.

```
SELECT * from OEHR_EMPLOYEES
```

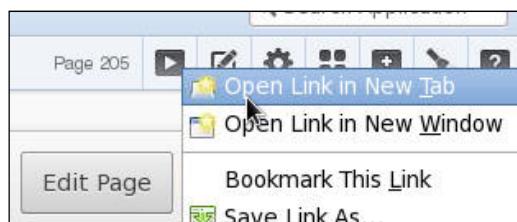
- 6) To display the last name as the text column, select **LAST_NAME** from the drop-down list for Text Column. To perform a search in the report, select **Enable Search**. For Search Type, select **Server: Like & Ignore Case** and for Search Column select **LAST_NAME**. Select the **Inset List** check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



- 7) Click **Create**.



- 8) Run the page on a new tab. Right-click **Run Page** and select **Open Link in New Tab**.



- 9) If the login window opens, enter `ora<n>` for Username and Password, and click **Login**.

The image shows a login interface. On the left, there are two input fields: 'Username' containing 'ora01' and 'Password' containing five asterisks ('*****'). Below these fields is a blue rounded rectangular button with the word 'Login' in white. A small hand cursor icon is positioned over the bottom-left corner of the 'Login' button.

- 10) Review the **List View Report**.

Employee List	
<input type="button" value="Logout"/>	
<input type="text" value=""/>	
King	
Kochhar	
De Haan	
Hunold	
Ernst	
Austin	
Pataballa	
Lorentz	
Greenberg	

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

Employee List	
<input type="button" value="Logout"/>	
<input type="text" value="Green"/> <input type="button" value="I"/>	
Greenberg	
Greene	

Practices for Lesson 6: Creating Forms

Chapter 6

Practices for Lesson 6: Overview

Practices Overview

There are four practices for this lesson. In these practices, you create a form on a table, a master detail form, a tabular form, and a form on a table with list view for mobile applications.

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 performed the previous practices or imported `LAB052_SOLN.sql`.

Tasks

- a. Create a form based on the `OEHR_CUSTOMERS` table. The form page and region should be titled Customer Details and contain the Customer 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 sequence.
 - 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.
- b. 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.

Practice 6-2: Creating a Master Detail Form

Overview

In this practice, you create a master detail form and make some modifications to it.

Assumptions

You have performed the previous practices.

Tasks

- a. On a new page called Master Detail Form, create a master detail form based on the `OEHR_ORDERS` and `OEHR_ORDER_ITEMS` tables.
 - 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 `OEHR_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.
- b. 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.
- c. On the Master Detail page, move the Order Status item to appear before the Customer ID in the Order Master region.
- d. On the “List of Orders (master report)” page, change the region title to “List of Orders.” Do not show the `PROMOTION_ID` column. Change the heading of Sales Rep ID to Sales Rep.

Practice 6-3: Creating a Tabular Form

Overview

In this practice, you create and manipulate a tabular form.

Assumptions

You have performed the previous practices.

Tasks

- a. 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 `OEHR_EMPLOYEES` table. The columns `EMAIL`, `JOB_ID`, and `COMMISSION_PCT` should be updatable columns. Change the element width of the `CUST_EMAIL` column to 40.

Practice 6-4: Create a Form on a Table for Mobile Applications

Overview

In this practice, you add a form page to the mobile application and link it from a list view page.

Assumptions

You have performed the practice 5-2 that adds a list view page to your mobile application.

Tasks

- a. Add a form page called Employee Detail to the application for mobile interface. Link this Employee Detail form page to the existing Employee List list view page.

Solution 6-1: Creating a Form on a Table

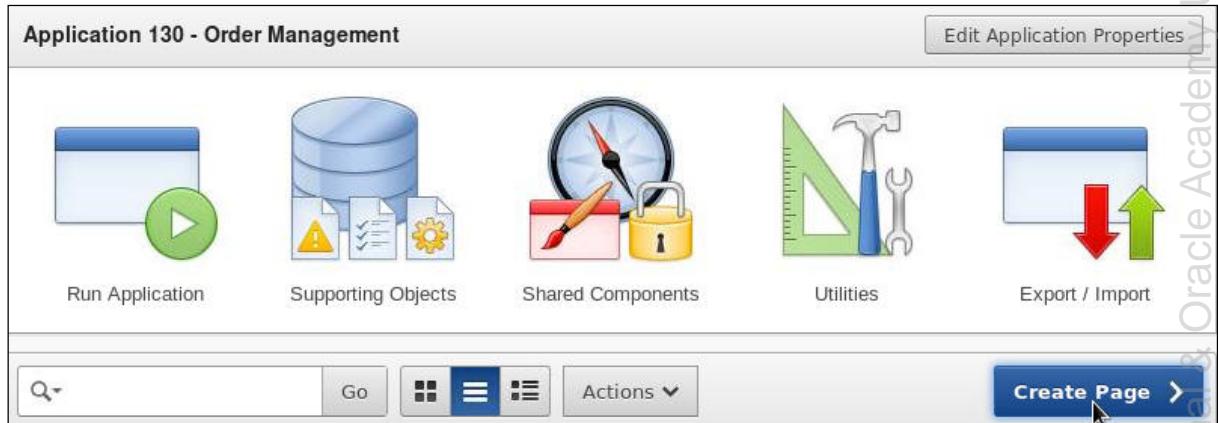
Overview

In this practice, you create a form based on a table, and then link this form from the Customer Report that was created previously.

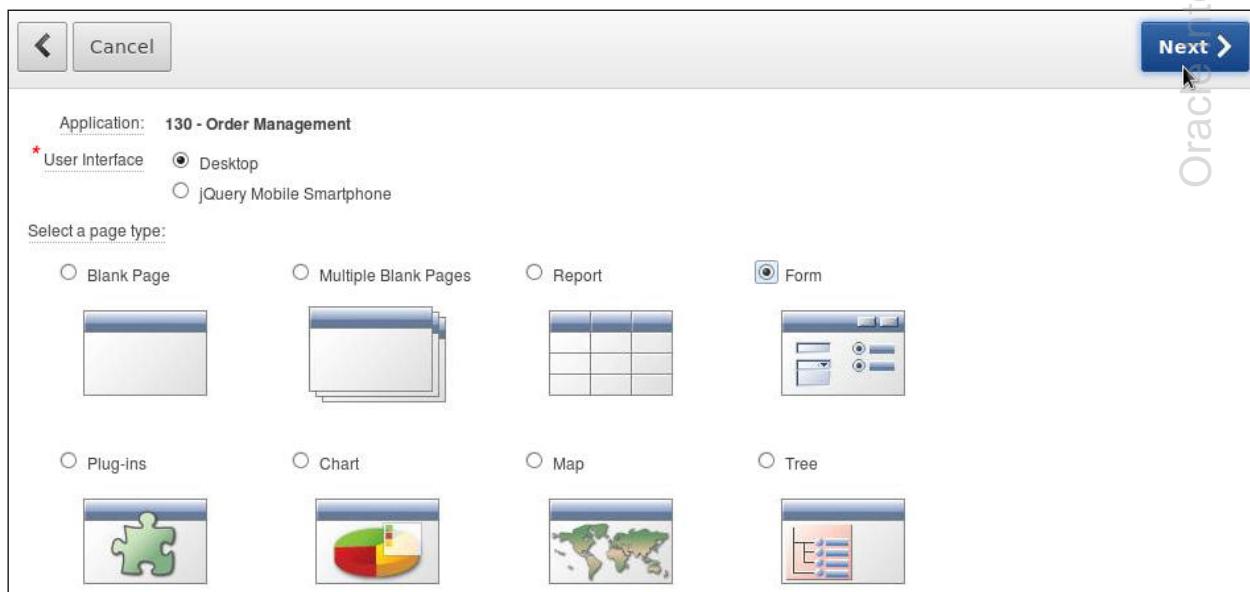
Tasks

- Create a form based on the `OEHR_CUSTOMERS` table. The form page and region should be titled Customer Details and contain the Customer First Name, Last Name, Email, and Manager ID fields. The following are the other requirements:
 - Ensure that the primary key has the value of `CUSTOMER_ID`.
 - The source of the primary key is an existing sequence.
 - The Create, Save, and Delete buttons are required.
 - Branch to Customers page for both: After Page Submit and Processing, and When Cancel Button Pressed.

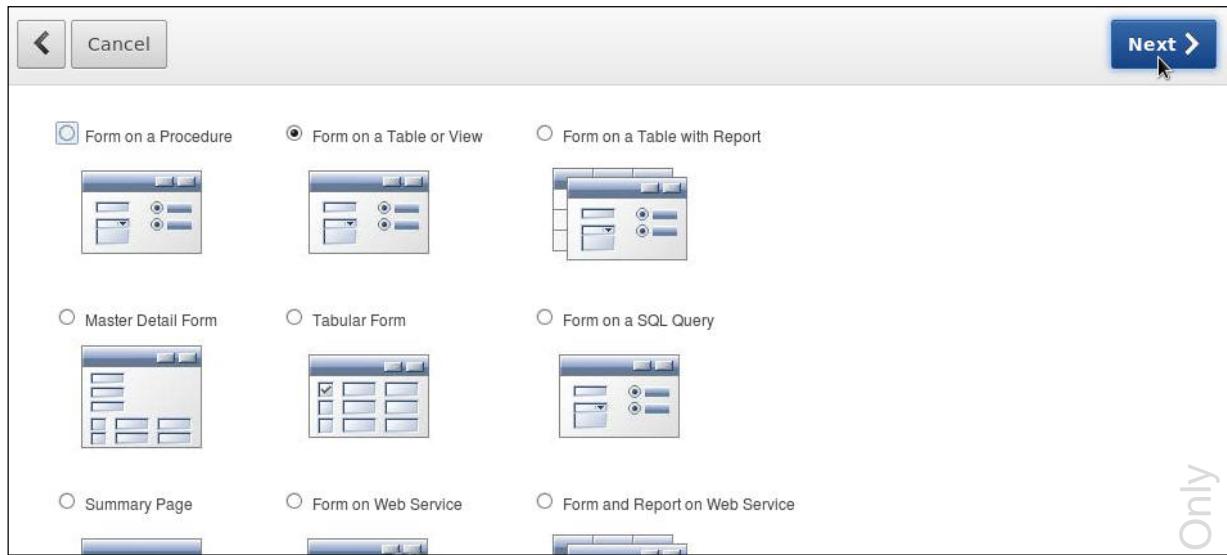
- On the Order Management application home page, click **Create Page >**



- Select the **Form** option and click **Next >**.



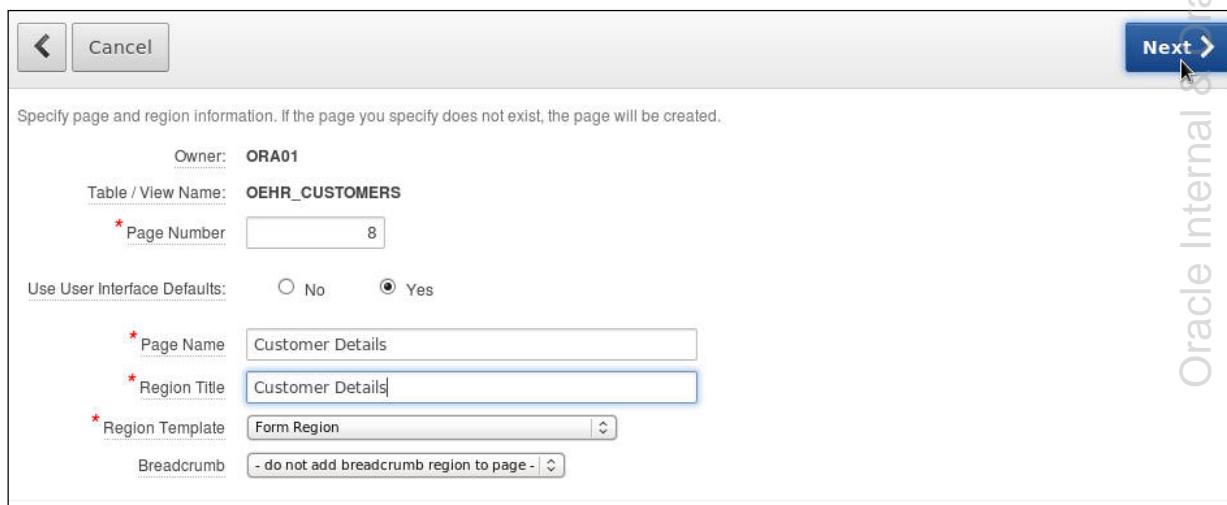
- 3) Accept the default **Form on a Table or View** option and click **Next >**.



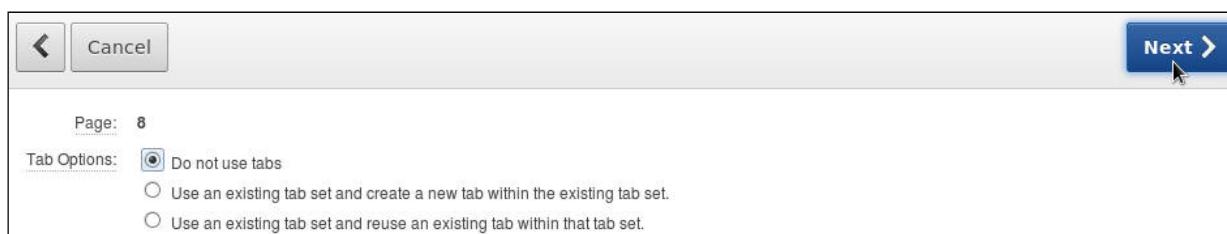
- 4) Ensure that your schema is selected. From the list of tables, select **OEHR_CUSTOMERS (table)**. Click **Next >**.



- 5) For Page Name and Region Title, enter **Customer Details** and click **Next >**.



- 6) Accept the default and click **Next >**.



- 7) For Primary Key Type, select Primary Key Column(s). Ensure that the primary key has a value of **CUSTOMER_ID** and click **Next >**.

Primary Key Type:

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

Primary Key Column 1: CUSTOMER_ID

Primary Key Column 2: - Select Primary Key 2 -

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

Source Type:

- Existing trigger
- Custom PL/SQL function
- Existing sequence

- 9) Make sure **CUST_FIRST_NAME**, **CUST_LAST_NAME**, **CUST_EMAIL**, and **ACCOUNT_MGR_ID** are on the right and ensure that the rest of the columns are on the left. Use the right arrow (>) and left arrow (<) to move the columns. Click **Next >**.

Select the columns to include on the form.

Page: 8
Owner: ORA01
Table / View Name: OEHR_CUSTOMERS

Select Column(s):

STREET_ADDRESS (Varchar2)	>	CUST_FIRST_NAME (Varchar2)
POSTAL_CODE (Varchar2)	>	CUST_LAST_NAME (Varchar2)
CITY (Varchar2)	>	CUST_EMAIL (Varchar2)
STATE_PROVINCE (Varchar2)	>	ACCOUNT_MGR_ID (Number)
COUNTRY_ID (Char)	<	
PHONE_NUMBER (Varchar2)	<	
NLS_LANGUAGE (Varchar2)	<	
NLS_TERRITORY (Varchar2)	<	
CREDIT_LIMIT (Number)	<	

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

The screenshot shows the configuration of a form page. At the top, there are buttons for back, cancel, and next. The next button is highlighted. Below the buttons, the following settings are displayed:

- Page:** 8
- Owner:** ORA01
- Table / View Name:** OEHR_CUSTOMERS
- Cancel Button Label:** Cancel
- Show Create Button:** Yes (selected)
- Create Button Label:** Create
- Show Save Button:** Yes (selected)
- Save Button Label:** Apply Changes
- Show Delete Button:** Yes (selected)
- Delete Button Label:** Delete

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

The screenshot shows the configuration of a form page. At the top, there are buttons for back, cancel, and next. The next button is highlighted. Below the buttons, the following settings are displayed:

- Page:** 8
- Owner:** ORA01
- Table / View Name:** OEHR_CUSTOMERS
- * After Page Submit and Processing Branch to Page:** 3 (with an up arrow icon)
- * When Cancel Button Pressed Branch to this Page:** 3 (with an up arrow icon)

- 12) Review the details and click **Create**.

The screenshot shows the configuration of a form page. At the top, there are buttons for back, cancel, and create. The create button is highlighted. Below the buttons, the following settings are displayed:

- You have requested to create a form on a table page with the following attributes. Please confirm your selections.**
- Application:** 130
- Page:** 8
- Page Name:** Customer Details
- Tab Set:** TS1
- Tab Label:** (empty)
- Region Title:** Customer Details
- Region Template:** Form Region
- Table / View Owner:** ORA01
- Table / View Name:** OEHR_CUSTOMERS
- Primary Key Column 1:** CUSTOMER_ID
- Primary Key Column 2:** (empty)
- Display Columns:**
 - CUST_FIRST_NAME
 - CUST_LAST_NAME
 - CUST_EMAIL
 - ACCOUNT_MGR_ID
- Process Options:** Insert,Update,Delete

- 13) Click **Run Page**.



- 14) If the Login page appears, enter your login credentials and click **Login**.

The screenshot shows the Oracle Application Express Login page. It has a title 'Login'. There are two input fields: 'Username' with the value 'ora01' and 'Password' with masked text. To the right of the password field is a blue 'Login' button with a white cursor pointing to it.

- 15) Review the form. You will link this form from the Customer Report. To return to the application home page, click the **Application <n>** link on the Developer toolbar.

The screenshot shows the Oracle Application Express Order Management page. The title is 'Order Management'. A navigation bar at the top includes 'Home' and 'Customers'. Below the title is a sub-header 'Customer Details'. There are four text input fields: 'Cust First Name *' (highlighted with a blue border), 'Cust Last Name *', 'Cust Email', and 'Account Mgr Id'. At the top right of the 'Customer Details' section are 'Cancel' and 'Create' buttons. At the bottom of the page is a navigation bar with links: Home, Application 130, Edit Page 8, Create, Session, Caching, View Debug, Debug, Show Edit Links, and Show Grid.

- b. 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.

- 1) On the Order Management application home page, click the **View Icons** icon.

Application 130 - Order Management

Edit Application Properties

Run Application Supporting Objects Shared Components Utilities Export / Import

View Icons

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Lock	Run
0	Global Page - jQuery Mobile Smartphone	44 hours ago	ora01	Global Page	jQuery Mobile Smartphone	Unassigned		
1	Home	44 hours ago	-	Home	Desktop	Unassigned		

- 2) Click the **Customers** icon.

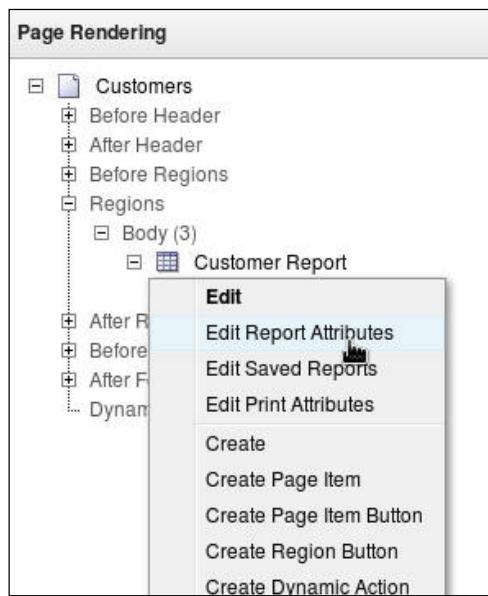
Application 130 - Order Management

Edit Application Properties

Run Application Supporting Objects Shared Components Utilities Export / Import

0 - Global Page - jQuery Mobile Smartphone
 1 - Home
 2 - Home
 3 - Customers
 4 - Employee Commission
 5 - Top Tier Salary

- 3) Under Regions, right-click the **Customer Report** subregion and select **Edit Report Attributes**.



- 4) Click the **Link Column** subtab.

	Heading	Type	Link	Display Text As
	CUSTOMER_ID	Customer Id	NUMBER	Display as Text (escape special characters)

- 5) Instead of linking to a single row view, you want to link to a custom target page. Select **Link to Custom Target** for Link Column.

Region Definition	Report Attributes	Saved Reports	Print Attributes
<p>Region Name: Customer Report</p> <p>Link Column</p> <p>Link Column <input style="border: 1px solid #ccc; padding: 2px 10px; margin-right: 10px;" type="button" value="Link to Single Row View"/> <input style="border: 1px solid #ccc; padding: 2px 10px;" type="button" value="Link to Custom Target"/></p> <p>Single Row View <input checked="" type="checkbox" value="Link to Single Row View"/> <input type="checkbox" value="Link to Custom Target"/> <input type="checkbox" value="Exclude Link Column"/> <input checked="" type="checkbox" value="Allow Displayed Columns"/></p> <p>Uniquely Identify Rows by <input style="border: 1px solid #ccc; padding: 2px 10px; margin-right: 10px;" type="button" value="ROWID"/> <input style="border: 1px solid #ccc; padding: 2px 10px;" type="button" value="Unique Column"/></p>			
<p>Cancel Apply Changes</p>			

- 6) Click the **[Icon 6]** quick pick for Link icon. Click the up arrow to the right of Page and select **Customer Details**. Click the icon to the right of **Item 1 Name**.

Link Column

Link Column Single Row View Uniquely Identify Rows by Unique Column	Link to Custom Target <input type="button" value="▼"/> <input checked="" type="checkbox"/> Allow Exclude Null Values <input checked="" type="checkbox"/> Allow Displayed Columns						
* Link Icon <input #image_prefix#e2.gif"="" >"="" alt="" type="text" value="  <div style="margin-top: 10px;"> [Icon 1] [Icon 2] [Icon 3] [Icon 4] [Icon 5] [Icon 6] [Icon 7] [Icon 8] </div>							
Link Attributes <input type="text"/>							
Target <input type="button" value="Page in this Application ▼"/> Request <input type="text"/>	Page <input type="text" value="8"/>  <input type="checkbox"/> Reset Pagination Clear Cache <input type="text"/> 						
<table border="0" style="width: 100%;"> <thead> <tr> <th style="width: 30%;">Name</th> <th style="width: 70%;">Value</th> </tr> </thead> <tbody> <tr> <td>Item 1 <input type="text"/></td> <td></td> </tr> <tr> <td>Item 2 <input type="text"/></td> <td></td> </tr> </tbody> </table>		Name	Value	Item 1 <input type="text"/>		Item 2 <input type="text"/>	
Name	Value						
Item 1 <input type="text"/>							
Item 2 <input type="text"/>							
<input type="button" value="Find Item"/>							

- 7) From the list in the pop-up window, click the link corresponding to `P<n>_CUSTOMER_ID`. Similarly, click the icon to the right of the Item 1 Value box. From the list in the pop-up window, click the `#CUSTOMER_ID#` link. When you have finished, click Apply Changes.

Region Name: Customer Report

Show All Column Attributes Column Groups Pagination Sorting Search Bar Download Link Column Advanced Attributes Icon View Detail View

Link Column ^

Link Column

Single Row View Allow Exclude Null Values Allow Displayed Columns

Uniquely Identify Rows by

Unique Column

* Link Icon

[Icon 1] [Icon 2] [Icon 3] [Icon 4] [Icon 5] [Icon 6] [Icon 7] [Icon 8]

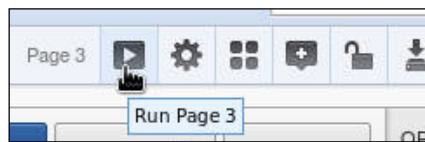
Link Attributes

Target Page Reset Pagination

Request Clear Cache

Name	Value	
Item 1	<input style="width: 150px; margin-right: 10px;" type="text" value="P8_CUSTOMER_ID"/> <input style="border: 1px solid #ccc; border-radius: 5px; padding: 2px 10px;" type="button" value="..."/>	<input style="width: 150px; margin-right: 10px;" type="text" value="#CUSTOMER_ID#"/> <input style="border: 1px solid #ccc; border-radius: 5px; padding: 2px 10px;" type="button" value="..."/>
Item 2	<input style="width: 150px; margin-right: 10px;" type="text"/> <input style="border: 1px solid #ccc; border-radius: 5px; padding: 2px 10px;" type="button" value="..."/>	

- 8) Click the Run icon.



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

Order Management						
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
	101	Constantin	Welles	514 W Superior St	46901	Kokon
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indian
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloom
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indian
	105	Matthias	MacGraw	4010 W 3rd St	47404	Bloom

- 10) 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 <n>** link on the Developer toolbar.

Order Management						
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indian
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloom
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indian
	105	Matthias	MacGraw	4010 W 3rd St	47404	Bloom

Customer Details

Cust First Name *	Harrison
Cust Last Name *	Pacino
Cust Email	Harrison.Pacino@ANI.COM
Account Mgr Id	145

Home Application 130 Edit Page 8 Create Session Caching View Debug Debug S

Solution 6-2: Creating a Master Detail Form

Overview

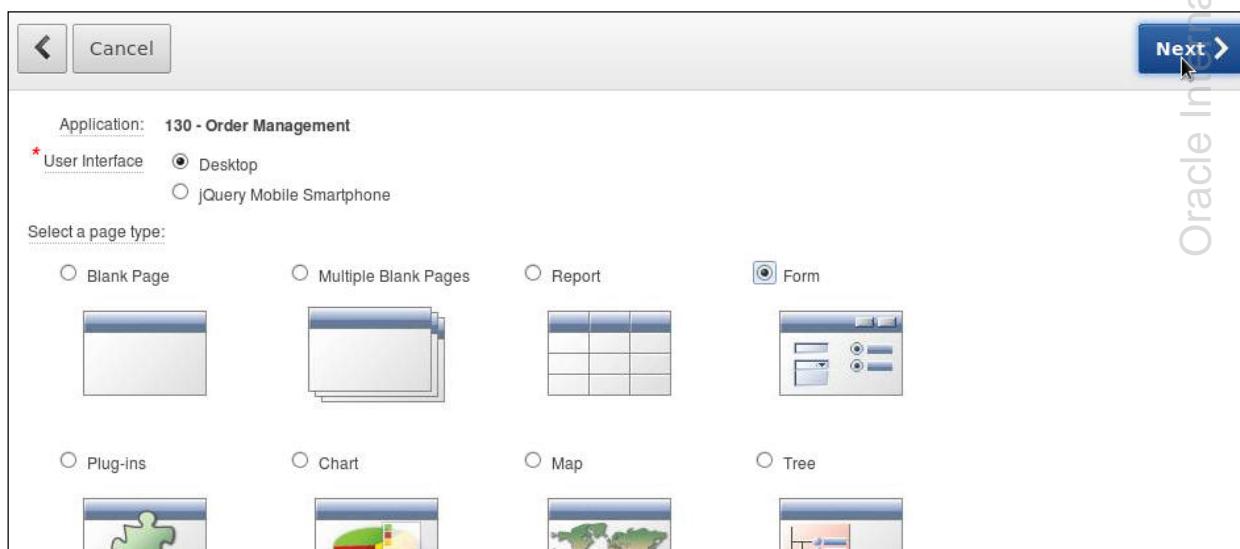
In this practice, you create a master detail form and make some modifications to it.

Tasks

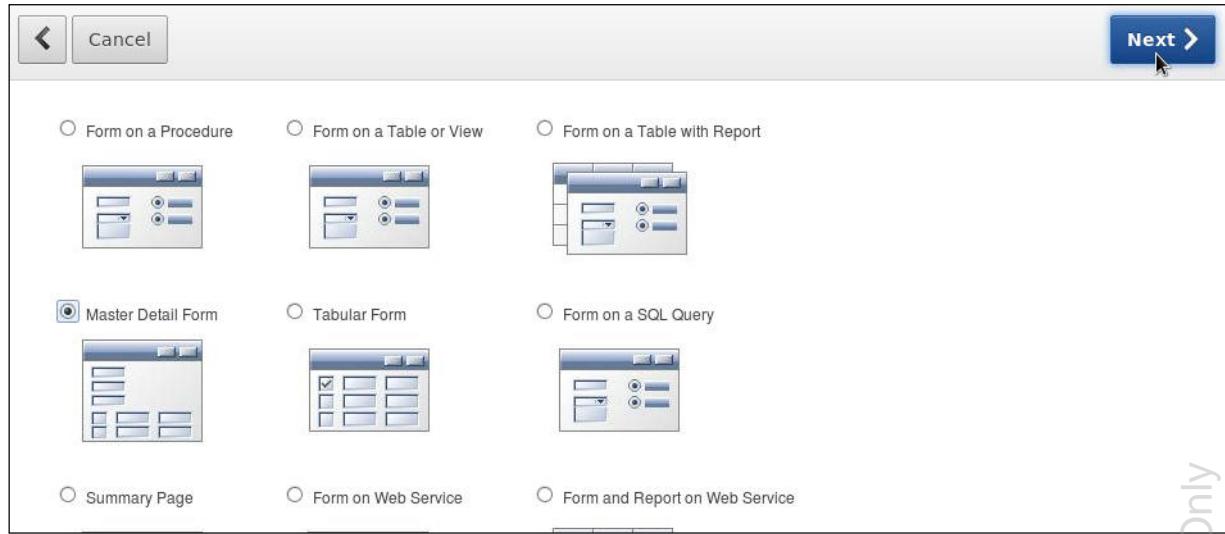
- a. On a new page called Master Detail Form, create a master detail form based on the **OEHR_ORDERS** and **OEHR_ORDER_ITEMS** tables.
 - Include a report page called List of Orders on the master table.
 - Display the master table and detail table forms on a single page.
 - Exclude the **ORDER_ID** column in the **OEHR_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.
- 1) On the Order Management application home page, click **Create Page >**.



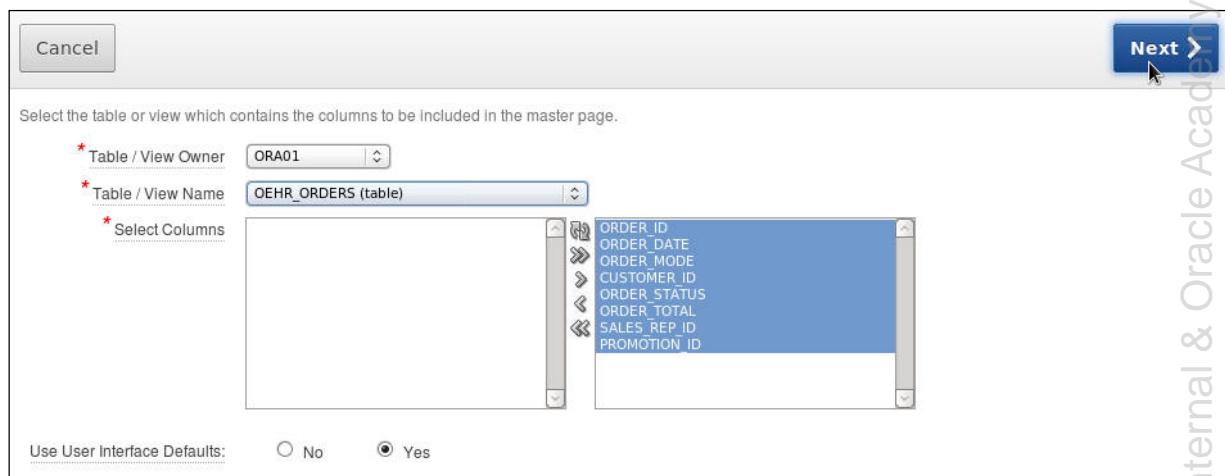
- 2) Select the **Form** option and click **Next >**.



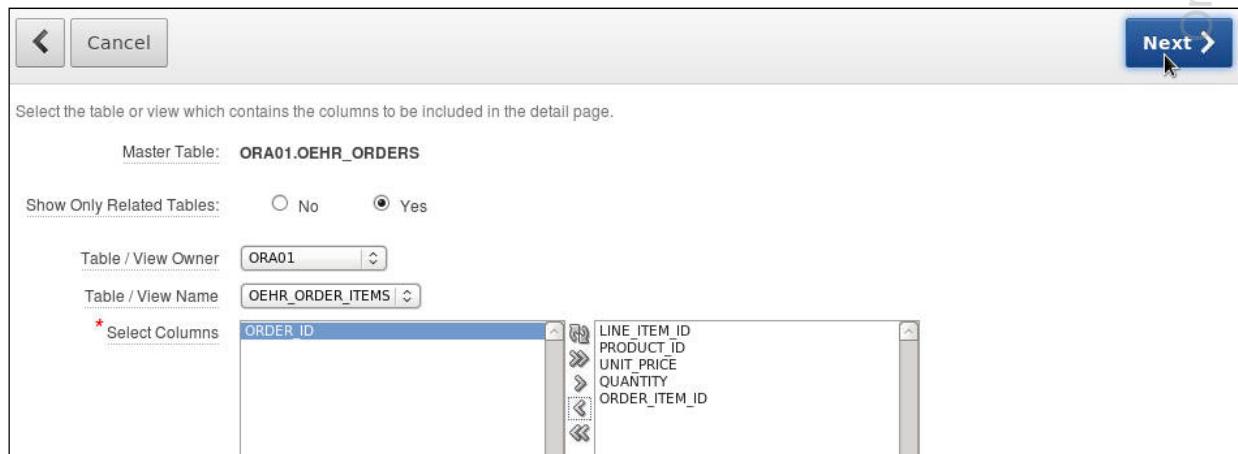
- 3) Select the **Master Detail Form** option and click **Next >**.



- 4) Ensure that your schema is selected. From the Table / View Name drop-down list, select **OEHR_ORDERS (table)**. Select all the columns in the **oehr_orders** table and **Next >**.



- 5) Ensure that your schema is selected. From the Table / View Name list, select **OEHR_ORDER_ITEMS**. Select the **ORDER_ID** column and move it to the left by using the left arrow (<). Click **Next >**.



- 6) 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 >**.

Master Table: ORA01.OEHR_ORDERS

* Primary Key Type: Select Primary Key Column(s)

* Primary Key Column 1: ORDER_ID

Primary Key Column 2: - Select Column -

Detail Table: ORA01.OEHR_ORDER_ITEMS

* Primary Key Type: Select Primary Key Column(s)

* Primary Key Column 1: ORDER_ITEM_ID

Primary Key Column 2: - Select Column -

- 7) For the Primary Key Source of the OEHR_ORDERS table, accept the default value of **Existing trigger**. Click **Next >**.

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.

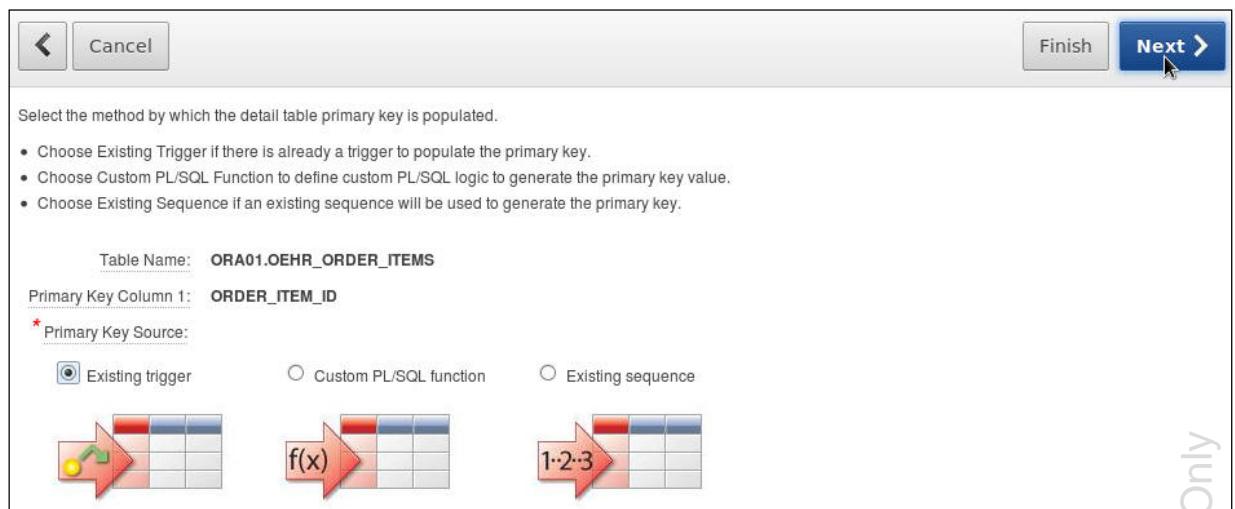
Table Name: ORA01.OEHR_ORDERS

Primary Key Column 1: ORDER_ID

* Primary Key Source:

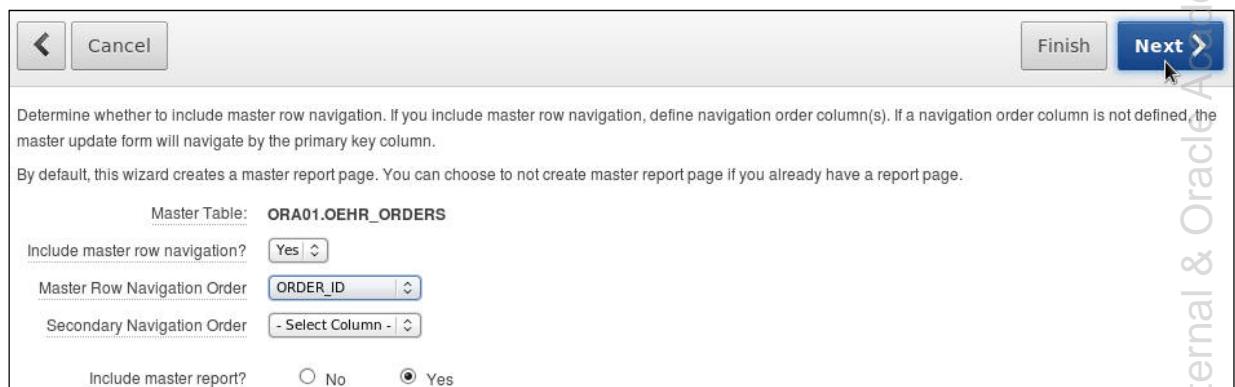
Existing trigger Custom PL/SQL function Existing sequence

- 8) For the Primary Key Source of the **OEHR_ORDER_ITEMS** table, accept the default value of **Existing trigger** and click **Next >**.

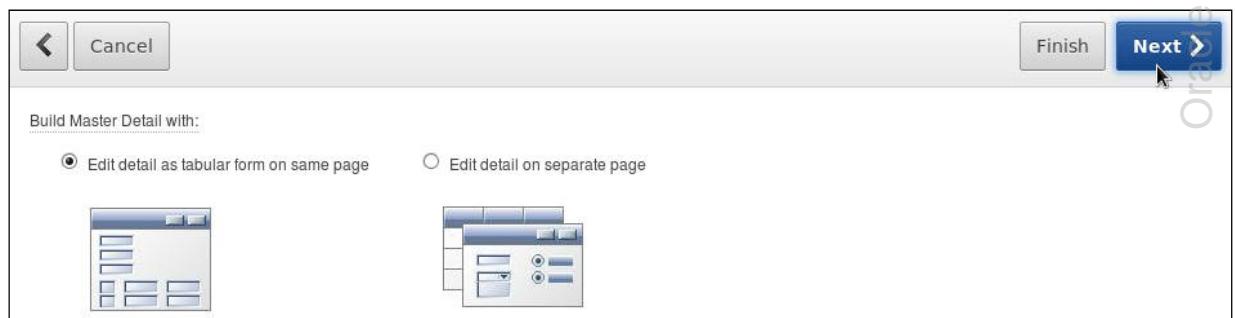


- 9) Select the following values and click **Next >**.

- Include master row navigation?: **Yes**
- Master Row Navigation Order: **ORDER_ID**
- Include master report?: **Yes**



- 10) Ensure that “Edit detail as tabular form on same page” is selected. Click **Next >**.



- 11) For Page Attributes, change the Page Title for OEHR_ORDERS on the master page to **List of Orders**, select **Breadcrumb** from the Breadcrumb drop-down list, and click **Next >**.

This page specifies master and detail page information. If the pages you specify do not exist, the pages will be created for you.

Master Table: ORA01.OEHR_ORDERS

Detail Table: ORA01.OEHR_ORDER_ITEMS

Master	* Page 9	* Page Title List of Orders	* Region Title OEHR_ORDERS
Detail	10	Master Detail	Edit OEHR_ORDERS
			OEHR_ORDER_ITEMS Detail

Breadcrumb Breadcrumb

Create Breadcrumb Entry

Entry Name (Master Report)	List of Orders
Entry Name (Master Detail Page)	Master Detail
Parent Entry	No parent breadcrumb entry [No parent breadcrumb entry]

- 12) Accept the default and click **Next >**.

Tab Options:

- Do not use tabs
- Use an existing tab set and create a new tab within the existing tab set.
- Use an existing tab set and reuse an existing tab within that tab set.

13) Click **Create**.

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

Application 130

Master Table ORA01.OEHR_ORDERS

Master Display Column(s)
ORDER_ID
ORDER_DATE
ORDER_MODE
CUSTOMER_ID
ORDER_STATUS
ORDER_TOTAL
SALES REP ID
PROMOTION_ID

Detail Table ORA01.OEHR_ORDER_ITEMS

Detail Display Column(s)
LINE_ITEM_ID
PRODUCT_ID
UNIT PRICE
QUANTITY
ORDER_ITEM_ID

Navigate master record by ORDER_ID

Include master report? Yes

Master Detail Layout Two page master detail

Tab Set TS1

14) To view the master detail form, click the **Run Page** button.

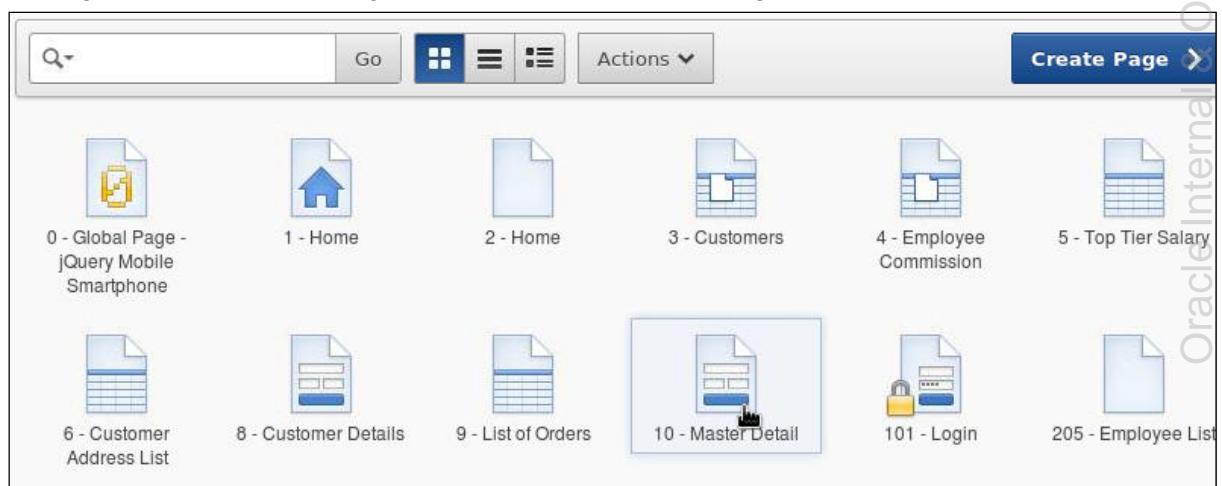
The master detail pages have been created successfully.

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

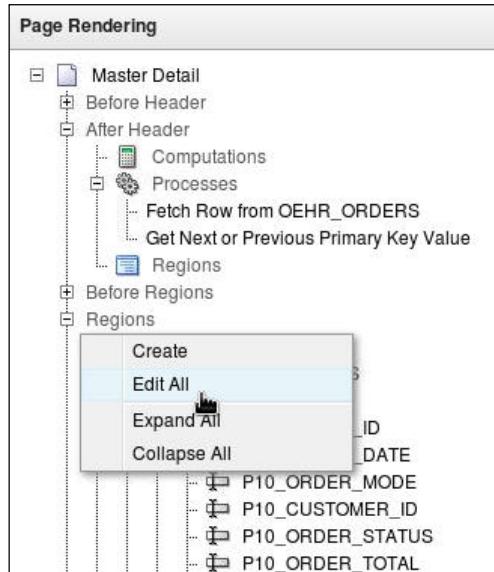
OEHR_ORDERS									Create
Edit	Order Date	Order Mode	Customer Id	Order Status	Order Total	Sales Rep Id	Promotion Id		
	16-AUG-99 02.34.12.234359 PM	direct	101	0	78279.6	153			
	19-NOV-99 03.41.54.696211 PM	direct	102	1	42283.2	154			
	02-OCT-99 04.49.34.678340 PM	direct	103	1	6653.4	154			
	14-JUL-00 05.18.23.234567 PM	direct	104	0	46257	155			
	08-JAN-00 06.03.12.654278 PM	direct	105	2	7826	155			
	14-MAY-00 07.59.08.843679 PM	direct	106	3	23034.6	156			
	31-AUG-99 08.53.06.008765 PM	direct	107	3	70576.9	156			
	08-JAN-98 09.19.44.123456 PM	direct	108	5	59872.4	158			
	10-FEB-00 10.22.35.564789 PM	direct	109	5	21863	158			

- 16) The Master detail form is displayed. Review the information. Click **Application <n>** on the Developer toolbar.

- b. 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.
- 1) You want to make some changes to the master detail form. On the Order Management application page, click the **Master Detail** page.



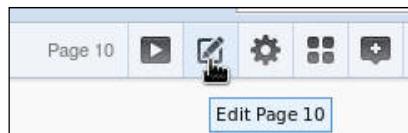
- 2) Right-click **Regions** and select **Edit All**.



- 3) Change the Region Name for the Oehr Orders region to **Order Master** and the Region Name for Oehr Order Items details to **Order Details**, and click **Apply Changes**.

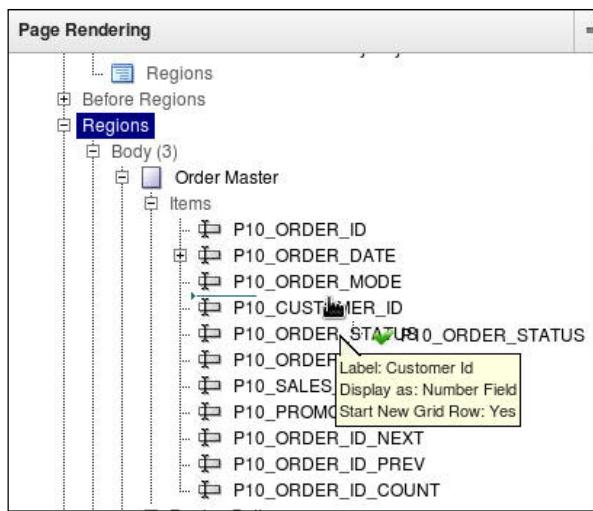
Regions							Delete Multiple Regions	Utilities	History	
							Page <input type="text" value="10"/> ▲ Go	Apply Changes ◀ ▶		
	Sequence	Region Name	Template			Type	Items	Buttons	Display Point	
	0	Order Master	26. Reports Region			HTML Text	11	6	Page Template	
	15	Order Details	26. Reports Region			SQL Query (updateable report)	0	2	Page Template	
	10	Breadcrumb	26. Breadcrumb Region			BREADCRUMB Breadcrumb	0	0	Page Template	

- 4) Click the **Edit Page** icon in the top-right corner of the window.

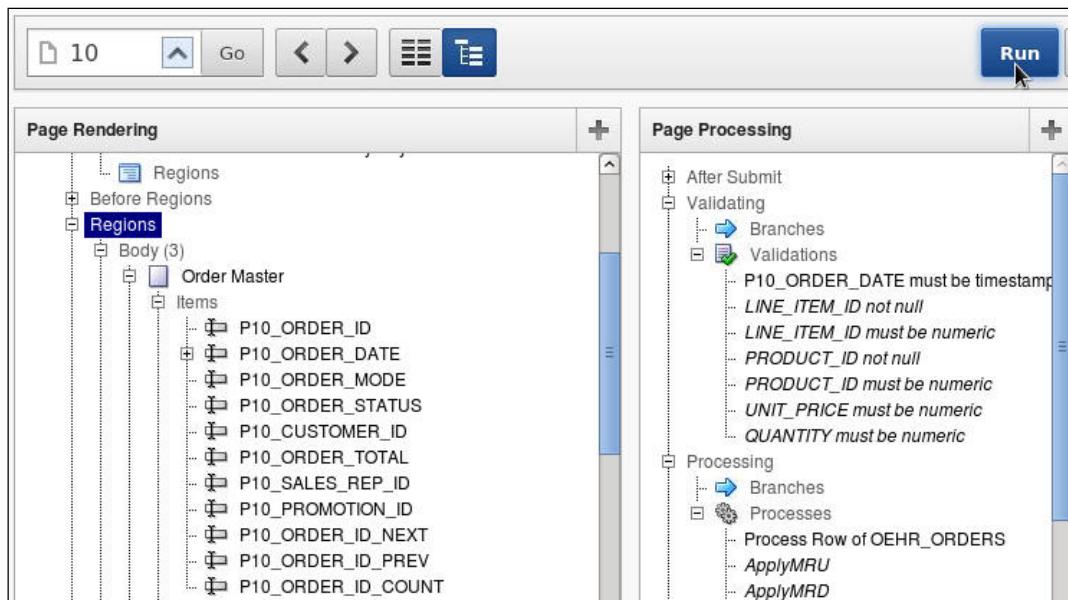


- c. On the Master Detail page, move the Order Status item to appear before the Customer ID in the Order Master region.

- 1) You can reorder items very easily by dragging them. Drag P<n>_ORDER_STATUS to above P<n>_CUSTOMER_ID.



- 2) Notice that the item is moved. Click the Run Page icon.



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

The screenshot shows the 'Order Master' form with the following data:

Order Date *	19-NOV-1999
Order Mode	direct
Order Status	1
Customer Id *	102
Order Total	42283.2
Sales Rep Id	154
Promotion Id	

Below the form, a message says "44 of 105".

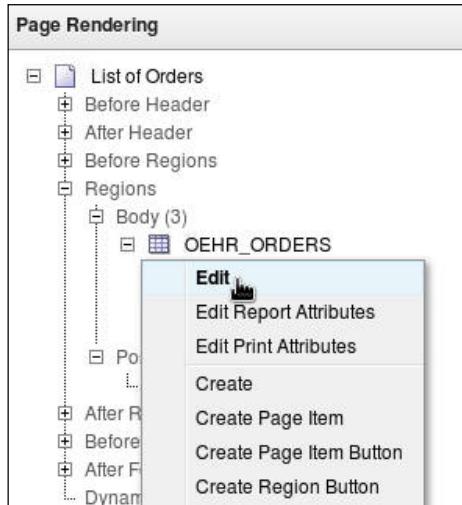
- d. On the List of Orders (master report) page, change the region title to List of Orders. Do not show the PROMOTION_ID column. Change the heading of Sales Rep ID to Sales Rep.
- 1) Click the **Edit Page <n>** link on the Developer toolbar.

The screenshot shows the 'List of Orders' master report with the following table:

Edit	Order Date	Order Mode	Customer Id	Order Status	Order Total	Sales Rep Id	Promotion Id
	16-AUG-99 02.34.12.234359 PM	direct	101	0	78279.6	153	
	19-NOV-99 03.41.54.696211 PM	direct	102	1	42283.2	154	
	02-OCT-99 04.49.34.678340 PM	direct	103	1	6653.4	154	
	14-JUL-00 05.18.23.234567 PM	direct	104	0	46257	155	
	08-JAN-00 06.03.12.654278 PM	direct	105	2	7826	155	
	14-MAY-00 07.59.08.843679 PM	direct	106	3	23034.6	156	

At the bottom, there is a toolbar with links: Home, Application 130, Edit Page 9, Create, Session, Caching, View Debug, Debug, Show E.

- 2) Under Regions, right-click **OEHR_ORDERS** and select **Edit**.



- 3) Click the Show All tab if not already selected. Change the Title to **List of Orders** and click the **Report Attributes** tab.

Region Definition	Report Attributes	Query Definition	Print Attributes
	Report Attributes		Cancel Delete App
Region: 2 of 2 Name: List of Orders			
<input type="button" value="Show All"/> <input type="button" value="Identification"/> <input type="button" value="Source"/> <input type="button" value="User Interface"/> <input type="button" value="Grid Layout"/> <input type="button" value="Attributes"/> <input type="button" value="Header and Footer"/> <input type="button" value="Conditions"/>			
Identification <p>Page: 9 List of Orders</p> <p>Title: List of Orders</p> <p>Type: SQL Query (Structured Query)</p>			
Source			

- 4) For the **PROMOTION_ID** column, deselect the Show check box. Change the Heading for **SALES REP_ID** to **Sales Rep**, and click **Apply Changes**.

Region Name: List of Orders

Cancel **Apply Changes**

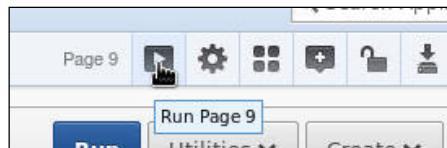
Show All Column Attributes Layout and Pagination Sorting Messages Report Export Break Formatting External Processing

Column Attributes

Headings Type: Column Names Column Names (InitCap) Custom PL/SQL None

Alias	Link	Edit	Heading	Column Width	Column Alignment	Heading Alignment	Show	Sum	Sort	Seq
ORDER_ID	<input checked="" type="checkbox"/>	<input type="button" value="Edit"/>			right ▲▼	center ▲▼	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
ORDER_DATE			Order Date		left ▲▼	center ▲▼	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
ORDER_MODE			Order Mode		left ▲▼	center ▲▼	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
CUSTOMER_ID			Customer Id		right ▲▼	center ▲▼	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
ORDER_STATUS			Order Status		right ▲▼	center ▲▼	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
ORDER_TOTAL			Order Total		right ▲▼	center ▲▼	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
SALES REP_ID			Sales Rep		right ▲▼	center ▲▼	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
PROMOTION_ID			Promotion Id		right ▲▼	center ▲▼	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-

- 5) To run the page, click the **Run** button.



- 6) Review the report. Note that **PROMOTION_ID** is no longer shown, the headings for Sales Rep have changed, and the region title has changed to List of Orders. Click the **Application <n>** link on the Developer toolbar.

List of Orders							
Edit	Order Date	Order Mode	Customer Id	Order Status	Order Total	Sales Rep	
	16-AUG-99 02.34.12.234359 PM	direct	101	0	78279.6	153	
	19-NOV-99 03.41.54.696211 PM	direct	102	1	42283.2	154	
	02-OCT-99 04.49.34.678340 PM	direct	103	1	6653.4	154	
	14-JUL-00 05.18.23.234567 PM	direct	104	0	46257	155	
	08-JAN-00 06.03.12.654278 PM	direct	105	2	7826	155	
	14-MAY-00 07.59.08.843679 PM	direct	106	3	23034.6	156	

Home Application 130 Edit Page 9 Create Session Caching View Debug Det

Solution 6-3: Creating a Tabular Form

Overview

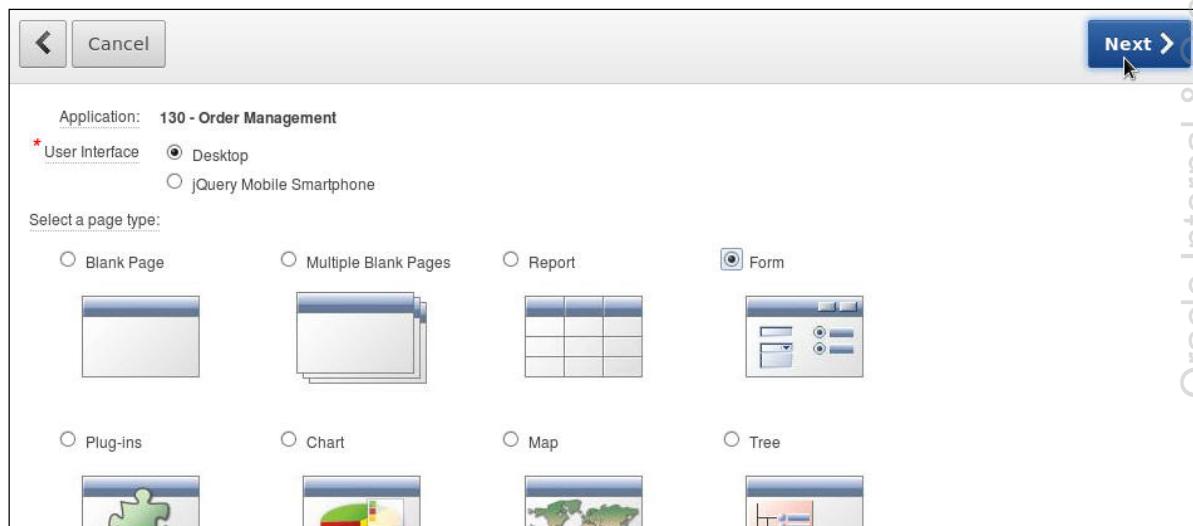
In this solution, you create and manipulate a tabular form.

Tasks

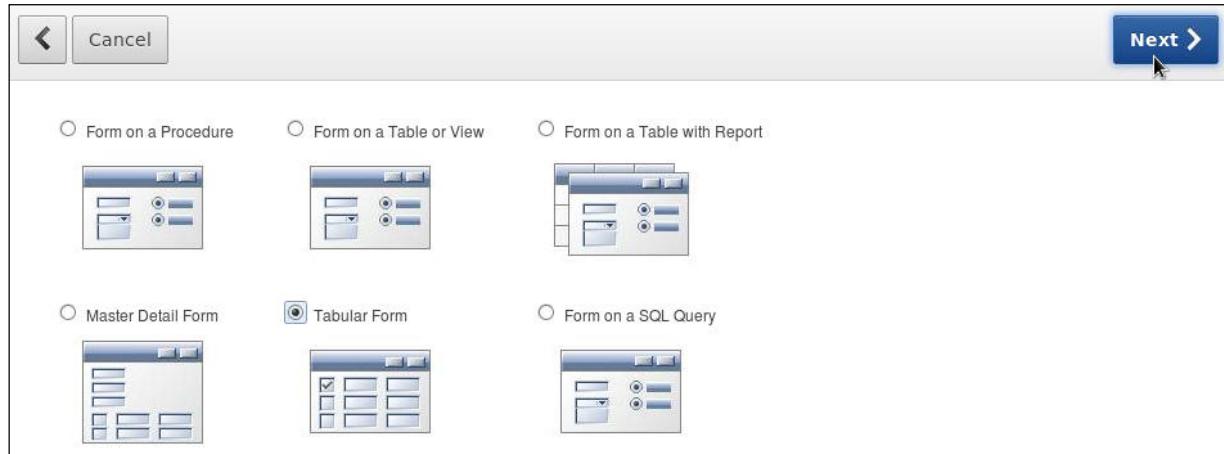
- a. On a new page called Update Employee Information, create a tabular form that displays the `FIRST_NAME`, `LAST_NAME`, `EMAIL`, `JOB_ID`, and `COMMISSION_PCT` columns from the `OEHR_EMPLOYEES` table. The `EMAIL`, `JOB_ID`, and `COMMISSION_PCT` columns should be updatable columns. Change the element width of the `CUST_EMAIL` column to 40.
 - 1) From the Order Management application home page, click **Create Page >**.



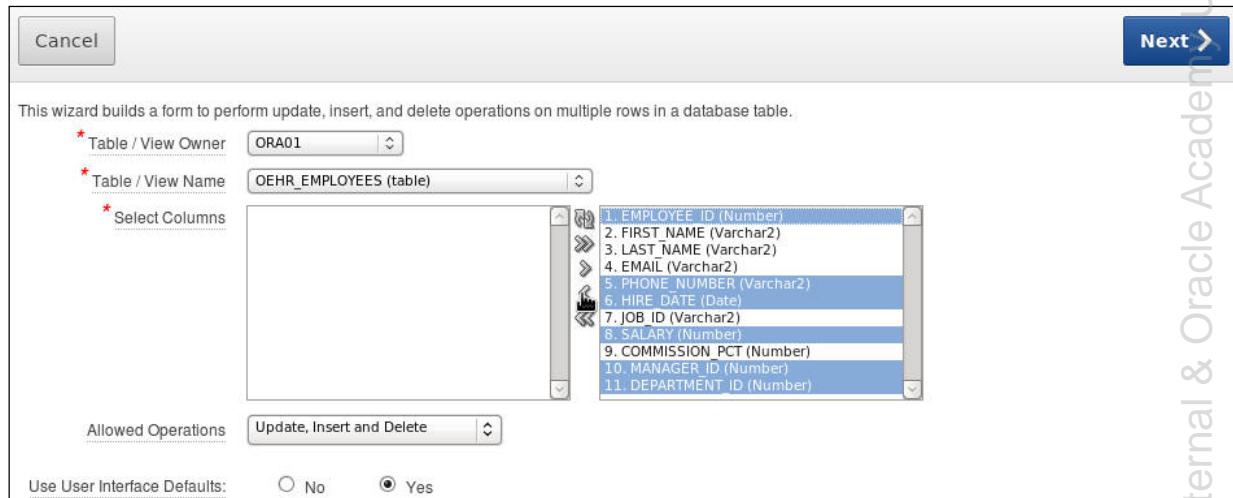
- 2) For the page type, select the **Form** option and click **Next >**.



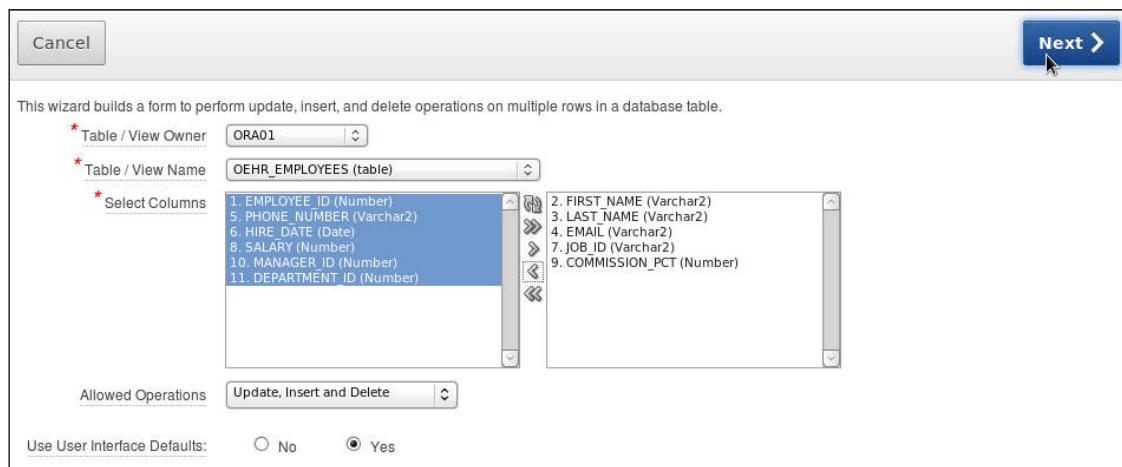
- 3) Select the **Tabular Form** option and click **Next >**.



- 4) Ensure that your schema is selected in the Table / View Owner field. For the Table / View Name field, select **OEHR_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 (<).



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



- 6) For Primary Key Type, select **Select Primary Key Column(s)**. Select **EMPLOYEE_ID** for Primary Key Column 1 and click **Next >**.

Owner: ORA01
Table Name: OEHR_EMPLOYEES
Primary Key Type: Managed by Database (ROWID) Select Primary Key Column(s)
Primary Key Column 1: 1. EMPLOYEE_ID (Number)
Primary Key Column 2: - Select Column -

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

Table Owner: ORA01
Table Name: OEHR_EMPLOYEES
Primary Key 1 Defaults
Primary Key Column 1: EMPLOYEE_ID
Source Type: Existing trigger Custom PL/SQL function Existing sequence

- 8) For Updatable Columns, you want all the columns to be updatable except FIRST_NAME and LAST_NAME. Select **FIRST_NAME** and **LAST_NAME**, and click the left arrow (<).

Owner: ORA01
Table Name: OEHR_EMPLOYEES
Primary Key Column 1: EMPLOYEE_ID
Updatable Columns: FIRST_NAME (Varchar2), LAST_NAME (Varchar2), EMAIL (Varchar2), JOB_ID (Varchar2), COMMISSION_PCT (Number)

9) Click **Next >**.

Owner: ORA01
Table Name: OEHR_EMPLOYEES
Primary Key Column 1: EMPLOYEE_ID
* Updatable Columns: FIRST_NAME (Varchar2), LAST_NAME (Varchar2)

10) On the “Identify page and Region Attributes” page, enter **Update Employee Information** for both Page Name and Region Title. Click **Next >**.

If the page you specify does not exist, the page will be created.
Owner: ORA01
Table Name: OEHR_EMPLOYEES
* Page: 13
* Page Name: Update Employee Information
* Region Title: Update Employee Information
* Region Template: Reports Region
Report Template: template: Standard
Breadcrumb: - do not add breadcrumb region to page -

11) Ensure that the **Do not use tabs** option is selected and click **Next >**.

Page: 13
Tab Options: Do not use tabs
 Use an existing tab set and create a new tab within the existing tab set.
 Use an existing tab set and reuse an existing tab within that tab set.

12) For Button Labels and Branches, accept the defaults and click **Next >**.

Page: 13
Owner: ORA01
Table Name: OEHR_EMPLOYEES
Cancel Button Label: Cancel Branch to Page: 1
Submit Button Label: Submit Branch to Page: 13
Delete Button Label: Delete
Add Row Button Label: Add Row

13) Click **Create**.

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

Application	130
Page	13
Page Name	Update Employee Information
Region Title	Update Employee Information
Tab Set	TS1
Tab Label	ORA01
Table Name	OEHR_EMPLOYEES
Columns	FIRST_NAME LAST_NAME EMAIL JOB_ID COMMISSION_PCT
Updateable Columns	EMAIL JOB_ID COMMISSION_PCT
Primary Key Column	EMPLOYEE_ID

14) Click **Run Page** to view your new form.

The tabular form has been created successfully.

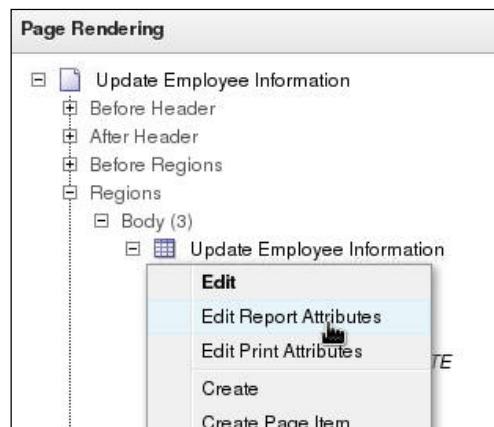
15) You notice that the email field is smaller than required. Click the **Edit Page <n>** link on the Developer toolbar.

	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	

row(s) 1 - 10 of 107

Home Application 130 Edit Page 13 Create Session Caching View Debug Debug Show Edit Links Show Grid

- 16) Under Regions, right-click **Update Employee Information** and select **Edit Report Attributes**.



- 17) Click the Edit icon to the left of **EMAIL**.

Region Definition		Report Attributes	Print Attributes																																																																																																								
Region Name: Update Employee Information					<input type="button" value="Cancel"/> <input type="button" value="Apply Changes"/>																																																																																																						
<input type="button" value="Show All"/> <input type="button" value="Column Attributes"/> <input type="button" value="Layout and Pagination"/> <input type="button" value="Sorting"/> <input type="button" value="Messages"/> <input type="button" value="Report Export"/> <input type="button" value="Break Formatting"/> <input type="button" value="External Processing"/>																																																																																																											
Column Attributes																																																																																																											
Headings Type: <input type="radio"/> Column Names <input type="radio"/> Column Names (InitCap) <input checked="" type="radio"/> Custom <input type="radio"/> PL/SQL <input type="radio"/> None																																																																																																											
<table border="1"> <thead> <tr> <th>Alias</th> <th>Link</th> <th>Edit</th> <th>Heading</th> <th>Column Width</th> <th>Column Alignment</th> <th>Heading Alignment</th> <th>Show</th> <th>Sum</th> <th>Sort</th> <th>Sort Sequence</th> <th> </th> </tr> </thead> <tbody> <tr> <td>[row selector]</td> <td></td> <td><input checked="" type="checkbox"/></td> <td>Select Row</td> <td><input type="text"/></td> <td><input type="button" value="left"/> <input type="button" value="center"/></td> <td><input type="button" value="center"/> <input type="button" value="right"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> </tr> <tr> <td>EMPLOYEE_ID</td> <td></td> <td><input checked="" type="checkbox"/></td> <td>Employee Id</td> <td><input type="text"/></td> <td><input type="button" value="left"/> <input type="button" value="center"/></td> <td><input type="button" value="center"/> <input type="button" value="right"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> </tr> <tr> <td>FIRST_NAME</td> <td></td> <td><input checked="" type="checkbox"/></td> <td>First Name</td> <td><input type="text"/></td> <td><input type="button" value="left"/> <input type="button" value="center"/></td> <td><input type="button" value="center"/> <input type="button" value="right"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> </tr> <tr> <td>LAST_NAME</td> <td></td> <td><input checked="" type="checkbox"/></td> <td>Last Name</td> <td><input type="text"/></td> <td><input type="button" value="left"/> <input type="button" value="center"/></td> <td><input type="button" value="center"/> <input type="button" value="right"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> </tr> <tr> <td>EMAIL</td> <td></td> <td><input checked="" type="checkbox"/></td> <td>Email</td> <td><input type="text"/></td> <td><input type="button" value="left"/> <input type="button" value="center"/></td> <td><input type="button" value="center"/> <input type="button" value="right"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> </tr> <tr> <td>JOB_ID</td> <td></td> <td><input checked="" type="checkbox"/></td> <td>Job Id</td> <td><input type="text"/></td> <td><input type="button" value="left"/> <input type="button" value="center"/></td> <td><input type="button" value="center"/> <input type="button" value="right"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> </tr> <tr> <td>COMMISSION_PCT</td> <td></td> <td><input checked="" type="checkbox"/></td> <td>Commission Pct</td> <td><input type="text"/></td> <td><input type="button" value="left"/> <input type="button" value="center"/></td> <td><input type="button" value="center"/> <input type="button" value="right"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> <td><input type="button" value="up"/> <input type="button" value="down"/></td> </tr> </tbody> </table> <p>When moving the last column further down, it will show up as the first column of your report. When moving the first column up, it will be moved to the end of your report.</p>												Alias	Link	Edit	Heading	Column Width	Column Alignment	Heading Alignment	Show	Sum	Sort	Sort Sequence		[row selector]		<input checked="" type="checkbox"/>	Select Row	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>	EMPLOYEE_ID		<input checked="" type="checkbox"/>	Employee Id	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>	FIRST_NAME		<input checked="" type="checkbox"/>	First Name	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>	LAST_NAME		<input checked="" type="checkbox"/>	Last Name	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>	EMAIL		<input checked="" type="checkbox"/>	Email	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>	JOB_ID		<input checked="" type="checkbox"/>	Job Id	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>	COMMISSION_PCT		<input checked="" type="checkbox"/>	Commission Pct	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>
Alias	Link	Edit	Heading	Column Width	Column Alignment	Heading Alignment	Show	Sum	Sort	Sort Sequence																																																																																																	
[row selector]		<input checked="" type="checkbox"/>	Select Row	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>																																																																																																
EMPLOYEE_ID		<input checked="" type="checkbox"/>	Employee Id	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>																																																																																																
FIRST_NAME		<input checked="" type="checkbox"/>	First Name	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>																																																																																																
LAST_NAME		<input checked="" type="checkbox"/>	Last Name	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>																																																																																																
EMAIL		<input checked="" type="checkbox"/>	Email	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>																																																																																																
JOB_ID		<input checked="" type="checkbox"/>	Job Id	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>																																																																																																
COMMISSION_PCT		<input checked="" type="checkbox"/>	Commission Pct	<input type="text"/>	<input type="button" value="left"/> <input type="button" value="center"/>	<input type="button" value="center"/> <input type="button" value="right"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="up"/> <input type="button" value="down"/>	<input type="button" value="up"/> <input type="button" value="down"/>																																																																																																

- 18) Select the **Column Attributes** subtab and enter 40 for element width and click **Apply Changes**.

Column Attributes: EMAIL

Show All | Column Definition | **Column Attributes** | List of Values | Tabular Form Attributes | Column Formatting | Column Link | Authorization | Conditional Disp...

Column Attributes

Display As: Text Field

Number / Date Format:

Numeric format mask: 999G999G999G999G999

Graphical formatting for percentages, whole numbers between 0 and 100

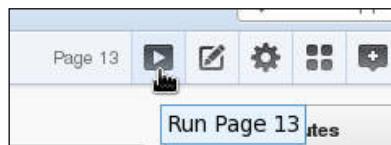
Field Template: - render form field without template -

Element Width: 40

Element CSS Classes:

Element Attributes:

- 19) Run the form to see the results.



- 20) Notice that the length of the Cust Email column has changed. Click **Application <n>** on the Developer toolbar.

Update Employee Information

<input type="checkbox"/>	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	

row(s) 1 - 10 of 107

Home Application 130 Edit Page 13 Create Session Cache http://localhost:8080/apex/f?p=4000:4...O_

Solution 6-4: Create a Form on a Table for Mobile Applications

Overview

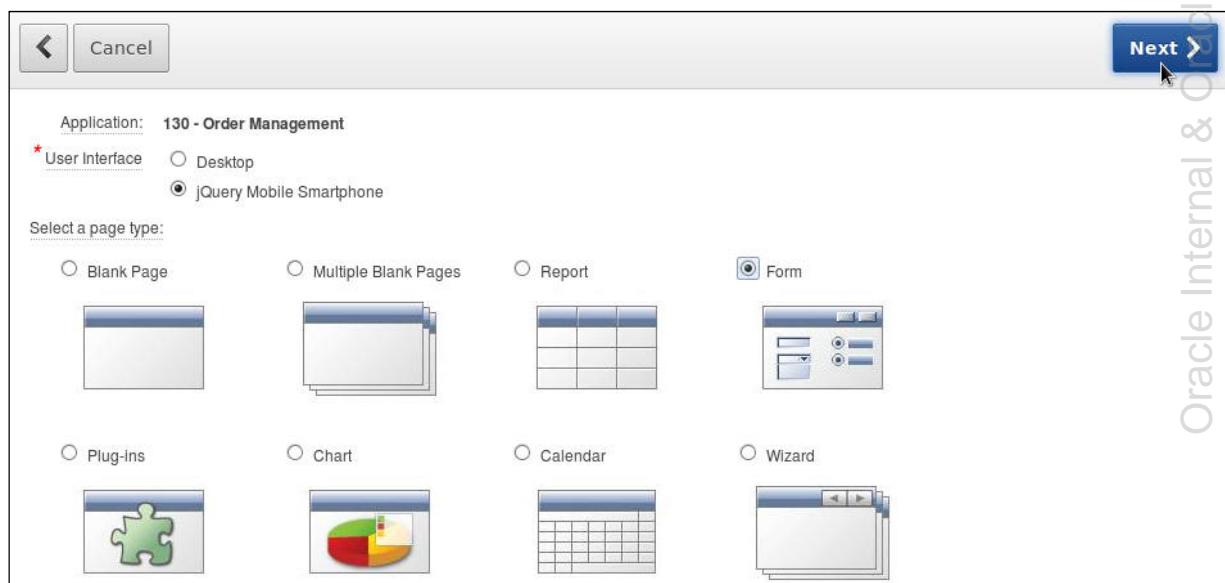
In this solution, you add a form page to the mobile application and link it from a list view page.

Tasks

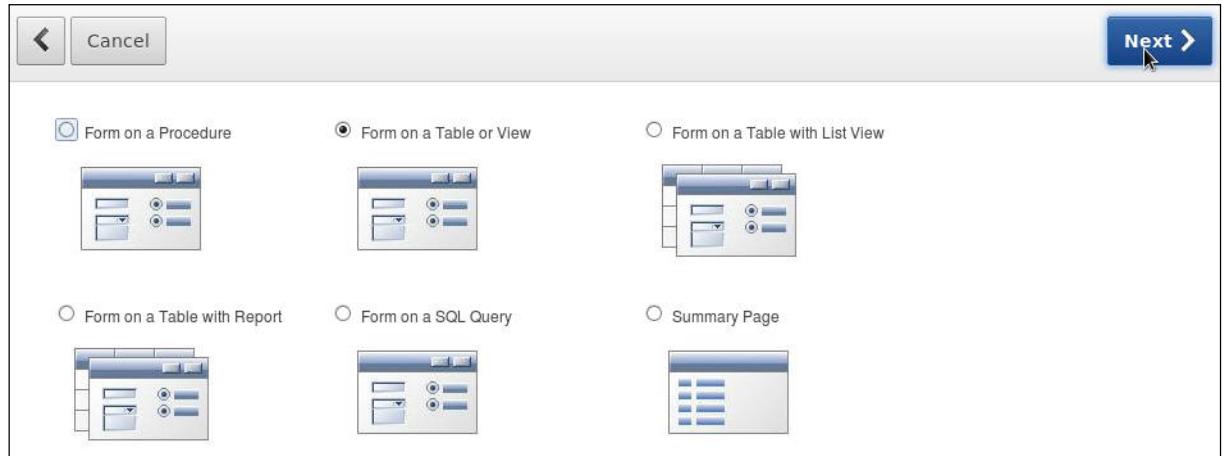
- a. Add a form page called Employee Detail to the application for mobile interface. Link this Employee Detail form page to the existing Employee List list view page.
 - 1) Navigate to the Application Builder Home page and click **Create Page >**.



- 2) Select **jQuery Mobile Smartphone** for User Interface. Select **Form** and click **Next >**.



- 3) Select the default and click **Next >**.



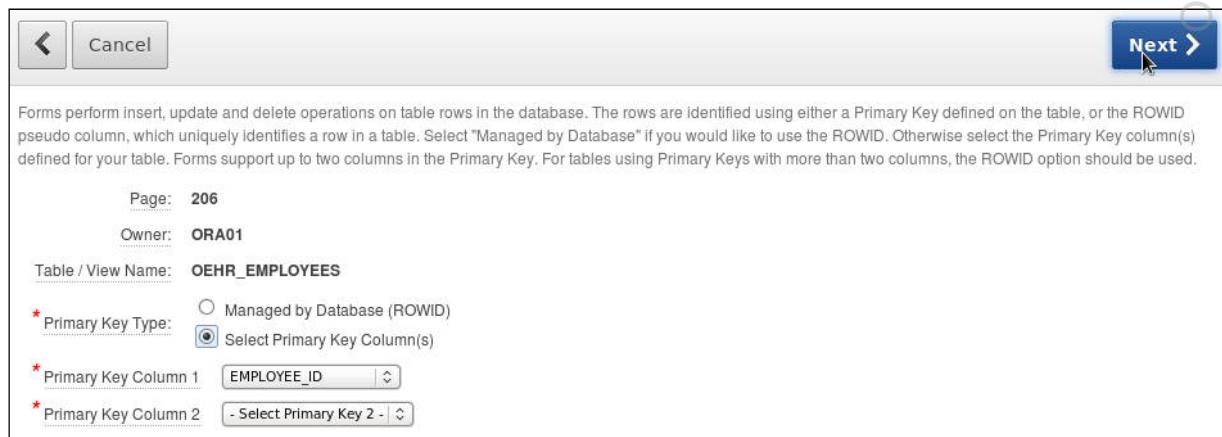
- 4) Select **OEHR_EMPLOYEES** for Table / View Name and click **Next >**.



- 5) Change the Page Number to **206** and enter the Page Name and Region Name as **Employee Detail**. Click **Next >**.



- 6) For Primary Key Type, select **Select Primary Key Column(s)**. Click **Next >**.



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

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.

Owner: ORA01
Table / View Name: OEHR_EMPLOYEES
Primary Key Column 1: EMPLOYEE_ID
* Source Type:
 Existing trigger Custom PL/SQL function Existing sequence

- 8) Click **Next >**.

Select the columns to include on the form.

Page: 206
Owner: ORA01
Table / View Name: OEHR_EMPLOYEES
* Select Column(s)

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

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

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.

Page: 206
Owner: ORA01
Table / View Name: OEHR_EMPLOYEES

Cancel Button Label	Cancel
Show Create Button	Yes <input type="button" value="Create"/>
Show Save Button	Yes <input type="button" value="Save"/> <input type="button" value="Apply Changes"/>
Show Delete Button	Yes <input type="button" value="Delete"/>

- 10) Select the **Employee List** list view page for both “After Page Submit and Processing Branch to Page” and “When Cancel Button Pressed Branch to this Page,” and click **Next >**.

Page: 206
Owner: ORA01
Table / View Name: OEHR_EMPLOYEES

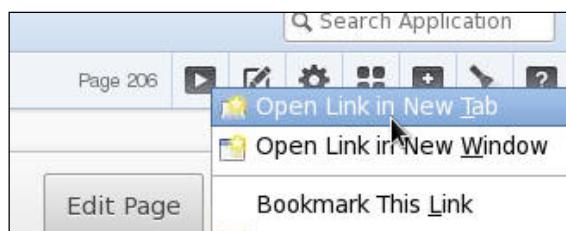
* After Page Submit and Processing Branch to Page 205
* When Cancel Button Pressed Branch to this Page 205

- 11) Click **Create**.

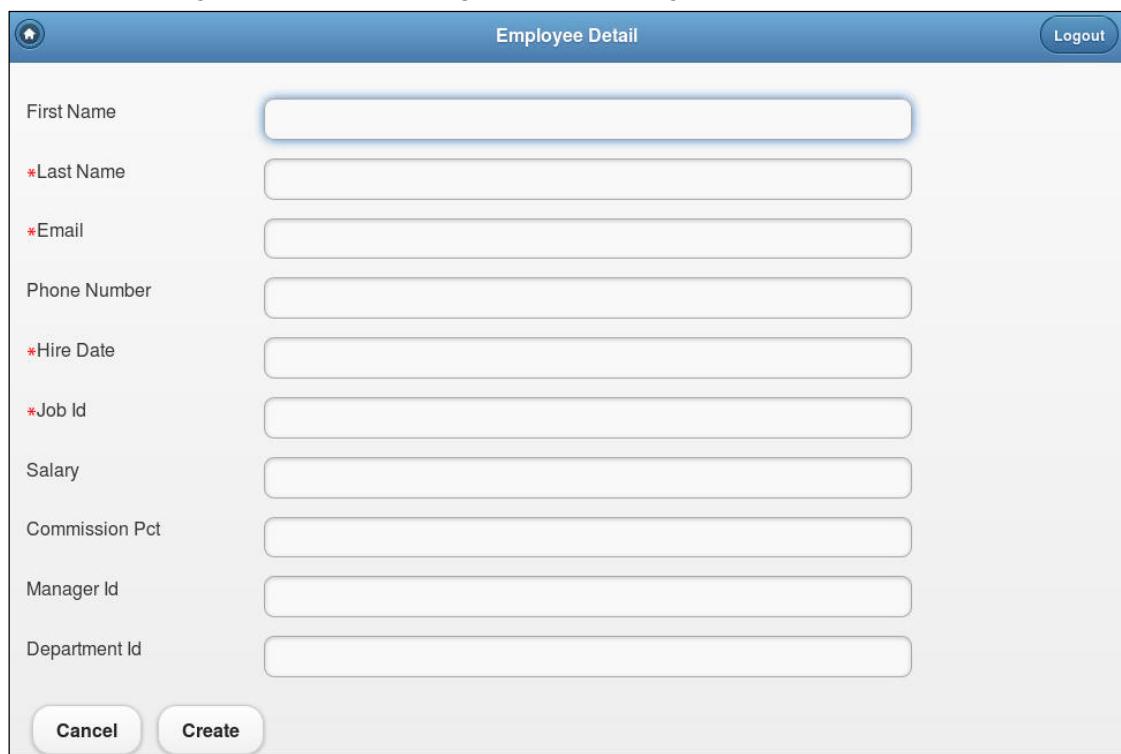
You have requested to create a form on a table page with the following attributes. Please confirm your selections.

Application	130
Page	206
Page Name	Employee Detail
Region Title	Employee Detail
Region Template	Plain (No Title)
Table / View Owner	ORA01
Table / View Name	OEHR_EMPLOYEES
Primary Key Column 1	EMPLOYEE_ID
Primary Key Column 2	
Display Columns	FIRST_NAME LAST_NAME EMAIL PHONE_NUMBER HIRE_DATE JOB_ID SALARY COMMISSION_PCT MANAGER_ID DEPARTMENT_ID
Process Options	Insert,Update,Delete

- 12) To run the page on a new tab, right-click the **Run** icon and select **Open Link in New Tab**.

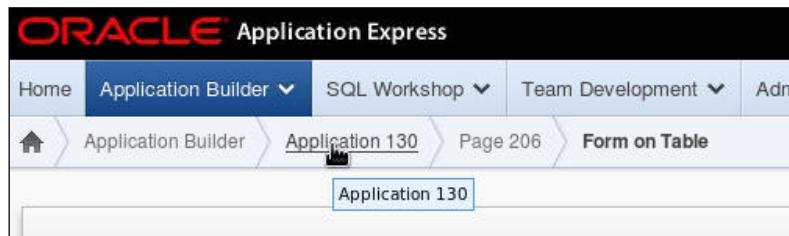


- 13) You will notice that there is no data on the Employee Detail page. You will have to link the **Employee List** list view page to the **Employee Detail** form.

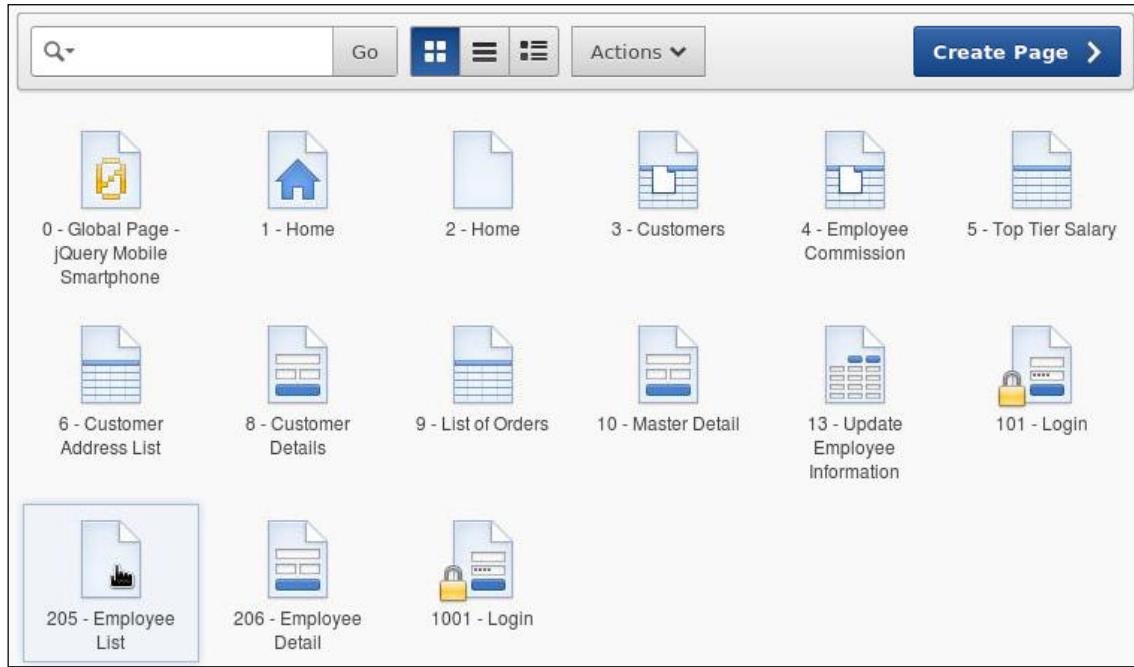


The screenshot shows the 'Employee Detail' form. At the top right is a 'Logout' button. Below it are nine input fields with labels: 'First Name', 'Last Name', 'Email', 'Phone Number', 'Hire Date', 'Job Id', 'Salary', 'Commission Pct', and 'Manager Id'. Each field has a red asterisk (*) next to its label, indicating it is required. Below these fields are two buttons: 'Cancel' and 'Create'.

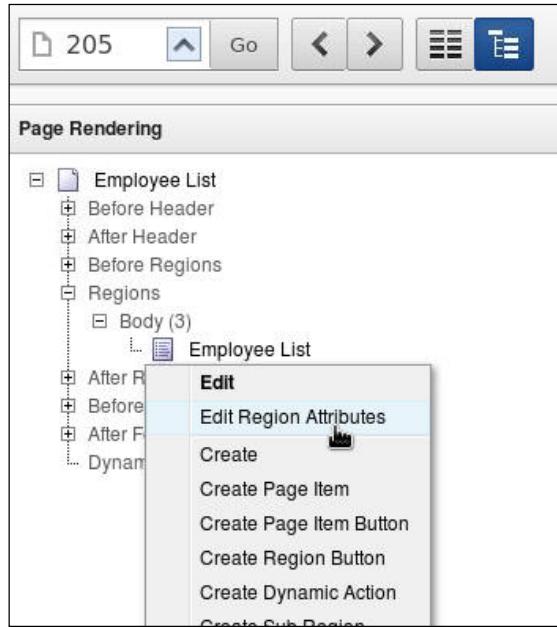
- 14) Go back to the **Create Form on Table** tab and click the **Application <n>** breadcrumb.



15) Click the **Employee List** page.



16) Under Regions, right-click **Employee List** and select **Edit Region Attributes**.



- 17) For Link Target, enter the following code (also located in /home/oracle/labs/files/lab6_4.txt) and click **Apply Changes**.

```
f?p=&APP_ID.:<n>:&APP_SESSION.::&DEBUG.:RP,<n>:P<n>_EMPLOYEE_ID:&EMPLOYEE_ID.
```

This specifies the URL to the target page (change <n> to the page number of your form) and set P<n>_EMPLOYEE_ID to the EMPLOYEE_ID value of the EMPLOYEE_LIST list view entry.

Region Definition Region Attributes

Region Name: Employee List

Show All Settings Advanced

Settings

Features

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

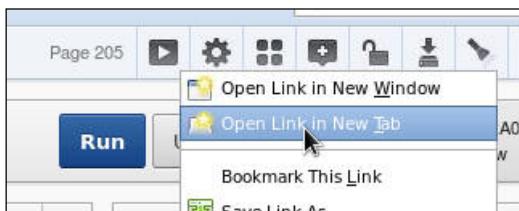
Text Column: LAST_NAME

Supplemental Information Column: - select -

Counter Column: - select -

Link Target: f?p=&APP_ID.:206:&APP_SESSION.::&DEBUG.:RP,206:P206_EMPLOYEE_ID:&EMPLOYEE_ID.

- 18) Right-click **Run Page** on the Employee List page and select **Open Link in New Tab**.



- 19) 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.

Employee List	
King	
Kochhar	
De Haan	
Hunold	
Ernst	
Austin	
Pataballa	
Lorentz	
Greenberg	
Faviet	
Chen	
Sciarra	

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

Employee Detail	
First Name	Valli
*Last Name	Pataballa
*Email	VPATABAL
Phone Number	590.423.4560
*Hire Date	1998-02-05
*Job Id	SA_REP
Salary	4800
Commission Pct	.3
Manager Id	103
Department Id	60
<input type="button" value="Cancel"/>	<input type="button" value="Delete"/>
<input type="button" value="Apply Changes"/>	

Practices for Lesson 7: Working with Pages and Regions

Chapter 7

Practices for Lesson 7: Overview

Practices Overview

In these practices, you create a report region on a Products page and modify the attributes of the report. You create a side bar region and a footer to the Customer Details page. Finally, you create a Global page for the desktop application, add a Static HTML region to the Global page, and run it. You also modify the Home region on the Mobile 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 a footer to the Customer Details page.

Assumptions

You have performed the previous practices or imported the `LAB064_SOLN.sql` packaged application.

Tasks

- a. Create a blank page called Products with a region called Products. Create a new tab called Products by using the existing tab set for this page.
- b. Create a new report region called List of Products on the Products page. Use a Classic Report and display all the rows in the `OEHR_PRODUCTS_INFORMATION` table. Run the report after it is created.
- c. Change the Page Template so there is no sidebar.
- d. Modify the report so that it is a subregion under the Product region parent and displays only the Product ID, Product Name, Product Status, Category ID, 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.
- e. 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/files/lab7_1_1.txt`):

Use this page to enter and
 maintain customer information.
- f. Add a footer to the Customer Details region on the Customer Details page so that the following message (located in `/home/oracle/labs/files/lab7_1_2.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>

Practice 7-2: Creating a Global Page and Adding a Region

Overview

In this practice, you create a Global desktop page for the Order Management application and review the page. You also add a Static HTML region to the Global Desktop page.

Assumptions

You should have completed the previous practices.

Tasks

- a. Create a Global desktop page in the Order Management application and review it in the Application Properties.
- b. 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/files/lab7_2.txt):

Practice 7-3: Modify the Mobile Home Page

Overview

In this practice, you modify the Home region on the Mobile Home page.

Assumptions

You should have completed the previous practices.

Tasks

- a. Modify the Home region on the Mobile Home page.

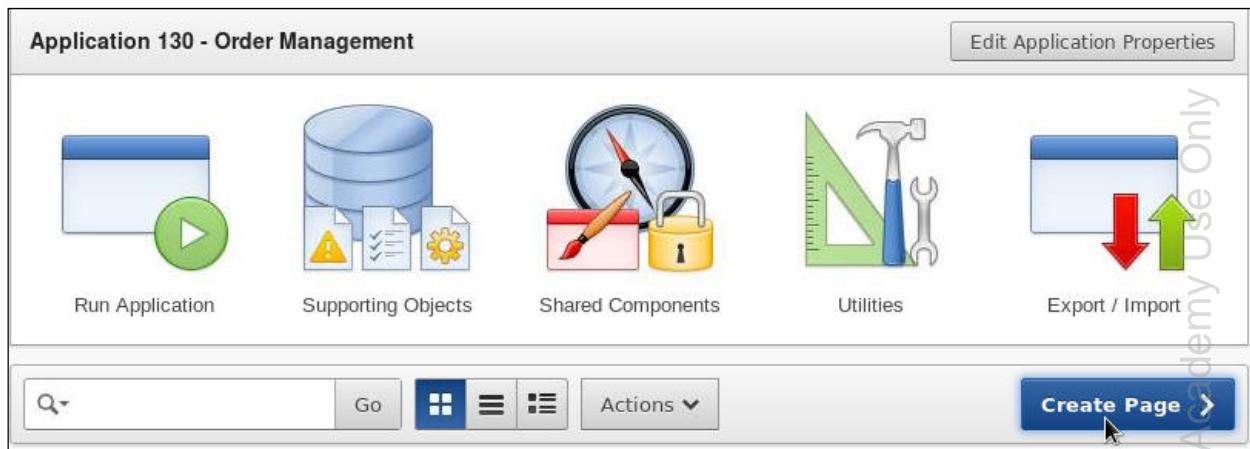
Solution 7-1: Creating and Modifying Pages and Regions

Overview

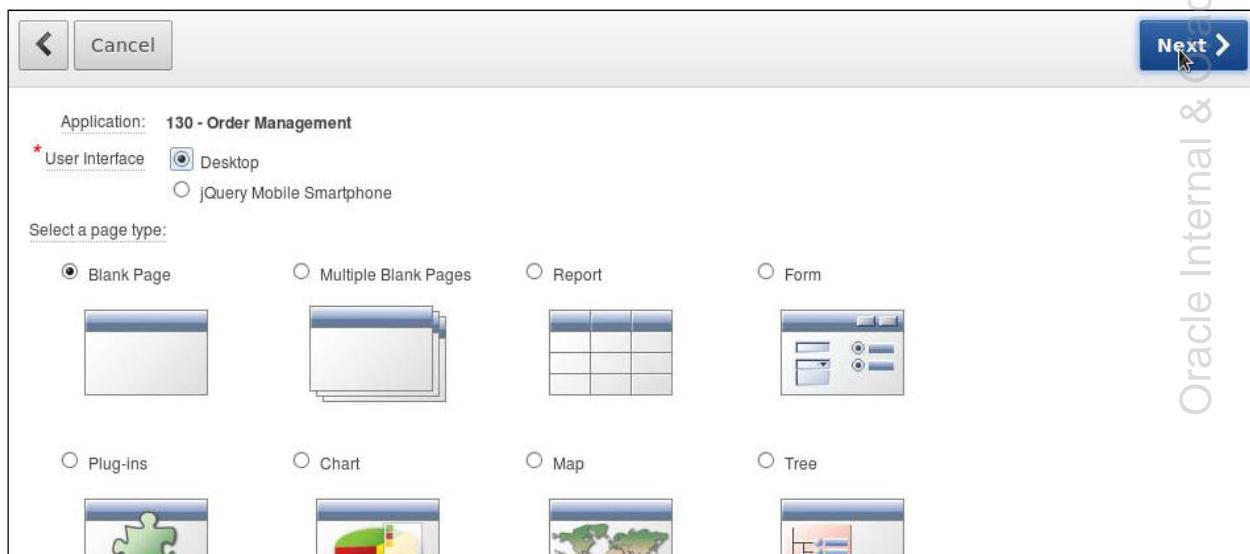
In this practice, you create a report region on a Products page, and modify the attributes of the report. You create a sidebar region, and add a footer to the Customer Details page.

Steps

- a. Create a blank page called Products with a region called Products. Create a new tab called Products by using the existing tab set for this page.
 - 1) Navigate to the **Order Management** application home page and click **Create Page >**.



- 2) Select **Blank Page** and click **Next >**.



- 3) Accept the default number and click **Next >**.

Select an unused numeric page identifier. Global page functions as a master page. Global page components are rendered on every page within your application.

Application: 130 - Order Management

* Page Number: 16

Page Alias:

- 4) Enter **Products** for Name and HTML Region 1. Click **Next >**.

Page: 16

* Name: Products

Breadcrumb: - do not use breadcrumbs on page -

Optional HTML Regions

HTML Region 1: Products

2

3

4

5

- 5) Select **Use an existing tab set and create a new tab within the existing tab set** option. Enter **Products** for New Tab Label and click **Next >**.

Page: 16

Tab Options:

- Do not use tabs
- Use an existing tab set and create a new tab within the existing tab set.
- Use an existing tab set and reuse an existing tab within that tab set.

* Tab Set: TS1 (Home, Customers)

* New Tab Label: Products

- 6) Click **Finish**.

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

Application: 130

Page: 16

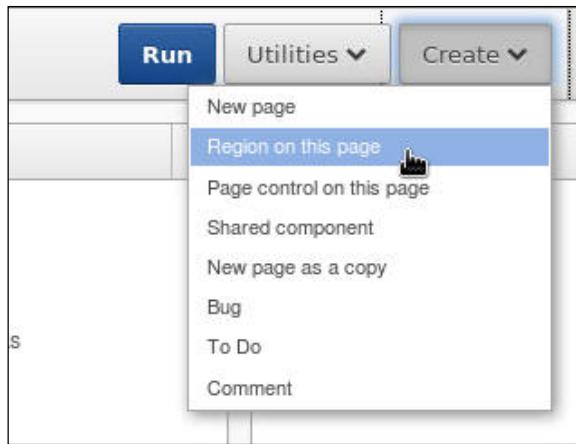
Page Name: Products

Page Title: Products

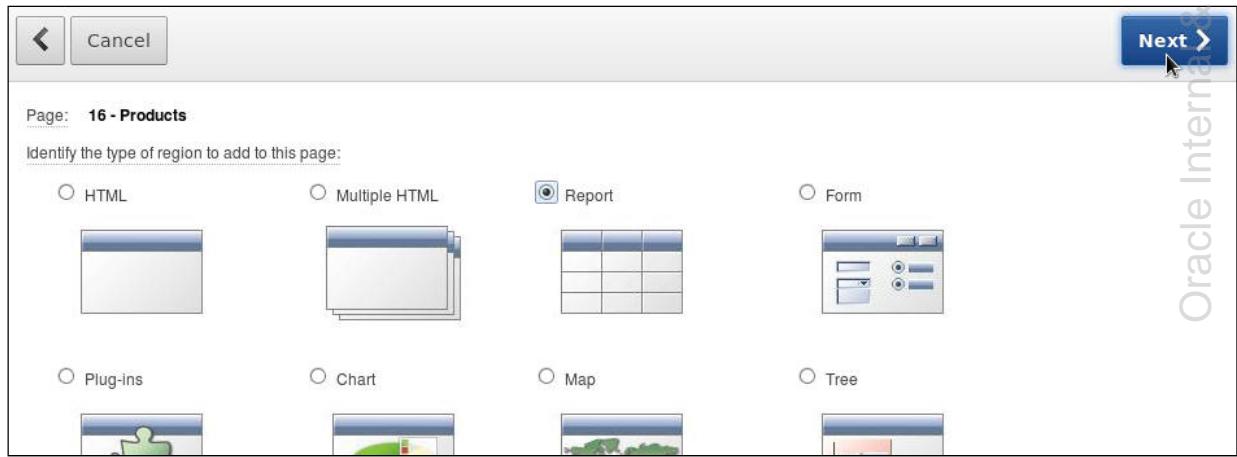
- 7) Click the **Edit Page** icon.



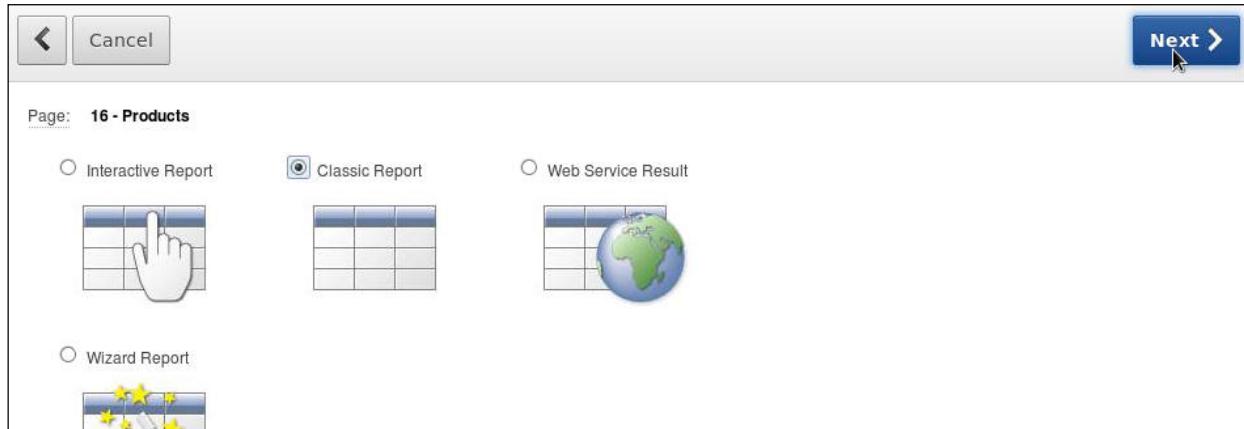
- b. Create a new report region called List of Products on the Products page. Use a Classic report and display all the rows in the OEHR_PRODUCTS_INFORMATION table. Run the report after it is created.
- 1) On the Page Definition page, click **Create** and select **Region on this page**.



- 2) Select the **Report** option, and click **Next >**.



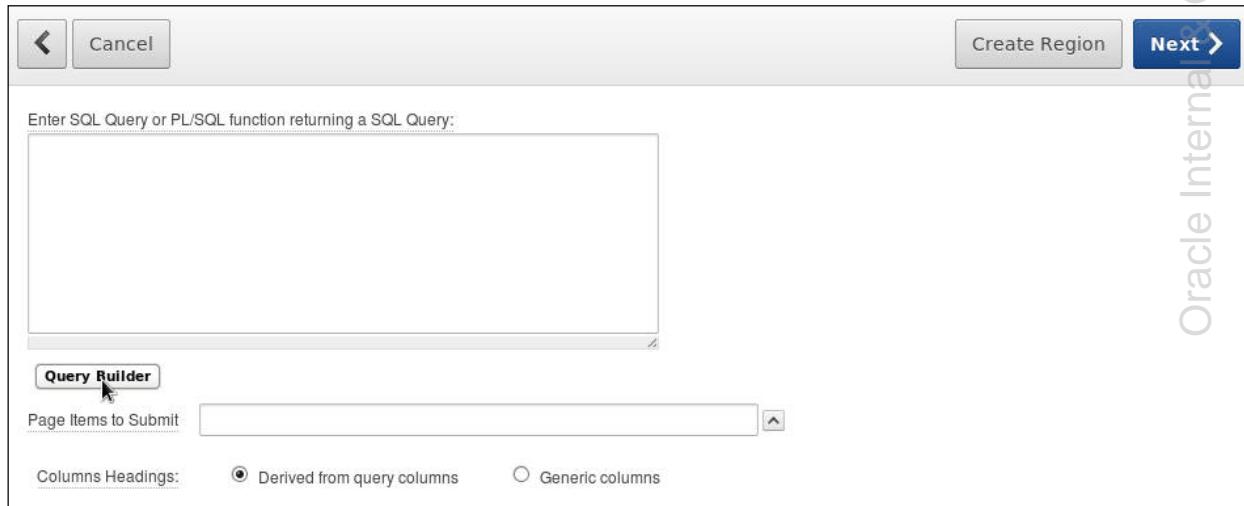
- 3) Select the **Classic Report** option and click **Next >**.



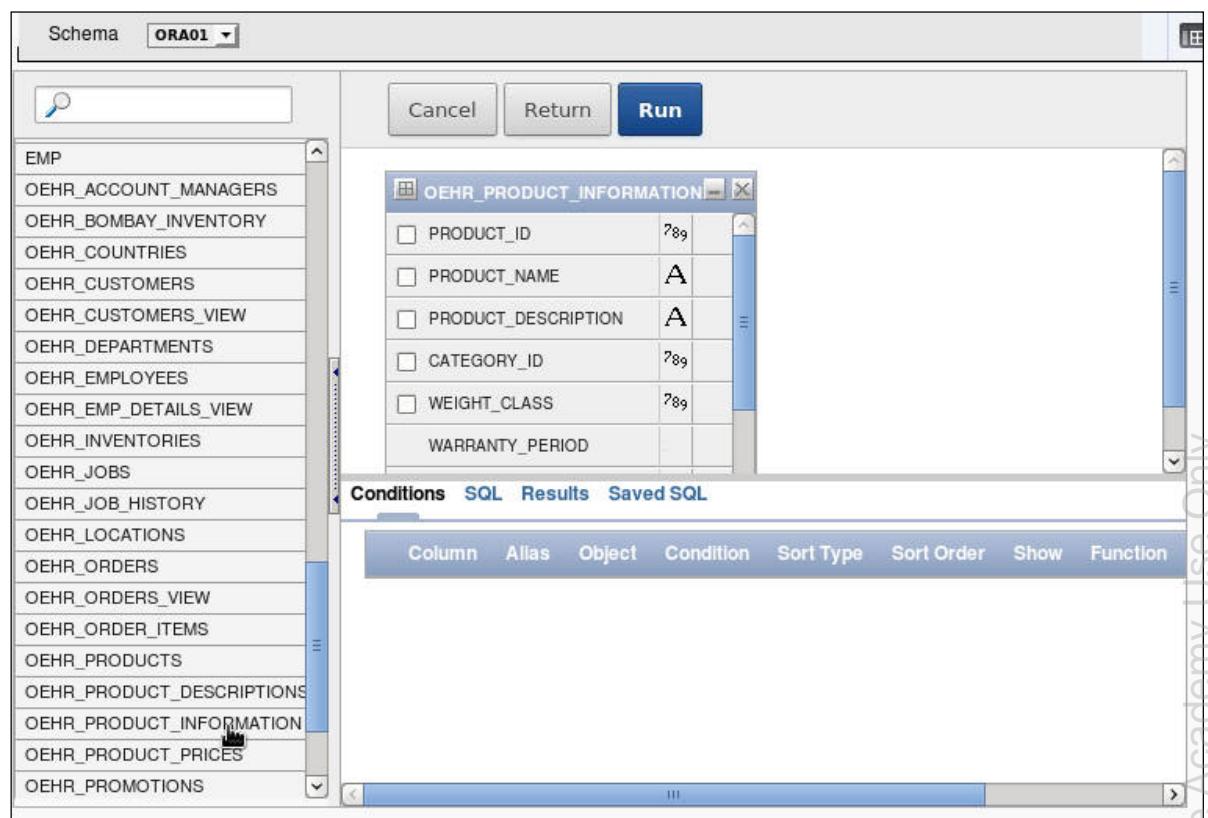
- 4) Enter **Products List** for **Title** and click **Next >**.



- 5) Click the **Query Builder** button.



- 6) Scroll down and select **OEHR_PRODUCT_INFORMATION** from the Object Selection pane.

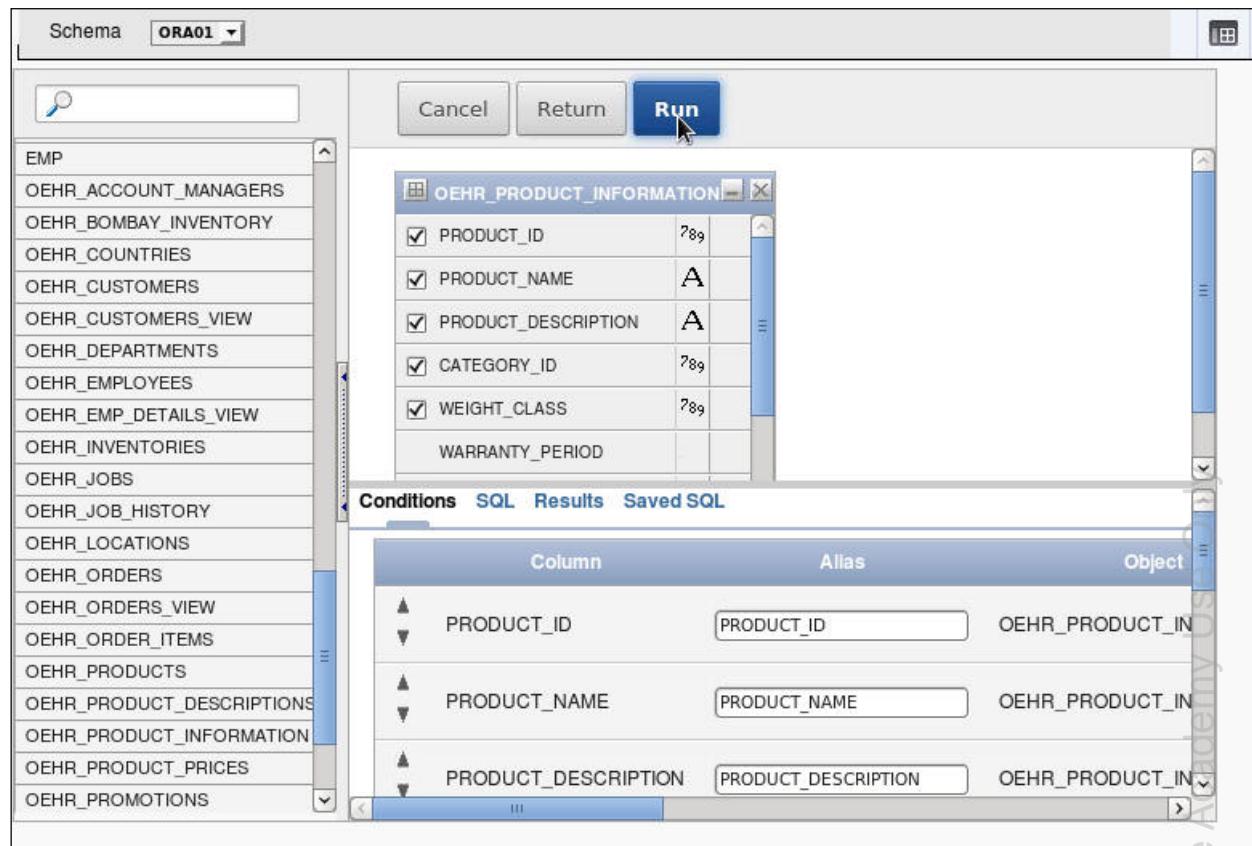


- 7) The selected object appears in the Design pane. Click the **Table Actions** icon in the top-left corner of the OEHR_PRODUCT_INFORMATION table and select the **Check All** check box. This enables you to select all the columns for your query. Notice that all the columns are listed in the bottom pane.

The screenshot shows the Oracle SQL Developer interface. On the left, a tree view lists various schema objects like EMP, OEHR_ACCOUNT_MANAGERS, etc. In the center, a table named 'OEHR_PRODUCT_INFORMATION' is selected. A modal dialog titled 'Table Actions' is open, with the 'Check All' checkbox checked. Below it, a dropdown menu says '- Select -'. The bottom pane displays a table with three rows:

Column	Alias	Object
PRODUCT_ID	PRODUCT_ID	OEHR_PRODUCT_IN
PRODUCT_NAME	PRODUCT_NAME	OEHR_PRODUCT_IN
PRODUCT_DESCRIPTION	PRODUCT_DESCRIPTION	OEHR_PRODUCT_IN

8) Click **Run**.



- 9) Click **Return**.

The screenshot shows the Oracle Application Express interface. On the left, a sidebar lists various schema objects: EMP, OEHR_ACCOUNT_MANAGERS, OEHR_BOMBAY_INVENTORY, OEHR_COUNTRIES, OEHR_CUSTOMERS, OEHR_CUSTOMERS_VIEW, OEHR_DEPARTMENTS, OEHR_EMPLOYEES, OEHR_EMP_DETAILS_VIEW, OEHR_INVENTORIES, OEHR_JOBS, OEHR_JOB_HISTORY, OEHR_LOCATIONS, OEHR_ORDERS, OEHR_ORDERS_VIEW, OEHR_ORDER_ITEMS, OEHR_PRODUCTS, OEHR_PRODUCT_DESCRIPTIONS, OEHR_PRODUCT_INFORMATION, OEHR_PRODUCT_PRICES, and OEHR_PROMOTIONS. The main area displays the OEHR_PRODUCT_INFORMATION table with the following data:

PRODUCT_ID	PRODUCT_NAME	PRODUCT_DESCRIPTION	CATEGORY_ID	WEIGHT_CLASS
1726	LCD Monitor 11/PM	Liquid Cristal Display 11 inch passive monitor. The virtually-flat, high-resolution screen delivers outstanding image quality with reduced glare.	11	3
		Liquid Cristal Display 9 inch passive monitor. Ensu...		

At the top right, there are 'Cancel', 'Return', and 'Run' buttons. The 'Return' button is highlighted with a cursor. Below the table, tabs for 'Conditions', 'SQL', 'Results', and 'Saved SQL' are visible.

- 10) Notice that a query is built that contains all the columns in the OEHR_PRODUCT_INFORMATION table. Click the **Create Region** button.

The screenshot shows the 'Create Region' dialog. At the top, there are 'Cancel' and 'Create Region' buttons. Below is a text area for entering SQL queries, containing the following code:

```
select OEHR_PRODUCT_INFORMATION.PRODUCT_ID as PRODUCT_ID,
       OEHR_PRODUCT_INFORMATION.PRODUCT_NAME as PRODUCT_NAME,
       OEHR_PRODUCT_INFORMATION.PRODUCT_DESCRIPTION as
PRODUCT_DESCRIPTION,
       OEHR_PRODUCT_INFORMATION.CATEGORY_ID as CATEGORY_ID,
       OEHR_PRODUCT_INFORMATION.WEIGHT_CLASS as WEIGHT_CLASS,
       OEHR_PRODUCT_INFORMATION.SUPPLIER_ID as SUPPLIER_ID,
       OEHR_PRODUCT_INFORMATION.PRODUCT_STATUS as PRODUCT_STATUS,
       OEHR_PRODUCT_INFORMATION.LIST_PRICE as LIST_PRICE;
```

Below the code, there's a 'Query Builder' button. Further down are fields for 'Page Items to Submit' and 'Columns Headings'. The 'Derived from query columns' radio button is selected.

- 11) Test your page and its new query. Click the **Run** button.

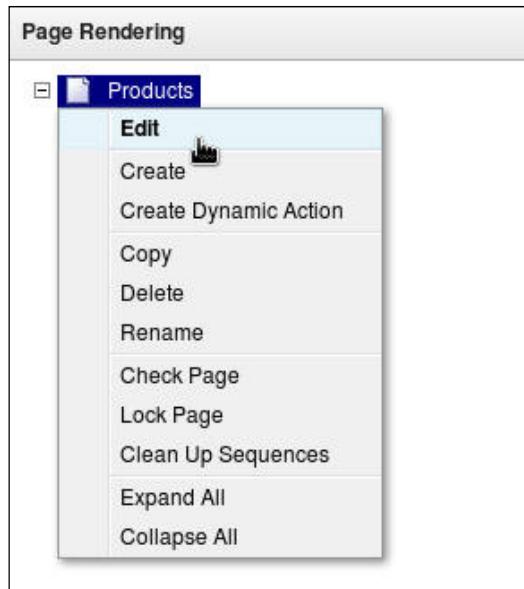
The screenshot shows the bottom navigation bar of the application. It features a series of icons and labels: 'Page 16', a play button icon, a gear icon, a plus icon, a lock icon, a download icon, a wrench icon, a question mark icon, and another question mark icon. Below these are buttons for 'Run', 'Utilities', 'Create', and a dropdown menu labeled 'ORA01'. The 'Run Page 16' button is highlighted with a cursor.

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

PRODUCT_ID	PRODUCT_NAME	PRODUCT_DESCRIPTION	CATEGORY_ID	WEIGHT_CLASS	SUPPLIER_ID	PRODUCT_STATUS
1726	LCD Monitor 11/PM	Liquid Cristal Display 11 inch passive monitor. The virtually-flat, high-resolution screen delivers outstanding image quality with reduced glare.	11	3	102067	under development
2359	LCD Monitor 9/PM	Liquid Cristal Display 9 inch passive monitor. Enjoy the productivity that a small monitor can bring via more workspace on your desk. Easy setup with plug-and-play.	11	3	102061	orderable

Home Application 130 Edit Page 16 Create Session Caching View Debug Debug Show Edit Links Show Grid

- c. Change the Page Template so there is no sidebar.
- Right-click the **Products** page definition and select **Edit**.



- 2) Select One Level Tabs – No Sidebar for Page Template.

Page Attributes: 12 of 16

Show All	Name	Display Attributes	JavaScript	CSS	HTML Header	Header and Footer	Read Only	Security	Duplicate
Use Theme Default Login Minimal Page No Tabs - Left Sidebar No Tabs - Left and Right Sidebar No Tabs - No Sidebar No Tabs - Right Sidebar One Level Tabs - Content Frame One Level Tabs - Left Sidebar One Level Tabs - Left and Right Sidebar One Level Tabs - No Sidebar (selected) One Level Tabs - Right Sidebar One Level Tabs - Search Filter Bar One Level Tabs - Wizard Page Popup Printer Friendly Two Level Tabs - Left Sidebar Two Level Tabs - Left and Right Sidebar Two Level Tabs - No Sidebar Two Level Tabs - Right Sidebar									
Name									
Page:	16								
* Name	Products								
Page Alias									
Group - No Group Assigned -									
Display Attribute									
User Interface	Desktop								
Page Template	One Level Tabs - No Sidebar								
Standard Tab Set	TS1 (Home, Customers, Products)								
Title	Products								

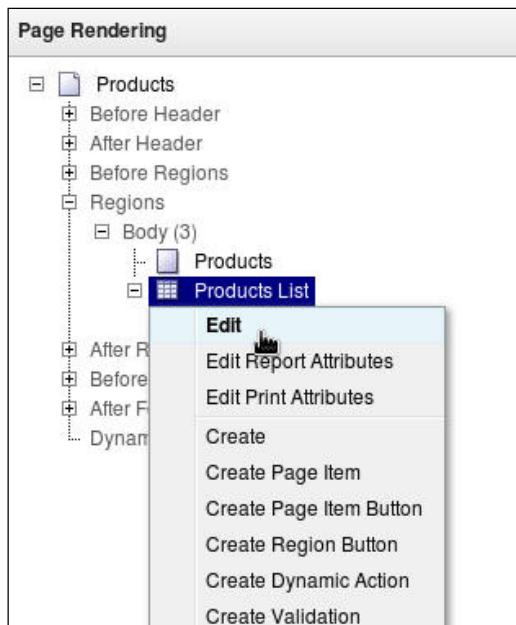
- 3) Click **Apply Changes**.

Page Attributes: 12 of 16

Show All	Name	Display Attributes	JavaScript	CSS	HTML Header	Header and Footer	Read Only	Security	Duplicate
Name									
Page:	16								
* Name	Products								
Page Alias									
Group - No Group Assigned -									
Display Attributes									
User Interface	Desktop								
Page Template	One Level Tabs - No Sidebar								
Standard Tab Set	TS1 (Home, Customers, Products)								
Title	Products								

- d. Modify the report so that it is a subregion under the Product region parent and displays only the Product ID, Product Name, Product Status, Category ID, 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.

- 1) You want to make a few changes to the report. Right-click **Products List** and select **Edit**.



- 2) Click the **User Interface** subtab.

The screenshot shows the 'Region Definition' dialog with the 'User Interface' tab selected. In the 'Identification' section, the page is titled '16 Products' and the title is set to 'Products List'. The 'Type' is specified as 'SQL Query'. In the 'Source' section, the SQL query is displayed:

```
select OEHR_PRODUCT_INFORMATION.PRODUCT_ID as PRODUCT_ID,
       OEHR_PRODUCT_INFORMATION.PRODUCT_NAME as PRODUCT_NAME,
       OEHR_PRODUCT_INFORMATION.PRODUCT_DESCRIPTION as PRODUCT_DESCRIPTION,
       OEHR_PRODUCT_INFORMATION.CATEGORY_ID as CATEGORY_ID,
       OEHR_PRODUCT_INFORMATION.WEIGHT_CLASS as WEIGHT_CLASS,
```

- 3) Select **Products** for Parent Region so that this region becomes a subregion of the Products parent.

Region: 2 of 2 Name: Products List

User Interface

- * Sequence: 20
- Parent Region: - Select a Parent -
- Display Point: Products (10)
- Template: Reports Region
- Item Display Position: Above Content

- 4) Click the **Report Attributes** tab.

Report Attributes

Region: 2 of 2 Name: Products List

User Interface

- * Sequence: 20
- Parent Region: Products (10)
- Template: Reports Region
- Item Display Position: Above Content

Grid Layout

- Start New Grid: No
- Start New Row: Yes
- Column: Automatic
- Column Span: Automatic

- 5) On the Report Attributes page, **deselect** the check boxes in the Show column that correspond to the following, and then click the **Layout and Pagination** tab.

- PRODUCT_DESCRIPTION
- WEIGHT_CLASS

- SUPPLIER_ID
- MIN_PRICE
- CATALOG_URL

Column Attributes

Headings Type: Column Names Column Names (InitCap) Custom PL/SQL None

Alias	Link	Edit	Heading	Column Width	Column Alignment	Heading Alignment	Show
PRODUCT_ID			PRODUCT_ID		left		<input checked="" type="checkbox"/>
PRODUCT_NAME			PRODUCT_NAME		left		<input checked="" type="checkbox"/>
PRODUCT_DESCRIPTION			PRODUCT_DESCRIPTION		left		<input type="checkbox"/>
CATEGORY_ID			CATEGORY_ID		left		<input checked="" type="checkbox"/>
WEIGHT_CLASS			WEIGHT_CLASS		left		<input type="checkbox"/>
SUPPLIER_ID			SUPPLIER_ID		left		<input type="checkbox"/>
PRODUCT_STATUS			PRODUCT_STATUS		left		<input checked="" type="checkbox"/>
LIST_PRICE			LIST_PRICE		left		<input checked="" type="checkbox"/>
MIN_PRICE			MIN_PRICE		left		<input type="checkbox"/>
CATALOG_URL			CATALOG_URL		left		<input type="checkbox"/>

- 6) From the list of links displayed below the Pagination Scheme select list, click [Select List].

Layout and Pagination

Report Template: template: 26. Standard

[HTML] [Look 1] [Look 2] [Look 3] [Look 4] [CSV] [XML]

Report Attributes Substitution:

Show Null Values as: -

Pagination Scheme: Row Ranges X to Y (with next and previous links)

[None] [Use pagination buttons] [Rows X to Y] [Select List] [Search Engine]

Enable Partial Page Refresh: Yes

Display Position: Bottom - Right

Number of Rows: (empty)

Maximum Row Count: (empty)

Strip HTML: Yes

Sort Nulls: Normal

Number of Rows (Item): (empty)

- 7) In the Number of Rows column, enter 10 and click **Apply Changes**.

Region Definition **Report Attributes** Print Attributes

Region Name: Products List

Cancel **Apply Changes**

Show All Column Attributes Layout and Pagination Sorting Messages Report Export Break Formatting External Processing

Layout and Pagination

Report Template: template: 26. Standard

[HTML] [Look 1] [Look 2] [Look 3] [Look 4] [CSV] [XML]

Report Attributes Substitution:

Show Null Values as: -

Pagination Scheme: Row Ranges 1-15 16-30 in select list (with pagination)

[None] [Use pagination buttons] [Rows X to Y] [Select List] [Search Engine]

Enable Partial Page Refresh: Yes

Display Position: Bottom - Right

Number of Rows: 10

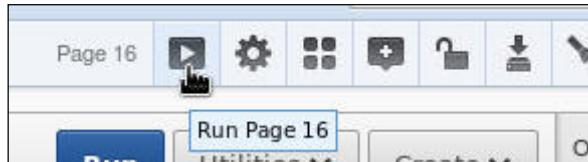
Maximum Row Count: (empty)

Strip HTML: Yes

Sort Nulls: Normal

Number of Rows (Item): (empty)

- 8) Run the page to view your changes. Click the **Run** button.



- 9) 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 <n>** link on the Developer toolbar.

Order Management

Home Customers Products

Products

Products List

PRODUCT_ID	PRODUCT_NAME	CATEGORY_ID	PRODUCT_STATUS	LIST_PRICE
1726	LCD Monitor 11/PM	11	under development	259
2359	LCD Monitor 9/PM	11	orderable	249
3060	Monitor 17/HR	11	orderable	299
2243	Monitor 17/HR/F	11	orderable	350
3057	Monitor 17/SD	11	orderable	369
3061	Monitor 19/SD	11	orderable	499
2245	Monitor 19/SD/M	11	orderable	512
3065	Monitor 21/D	11	orderable	999
3331	Monitor 21/HR	11	orderable	879
2252	Monitor 21/HR/M	11	obsolete	889
3064	Monitor 21/SD	11	planned	1023
3155	Monitor Hinge - HD	11	orderable	49
3234	Monitor Hinge - STD	11	orderable	39
3350	Plasma Monitor 10/LE/VGA	11	orderable	740
2236	Plasma Monitor 10/TFT/XGA	11	under development	964

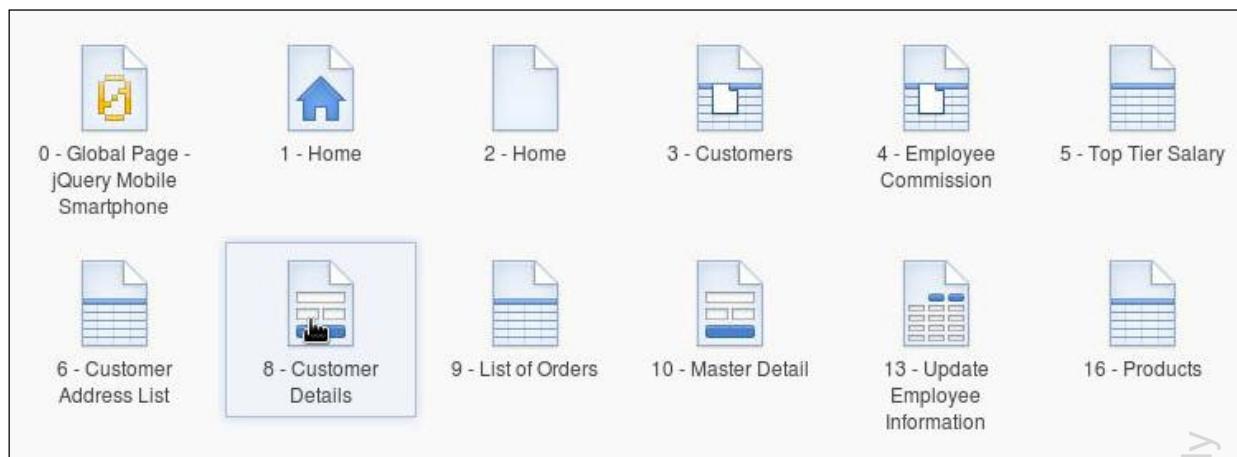
Application 130 row(s) 1 - 15 of 288 Next >

Home Application 130 Edit Page 16 Create Session Caching View Debug Deb

- e. 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/files/lab7_1_1.txt):

Use this page to enter and
 maintain customer information.

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



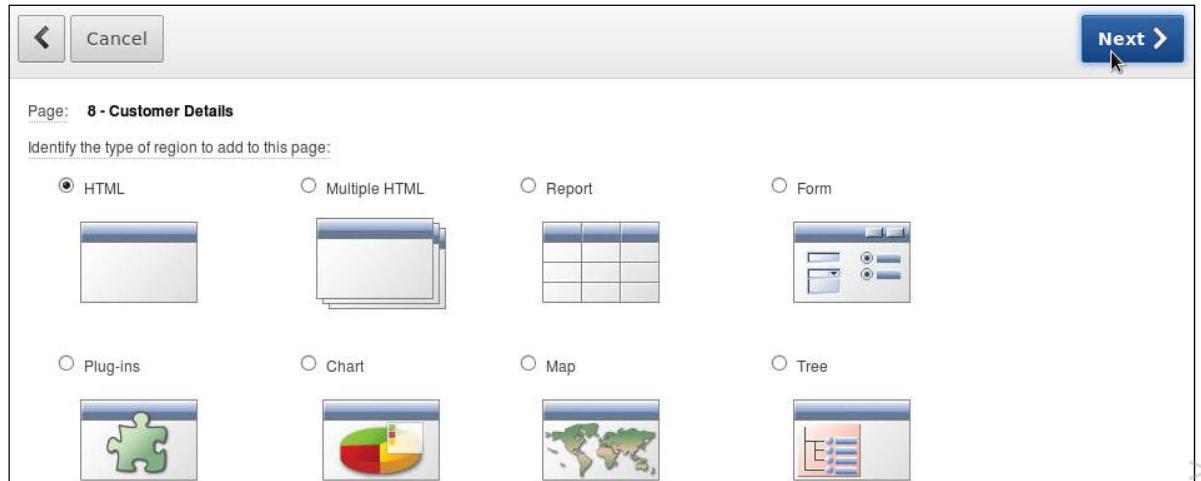
- 2) Switch to the Component View by clicking the **Component View** icon.



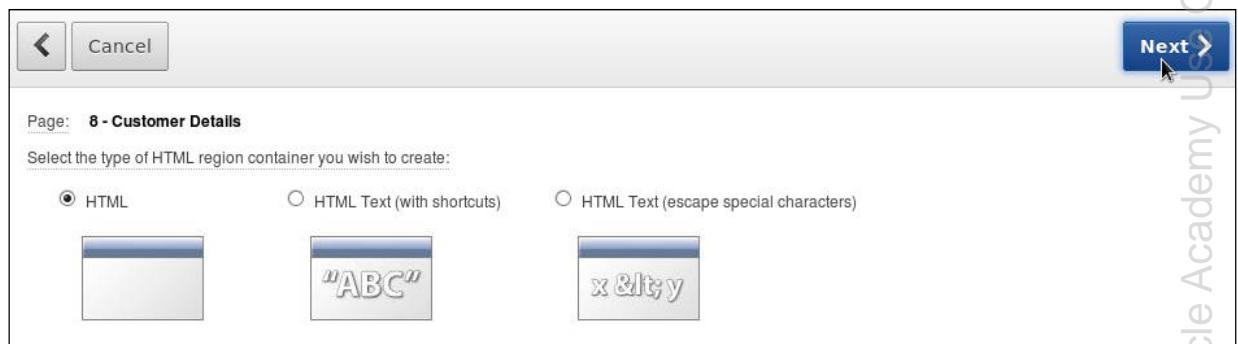
- 3) Under Regions, click the **Create** icon.

Display Point	Page Template Body (3)		
0	<input checked="" type="checkbox"/> Customer Details	HTML	Create

- 4) For the region type, select the **HTML** option and click **Next >**.



- 5) Select **HTML** again and click **Next >**.



- 6) For Display Attributes, enter **Hint** for Title, select **Sidebar Region** for Region Template, and select **Page Template Region Position 3** for Display Point. Then click **Next >**.



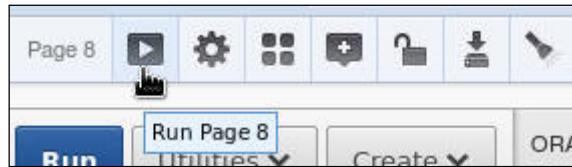
- 7) In **Enter HTML Text Region Source**, enter the following (located in /home/oracle/labs/files/lab7_1_1.txt) and click **Create Region**.

Use this page to enter and
 maintain customer information.

Enter HTML Text Region Source:

Use this page to enter and
 maintain customer information.

- 8) Run the page by clicking the **Run Page** icon.



- 9) 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** link on the Developer toolbar.

Customer Details

Cust First Name *

Cust Last Name *

Cust Email

Account Mgr Id

Hint

Use this page to enter and maintain customer information.

- 10) Click the **Edit** page icon.



- 11) Select One Level Tabs – Right Sidebar for Page Template and click **Apply Changes**.

Page Attributes: 8 of 16

Name

Page: 8

* Name: Customer Details

Page Alias:

Group: - No Group Assigned -

Display Attributes

User Interface: Desktop

Page Template: One Level Tabs - Right Sidebar

Standard Tab Set: TS1 (Home, Customers, Products)

Title: Customer Details

Cursor Focus: First item on page

- 12) Run the page again and you see that the Hint is now displayed in the right sidebar area. Click the **Edit Page** link on the Developer toolbar.

Order Management

Customer Details

Cust First Name *

Cust Last Name *

Cust Email

Account Mgr Id

Hint
Use this page to enter and maintain customer information.

- f. Add a footer to the Customer Details region on the Customer Details page so that the following message (located in /home/oracle/labs/files/lab7_1_2.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>
```

- 1) Under Regions, select **Customer Details**.

Regions				
Display Point: Page Template Body (3)				
0	Customer Details	HTML		
Display Point: Region Position 03				
10	Hint	HTML		
Buttons				
Region Customer Details				

- 2) Click the **Header and Footer** tab from the list of links at the top of the page.

Region Definition								
Region: 1 of 2 Name: Customer Details								
Show All	Identification	Source	User Interface	Grid Layout	Attributes		Conditions	Re
Identification								
Page: 8 Customer Details								
<input type="text"/> * Title Customer Details								

- 3) Enter the following (located in /home/oracle/labs/files/lab7_1_2.txt) in the Region Footer field and click **Apply Changes**.

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

Region Definition

Region: 1 of 2 Name: Customer Details

Cancel Delete **Apply Changes**

Show All Identification Source User Interface Grid Layout Attributes Header and Footer Conditions Read Only Sec

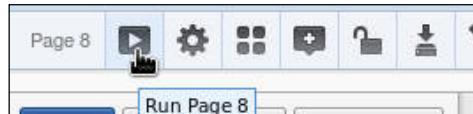
Header and Footer

Region Header

Region Footer

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

- 4) Test the page by clicking the **Run Page** icon in the top-right corner.



- 5) The footer text is displayed. Click the **Application <n>** link on the Developer toolbar.

Order Management

Home Customers Products

Customer Details

Cust First Name *

Cust Last Name *

Cust Email

Account Mgr Id

The record created or modified in this form is reflected in the Customer Report.

Hint
Use this page to enter and maintain customer information.

Home Application 130 Edit Page 8 Create Session Caching View Debug Debug Show Edit Links Show Grid

Solution 7-2: Creating a Global Page and Adding a Region

Overview

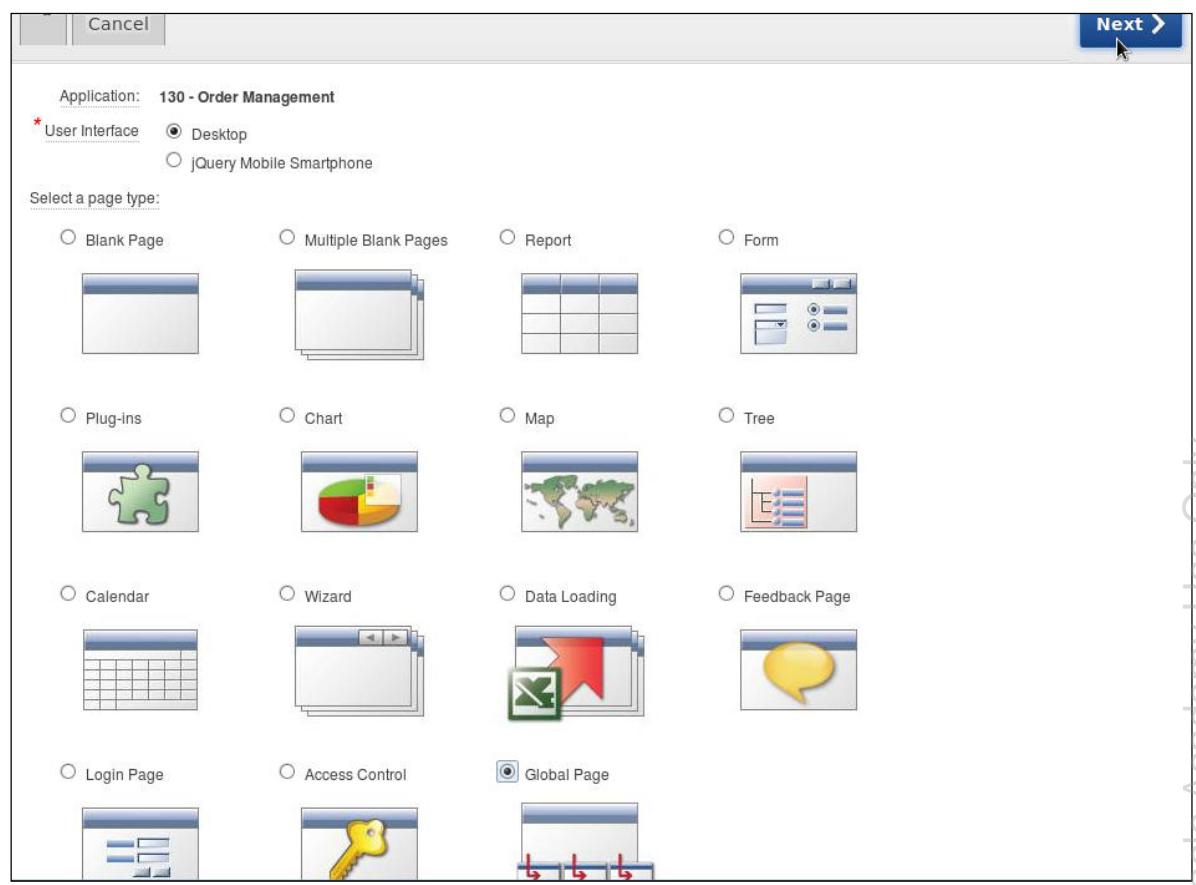
In this solution, you create a Global desktop page for the Order Management application and review the page. You also add a Static HTML region to the Global Desktop page.

Tasks

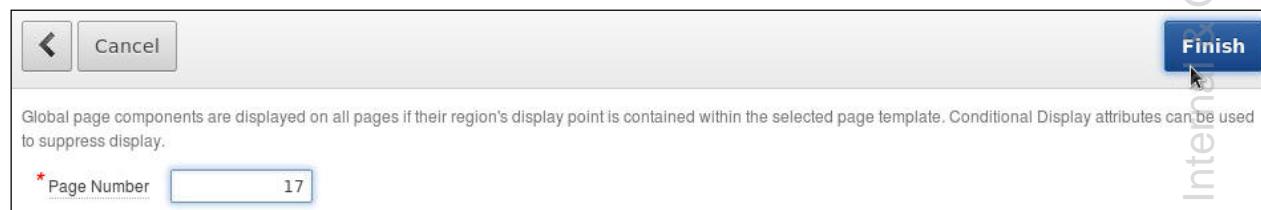
- a. Create a Global desktop page to the Order Management application and review it in Application Properties.
 - 1) Navigate to the **Order Management** application home page and click **Create Page >**.



- 2) Select **Global Page** and click **Next >**. Make sure you have selected **Desktop** for User Interface.



- 3) Click **Finish**.



- 4) Click the “Switch to Tree View” icon.

The screenshot shows the Oracle Application Builder interface. The top navigation bar includes 'Run Application', 'Utilities', 'Create', and 'ORA01 Now'. On the left, there's a toolbar with icons for file operations like Open, Save, Print, and a magnifying glass. Below the toolbar, the 'Page Rendering' tab is active, displaying fields for 'Page Name' (Global Page - Desktop), 'Template' (Application default), and 'Build Option'. To the right of the rendering panel are sections for 'Application Level Components' (Application Items, Application Processes, Application Computations) and 'About' (describing global page components). A sidebar on the right lists 'Recently Edited Pages' with links to various application pages.

- 5) To review if the Global Page was added for the desktop user interface, click the **Application <n>** breadcrumb. You are taken to the Order Management application home page.

The screenshot shows the Oracle Application Builder interface with the breadcrumb navigation path: Application Builder > Application 130 > Page 17. The 'Application 130' breadcrumb is highlighted with a blue border. The interface includes a toolbar with file operations and a navigation bar with back, forward, and search buttons.

- 6) Click **Edit Application Properties**.

The screenshot shows the Oracle Application Builder interface for Application 130 - Order Management. The top bar has a 'Edit Application Properties' button with a mouse cursor hovering over it. Below the bar are five main navigation icons: 'Run Application' (play button), 'Supporting Objects' (database and files), 'Shared Components' (compass and padlock), 'Utilities' (ruler and tools), and 'Export / Import' (file exchange).

- 7) Click the **User Interface** tab.

Definition	Security	Globalization	User Interface
Application 130 <div style="text-align: right;"> User Interface Cancel Delete Apply Changes </div> <div style="display: flex; justify-content: space-between;"> Show All Name Properties Availability Error Handling Global Notification Substitutions Build Options </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> Name <div style="display: flex; align-items: center;"> Application 130 <div style="margin-left: 10px;"> * Name <input type="text" value="Order Management"/> </div> <div style="margin-left: 10px;"> Application Alias <input type="text" value="F_130"/> </div> <div style="margin-left: 10px;"> * Version <input type="text" value="release 1.0"/> </div> <div style="margin-left: 10px;"> Application Group <input type="button" value="- Unassigned -"/> </div> </div> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> Properties </div>			

- 8) Click the **User Interfaces** subtab.

Definition	Security	Globalization	User Interface
Application 130 <div style="text-align: right;"> Cancel </div> <div style="display: flex; justify-content: space-between;"> Show All General Properties Logo JavaScript User Interface Detection User Interfaces </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> General Properties <div style="display: flex; align-items: center;"> Image Prefix <input type="text" value="/"/> </div> <div style="margin-top: 10px;"> Content Delivery Network <input type="button" value="None (use Web Server)"/> </div> </div>			

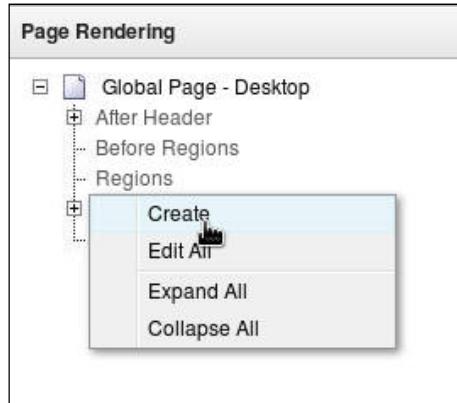
- 9) Your Global desktop page has been assigned to the Desktop interface. Click the **Edit Page** icon in the upper right corner.

Definition	Security	Globalization	User Interface																											
Application 130 <div style="text-align: right;"> Cancel Apply Changes </div> <div style="display: flex; justify-content: space-between;"> Show All General Properties Logo JavaScript User Interface Detection User Interfaces </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> User Interfaces <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Sequence</th> <th>Auto Detect</th> <th>Default</th> <th>Home</th> <th>Login</th> <th>Theme</th> <th>Global Page</th> </tr> </thead> <tbody> <tr> <td>Desktop</td> <td>Desktop</td> <td>10</td> <td>No</td> <td>Yes</td> <td><code>!?p=&APP_ID.:1:&SESSION.</code></td> <td><code>!?p=&APP_ID.:LOGIN_DESKTOP:&SESSION.</code></td> <td>Productivity Applications - 26 *</td> <td>17</td> </tr> <tr> <td>jQuery Mobile Smartphone</td> <td>jQuery Mobile Smartphone</td> <td>20</td> <td>Yes</td> <td>No</td> <td><code>!?p=&APP_ID.:HOME_JQM_SMARTPHONE:&SESSION.</code></td> <td><code>!?p=&APP_ID.:LOGIN_JQM_SMARTPHONE:&SESSION.</code></td> <td>jQuery Mobile Smartphone - 50 *</td> <td>0</td> </tr> </tbody> </table> </div>				Name	Type	Sequence	Auto Detect	Default	Home	Login	Theme	Global Page	Desktop	Desktop	10	No	Yes	<code>!?p=&APP_ID.:1:&SESSION.</code>	<code>!?p=&APP_ID.:LOGIN_DESKTOP:&SESSION.</code>	Productivity Applications - 26 *	17	jQuery Mobile Smartphone	jQuery Mobile Smartphone	20	Yes	No	<code>!?p=&APP_ID.:HOME_JQM_SMARTPHONE:&SESSION.</code>	<code>!?p=&APP_ID.:LOGIN_JQM_SMARTPHONE:&SESSION.</code>	jQuery Mobile Smartphone - 50 *	0
Name	Type	Sequence	Auto Detect	Default	Home	Login	Theme	Global Page																						
Desktop	Desktop	10	No	Yes	<code>!?p=&APP_ID.:1:&SESSION.</code>	<code>!?p=&APP_ID.:LOGIN_DESKTOP:&SESSION.</code>	Productivity Applications - 26 *	17																						
jQuery Mobile Smartphone	jQuery Mobile Smartphone	20	Yes	No	<code>!?p=&APP_ID.:HOME_JQM_SMARTPHONE:&SESSION.</code>	<code>!?p=&APP_ID.:LOGIN_JQM_SMARTPHONE:&SESSION.</code>	jQuery Mobile Smartphone - 50 *	0																						

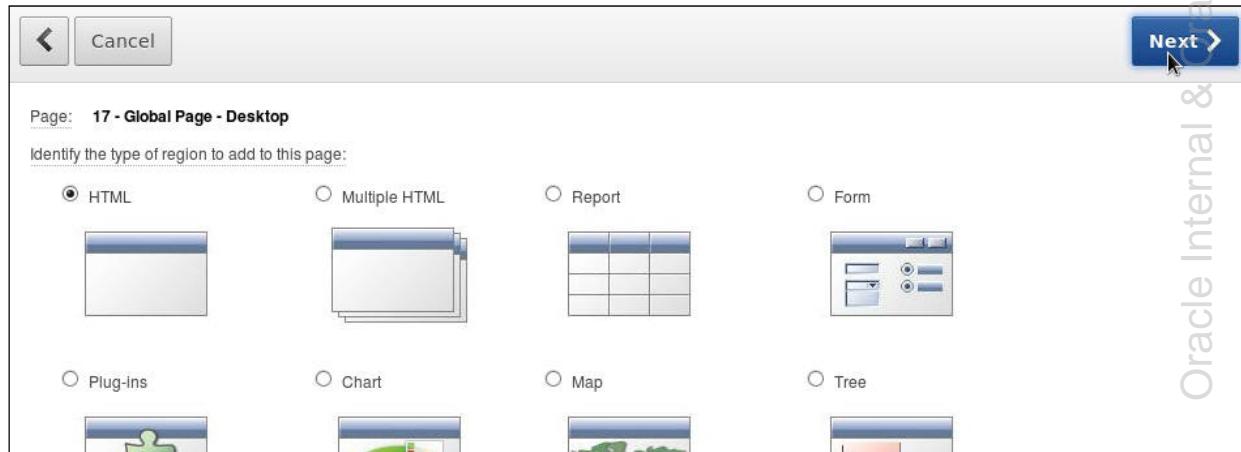
- b. Add a Static HTML region to the Global Desktop page. Call the region as “In the News” on the Global page with the following code (located in /home/oracle/labs/files/lab7_2.txt):

```
<html><body>
<table width="179" border="1">
<tr>
<td><p><strong>News and Events</strong></p>
<p> Visit us at &nbsp;<a href="http://www.oracle.com">
www.oracle.com</a></p>
</td>
</tr>
</table></body></html>
```

- 1) Right-click the **Regions** node and click **Create**.



- 2) Select **HTML** and click **Next >**.



- 3) Select **HTML** again and click **Next >**.



- 4) For Title, enter **In the News**. For Display Point, select **Page Template Region Position 2** and click **Next >**.



- 5) In the **Enter HTML Text Region Source** field, enter the following code and click **Create Region**. You can copy and paste the code from `/home/oracle/labs/files/lab7_2.txt`.

```
<html><body>
<table width="179" border="1">
<tr>
<td><p><strong>News and Events</strong></p>
<p> Visit us at &nbsp;<a href="http://www.oracle.com">
www.oracle.com</a></p>
</td>
</tr>
</table>
</body></html>
```

Enter HTML Text Region Source:

```
<html><body>
<table width="179" border="1">
<tr>
<td><p><strong>News and Events</strong></p>
<p> Visit us at &nbsp;<a href="http://www.oracle.com">
www.oracle.com</a></p>
</td>
</tr>
</table>
</body></html>
```

- 6) Click the **Run Application** button.

The screenshot shows the Oracle Application Express Page Rendering interface. The 'Regions' section displays a tree structure with 'Global Page - Desktop' expanded, showing 'Regions' which further includes 'Position 02' and 'In the News'. The 'Run Application' button is highlighted with a mouse cursor.

- 7) The home page is displayed with the “In the News” region. Click the **Customers** tab.

The screenshot shows the Order Management application home page. The 'Customers' tab is selected. The 'In the News' region displays news items, including "Visit us at www.oracle.com".

- 8) Note that the “In the News” region appears on this page too. Click the **Products** tab.

Order Management

Home Customers **Products**

In the News

News and Events
Visit us at www.oracle.com

Go Reports 1. Primary Report Actions ▾

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN

- 9) The region appears on this page too.

Order Management

Home Customers **Products**

In the News

News and Events
Visit us at www.oracle.com

Products

Products List

PRODUCT_ID	PRODUCT_NAME	CATEGORY_ID	PRODUCT_STATUS	LIST_PRICE
1726	LCD Monitor 11/PM	11	under development	259
2359	LCD Monitor 9/PM	11	orderable	249
3060	Monitor 17/HR	11	orderable	299
2243	Monitor 17/HR/F	11	orderable	350
3057	Monitor 17/SD	11	orderable	369
3061	Monitor 19/SD	11	orderable	499
2245	Monitor 19/SD/M	11	orderable	512

Home Application 130 Edit Page 16 Create Session Caching View Debug Debug

Solution 7-3: Modify the Mobile Home Page

Overview

In this solution, you modify the Mobile Home page.

Tasks

- 1) Navigate to the Order Management application home page and click **View Report**.

Application 130 - Order Management

Edit Application Properties

Run Application Supporting Objects Shared Components Utilities Export / Import

View Report

0 - Global Page - jQuery Mobile Smartphone 1 - Home 2 - Home 3 - Customers 4 - Employee Commission 5 - Top Tier Salary

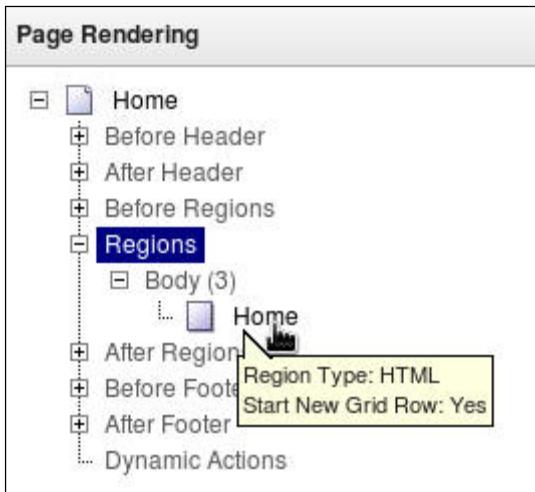
- 2) Select **User Interface** and select **jQuery Mobile Smartphone** to create a filter that will only display the mobile pages.

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Lock
0	Global Page - jQuery Mobile Smartphone	5 days ago	ora01	Global Page	Desktop jQuery Mobile Smartphone	Unassigned	
1	Home	5 days ago	-	Home			
2	Home	5 days ago	ora01	Static HTML			

- 3) Select the **Home** page.

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Loc
0	Global Page - jQuery Mobile Smartphone	5 days ago	ora01	Global Page	jQuery Mobile Smartphone	Unassigned	
2	Home	5 days ago	ora01	Static HTML	jQuery Mobile Smartphone	Unassigned	
205	Employee List	2 days ago	ora01	Static HTML	jQuery Mobile Smartphone	Unassigned	

- 4) Double-click the **Home** region.



- 5) Click the **Source** subtab. Enter the following code in the Region Source area and click **Apply Changes**. You can copy and paste the code from `/home/oracle/labs/files/lab7_3.txt`. Make sure that you change the reference to the page number of the employee list page, in this case, 205.

```

<ul>
<li><a href="f?p=&APP_ID.:<employee_list page number>:&APP_SESSION.">Employee
List</li>
</ul>

```

Region Definition

Region: 1 of 1 Name: Home

Cancel Delete Apply Changes

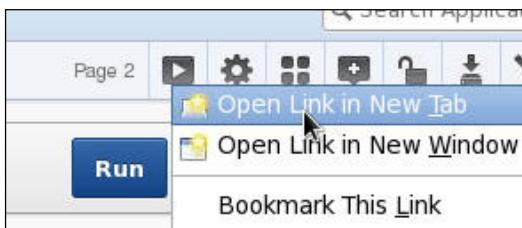
Show All Identification Source User Interface Grid Layout Attributes Header and Footer Conditions Read Only Sec

Source

Region Source

```
<ul>
<li><a href="f?p=&APP_ID.:205:&APP_SESSION.">Employee List</li>
</ul>
```

- 6) Right-click the **Run Page** icon and select **Open Link in New Tab**.



- 7) Enter **ora<n>** for Username and Password, and click **Login**.

Username: ora01

Password: •••••

Login

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

Home Logout

- [Employee List](#)

- 9) The Employee List page is displayed. Click the **Home** icon to return to the Home page.

The screenshot shows a web application interface titled "Employee List". At the top left is a user icon. To its right is the title "Employee List". On the far right is a "Logout" button. Below the title, there is a navigation bar with a "Home" button highlighted by a blue border. The main content area displays a list of four employees: "King", "Kochhar", "De Haan", and "Hunold". Each employee name is followed by a small circular arrow icon with a right-pointing arrow, indicating a link to another page or action. The "Home" button in the navigation bar is also highlighted with a blue border.

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, manipulate the way they work, and change the layout on the page.

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 performed the previous practices or imported the `LAB073_SOLN.sql` packaged application.

Tasks

- a. Create a blank page called Customer Feedback.
- b. Add the following items to the form:

Customer ID	Text Field
Feedback	Text Area
Added On	Date Picker
- c. Add a button on the Customers page to redirect to the Customer Feedback page.
- d. Add an Apply button on the Customer Feedback page.
- e. Add a Cancel button on the Customer Feedback page to redirect to the Customers page.

Practice 8-2: Manipulating Items

Overview

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

Assumptions

You have performed the previous practices.

Tasks

Modify the Customer Details page as follows:

- Modify the Account Manager item to be a select list with the following query (located in /home/oracle/labs/files/lab8_2_1.txt):

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

- 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

- Add a select list item called Country that contains the following query (located in /home/oracle/labs/files/lab8_2_2.txt). This item should allow nulls.

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

- Add another item, City, based on the Country item that you just created with the following query (located in /home/oracle/labs/files/lab8_2_3.txt). Select the Country item as the cascading LOV.

Note: You may need to change the query so that you do not have multiple rows.

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

- e. Change the Account Manager of an existing customer record.
Note: You must navigate to the customer report and edit one of the records.
- f. Modify the Employee Detail mobile form page to take advantage of some of the new HTML5 item types.

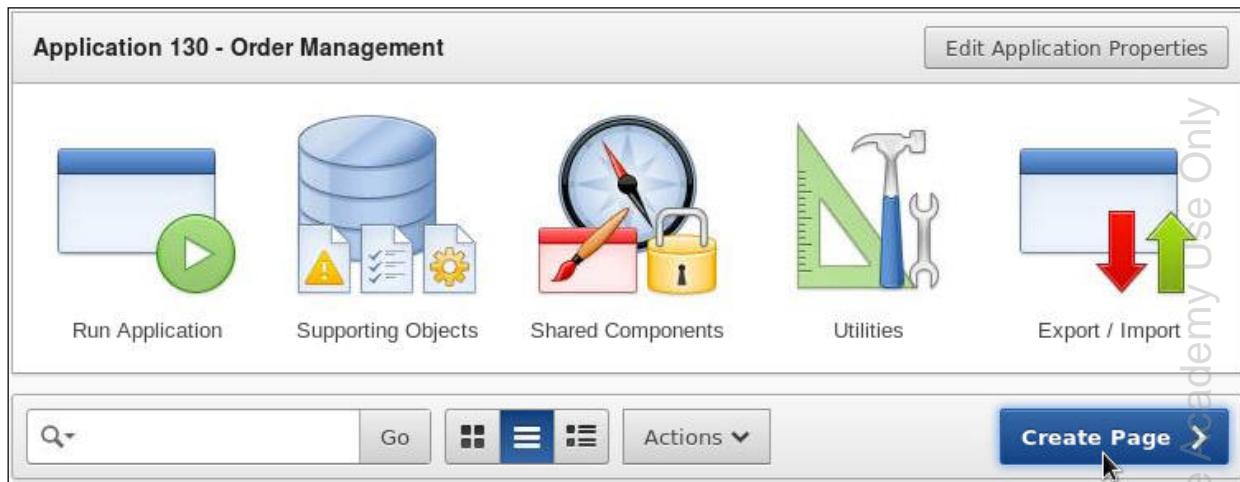
Solution 8-1: Adding Items and Buttons

Overview

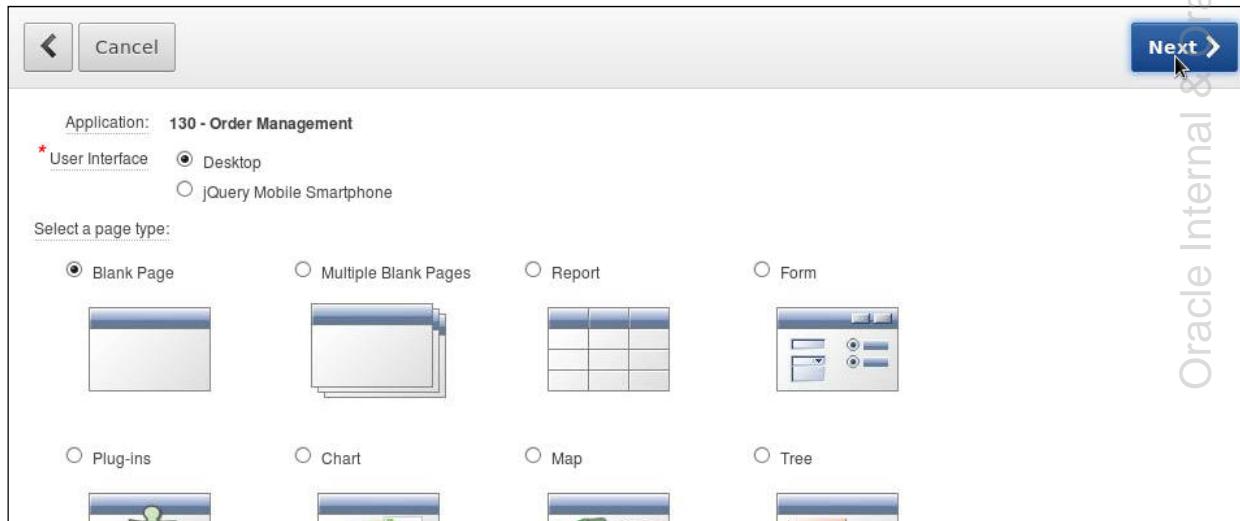
In this practice, you create a Customer Feedback form that contains some items and two buttons. You create a button on the Customers report to link to the feedback form.

Tasks

- a. Create a blank page called Customer Feedback.
 - 1) Navigate to the Order Management application home page and click **Create Page >**.



- 2) Select **Blank Page** and click **Next >**.



- 3) Accept the default and click **Next >**.

Select an unused numeric page identifier. Global page functions as a master page. Global page components are rendered on every page within your application.

Application: 130 - Order Management

* Page Number: 18

Page Alias:

- 4) In the Name field, enter **Customer Feedback**. Click **Next >**.

Page: 18

* Name: Customer Feedback

Breadcrumb: - do not use breadcrumbs on page -

- 5) Accept the default and click **Next >**.

Page: 18

Tab Options:

- Do not use tabs
- Use an existing tab set and create a new tab within the existing tab set.
- Use an existing tab set and reuse an existing tab within that tab set.

- 6) Click **Finish**.

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

Application 130

Page 18

Page Name Customer Feedback

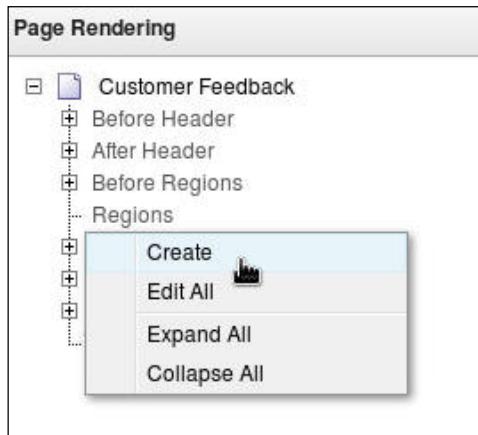
Page Title Customer Feedback

- 7) You want to create a region on this page. Click the **Edit Page** icon.

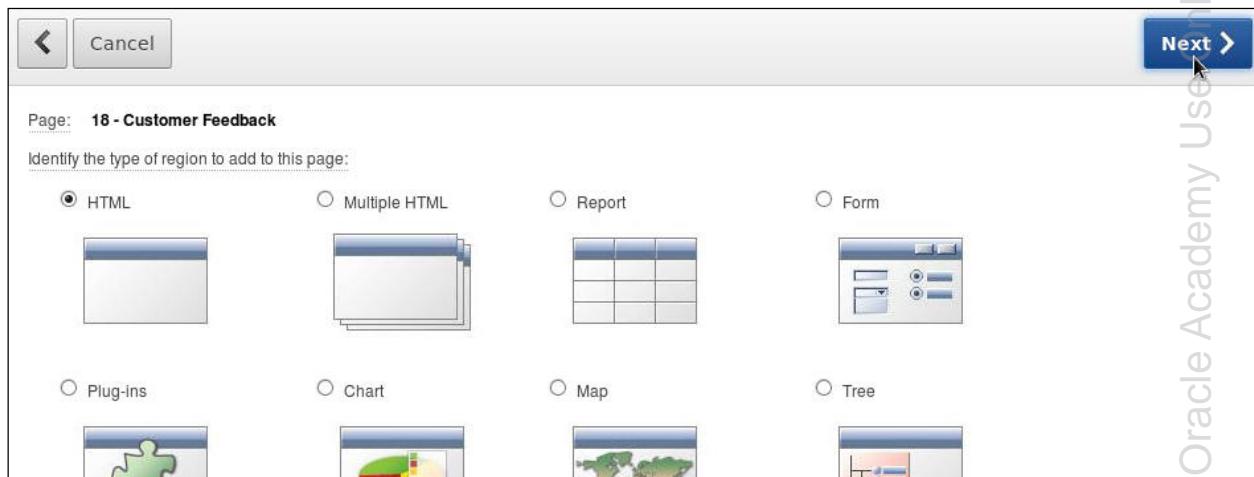
Page 18 has been created successfully.

Edit Page Run Page

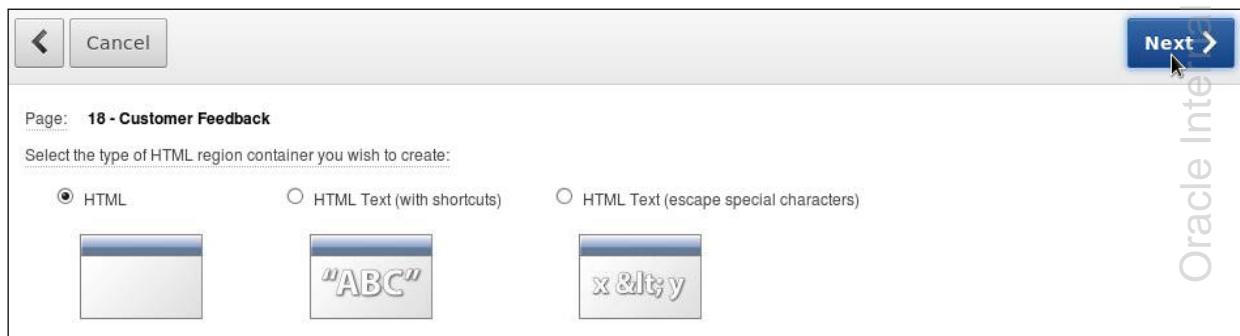
- 8) Right-click **Regions** and select **Create**.



- 9) Select the **HTML** region type and click **Next >**.



- 10) Select **HTML** again and click **Next >**.

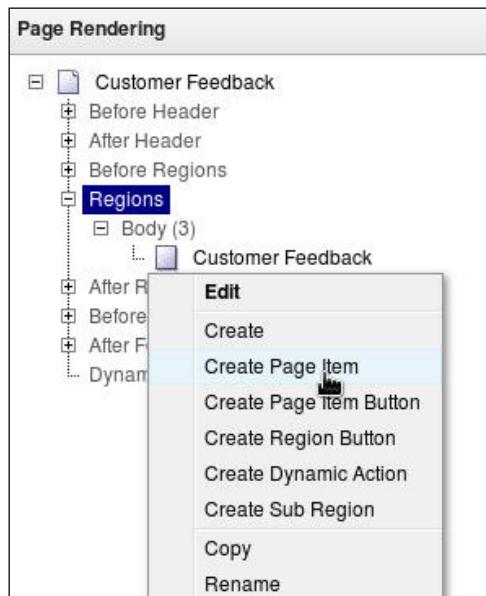


- 11) For Title, enter **Customer Feedback**, accept the defaults for other fields, and click **Create Region**.

- b. Add the following items to the form:

Customer ID	Text Field
Feedback	Text Area
Added On	Date Picker

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



- 2) Select **Text Field** for Item Type and click **Next >**.

The screenshot shows a dialog box titled "Page: 18 - Customer Feedback". The heading "Select Item Type:" is displayed. There are four rows of item types, each with a radio button and a preview image. The "Text Field" option is selected, indicated by a checked radio button and highlighted with a blue border. The other options include Checkbox, Color Picker, Date Picker, Display Image, Display Only, File Browse..., Hidden, List Manager, Number Field, Password, Plug-Ins, Popup LOV, Radio Group, Rich Text Editor, Select List, Shuttle, Textarea, and Yes/No.

- 3) Enter **P<n>_CUSTOMER_ID** for Item Name and click **Next >**.

The screenshot shows a dialog box titled "Page: 18 - Customer Feedback". The "Display As:" field is set to "Text Field". The "Item Name:" field contains "P18_CUSTOMER_ID". The "Sequence" field is set to "10". The "Region" field is set to "Customer Feedback (10)".

- 4) Accept the defaults and click **Next >**.

The screenshot shows a dialog box titled "Page: 18 - Customer Feedback". The "Item Name:" field is "P18_CUSTOMER_ID". The "Display As:" field is "Text Field". The "Label" field is "Customer Id". The "Field Width" field is "30". The "Template" field is "Optional".

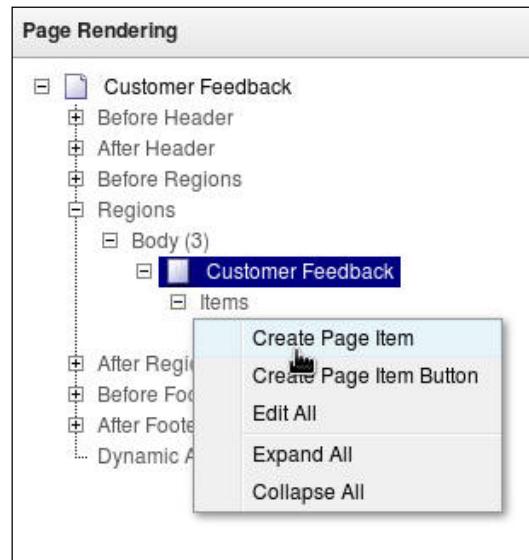
- 5) Accept the defaults and click **Next >**.

Page: 18 - Customer Feedback
Item Name: P18_CUSTOMER_ID
Display As: Text Field
Value Required: No
Subtype: Text
Submit when Enter pressed: No
Disabled: No

- 6) Select **Database Column** for Source Type and click **Create Item**.

Page: 18 - Customer Feedback
Item Name: P18_CUSTOMER_ID
Display As: Text Field
Source Used: Always, replacing any existing value in session state
Source Type: Database Column
Database Column Name: CUSTOMER_ID
Format Mask:

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



8) Select **Text Area** for Item Type and click **Next >**.

Cancel Next >

Page: 18 - Customer Feedback

Select Item Type:

<input type="radio"/> Checkbox	<input type="radio"/> Color Picker	<input type="radio"/> Date Picker	<input type="radio"/> Display Image
<input type="radio"/> Display Only	<input type="radio"/> File Browse...	<input type="radio"/> Hidden	<input type="radio"/> List Manager
<input type="radio"/> Number Field	<input type="radio"/> Password	<input type="radio"/> Plug-ins	<input type="radio"/> Popup LOV
<input type="radio"/> Radio Group	<input type="radio"/> Rich Text Editor	<input type="radio"/> Select List	<input type="radio"/> Shuttle
<input type="radio"/> Text Field	<input type="radio"/> Text Field with autocomplete	<input checked="" type="radio"/> Textarea	<input type="radio"/> Yes/No

9) Enter **P<n>_FEEDBACK** for Item Name and click **Next >**.

Cancel Next >

Page: 18 - Customer Feedback

Display As: **Textarea**

* Item Name:

* Sequence:

* Region:

10) Accept the defaults and click **Next >**.

Cancel Next >

Page: 18 - Customer Feedback

Item Name: **P18_FEEDBACK**

Display As: **Textarea**

Label: [Clear]

Field Width:

Height:

Template:

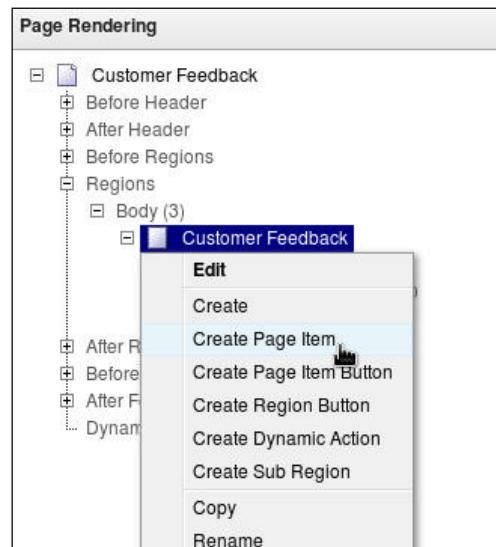
11) Accept the defaults and click **Next >**.

Page: 18 - Customer Feedback
Item Name: P18_FEEDBACK
Display As: Textarea
Value Required: No
Resizable: Yes
Auto-Height: No
Character Counter: No

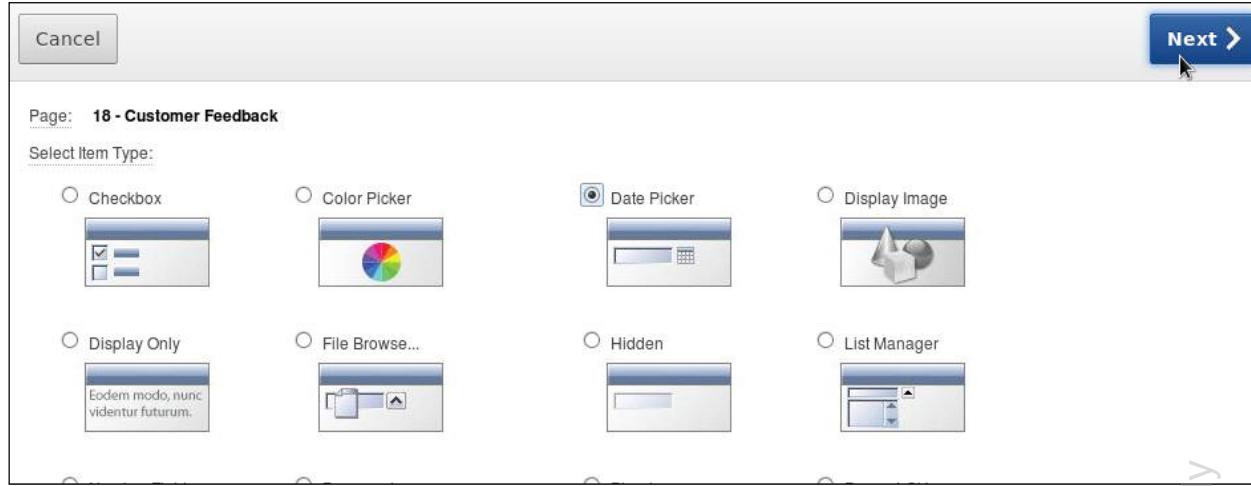
12) Select **Database Column** for Source Type and click **Create Item**.

Page: 18 - Customer Feedback
Item Name: P18_FEEDBACK
Display As: Textarea
Source Used: Always, replacing any existing value in session state
* Source Type: Database Column
Database Column Name: FEEDBACK
Format Mask:
Default:

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



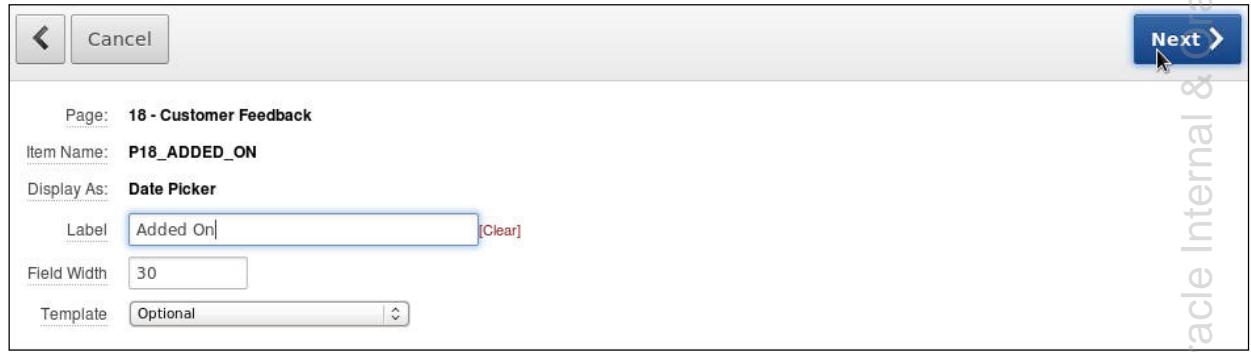
14) Select **Date Picker** for Item Type and click **Next >**.



15) Enter **P<n>_ADDED_ON** for Item Name and click **Next >**.



16) Accept the defaults and click **Next >**.



17) Accept the defaults and click **Next >**.

Page: 18 - Customer Feedback

Item Name: P18_ADDED_ON

Display As: Date Picker

Value Required: No

Format Mask:

Highlighted Date:

Minimum Date:

Maximum Date:

Show: on icon click

Show other Months: No

Navigation List for: None

18) Select **Database Column** for Source Type and click **Create Item**.

Page: 18 - Customer Feedback

Item Name: P18_ADDED_ON

Display As: Date Picker

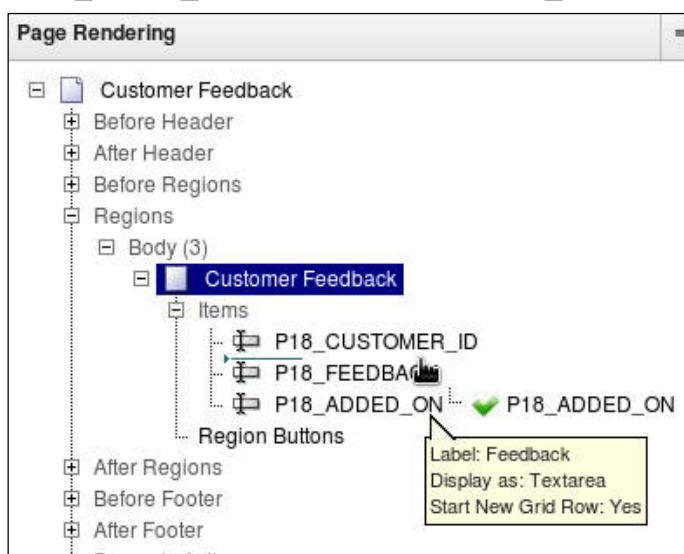
Source Used: Always, replacing any existing value in session state

* Source Type: Database Column

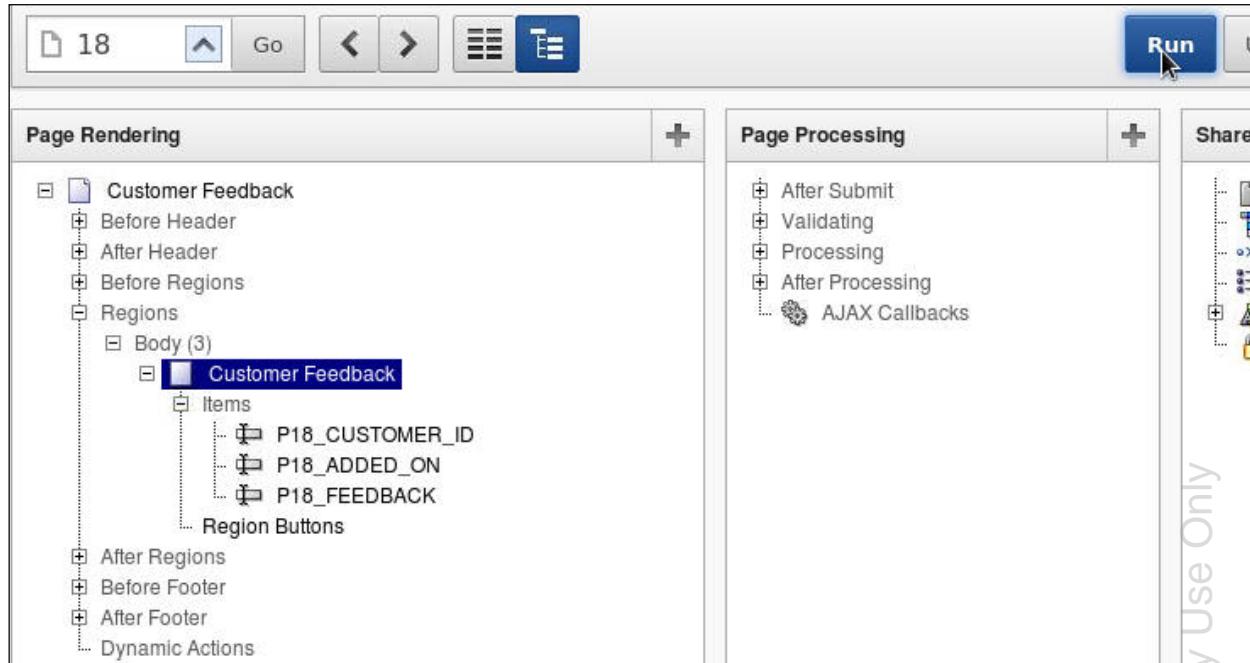
Database Column Name: ADDED_ON

Default:

19) You can also drag an item to reposition the item in the list. Drag the P<n>_ADDED_ON item to above the P<n>_FEEDBACK item.



20) Run the page. Click the **Run** button.



21) On the login page, enter your login credentials if prompted.

The screenshot shows a login page with the following structure:

- In the News** section with the sub-section **News and Events**. It includes a link to www.oracle.com.
- Login** section with fields for **Username** (containing 'ora01') and **Password** (containing five dots). To the right of the password field is a **Login** button with a cursor pointing at it.

- 22) You want to create a button on the **Customers** page to redirect to the Customer Feedback page. Click the **Application <n>** link on the Developer toolbar.

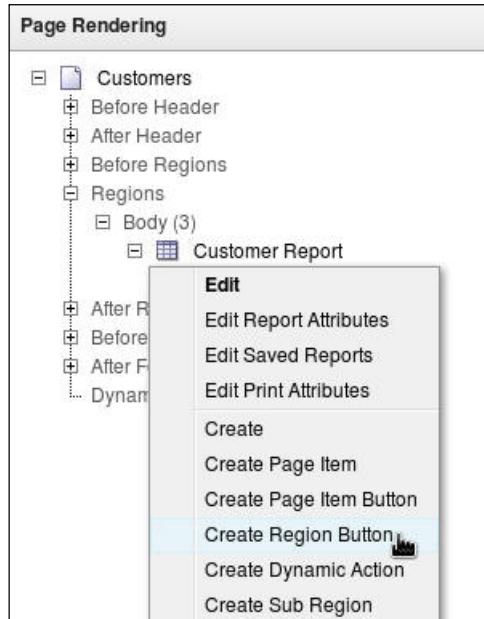
- c. Add a button on the Customers page to redirect to the Customer Feedback page.

- 1) Click the **Customers** page icon.

Note: You may need to remove the filter you created previously and click View Icons to see what is displayed in the screenshot.



- 2) Right-click the **Customer Report** region and select **Create Region Button**.



- 3) For Button Name, enter **Customer Feedback** and for Button Style, select **Template Based Button**. For Button Template, select **Large Button**. Click **Next >**.

The screenshot shows the 'Create Button' dialog. The 'Page' is '3 - Customers' and the 'Region' is 'Customer Report'. The 'Button Name' is set to 'CUSTOMER_FEEDBACK'. The 'Label' is 'Customer Feedback'. The 'Button Style' is 'Template Based Button'. The 'Button Template' is 'Large Button'. The 'Next >' button is highlighted with a mouse cursor.

- 4) Select **Right of Interactive Report Search Bar** for Position and click **Next >**.

The screenshot shows the 'Create Button' dialog. The 'Page' is '3 - Customers' and the 'Region' is 'Customer Report'. The 'Button Name' is 'CUSTOMER_FEEDBACK'. The 'Sequence' is '10'. The 'Position' is 'Right of Interactive Report Search Bar'. The 'Alignment' is 'Right'. The 'Next >' button is highlighted with a mouse cursor.

- 5) For **Action**, select the **Redirect to Page in this Application** and click the icon to the right of the Page field.

The screenshot shows a configuration dialog for a button action. The 'Action' dropdown is set to 'Redirect to Page in this Application'. The 'Page' field contains the value '3 - Customers'. To the right of the 'Page' field is a small icon of a hand cursor pointing up, which is a standard UI element for a 'Select' or 'Open' operation in Oracle ADF.

Page:	3 - Customers
Region:	Customer Report
Button Name:	CUSTOMER_FEEDBACK
Action:	Redirect to Page in this Application
* Page:	<input type="text" value="3 - Customers"/>
<input type="checkbox"/> reset pagination for this page Popup List of Values: Page	
Request:	<input type="text"/>
Clear Cache:	<input type="text"/> (comma separated page numbers)
Set these items:	<input type="text"/> (comma separated name list)
With these values:	<input type="text"/> (comma separated value list)

- 6) Select the **Customer Feedback** page from the list.

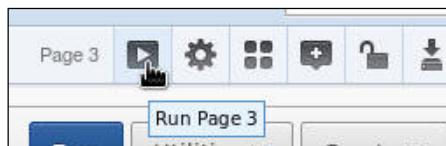
The screenshot shows a modal dialog with a search bar at the top. Below the search bar is a list of page names, each preceded by a small icon. The page '18 Customer Feedback' is highlighted with a black rectangular selection box around its icon and text.

	<input type="text"/>	Search	Close
0 Global Page - jQuery Mobile Smartphone			
1 Home			
2 Home			
3 Customers			
4 Employee Commission			
5 Top Tier Salary			
6 Customer Address List			
8 Customer Details			
9 List of Orders			
10 Master Detail			
13 Update Employee Information			
16 Products			
17 Global Page - Desktop			
18 Customer Feedback	[Selected]		
101 Login			
205 Employee List			
206 Employee Detail			
1001 Login			

7) Click **Create Button**.

Page: 3 - Customers
Region: Customer Report
Button Name: CUSTOMER_FEEDBACK
Action: Redirect to Page in this Application
* Page: 18
Request:
Clear Cache: (comma separated page numbers)
Set these items: (comma separated name list)
With these values: (comma separated value list)

8) To run the page, click **Run**.



9) Click the **Customer Feedback** button.



d. Add an Apply button on the Customer Feedback page.

- 1) 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** link on the Developer toolbar.

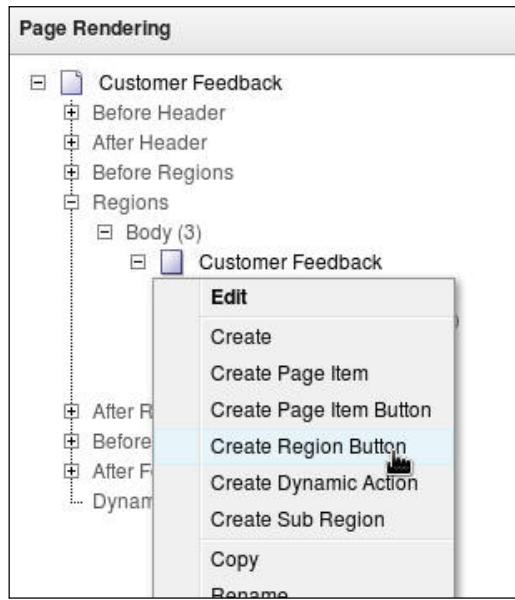
In the News
News and Events
Visit us at www.oracle.com

Customer Feedback

Customer Id:
Added On:
Feedback:

Home Application 130 Edit Page 18 Create Session Caching View Debug Debug Show Edit Links Show Grid

- 2) Right-click the **Customer Feedback** region and select **Create Region Button**.

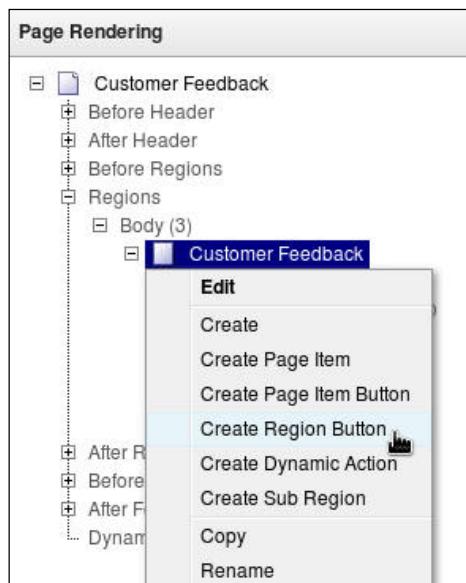


- 3) Click the **[Apply]** quick pick for Button Name as **APPLY_CHANGES** and for Button Style select **Template Based Button**. For Button Template, select **Large Button** and Button Type as **Hot**. Click **Create Button**.

Page:	18 - Customer Feedback
Region:	Customer Feedback
* Button Name:	APPLY_CHANGES
<input type="button" value="[Cancel]"/> <input type="button" value="[Next]"/> <input type="button" value="[Previous]"/> <input type="button" value="[Apply]"/> <input type="button" value="[Submit]"/> <input type="button" value="[Delete]"/> <input type="button" value="[Finish]"/> <input type="button" value="[Create]"/> <input type="button" value="[Reset]"/>	
* Label:	Apply
Button Style:	Template Based Button
Button Template:	Large Button
Button Type:	Hot
Button Attributes:	

- e. Add a Cancel button on the Customer Feedback page to redirect to the Customers page.

- 1) You also want to create a Cancel button. Right-click the **Customer Feedback** region and select **Create Region Button**.



- 2) Click the **[Cancel]** quick pick and for Button Style, select **Template Based Button**. For Button Template, select **Large Button**, and then click **Next >**.

Page:	18 - Customer Feedback
Region:	Customer Feedback
* Button Name:	CANCEL
<input type="button" value="[Cancel]"/> <input type="button" value="[Next]"/> <input type="button" value="[Previous]"/> <input type="button" value="[Apply]"/> <input type="button" value="[Submit]"/> <input type="button" value="[Delete]"/> <input type="button" value="[Finish]"/> <input type="button" value="[Create]"/> <input type="button" value="[Reset]"/>	
* Label:	Cancel
Button Style:	Template Based Button
Button Template:	Large Button
Button Type:	Normal
Button Attributes:	

- 3) Accept the default and click **Next >**.

Page:	18 - Customer Feedback
Region:	Customer Feedback
Button Name:	CANCEL
* Sequence:	20
Position:	Top of Region
<input type="button" value="[Top]"/> <input type="button" value="[Close]"/> <input type="button" value="[Edit]"/> <input type="button" value="[Create]"/> <input type="button" value="[Change]"/> <input type="button" value="[Previous]"/> <input type="button" value="[Next]"/>	
Alignment:	Right

- 4) Select **Redirect to Page in this Application** for **Action**, and enter the page number for the **Customers** page (in this case, 3) in the **Page** field. Click **Create Button**.

Page: 18 - Customer Feedback
Region: Customer Feedback
Button Name: CANCEL
Action: Redirect to Page in this Application
* Page: 3
 reset pagination for this page
Request:
Clear Cache: (comma separated page numbers)
Set these items: (comma separated name list)
With these values: (comma separated value list)

- 5) Run the page. Click **Run**.

18 Go < > Run

Page Rendering

- Customer Feedback
 - Before Header
 - After Header
 - Before Regions
 - Regions
 - Body (3)
 - Customer Feedback
 - Items
 - P18_CUSTOMER_ID
 - P18_ADDED_ON
 - P18_FEEDBACK
 - Region Buttons
 - APPLY_CHANGES
 - CANCEL
 - After Regions
 - Before Footer

Page Processing

- After Submit
- Validating
- Processing
- After Processing
- AJAX Callbacks

- 6) The **Apply** and **Cancel** buttons are created successfully. Click the **Application <n>** link on the Developer toolbar.

The screenshot shows the Oracle Application Express developer toolbar. On the left, there's a sidebar with 'In the News' and 'News and Events' sections, and a link to 'www.oracle.com'. The main area is titled 'Customer Feedback' and contains three input fields: 'Customer Id' (text input), 'Added On' (date input with a calendar icon), and 'Feedback' (text area). At the top right are 'Apply' and 'Cancel' buttons. Below the main area is a toolbar with links: Home, Application 130, Edit Page 18, Create, Session, Caching, View Debug, Debug, Show Edit Links, and Show Grid. The 'Application 130' link is highlighted.

Solution 8-2: Manipulating Items

Overview

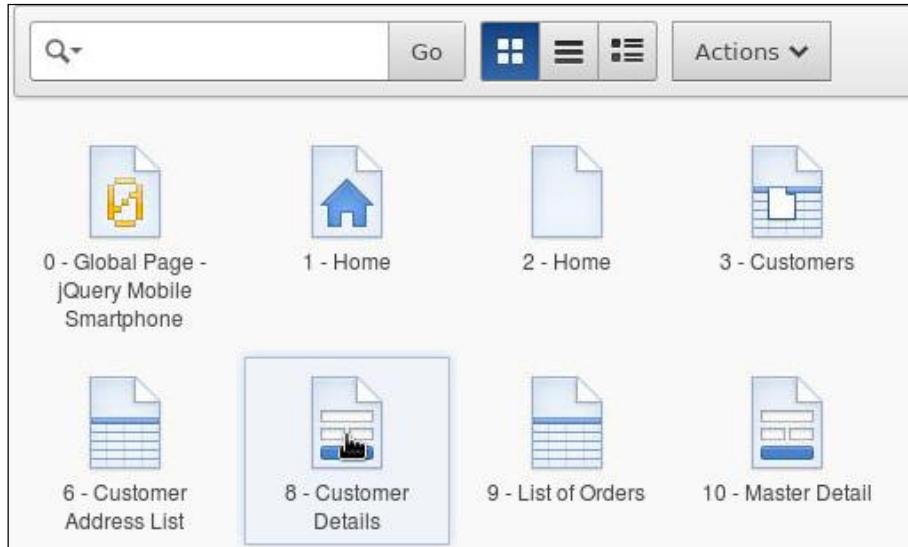
In this practice, you add some additional items and modify the way the fields in the Customer Details form are displayed.

Tasks

- Modify the Account Manager item to be a select list with the following query (located in /home/oracle/labs/files/lab8_2_1.txt):

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

- 1) Navigate to the Order Management application home page and select the **Customer Details** page.



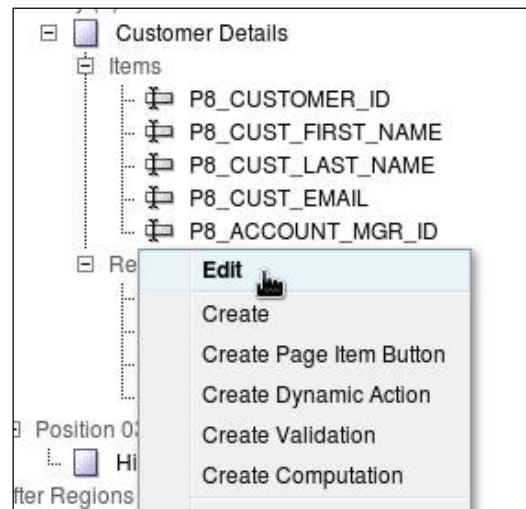
- 2) Run the page.



- 3) You will change the **Account Manager** item to a select list and also add a quick pick list. Click the **Edit Page** link on the Developer toolbar.

The screenshot shows the Order Management page with the Customer Details form open. The Cust First Name field is selected. A Hint box on the right contains the text: "Use this page to enter and maintain customer information."

- 4) Right-click the **P<n>_ACCOUNT_MGR_ID** item and select **Edit**.



- 5) Click the **Select List** quick pick, change the label to **Account Manager**, and click the **List of Values** tab.

- 6) 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/files/lab8_2_1.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 OEHR_EMPLOYEES
where DEPARTMENT_ID=80
order by 1
```

Show All Identification User Interface Grid Layout Label Settings List of Values Element Source De

List of Values

Named LOV - Select Named LOV -

Display Extra Values Yes

Display Null Value Yes

Null Display Value - Select Manager - Null Return Value

Cascading LOV Parent Item(s)

List of values definition

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

- b. 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

- 1) Click the **Quick Picks** tab.

Page Item: P8_ACCOUNT_MGR_ID Cancel Delete Apply Changes < >

Show All Identification User Interface Grid Layout Label Settings List of Values Element Source Default Quick Picks

List of Values

Named LOV - Select Named LOV -

Display Extra Values Yes

Display Null Value Yes

Null Display Value - Select Manager - Null Return Value

Cascading LOV Parent Item(s)

List of values definition

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

- 2) Select Yes for Show Quick Picks. Enter the following labels and values and click Apply Changes.

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

Page Item: P8_ACCOUNT_MGR_ID

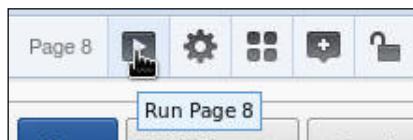
Show All Identification User Interface Grid Layout Label Settings List of Values Element Source Default Quick Picks Condition

Quick Picks

Show Quick Picks Yes

Label 1	Bates, Elizabeth	Value 1	172
2	Russell, John	2	145
3	Cambrault, Gerald	3	148
4		4	

- 3) Click the Run Page icon.



- 4) Click the Account Manager drop-down list to see the list of Account Managers.

Customer Details

Cust First Name *	<input type="text"/>
Cust Last Name *	<input type="text"/>
Cust Email	<input type="text"/>
Account Manager	<input type="button" value="- Select Manager -"/> <div style="display: none;"> Abel, Ellen Ande, Sundar Banda, Amit Bates, Elizabeth Bernstein, David Bloom, Harrison Cambrault, Gerald Cambrault, Nanette Doran, Louise </div>
The record created or modified by this user will be displayed in the Customer Report.	

- 5) 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.

- 6) Notice how the name is selected for **Account Manager**. You want to add some additional items. Click the **Edit Page** link on the Developer toolbar.

Customer Details

Cancel **Create**

Cust First Name *

Cust Last Name *

Cust Email

Account Manager

[Bates, Elizabeth](#), [Russell, John](#), [Cambrault, Gerald](#)

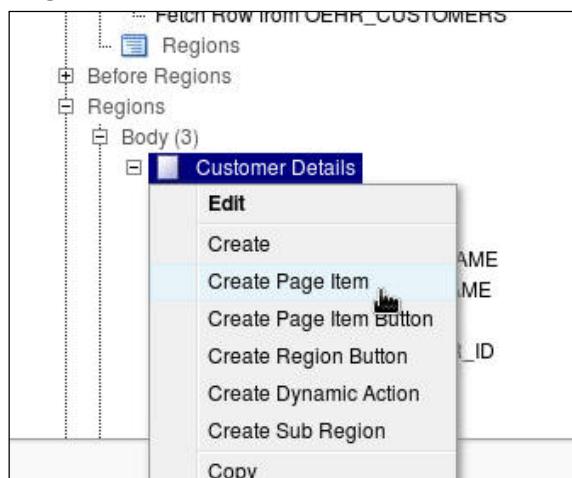
The record created or modified in this form is reflected in the Customer Report.

Home **Application 130** **Edit Page 8** **Create** **Session** **Caching** **View Debug** **Debug** **Show Edit Links** **Show**

- c. Add a select list item called Country that contains the following query (located in /home/oracle/labs/files/lab8_2_2.txt). This item should allow nulls.

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

- 1) In the Customer Details region, right-click **Customer Details** and select **Create Page Item**.



- 2) Select the **Select List** item type and click **Next >**.

The screenshot shows the 'Select Item Type' configuration dialog. The 'Page' is set to '8 - Customer Details'. The 'Select Item Type:' section contains a grid of 16 item types, each with a radio button and a preview icon. The 'Select List' item type is selected, indicated by a checked radio button. Other item types shown include Checkbox, Color Picker, Date Picker, Display Image, Display Only, File Browse..., Hidden, List Manager, Number Field, Password, Plug-ins, Popup LOV, Radio Group, Rich Text Editor, Shuttle, Text Field, Text Field with autocomplete, Textarea, and Yes/No. The 'Next >' button is visible at the top right of the dialog.

- 3) Enter **P8_COUNTRY_ID** for Item Name and click **Next >**.

The screenshot shows the 'Configure Page Item' dialog. The 'Page' is set to '8 - Customer Details'. The 'Display As:' dropdown is set to 'Select List'. The 'Item Name' field contains 'P8_COUNTRY_ID' (with a red asterisk indicating it's required). The 'Sequence' field is set to '60'. The 'Region' dropdown is set to 'Customer Details (0)'. The 'Next >' button is visible at the top right of the dialog.

- 4) Change the Label to **Country** and click **Next >**.

Page: 8 - Customer Details
Item Name: P8_COUNTRY_ID
Display As: Select List
Label: Country [Clear]
Height: 1
Template: Optional

- 5) Accept the defaults and click **Next >**.

Page: 8 - Customer Details
Item Name: P8_COUNTRY_ID
Display As: Select List
Value Required: No
Page Action when Value Changed: None (Default)
Allow Multi Selection: No

- 6) Enter the following SQL in the **List of Values** Query area (located in /home/oracle/labs/files/lab8_2_2.txt). Enter - **Select Country** - for Null Display Value and click **Next >**.

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

Application/Page: 130/8
Item Name: P8_COUNTRY_ID
Display As: Select List
Named LOV:
Display Null Value: Yes
Null Display Value: - Select Country
Null Return Value:
Cascading LOV Parent Item(s):

* List of Values Query

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

- 7) Select **Database Column** for Source Type. Notice that the **COUNTRY_ID** column is automatically inserted. Click **Create Item**.

Identify the source of the item. If the item source is null the default value will be used.

Page: 8 - Customer Details

Item Name: P8_COUNTRY_ID

Display As: Select List

Source Used: Always, replacing any existing value in session state

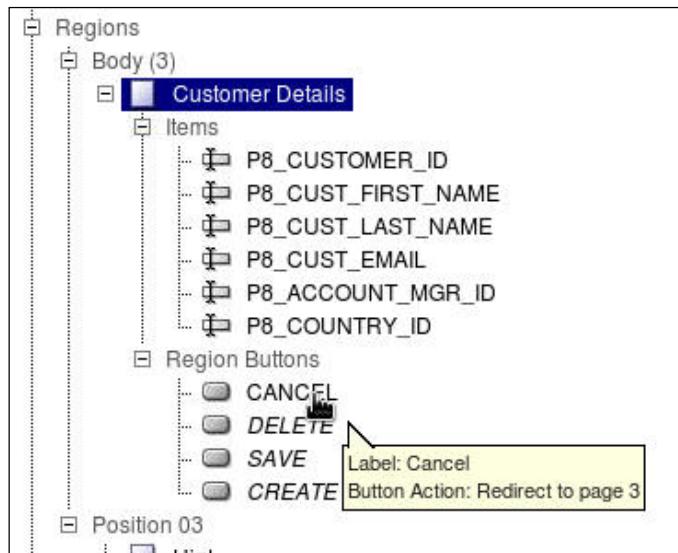
* Source Type: Database Column

Database Column Name: COUNTRY_ID

Format Mask:

Default:

- 8) You want to change the size of the Cancel button. Under Region Button, double-click **CANCEL**.



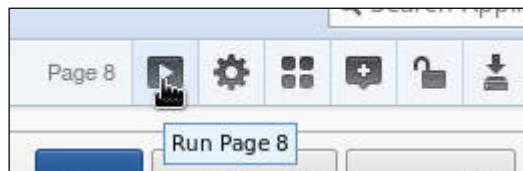
- 9) Under Attributes, change the Button Template to **Large Button** and click **Apply Changes**.

Page Button: 1 of 4 Name: CANCEL

Cancel Delete Apply Changes

Show All	Name	Displayed	Attributes	Action When Button Clicked	Conditions	Security	Configuration	Comments
Name								
Page: 8 Customer Details								
* Button Name	CANCEL							
* Text Label / Alt	Cancel							
Displayed								
* Sequence	10							
* Display in Region	Customer Details (0)							
* Button Position	Region Template Position #CLOSE#							
Button Alignment	Right							
Attributes								
Static ID								
Button Style	Template Based Button							
* Button Template	Large Button							
Button Type	Normal							

- 10) Run the page. Click the **Run Page** icon.



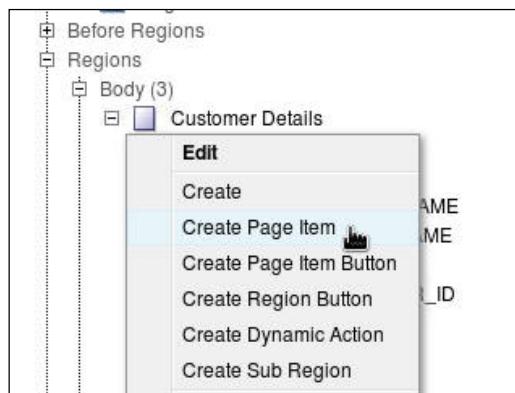
- 11) Notice that the **Country Id** item shows a select list of country names. You want to create an item that is based on the country selected (cascading LOV). Click the **Edit Page** link on the Developer toolbar.

The screenshot shows the 'Customer Details' page with various input fields: 'Cust First Name *', 'Cust Last Name *', 'Cust Email', 'Account Manager' (with a dropdown menu showing options like 'Bates, Elizabeth', 'Russell, John', 'Cambrault, Gerald'), and a 'Country' field which is currently expanded to show a cascading LOV. The dropdown menu lists countries starting with Argentina and ending with Israel.

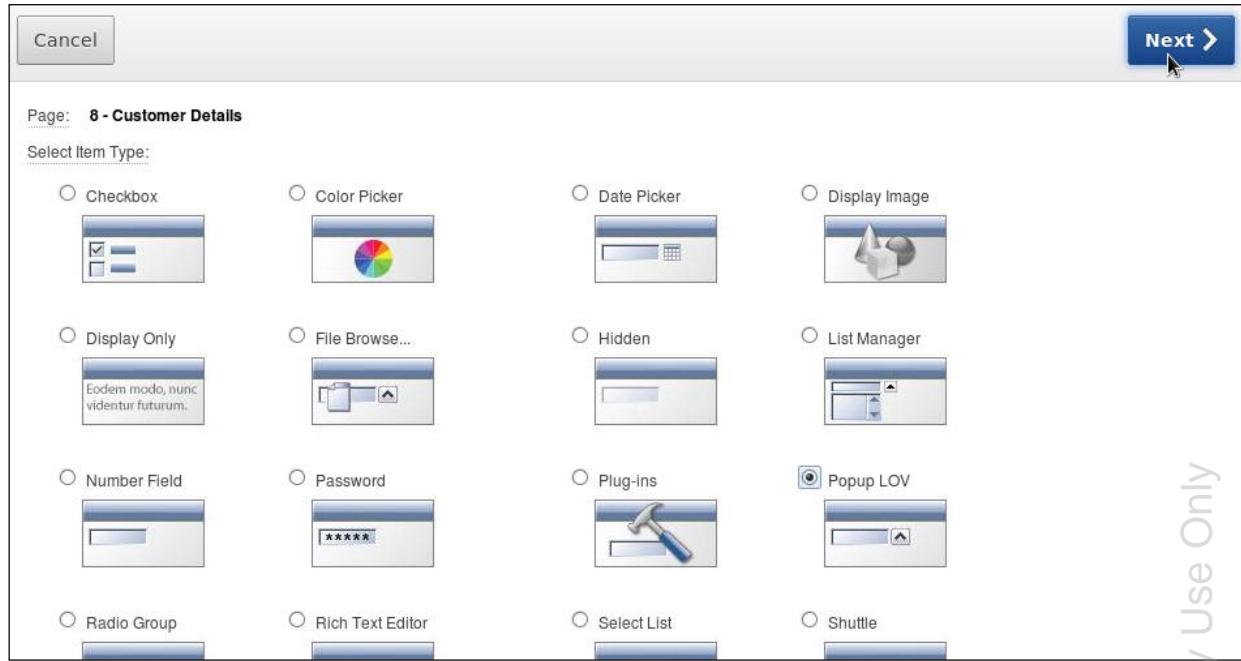
- d. Add another item, City, based on the Country item that you just created with the following query (located in /home/oracle/labs/files/lab8_2_3.txt). Select the Country item as the cascading LOV. **Note:** You may need to change the query so that you do not have multiple rows.

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

- 1) Right-click **Customer Details** under Regions and select **Create Page Item**.



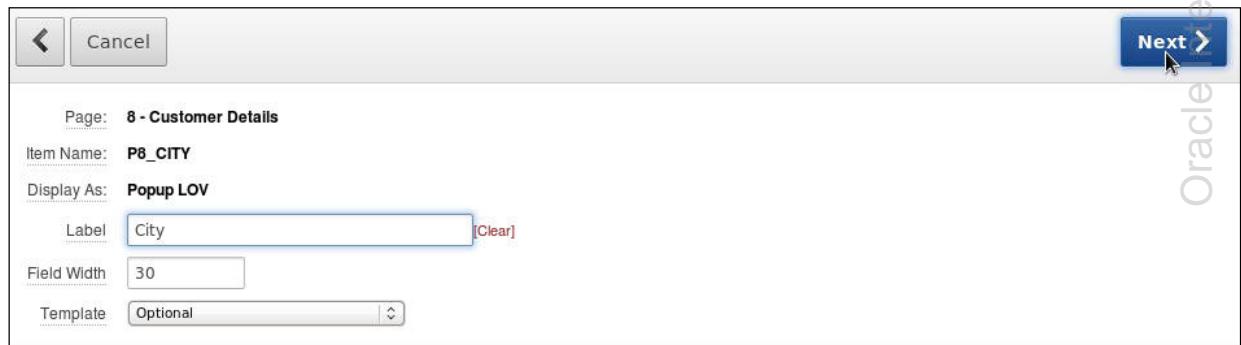
- 2) Select the **Popup LOV** item type and click **Next >**.



- 3) Enter **P<n>_CITY** for Item Name and click **Next >**.



- 4) Accept the defaults and click **Next >**.

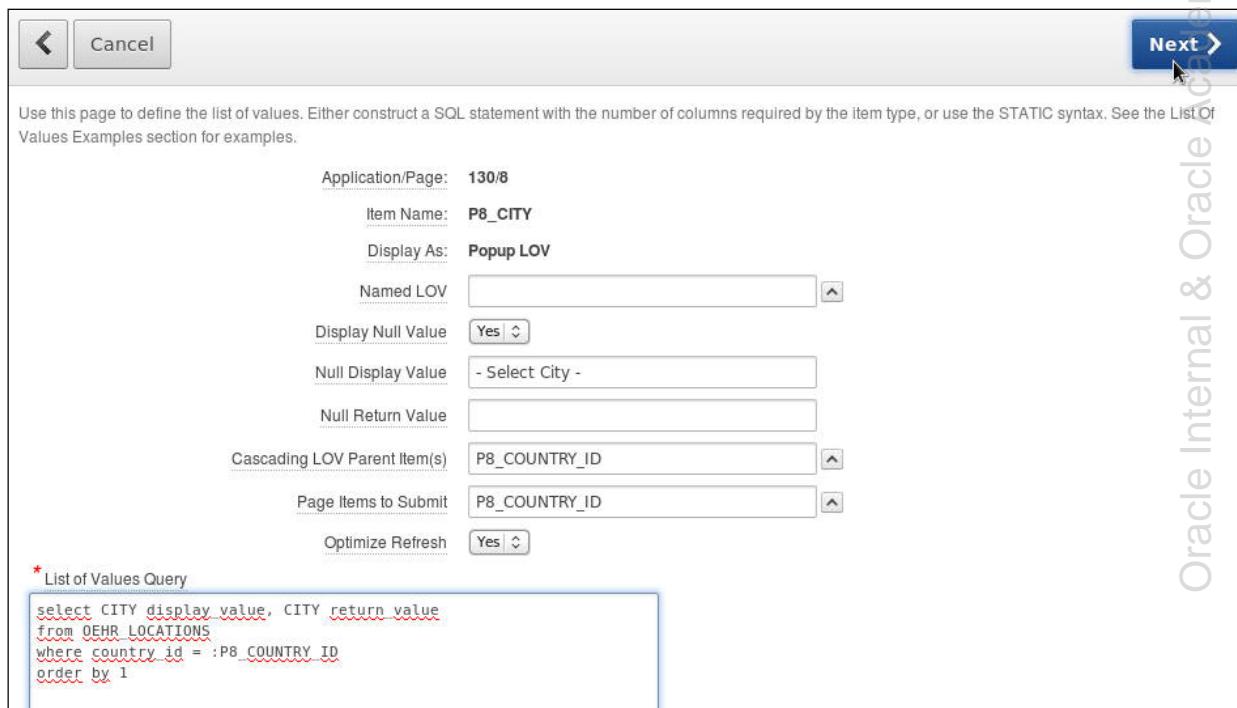


- 5) Accept the defaults and click **Next >**.



- 6) Enter the following SQL in the **List of Values** Query (located in /home/oracle/labs/files/lab8_2_3.txt). Enter – **Select City – in Null Display Value** and select **P<n>_COUNTRY_ID** for the **Cascading LOV Parent Item(s)** and **Page Items to Submit** fields. Note that this item will be refreshed when the value of **P<n>_COUNTRY_ID** is changed. Click **Next**. Be sure to change **P<n>** to your page number.

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



- 7) Select **Database Column** for Source Type and click **Create Item**.

Identify the source of the item. If the item source is null the default value will be used.

Page: 8 - Customer Details

Item Name: P8_CITY

Display As: Popup LOV

Source Used: Always, replacing any existing value in session state

* Source Type: Database Column

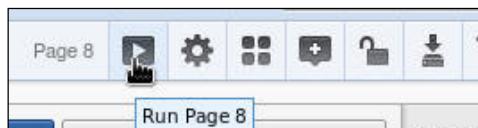
Database Column Name: CITY

Format Mask:

Default:

Create Item

- 8) Click the **Run Page** icon.



- 9) 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

Japan

City

The record created or modified in this form is reflected in the Customer Report

Pop-up List of Values: City

Create

- 10) A pop-up window with only the cities from Japan are shown. Click one of the cities.

- Select City -

Hiroshima

Tokyo

Search

Close

- e. Change the Account Manager of an existing customer record.

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

- 1) You want to modify an existing record. Click the **Customers** tab.

Order Management

Home	Customers	Products
<p>In the News</p> <p>News and Events</p> <p>Visit us at www.oracle.com</p>		
<p>Customer Details</p> <p>Cust First Name * <input type="text"/></p> <p>Cust Last Name * <input type="text"/></p> <p>Cust Email <input type="text"/></p> <p>Account Manager <input type="button" value="- Select Manager -"/></p> <p>Bates, Elizabeth, Russell, John, Cambrault, Gerald</p> <p>Country <input type="button" value="Japan"/></p> <p>City Hiroshima <input type="button" value=""/></p> <p>The record created or modified in this form is reflected in the Customer Report.</p>		

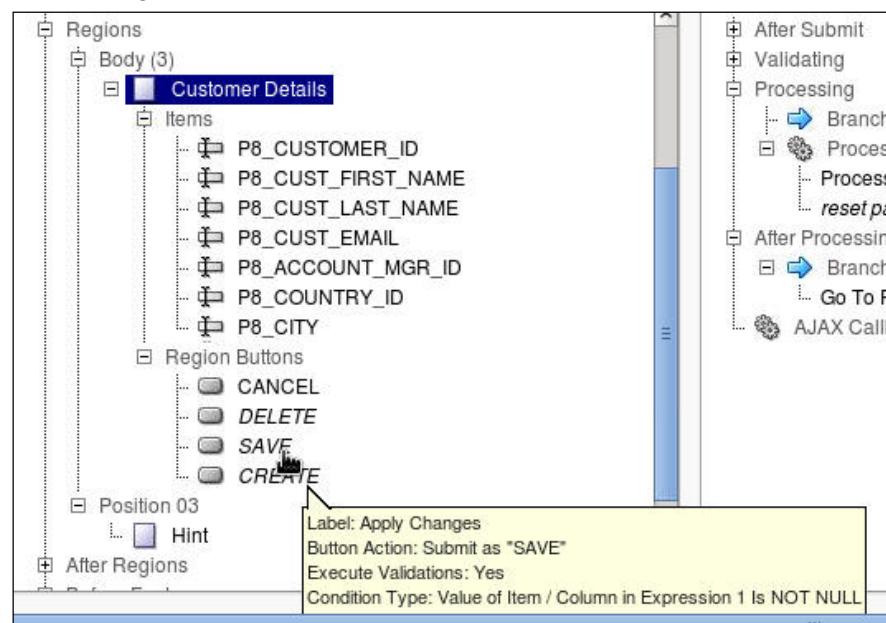
- 2) Click the **Edit** icon for one of the rows.

		<input type="text"/> Go		Reports	1. Primary Report	Actions ▾		Customer	
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country	
<input type="button" value="Edit"/>	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	
<input type="button" value="Edit"/>	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	
<input type="button" value="Edit"/>	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	
<input type="button" value="Edit"/>	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US	
<input type="button" value="Edit"/>	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US	

- 3) You want to make one more change on the Customer Details page so that the Apply Changes button is highlighted and appears larger. Click **Edit Page <n>**.

The screenshot shows the 'Customer Details' page. It contains fields for 'Cust First Name' (Manisha), 'Cust Last Name' (Taylor), 'Cust Email' (Manisha.Taylor@AUKLET.COM), 'Account Manager' (Russell, John), 'Country' (United States of America), and 'City' (Bloomington). At the bottom, a message states: 'The record created or modified in this form is reflected in the Customer Report.' Below the form is a navigation bar with links: Home, Application 130, Edit Page 8, Create, Session, Caching, View Debug, Debug, Show Edit Links, and Share.

- 4) Under Region Buttons, double-click the **SAVE** button.



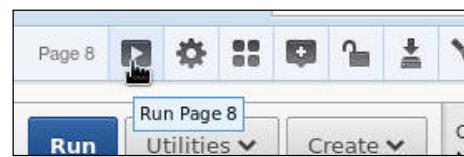
- 5) Under Attributes, change the Button Template to **Large Button** and change Button Type to **Hot**. Click **Apply Changes**.

Page Button: 3 of 4 Name: SAVE

Cancel Delete Apply Changes

Show All	Name	Displayed	Attributes	Action When Button Clicked	Conditions	Security	Configuration	Comments
Name								
Page: 8 Customer Details								
* Button Name	SAVE							
* Text Label / Alt	Apply Changes							
Displayed								
* Sequence	30							
* Display in Region	Customer Details (0)							
* Button Position	Region Template Position #CHANGE#							
Button Alignment	Right							
Attributes								
Static ID								
Button Style	Template Based Button							
* Button Template	Large Button							
Button Type	Hot							
Button CSS Classes								

- 6) Click the **Run Page** icon.



- 7) Click one of the quick picks for **Account Manager**.

Customer Details

Cust First Name * Manisha

Cust Last Name * Taylor

Cust Email Manisha.Taylor@AUKLET.COM

Account Manager Russell, John

Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country United States of America

City Bloomington

The record created or modified in this form is reflected in the Customer Report.

Cancel Delete Apply Changes

- 8) Click **Apply Changes**.

Customer Details

Cust First Name * Manisha

Cust Last Name * Taylor

Cust Email Manisha.Taylor@AUKLET.COM

Account Manager Bates, Elizabeth

Bates, Elizabeth, Russell, John, Cambrault, Gerald

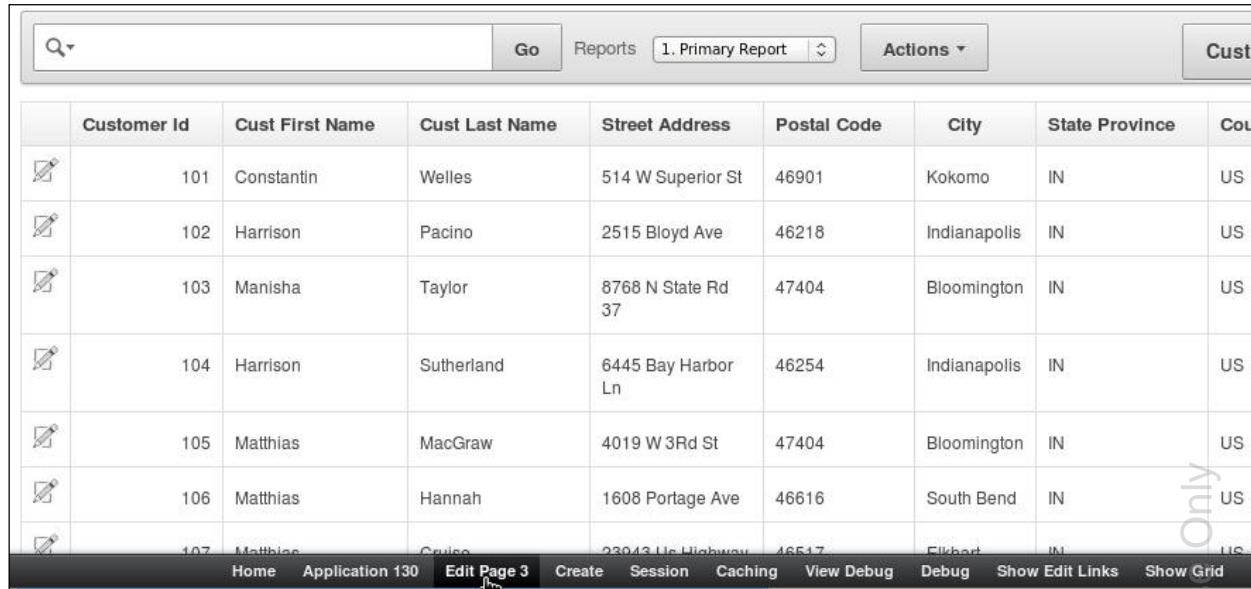
Country United States of America

City Bloomington

The record created or modified in this form is reflected in the Customer Report.

Cancel Delete Apply Changes

- 9) The action is processed. Click the **Edit Page** link on the Developer toolbar.



The screenshot shows a table of customer data with columns for Customer ID, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, and Country. The table has 7 rows of data. At the bottom of the page, the developer toolbar is visible with various buttons like Home, Application 130, Edit Page 3, Create, Session, Caching, View Debug, Debug, Show Edit Links, and Show Grid. The 'Edit Page 3' button is highlighted with a mouse cursor.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US
	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US
	106	Matthias	Hannah	1608 Portage Ave	46616	South Bend	IN	US
	107	Matthias	Cruise	23043 Us Highway 16517	46517	Elkhart	IN	US

- f. Modify the Employee Detail mobile form page to take advantage of some of the new HTML5 item types.
- 1) You want to add a new column to the OEHR_EMPLOYEES table to store whether an employee is active or not. Select **SQL Workshop > Object Browser**.



- 2) Select **OEHR_EMPLOYEES** from the Tables list.

Tables
EBA_CUST_TAGS_TYPE_SUM
EBA_CUST_TZ_PREF
EBA_CUST_USERS
EBA_CUST_VIEWS_LOG
EMP
OEHR_AUDITS
OEHR_COUNTRIES
OEHR_CUSTOMERS
OEHR_DEPARTMENTS
OEHR_EMPLOYEES
OEHR_INVENTORIES
OEHR_JOBS
OEHR_JOB_HISTORY

- 3) Click Add Column.

OEHR_EMPLOYEES					
Table Data Indexes Model Constraints Grants Statistics UI Defaults Triggers Dependencies SQL					
Column Name	Data Type	Nullable	Default	Primary Key	
EMPLOYEE_ID	NUMBER(6,0)	No	-	1	
FIRST_NAME	VARCHAR2(20)	Yes	-	-	
LAST_NAME	VARCHAR2(25)	No	-	-	
EMAIL	VARCHAR2(25)	No	-	-	
PHONE_NUMBER	VARCHAR2(20)	Yes	-	-	
HIRE_DATE	DATE	No	-	-	
JOB_ID	VARCHAR2(10)	No	-	-	
SALARY	NUMBER(8,2)	Yes	-	-	
COMMISSION_PCT	NUMBER(2,2)	Yes	-	-	
MANAGER_ID	NUMBER(6,0)	Yes	-	-	

- 4) Enter **ACTIVE_YN** for Add Column, select **VARCHAR2** for Type, enter **1** for Length, and click **Next >**.

Add Column

Schema: ORA01

Table: OEHR_EMPLOYEES

* Add Column: ACTIVE_YN

Type: VARCHAR2

Length: 1

Precision:

Scale:

Nullable: NULL (do not require a value)

Preserve Case

Cancel Next >

- 5) Click **Finish**.

Confirm your request

!

Schema: ORA01

Object: OEHR_EMPLOYEES

Action: Add Column ACTIVE_YN

Cancel < Previous Finish

- 6) Now you can modify the Employee Detail mobile form page. Navigate to the Order Management application page. Click the **View Report** icon.

The screenshot shows the Oracle Application 130 - Order Management interface. At the top, there are four main icons: 'Run Application', 'Supporting Objects', 'Shared Components', and 'Utilities'. Below these are search and action buttons. In the 'Utilities' section, there are five items labeled 0 through 4, each with an icon and a link: '0 - Global Page - jQuery Mobile Smartphone', '1 - Home', '2 - Home', '3 - Customers', and '4 - Employee Commission'. The 'View Report' button for item 0 is highlighted with a blue border.

- 7) In the report, select the **User Interface** heading, and then select **jQuery Mobile Smartphone**.

The screenshot shows a list of pages. The columns are: Page, Name, Updated, Updated By, Page Type, User Interface, and Group. The first row has a 'User Interface' dropdown menu open, showing options: Desktop and 'jQuery Mobile Smartphone Smartphone' (which is selected and highlighted in blue). The other rows show 'Home' and 'Static HTML' respectively.

Page	Name	Updated	Updated By	Page Type	User Interface	Group
0	Global Page - jQuery Mobile Smartphone	7 days ago	ora01	Global Page	Desktop jQuery Mobile Smartphone Smartphone	L
1	Home	7 days ago	-	Home		
2	Home	2 days ago	ora01	Static HTML		
		18 hours		Interactive		

8) Select Employee Detail.

Page	Name	Updated	Updated By	Page Type	User Interface
0	Global Page - jQuery Mobile Smartphone	7 days ago	ora01	Global Page	jQuery Mobile Smartphone
2	Home	2 days ago	ora01	Static HTML	jQuery Mobile Smartphone
205	Employee List	5 days ago	ora01	Static HTML	jQuery Mobile Smartphone
206	Employee Detail	5 days ago	ora01	DML Form	jQuery Mobile Smartphone
1001	Login	7 days ago	ora01	Login	jQuery Mobile

9) You want to change the setting for email so that it uses the appropriate keyboard for email on a mobile device. Double-click P<n>_EMAIL.

Body (3)

- Employee Detail
 - Items
 - P206_EMPLOYEE_ID
 - P206_FIRST_NAME
 - P206_LAST_NAME
 - P206_EMAIL
 - P206_PHONE_NUMBER
 - P206_HIRE_DATE
 - P206_JOB
 - P206_SAL
 - P206_COMMISSION_PCT
 - P206_MANAGER_ID
 - P206_DEPARTMENT_ID
 - Region Buttons
 - CANCEL
 - DELETE

- 10) Click the **Settings** subtab.

Page Item: P206_EMAIL

Show All Identification User Interface Grid Layout Label Settings Element Source Default

Identification

Page: 206 Employee Detail

* Name: P206_EMAIL

Display As: Text Field

Text , Number , Date , Textarea , Select List , Radio , Popup List of Values , Checkbox , Disp

- 11) Select **E-Mail** for Subtype and click **Apply Changes**.

Page Item: P206_EMAIL

Show All Identification User Interface Grid Layout Label Settings Element Source Default Quick Picks Conditions...

Settings

Value Required: Yes

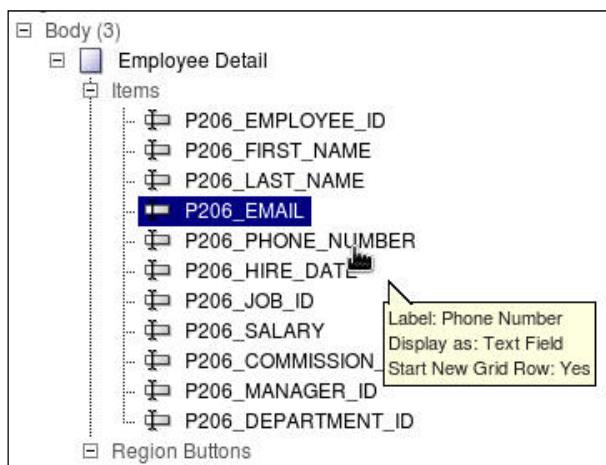
Subtype: E-Mail

Submit when Enter pressed: No

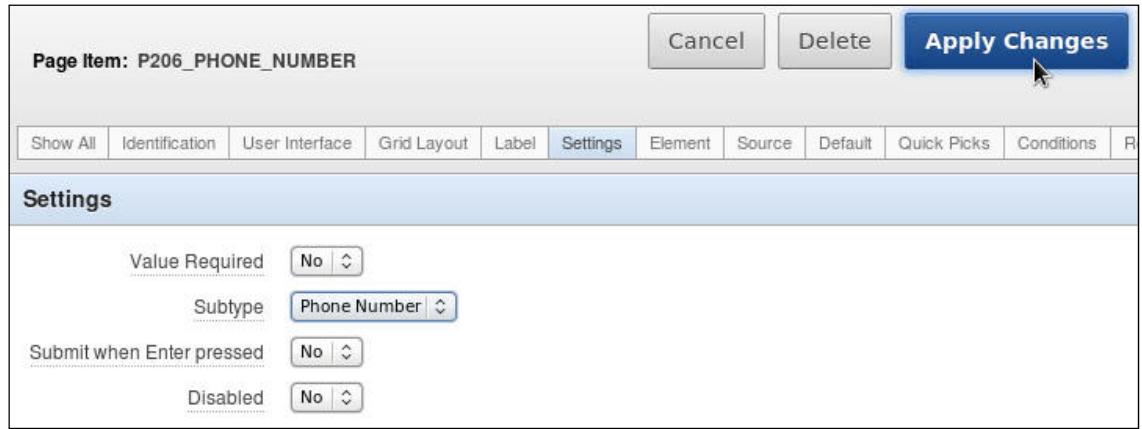
Disabled: No

Cancel Delete Apply Changes

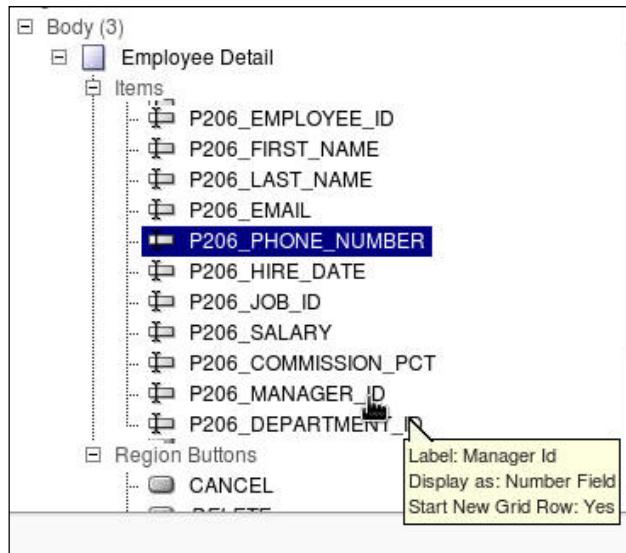
- 12) You want to change the subtype for Phone Number. Double-click **P<n>_PHONE_NUMBER**.



- 13) Notice that the Settings tab is already selected. Select Phone Number for Subtype and click **Apply Changes**. Note that to see how subtypes work, you need to run the page on a mobile device. Ask your instructor to show you an example.



- 14) You want to change Manager to show a select list. Double-click **P<n>_MANAGER_ID**.



- 15) Click the **Show All** subtab.

The screenshot shows the 'Page Item: P206_MANAGER_ID' configuration dialog. The 'Show All' tab is selected in the top navigation bar. The main area is titled 'Settings' and contains fields for 'Value Required' (set to 'No'), 'Format Mask' (empty), 'Minimum Value' (empty), 'Maximum Value' (empty), and 'Number Alignment' (set to 'Right'). Buttons for 'Cancel' and 'Delete' are visible in the top right corner.

- 16) Click the **Select List** quick pick or select **Select List** from Display As. Then click the **List of Values** subtab.

The screenshot shows the 'Page Item: P206_MANAGER_ID' configuration dialog. The 'List of Values' tab is selected in the top navigation bar. The 'Identification' tab is active, showing 'Page: 206 Employee Detail', 'Name: P206_MANAGER_ID', and 'Display As: Select List'. Below this, a list of options is shown: Text, Number, Date, Textarea, Select List (highlighted in red), Radio, Popup List of Values, Checkbox, Display Only, and Hidden. The 'User Interface' tab is also visible at the bottom, containing fields for 'Sequence' (set to 100) and 'Region' (set to Employee Detail (10)). Buttons for 'Cancel', 'Delete', and 'Apply Changes' (highlighted in blue) are visible in the top right corner.

- 17) Enter the following code (located in the `/home/oracle/labs/files/lab8_2_4.txt` directory) in the **List of values definition area** and click **Apply Changes**:

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

Page Item: P206_MANAGER_ID

Cancel Delete Apply Changes

Show All Identification User Interface Grid Layout Label Settings List of Values Element Source Default Quick Picks

List of Values

Named LOV - Select Named LOV -

Display Extra Values Yes

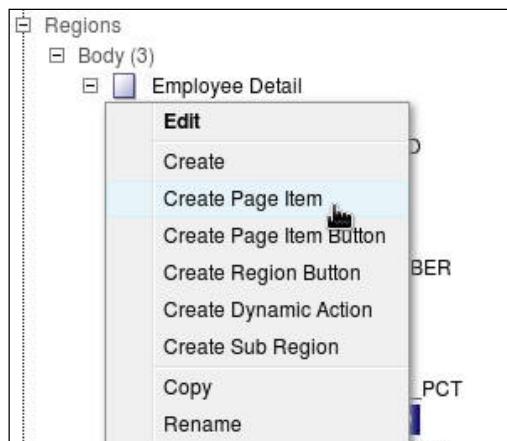
Display Null Value No

Cascading LOV Parent Item(s)

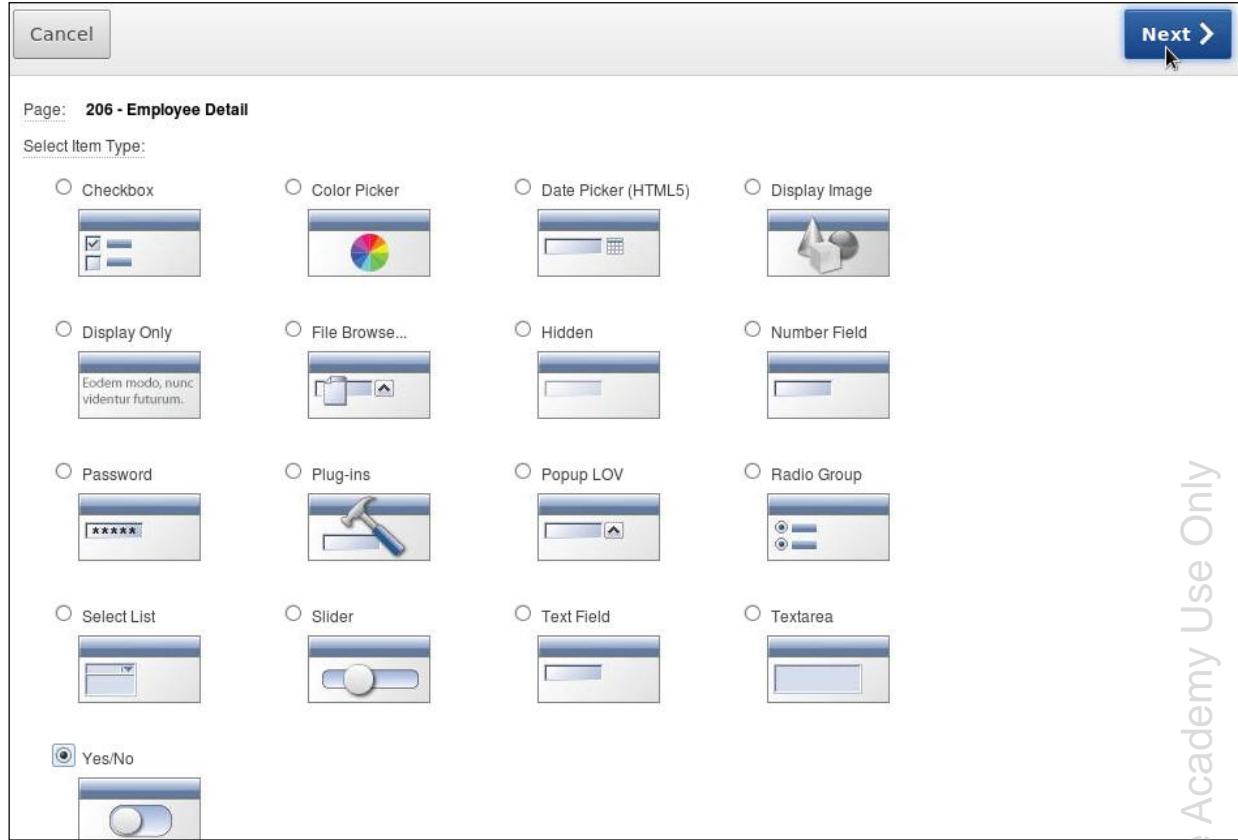
List of values definition

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

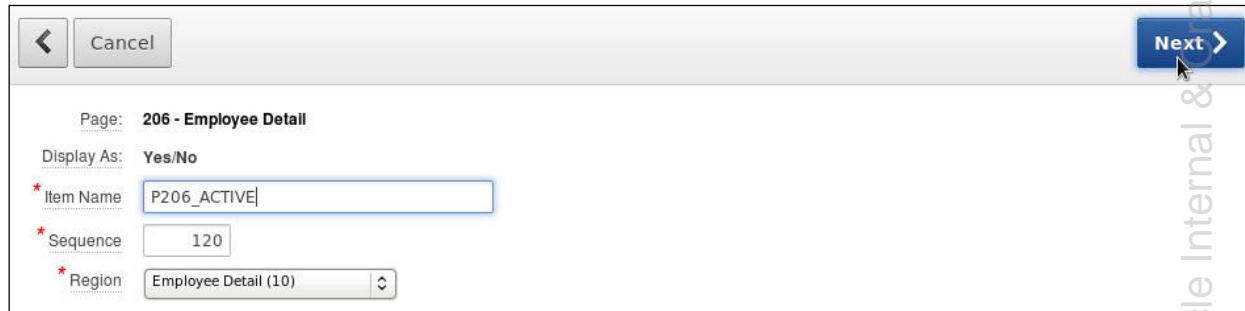
- 18) You want to create a new page item for the ACTIVE_YN column you added to the OEHR_EMPLOYEES table previously. Right-click **Employee Detail** and select **Create Page Item**.



19) Select the Yes/No item type and click **Next >**.



20) Change the Item Name to P<n>_ACTIVE and click **Next >**.



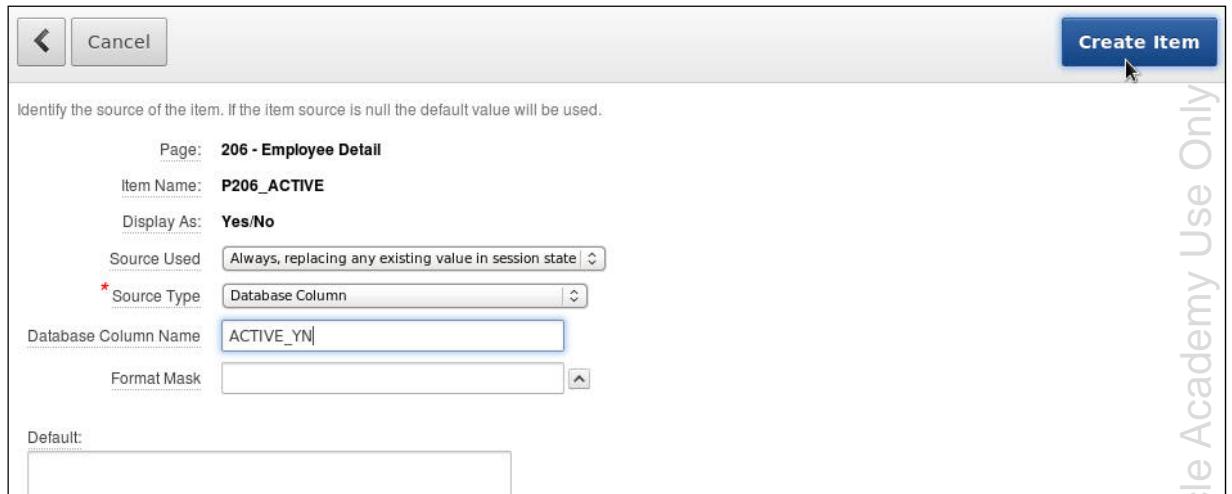
21) Accept the defaults and click **Next >**.



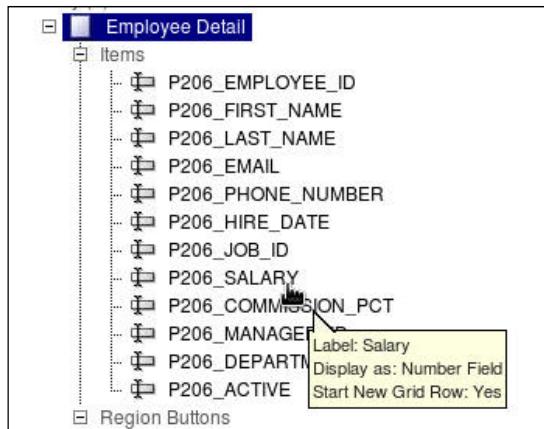
- 22) Accept the defaults and click **Next >**.



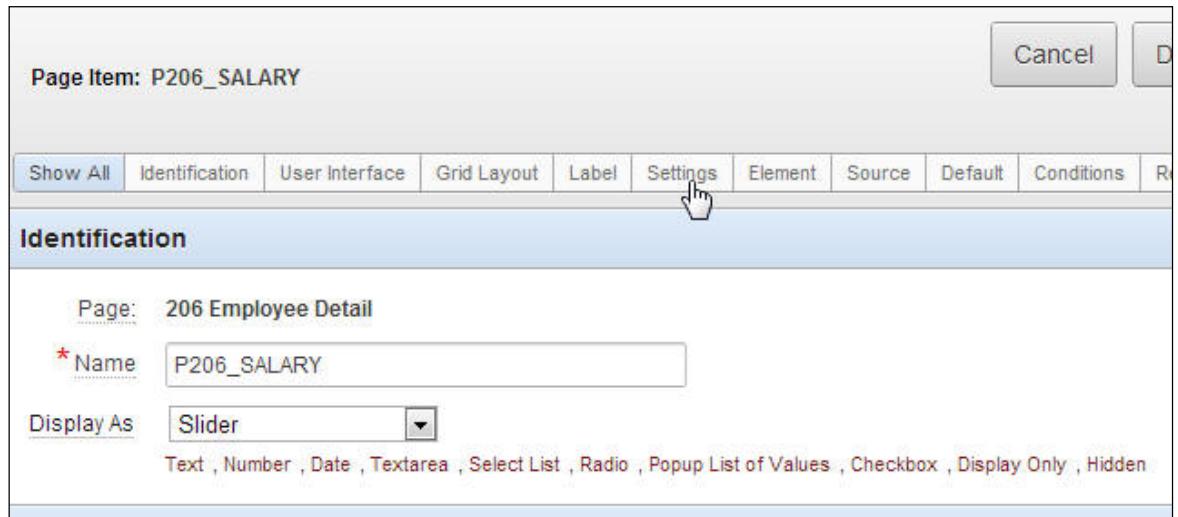
- 23) Select **Database Column** for Source Type and change the Database Column Name to **ACTIVE_YN** and click **Create Item**.



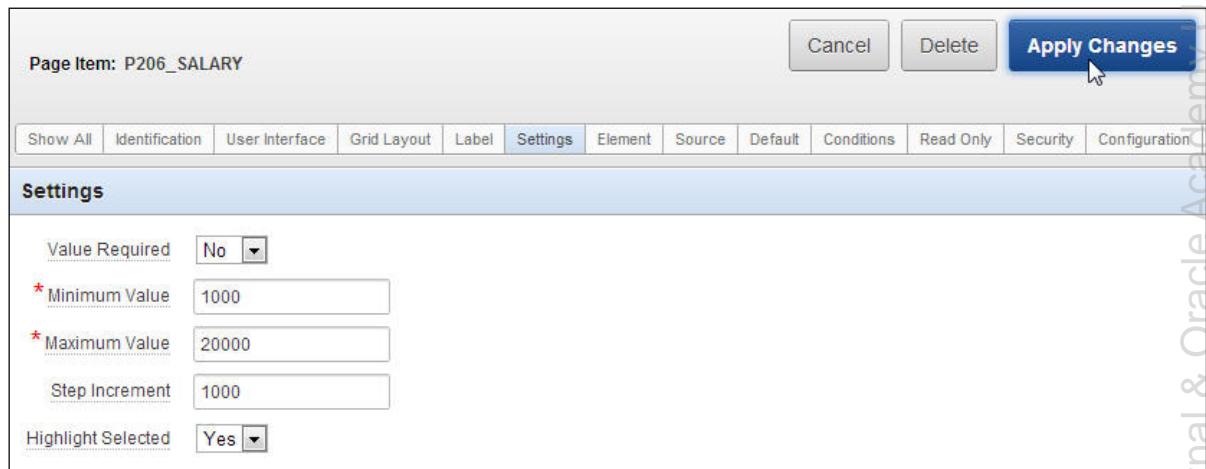
- 24) You want to change the Salary so that it appears as a slider. Double-click **P<n>_SALARY**.



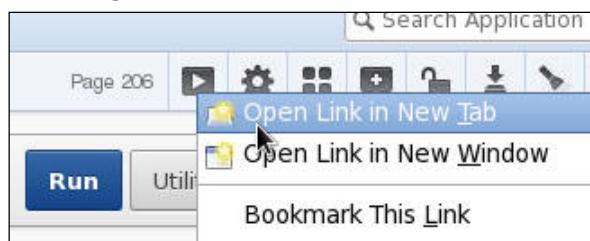
- 25) Select **Slider** from the Display As drop-down list and click the **Settings** subtab.



- 26) Enter **1000** for Minimum Value, **20000** for Maximum Value, and **1000** for Step Increment. Select **Yes** for Highlight Selected and click **Apply Changes**.



- 27) With mobile applications, the Developer toolbar is not displayed. Therefore, it is recommended that you run the application in a different window. Right-click the **Run Page** icon and select **Open Link in New Tab**.



- 28) If prompted, enter your login information and click **Login**.

Username: ora01
Password: *****
Login

- 29) If the form is empty, click **Cancel** to return to the report.

Employee Detail

First Name

*Last Name

*Email

Phone Number

*Hire Date

*Job Id

Salary: 0

Commission Pct

Manager Id: Steven King

Department Id

Active: No

Cancel Create

30) Select a record from the list.

The screenshot shows a user interface titled "Employee List". At the top right is a "Logout" button. Below the title is a search bar with a magnifying glass icon. The main area displays a list of names, each followed by a circular selection icon containing a right-pointing arrow. The names listed are King, Kochhar, De Haan, Hunold, Ernst, Austin, and Pataballa.

Name	Action
King	Selection icon
Kochhar	Selection icon
De Haan	Selection icon
Hunold	Selection icon
Ernst	Selection icon
Austin	Selection icon
Pataballa	Selection icon

- 31) The form is populated with the employee information. Move the Salary slider so that the salary is 10000.

Employee Detail

Logout

First Name	Bruce
*Last Name	Ernst
*Email	BERNST
Phone Number	590.423.4568
*Hire Date	1991-05-21
*Job Id	IT_PROG
Salary	6000 <input type="range" value="6000"/>
Commission Pct	6000
Manager Id	Alexander Hunold <input checked="" type="checkbox"/>
Department Id	60
Active	<input type="checkbox"/> No

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

- 32) Change the Active item so that the value is **Yes** and click **Apply Changes**.

Employee Detail

First Name: Bruce

*Last Name: Ernst

*Email: BERNST

Phone Number: 590.423.4568

*Hire Date: 1991-05-21

*Job Id: IT_PROG

Salary: 10000

Commission Pct:

Manager Id: Alexander Hunold

Department Id: 60

Active: Yes

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

- 33) Your changes are saved.

Employee List

Action Processed.

King	➤
Kochhar	➤
De Haan	➤
Hunold	➤
Ernst	➤
Austin	➤

Practices for Lesson 9: Understanding Session State

Chapter 9

Practices for Lesson 9: Overview

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 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 performed the previous practices or imported the `LAB082_SOLN.sql` application.

Tasks

- a. On the Customers page in the Order Management application, add a Create Region button that navigates to the Customer Details page when it is clicked.
- b. Run the page and view an existing record. Click Cancel, and then click the Create button. What do you observe?
- c. Edit the button and clear the cache for the Customer Details page.
- d. Edit an existing record and view the session state. Why do the values for all the items on the Customer Details page not appear?
- e. Change the Link Column on the Customer Report to include the value for the `P<n>_CUST_FIRST_NAME` item.
- f. On the Customer Details page, change the title of the Customer Details region to use the following (located in `/home/oracle/labs/files/lab9_1.txt`). Ensure that you change `P<n>` to your page number.

```
&P<n>_CUST_FIRST_NAME. &P<n>_CUST_LAST_NAME. Customer Details
```

- g. Run the page. What do you observe?

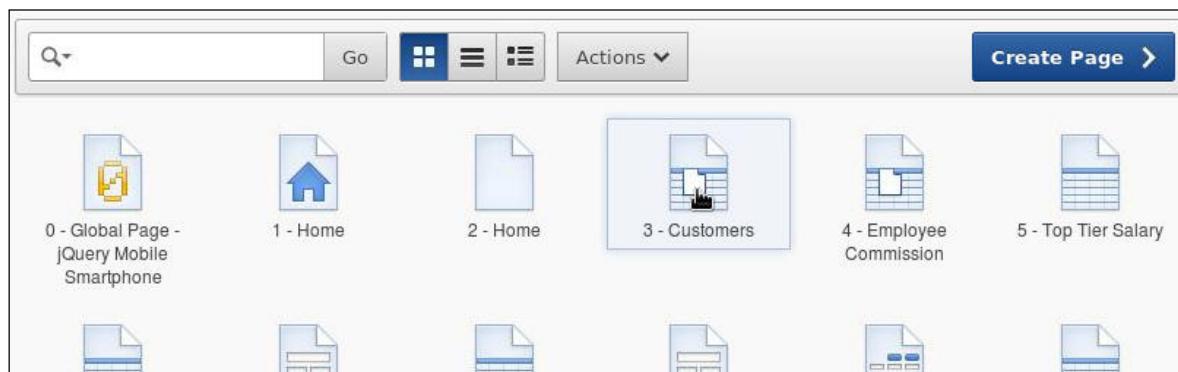
Solution 9-1: Understanding Session State

Overview

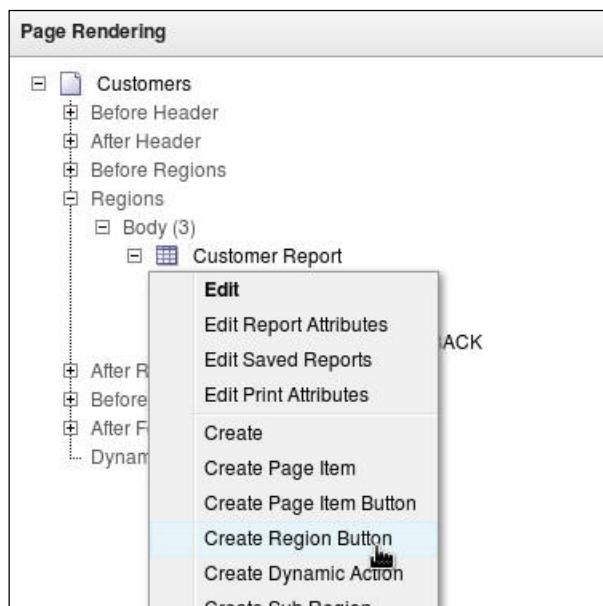
In this practice, you add a Create button to the Customers page. When the button is clicked, it redirects to the Customer Details page. You clear the cache so that when the button is clicked, the Customer Details form is empty. You review what is in session state and also add the current value for first name and last name to the Customer Details region header.

Tasks

- a. On the Customers page in the Order Management application, add a Create Region button that navigates to the Customer Details page when it is clicked.
 - 1) Navigate to the **Order Management** application home page and select the **Customers** page.



- 2) You want to create a region button for the Create function. Right-click the **Customer Report** region and select **Create Region Button**.



- 3) Select the **[Create]** quick pick for Button Name, **Template Based Button** for Button Style, **Large Button** for Button Template, and **Hot** for Button Type, and then click **Next >**.

Page: 3 - Customers
Region: Customer Report
* Button Name: CREATE
[Cancel] [Next] [Previous] [Apply] [Submit] [Delete] [Finish] [Create] [Reset]
* Label: Create
Button Style: Template Based Button
Button Template: Large Button
Button Type: Hot
Button Attributes:

- 4) Select **Right of Interactive Report Search Bar** for Position and click **Next >**.

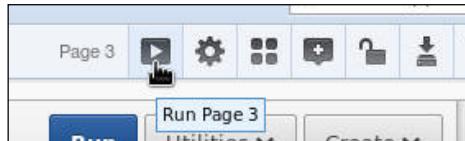
Page: 3 - Customers
Region: Customer Report
Button Name: CREATE
* Sequence: 20
Position: Right of Interactive Report Search Bar
[Top] [Close] [Edit] [Create] [Change] [Previous] [Next]
Alignment: Right

- 5) Select **Redirect to Page in this Application** for Action, select your **Customer Details** page number, and click **Create Button**.

Page: 3 - Customers
Region: Customer Report
Button Name: CREATE
Action: Redirect to Page in this Application
* Page: 8
 reset pagination for this page
Request:
Clear Cache:
Set these items:
With these values:

- b. Run the page and view an existing record. Click Cancel, and then click the Create button. What do you observe?

- 1) Run the page. Click the **Run** icon.



- 2) If you are prompted to enter your login credentials, enter the details.

In the News

News and Events
Visit us at www.oracle.com

Login

Username: ora01
Password: **Login**

- 3) The report is displayed. Click the **Edit** icon for one of the rows.

In the News

News and Events
Visit us at www.oracle.com

Actions ▾ Customer Feedback Create

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	+1 317 123
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	+1 317 123
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	+1 812 123
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US	+1 317 123
	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US	+1 812 123
	106	Matthias	Hannah	1608 Portage Ave	46616	South Bend	IN	US	+1 219 123

- 4) Note that the Customer Details form reflects the data for the customer that you chose. Click **Cancel**.

The screenshot shows the 'Customer Details' form. The fields are filled as follows:

- Cust First Name: Harrison
- Cust Last Name: Pacino
- Cust Email: Harrison.Pacino@ANI.COM
- Account Manager: Russell, John (dropdown menu)
- Country: United States of America (dropdown menu)
- City: Indianapolis

Below the form, a message states: "The record created or modified in this form is reflected in the Customer Report."

- 5) Click the **Create** button.

The screenshot shows a grid of customer data with the following columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, City, State Province, Country Id, and Phone Number. The data is as follows:

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number
101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	+1 317 123 4567
102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	+1 317 123 4568
103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	+1 812 123 4569
104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US	+1 317 123 4560

- 6) 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 the 'Customer Details' form again, with the same data as before:

- Cust First Name: Harrison
- Cust Last Name: Pacino
- Cust Email: Harrison.Pacino@ANI.COM
- Account Manager: Russell, John (dropdown menu)
- Country: United States of America (dropdown menu)
- City: Indianapolis

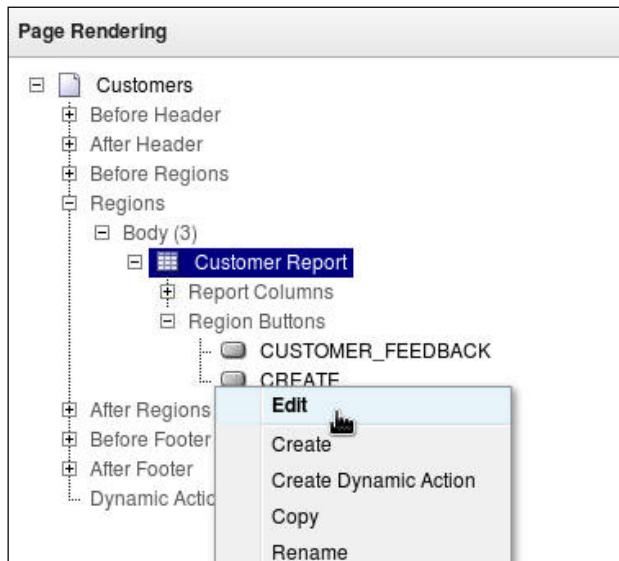
Below the form, a message states: "The record created or modified in this form is reflected in the Customer Report."

- 7) On the **Customers** page, click the **Edit Page** link on the Developer toolbar.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Number
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	+1 317 123
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	+1 317 123
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	+1 812 123
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US	+1 317 123
	105	Mathias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US	+1 812 123
	106	Maurice	Hughes	1000 Broadway Ave	46210	Crown Point	IN	US	+1 812 123

- c. Edit the button and clear the cache for the Customer Details page.

- 1) Right-click the **CREATE** button and select **Edit**.



- 2) Click the **Action When Button Clicked** tab.

Name

Page: 3 Customers

* Button Name: CREATE

* Text Label / Alt: Create

Displayed

* Sequence: 20

* Display in Region: Customer Report (10)

* Button Position: Right of Interactive Report Search Bar

- 3) For Clear Cache, enter the page number of the Customer Details page. This is the same page number that is displayed in the Page field. Click **Apply Changes**.

Action When Button Clicked

Action: Redirect to Page in this Application

* Page: 8

reset pagination for this page

Request:

Clear Cache: 8 (comma separated page numbers)

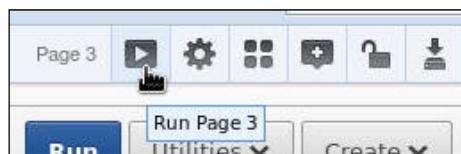
Set These Items:

With These Values:

Database Action: - No Database Action -

Apply Changes

- 4) Run the page. Click the **Run** icon.



- 5) Click **Create** again.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Num
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	+1 317 123
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	+1 317 123
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	+1 812 123

- 6) 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**.

Customer Details

Cust First Name *

Cust Last Name *

Cust Email

Account Manager

- Select Manager -

Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country

- Select Country -

City

The record created or modified in this form is reflected in the Customer Report.

- d. Edit an existing record and view the session state. Why do the values for all the items on the Customer Details page not appear?
- 1) 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.
 - 2) 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 Num
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	+1 317 123 4
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	+1 317 123 4
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	+1 812 123 4

- 3) The values for the record are displayed. Click the **Session** link on the Developer toolbar.

The screenshot shows a 'Customer Details' form with the following fields and their values:

- Cust First Name: Harrison
- Cust Last Name: Pacino
- Cust Email: Harrison.Pacino@ANI.COM
- Account Manager: Russell, John (dropdown menu showing Bates, Elizabeth, Russell, John, Cambrault, Gerald)
- Country: United States of America
- City: Indianapolis

A note at the bottom states: "The record created or modified in this form is reflected in the Customer Report."

The toolbar at the bottom includes links: Home, Application 130, Edit Page 8, Create, Session (highlighted), Caching, View Debug.

- 4) Notice that the only value in session state is `P<n>_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 developer toolbar with the 'Session' tab selected. Session details are displayed:

- Application: 130 Order Management
- Session: 2766699625432
- User: ORA01
- Workspace: 2713224211993072
- Browser Language: en

The 'Page Items' section shows a table with one row:

Application ▾	Page	Item Name	Display	Item Value	Status	Encrypted
130	8	P8_CUSTOMER_ID	Hidden	102	Inserted	No

Page number 1 - 1 is shown at the bottom right of the table.

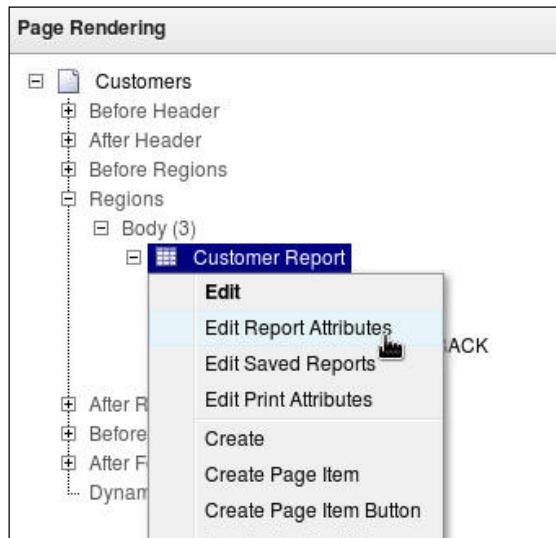
- 5) Switch back to your Customer Details page and click **Cancel**.

The record created or modified in this form is reflected in the Customer Report.

- 6) Click the **Edit Page** link on the Developer toolbar.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN
	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN
	106	Manisha	Ullal	1200 Belden Ave	46240	South Bend	IN

- e. Change the Link Column on the Customer Report to include the value for the `P<n>_CUST_FIRST_NAME` item.
- 1) You want to review how the value for `P<n>_CUSTOMER_ID` is populated in session state. Right-click **Customer Report** and select **Edit Report Attributes**.



- 2) Click the **Link Column** tab if it is not already displayed.

Region Definition	Report Attributes	Saved Reports	Print Attributes															
<input type="text" value="Region Name: Customer Report"/> Cancel Apply C																		
<input type="button" value="Show All"/> <input type="button" value="Column Attributes"/> <input type="button" value="Column Groups"/> <input type="button" value="Pagination"/> <input type="button" value="Sorting"/> <input type="button" value="Search Bar"/> <input type="button" value="Download"/> <input type="button" value="Link Column"/> <input type="button" value="Advanced Attributes"/>																		
Column Attributes <p>To change the column display order run the report as a developer. Click Select Columns from the Actions Menu and move the display using the arrows. Then select Save Report from the Action Menu and save As Default Report Settings.</p> <table border="1"> <thead> <tr> <th></th> <th>Heading</th> <th>Type</th> <th>Link</th> <th>Display Text As</th> </tr> </thead> <tbody> <tr> <td></td> <td>CUSTOMER_ID</td> <td><input type="text" value="Customer Id"/></td> <td>NUMBER</td> <td><input type="button" value="Display as Text (escape special characters)"/></td> </tr> <tr> <td></td> <td>CUST_FIRST_NAME</td> <td><input type="text" value="Cust First Name"/></td> <td>STRING</td> <td><input type="button" value="Display as Text (escape special characters)"/></td> </tr> </tbody> </table>					Heading	Type	Link	Display Text As		CUSTOMER_ID	<input type="text" value="Customer Id"/>	NUMBER	<input type="button" value="Display as Text (escape special characters)"/>		CUST_FIRST_NAME	<input type="text" value="Cust First Name"/>	STRING	<input type="button" value="Display as Text (escape special characters)"/>
	Heading	Type	Link	Display Text As														
	CUSTOMER_ID	<input type="text" value="Customer Id"/>	NUMBER	<input type="button" value="Display as Text (escape special characters)"/>														
	CUST_FIRST_NAME	<input type="text" value="Cust First Name"/>	STRING	<input type="button" value="Display as Text (escape special characters)"/>														

- 3) Note that the name for Item 1 is **P<n>_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.

Link Column

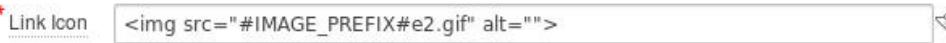
Link Column	<input type="button" value="Link to Custom Target"/>								
Single Row View	<input type="checkbox"/> Allow Exclude Null Values <input type="checkbox"/> Allow Displayed Columns								
Uniquely Identify Rows by	<input type="text" value="ROWID"/>								
Unique Column	<input type="text"/>								
* Link Icon	<input #image_prefix#e2.gif"="" >"="" alt="" type="text" value=" <input type="button" value="Find Item"/> <input type="checkbox"/>								
<input type="button" value="Icon 1"/> <input type="button" value="Icon 2"/> <input type="button" value="Icon 3"/> <input type="button" value="Icon 4"/> <input type="button" value="Icon 5"/> <input type="button" value="Icon 6"/> <input type="button" value="Icon 7"/> <input type="button" value="Icon 8"/>									
Link Attributes									
Target	<input type="button" value="Page in this Application"/> <input type="text" value="8"/> <input type="button" value="Reset Page"/>								
Request	<input type="text"/>								
<table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Item 1</td> <td><input type="text" value="#CUSTOMER_ID#"/></td> </tr> <tr> <td>Item 2</td> <td><input type="text"/></td> </tr> <tr> <td>Item 3</td> <td><input type="text"/></td> </tr> </tbody> </table>		Name	Value	Item 1	<input type="text" value="#CUSTOMER_ID#"/>	Item 2	<input type="text"/>	Item 3	<input type="text"/>
Name	Value								
Item 1	<input type="text" value="#CUSTOMER_ID#"/>								
Item 2	<input type="text"/>								
Item 3	<input type="text"/>								
<input type="button" value="Find Item"/>									

- 4) Select **P<n>_CUST_FIRST_NAME**.

Search			Page
Name	Type	Page	
P8_ACCOUNT_MGR_ID	Page Item	8	
P8_CITY	Page Item	8	
P8_COUNTRY_ID	Page Item	8	
P8_CUSTOMER_ID	Page Item	8	
P8_CUST_EMAIL	Page Item	8	
P8_CUST_FIRST_NAME	Page Item	8	
P8_CUST_LAST_NAME	Page Item	8	
1 - 7			

- 5) Click the **Find Item** icon for Value 2.

Link Column

Link Column	Link to Custom Target
<input type="checkbox"/> Allow Exclude Null Values <input type="checkbox"/> Allow Displayed Columns	
Uniquely Identify Rows by	ROWID
Unique Column	
* Link Icon	 [Icon 1] [Icon 2] [Icon 3] [Icon 4] [Icon 5] [Icon 6] [Icon 7] [Icon 8]
Link Attributes	
Target	Page in this Application
Request	Page
	8
	<input type="checkbox"/> Reset Pagination
	Clear Cache
Name	Value
Item 1 P8_CUSTOMER_ID	#CUSTOMER_ID#
Item 2 P8_CUST_FIRST_NAME	
Item 3	

- 6) Select the current value #CUST_FIRST_NAME#.

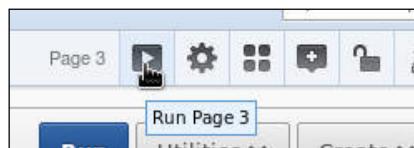
Pick Column

Pick column name substitution string to assign a session state or link text.

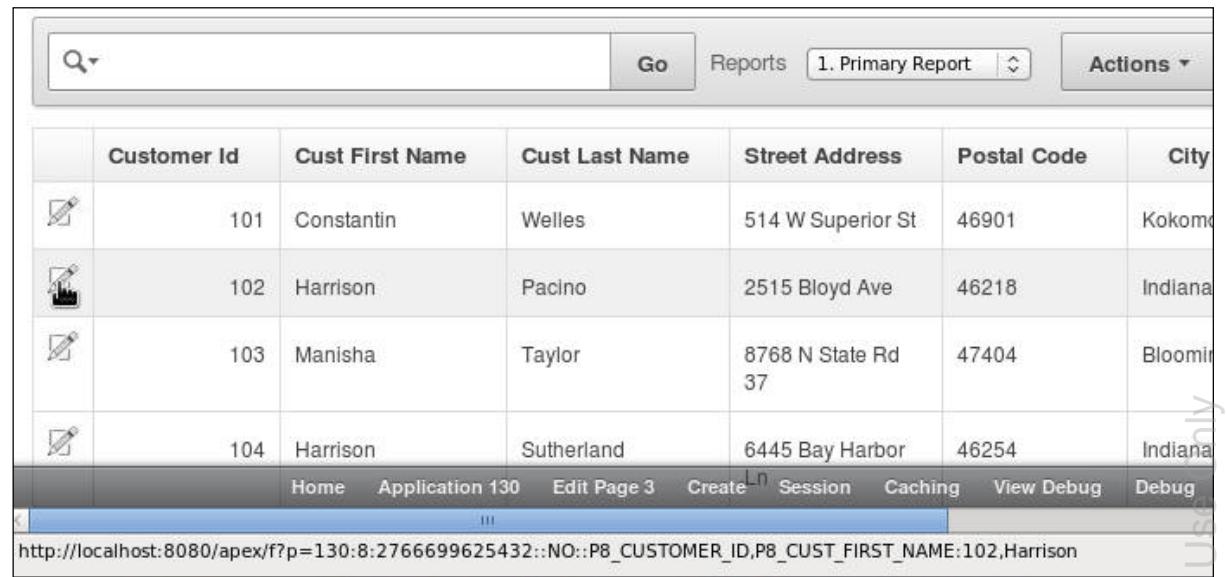
[#CUSTOMER_ID#](#)
[#CUST_FIRST_NAME#](#)
[#CUST_LAST_NAME#](#)
[#STREET_ADDRESS#](#)
[#POSTAL_CODE#](#)
[#CITY#](#)
[#STATE_PROVINCE#](#)
[#COUNTRY_ID#](#)
[#PHONE_NUMBER#](#)
[#NLS_LANGUAGE#](#)
[#NLS_TERRITORY#](#)
[#CREDIT_LIMIT#](#)
[#CUST_EMAIL#](#)

- 7) The Customer First Name, as well as the Customer ID, is passed into session state now. Click **Apply Changes**.

- 8) Click **Run Page**.



- 9) Move your cursor over the Edit button for a 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.



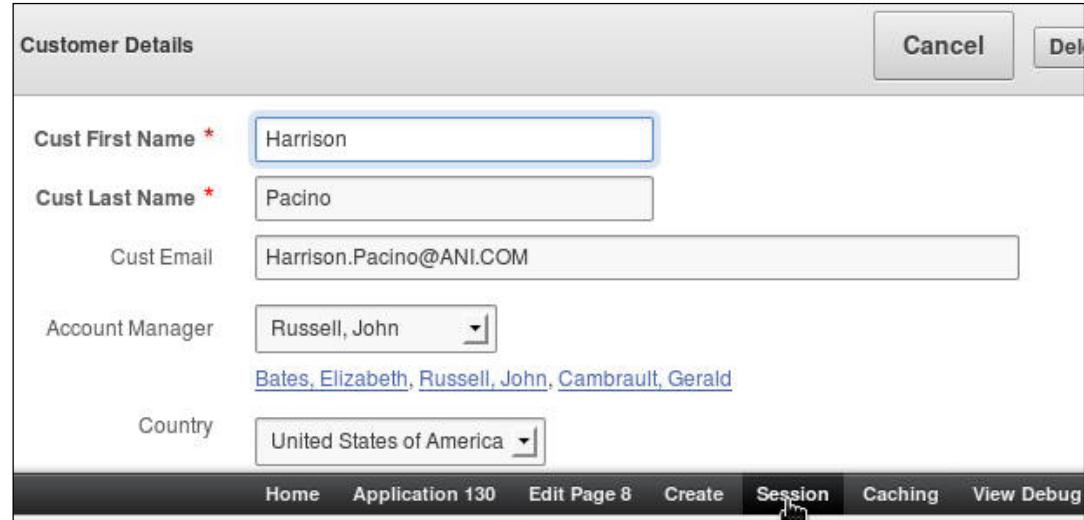
The screenshot shows a report page with a table of customer information. The columns are Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, and City. There are four rows of data. Each row has an 'Edit' icon (pencil symbol) in the first column. The URL in the browser's address bar is `http://localhost:8080/apex/f?p=130:8:2766699625432::NO::P8_CUSTOMER_ID,P8_CUST_FIRST_NAME:102,Harrison`.

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
	101	Constantin	Welles	514 W Superior St	46901	Kokomo
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indiana
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington
	104	Harrison	Sutherland	6445 Bay Harbor	46254	Indiana

Home Application 130 Edit Page 3 Create Session Caching View Debug Debug

http://localhost:8080/apex/f?p=130:8:2766699625432::NO::P8_CUSTOMER_ID,P8_CUST_FIRST_NAME:102,Harrison

- 10) Click the **Session** link on the Developer toolbar.



The screenshot shows an edit form for 'Customer Details'. It contains fields for Cust First Name (Harrison), Cust Last Name (Pacino), Cust Email (Harrison.Pacino@ANI.COM), Account Manager (Russell, John, with a dropdown menu showing Bates, Elizabeth, Russell, John, Cambrault, Gerald), and Country (United States of America). The toolbar at the bottom includes links for Home, Application 130, Edit Page 8, Create, Session (which is highlighted with a cursor), Caching, and View Debug.

- 11) Notice that this time, the `P<n>_CUST_FIRST_NAME` value is also passed.

The screenshot shows the Oracle Application Express Session page. At the top, there is a navigation bar with tabs: Items, Pages, Queries, Tables, PL/SQL, Images, Debug, Session (which is selected), and Errors. Below the navigation bar, there are search and filter controls: Page (set to 8), Find, Rows (set to 50), View, Page Items, and a Set button. The main content area displays session information: Application: 130 Order Management, Session: 2766699625432, User: ORA01, Workspace: 2713224211993072, and Browser Language: en. Below this, a table titled "Page Items" lists application items. The table has columns: Application, Page, Item Name, Display, Item Value, Status, and Encrypted. There are two rows: one for P8_CUSTOMER_ID (Hidden, 102, Inserted, No) and one for P8_CUST_FIRST_NAME (Text Field, Harrison, Inserted, No).

Application	Page	Item Name	Display	Item Value	Status	Encrypted
130	8	P8_CUSTOMER_ID	Hidden	102	Inserted	No
130	8	P8_CUST_FIRST_NAME	Text Field	Harrison	Inserted	No

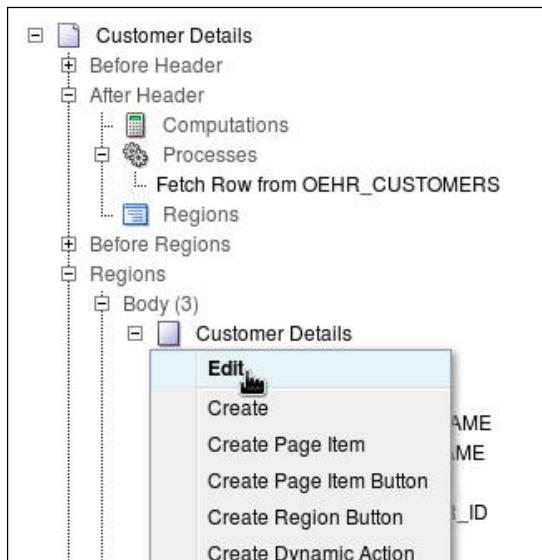
- 12) Switch back to the **Customer Details** page. Click the **Edit Page** link on the Developer toolbar.

The screenshot shows the Customer Details page in edit mode. The title bar says "Customer Details". On the right side, there are "Cancel" and "Delete" buttons. The page contains four input fields: "Cust First Name" (Harrison), "Cust Last Name" (Pacino), "Cust Email" (Harrison.Pacino@ANI.COM), and "Account Manager" (Russell, John). A dropdown menu for "Account Manager" shows a list of names: Bates, Elizabeth, Russell, John, Cambrault, Gerald. Below the "Account Manager" field is a "Country" field set to "United States of America". At the bottom of the page is a toolbar with links: Home, Application 130, Edit Page 8 (which is highlighted with a cursor), Create, Session, Caching, View Debug, and Debug.

- f. On the Customer Details page, change the title of the Customer Details region to use the following (located in /home/oracle/labs/files/lab9_1.txt). Ensure that you change `P<n>` to your page number.

```
&P<n>_CUST_FIRST_NAME. &P<n>_CUST_LAST_NAME. Customer Details
```

- 1) You want to populate the Title with the current values for First Name and Last Name. Right-click the **Customer Details** Region and select **Edit**.



- 2) Change the title from "Customer Details" to the following (located in `/home/oracle/labs/files/lab9_1.txt`), replacing <n> with the Customer Details page number. Click **Apply Changes**.

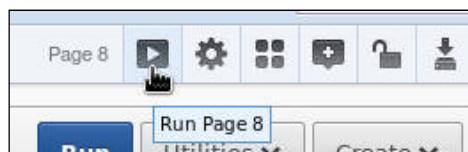
```
&P<n>_CUST_FIRST_NAME. &P<n>_CUST_LAST_NAME. Customer Details
```

Note: In the preceding text, the period (.) at the end of the item name is required.

The screenshot shows the 'Region Definition' dialog for the 'Customer Details' region. The 'Identification' tab is active, displaying the page number (8 Customer Details), the title field containing the placeholder text (&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details), and the type set to 'HTML Text'. The 'Source' tab is visible at the bottom. Buttons for 'Cancel', 'Delete', and 'Apply Changes' are at the top right, with 'Apply Changes' being the last one clicked.

- g. Run the page. What do you observe?

- 1) Click the **Run Page** icon.



- 2) Note that the Customer Name for the record being displayed is contained in the title. Click the **Application <n>** link on the Developer toolbar.

Harrison Pacino 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.

Home Application 130 Edit Page 8 Create Session Caching View Debug Debug Show Ed

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 Order Management 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 `oehr_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 performed the previous practices or imported the `LAB091_SOLN.sql` packaged application.

Tasks

- a. Create an **After Submit PL/SQL Expression** computation on the `P<n>_CUST_EMAIL` item. The PL/SQL expression should be: `upper(:P<n>_CUST_EMAIL)`. Test the page to see that the email address is stored as uppercase.
- b. Add a **Display Only** item called `P<n>_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/files/lab10_1.txt`):

```
for c1 in (
    select phone_number from oechr_customers where customer_id =
    :P<N>_CUSTOMER_ID
)
loop
    :P<N>_PHONE_NUMBER := c1.phone_number;
end loop;
```

- c. Change the Process Row of `OEHR_CUSTOMERS` process to add the `P<n>_CUSTOMER_ID` item in the `Return Key into Item` field.

- d. Create an **OEHR_AUDITS** table by using the SQL Workshop's Object Browser and add the following details:

Column Name	Data Type	Other Details
CUSTOMER_ID (PK)	NUMBER	Not Populated
CREATED_BY	VARCHAR2	SCALE 40
CREATED_ON	DATE	N/A

Add an After Submit PL/SQL process called audit insert which has the following PL/SQL code (located in `/home/oracle/labs/files/lab10_2.txt`). Set the success message to "You have been audited."

```
INSERT INTO oechr_audits VALUES (:P<n>_CUSTOMER_ID, :APP_USER,
sysdate);
```

- e. Create an Item String Comparison validation on the **P<n>_CUST_EMAIL** item to ensure that there are no spaces in the Email value. Test the page to make sure that it works.
- f. 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?
- g. 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/files/lab10_3.txt`):

```
Declare
begin
    If :JOB_ID = 'SA_REP' and :COMMISSION_PCT is not null then
        Return true;
    Else
        Return false;
    End if;
End;
```

Solution 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 Order Management 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 `oehr_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.

Tasks

- a. Create an **After Submit PL/SQL Expression** computation on the `P<n>_CUST_EMAIL` item. The PL/SQL expression should be: `upper (:P<n>_CUST_EMAIL)`. Test the page to see that the email address is stored as uppercase.

- 1) Navigate to the **Order Management** application home page and select the **Customer Details** page.

Application 130 - Order Management

Edit Application Properties

Run Application Supporting Objects Shared Components Utilities Export / Import

Q Go Actions Create Page >

0 - Global Page - jQuery Mobile Smartphone	1 - Home	2 - Home	3 - Customers	4 - Employee Commission	5 - Top Tier Salary
6 - Customer Address List	8 - Customer Details	9 - List of Orders	10 - Master Detail	13 - Update Employee	16 - Products

- 2) Under Page Processing, expand **After Submit**, right-click **Computations**, and select **Create**.

Page Processing

- After Submit
 - Processes
 - Branches
 - Computations
- Validation
- Processing
 - Create
 - Edit All
 - Expand All
 - Collapse All
 - reset page
- After Processing

- 3) Ensure that the **Item on This Page** option is selected. Click **Next >**.

Computations set the value of an application or page item. For example, a computation could set the value of MY_ITEM to static text or a dynamic value.

Page: 8 - Customer Details

Location:

- Item on This Page
- Item on Another Page
- Application Level Item

- 4) For Compute Item, select **P<n>_CUST_EMAIL** and for Computation Type, select **PLSQL Expression**. Then click **Next >**.

Select the item and point at which you would like to perform the computation. You can perform computations at different points. Computations that execute at the same point are performed in order of the sequence number provided.

Page: 8 - Customer Details

* Compute Item: 40, P8_CUST_EMAIL (&P8_CUST_FIRST_NAME, &P8_CUST_LAST_NAME, Customer Details)

* Sequence: 10

* Computation Point: After Submit

* Computation Type: PLSQL Expression

- 5) For Computation, enter **upper(:P<n>_CUST_EMAIL)**. Ensure that you change **<n>** to the Customer Details page number. Click **Create Computation**.

Enter the text of your computation. The identified item's value will be set to the result of your computation when the computation executes.

Page: 8 - Customer Details

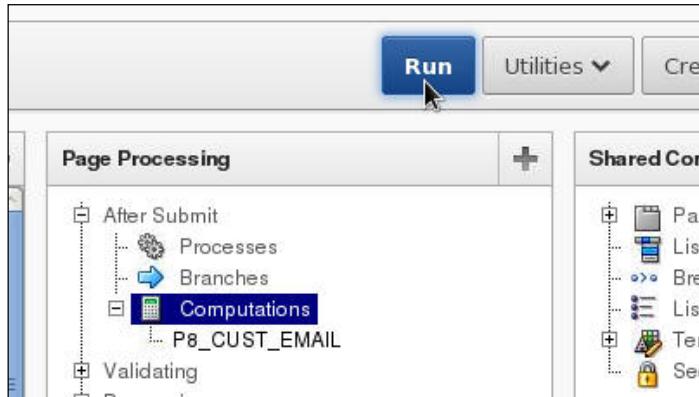
Compute Item: P8_CUST_EMAIL

Computation Type: PLSQL Expression

* Computation:

```
upper( :P8_CUST_EMAIL)
```

- 6) Run the page. Click **Run**.



- 7) You need to edit a record. Click **Cancel** to return to the Customer Report.

Customer Details

Cust First Name *	<input type="text"/>	Cancel	Create	
Cust Last Name *	<input type="text"/>			
Cust Email	<input type="text"/>			
Account Manager	- Select Manager -			
	Bates, Elizabeth, Russell, John, Cambrault, Gerald			
Country	- Select Country -			
City	<input type="text"/>			

The record created or modified in this form is reflected in the Customer Report.

- 8) Click the **Edit** icon for one of the rows.

Customer Feedback

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US
	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US
	106	Matthias	Hannah	1608 Portage Ave	46616	South Bend	IN	US

- 9) Notice that the email is currently in uppercase and lowercase letters. Click **Apply Changes** to invoke the computation.

- 10) The Customer Report is displayed. Scroll to the right to see the Email column. Notice that the email for the record (highlighted in red as follows) that you just applied is now in uppercase letters.

VINCE	COUNTRY ID	PHONE NUMBER	NLS LANGUAGE	NLS TERRITORY	CREDIT LIMIT	CREDIT LIMIT	CUST EMAIL	CUST EMAIL	ACCOUNT MGR ID
	US	+1 317 123 4104	us	AMERICA	100	Constantin.Welles@ANHINGA.COM			14
	US	+1 317 123 4111	us	AMERICA	100	Harrison.Pacino@ANI.COM			14
	US	+1 812 123 4115	us	AMERICA	100	Manisha.Taylor@AUKLET.COM			17
	US	+1 317 123 4126	us	AMERICA	100	Harrison.Sutherland@GODWIT.COM			14
	US	+1 812 123 4129	us	AMERICA	100	MATTHIAS.MACGRAW@GOLDENEYE.COM			14
	US	+1 219 123 4136	us	AMERICA	100	Matthias.Hannah@GREBE.COM			14
	US	+1 219 123 4138	us	AMERICA	100	Matthias.Cruise@GROSBEAK.COM			14

- b. Add a **Display Only** item called **P<n>_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/files/lab10_1.txt**):

```
for c1 in (
  select phone_number from oehr_customers where customer_id =
  :P<N>_CUSTOMER_ID
)
loop
  :P<N>_PHONE_NUMBER := c1.phone_number;
end loop;
```

- 1) You want to make some more modifications to the Customer Details page. Click the **Edit** icon for one of the customer records.

Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Pro
101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN
102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN
103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN
104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN
105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN
106	Matthias	Hannah	1608 Portage Ave	46616	South Bend	IN

- 2) Click the **Edit Page** link on the Developer toolbar.

Matthias MacGraw Customer Details

Cust First Name *

Cust Last Name *

Cust Email

Account Manager

Bates, Elizabeth, Russell, John, Cambrault, Gerald

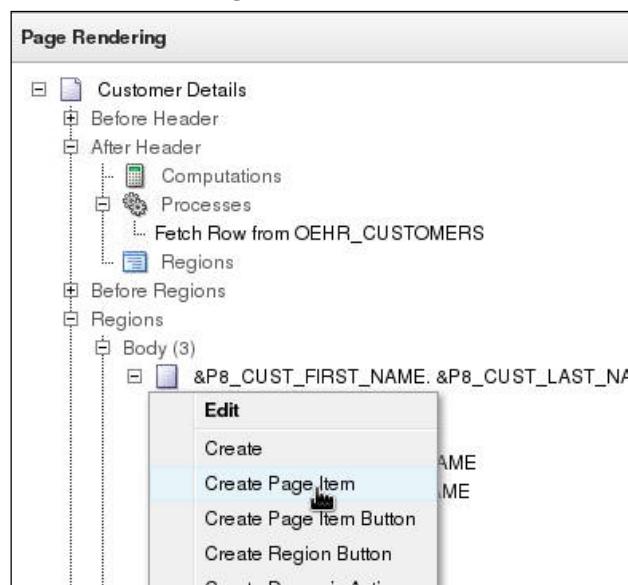
Country

City

The record created or modified in this form is reflected in the Customer Report.

Toolbar: Home Application 130 Edit Page 8 Create Session Caching View Debug Debug Show Edit Links

- 3) You want to create a page item for Phone Number. Right-click your **Region** and select **Create Page Item**.



- 4) Select **Display Only** for the item type and click **Next >**.

Page: 8 - Customer Details

Select Item Type:

<input type="radio"/> Checkbox	<input type="radio"/> Color Picker	<input type="radio"/> Date Picker	<input type="radio"/> Display Image
<input checked="" type="radio"/> Display Only	<input type="radio"/> File Browse...	<input type="radio"/> Hidden	<input type="radio"/> List Manager
<input type="radio"/> Number Field	<input type="radio"/> Password	<input type="radio"/> Plug-ins	<input type="radio"/> Popup LOV

- 5) Enter **P<n>_PHONE_NUMBER** for Item Name and click **Next >**.

Page: 8 - Customer Details

Display As: **Display Only**

* Item Name: P8_PHONE_NUMBER

* Sequence: 80

* Region: &P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)

- 6) Accept the defaults and click **Next >**.

The screenshot shows the 'Customer Details' page configuration dialog. The 'Item Name' is set to 'P8_PHONE_NUMBER'. The 'Display As' dropdown is set to 'Display Only'. The 'Label' field contains 'Phone Number' with a '[Clear]' link. The 'Template' dropdown is set to 'Optional'. The 'Next >' button is highlighted with a mouse cursor.

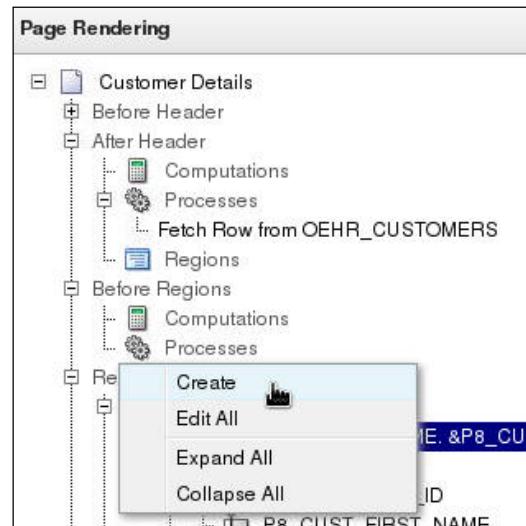
- 7) Accept the defaults and click **Next >**.

The screenshot shows the 'Customer Details' page configuration dialog. The 'Item Name' is set to 'P8_PHONE_NUMBER'. The 'Display As' dropdown is set to 'Display Only'. The 'Save Session State' dropdown is set to 'No'. The 'Based On' dropdown is set to 'Page Item Value'. The 'Show Line Breaks' dropdown is set to 'Yes'. The 'Next >' button is highlighted with a mouse cursor.

- 8) Select **Database Column** for Source Type. Notice that **PHONE_NUMBER** appears automatically in the Database Column Name field. Click **Create Item**.

The screenshot shows the 'Create Item' dialog. The 'Item Name' is set to 'P8_PHONE_NUMBER'. The 'Display As' dropdown is set to 'Display Only'. The 'Source Used' dropdown is set to 'Always, replacing any existing value in session state'. The 'Source Type' dropdown is set to 'Database Column'. The 'Database Column Name' field contains 'PHONE_NUMBER'. The 'Format Mask' field is empty. The 'Default:' field is empty. The 'Create Item' button is highlighted with a mouse cursor.

- 9) You want to create an On Load process that is executed Before Regions. This process retrieves PHONE_NUMBER for display only. Under Page Rendering, expand Before Regions, right-click Processes, and select **Create**.



- 10) Make sure that **PL/SQL** is selected and click **Next >**.

Page: 8 - Customer Details

Select the category of the process you wish to create:

PL/SQL Reset Pagination Plug-ins

Session State Data Manipulation Web Services

- 11) For Name, enter **display phone** and click **Next >**. Note that On Load – Before Regions should be selected for Point.

Page: 8 - Customer Details

* Name: display phone

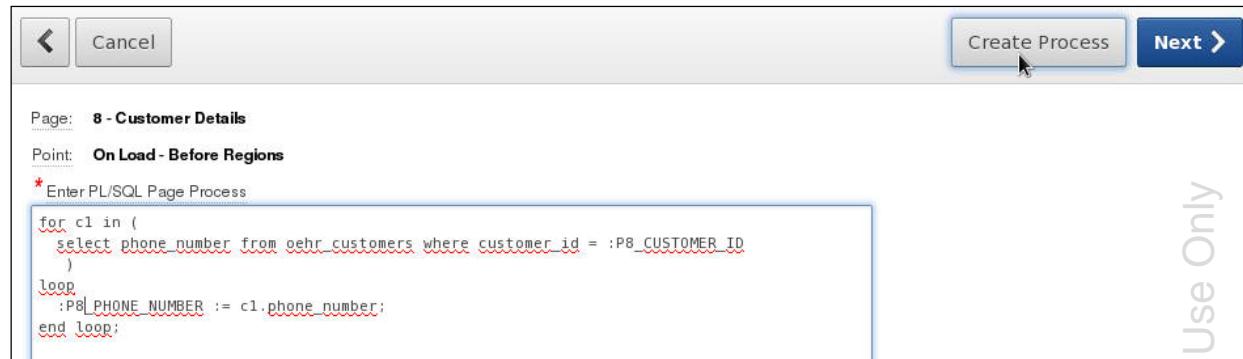
* Sequence: 50

* Point: On Load - Before Regions

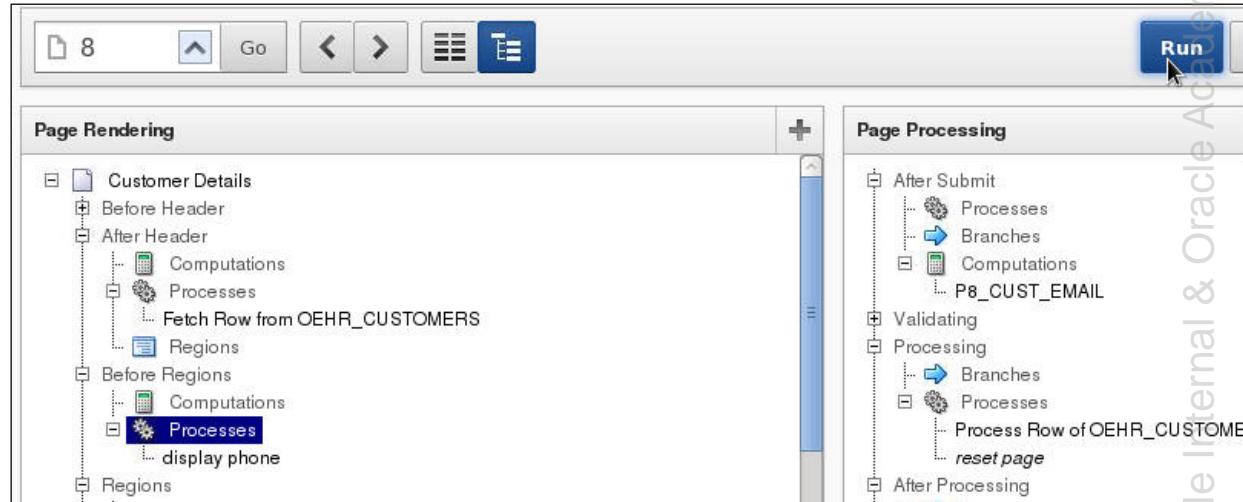
* Type: PL/SQL anonymous block

- 12) Enter the following code in the Enter PL/SQL Page Process text box (located in /home/oracle/labs/files/lab10_1.txt) and click **Create Process**.

```
for c1 in (
    select phone_number from oechr_customers where customer_id =
    :P<N>_CUSTOMER_ID
)
loop
    :P<N>_PHONE_NUMBER := c1.phone_number;
end loop;
```

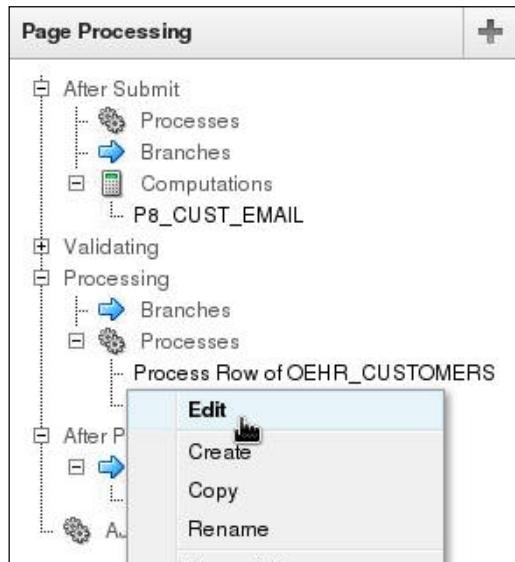


- 13) Click **Run** to run the page.



- 14) Notice that the phone number is displayed for the customer that you selected.
 Click the **Edit Page** link on the Developer toolbar.

- c. Change the Process Row of **OEHR_CUSTOMERS** process to add the **P<n>_CUSTOMER_ID** item in the **Return Key into Item** field.
- 1) You want to create an After Submit process on the Customer Details page. Whenever a new customer is added to the **OEHR_CUSTOMERS** table by using the form, the details of the user who created the new customer are stored in the Audit table. Under Page Processing, in the Processes region, right-click **Process Row of OEHR_CUSTOMERS** and select **Edit**.



- 2) From the list of tabs that is displayed at the top of the page, click **Source: Automatic Row Processing (DML)**.

Process: 2 of 4 Name: Process Row of OEHR_CUSTOMERS

Show All Name Process Point Source: Automatic Row Processing (DML) Where Clause M

Name

Page: 8 Customer Details

* Name: Process Row of OEHR_CUSTOMERS

Type: Automatic Row Processing (DML)

- 3) Because you want to use the value of CUSTOMER_ID in another process, you want to put the value into the P<n>_CUSTOMER_ID item on your page. Click the icon to the right of the **Return Key Into Item** field.

Source: Automatic Row Processing (DML)

* Table Owner: ORA01

* Table Name: OEHR_CUSTOMERS

* Item Containing Primary Key Column Value: P8_CUSTOMER_ID

* Primary Key Column: CUSTOMER_ID

Item Containing Secondary Key Column Value:

Secondary Key Column:

Row Version Column:

Allowed Operations: Insert Update Delete

Return Key Into Item:

Return Second Key Into Item:

Valid Update Request Values: SAVE, APPLY CHANGES, UPDATE, UPDATE ROW, CHANGE, APPLY, APPLY%<CHANGES%, GET_NEXT%, GET_PREV%

Valid Insert Request Values: INSERT, CREATE, CREATE AGAIN, CREATEAGAIN

Valid Delete Request Values: DELETE, REMOVE, DELETE ROW, DROP

session state, automatic processing, or a call SQL or PL/SQL code
Return to page

Tasks
Undo Process Source

Page Items
P8_CUSTOMER_ID
P8_CUST_FIRST_N
P8_CUST_LAST_N
P8_CUST_EMAIL
P8_ACCOUNT_MG
P8_CITY
P8_PHONE_NUMB

Oracle Database Oracle Database Only

- 4) In the list that is displayed, click the link corresponding to the P<n>_CUSTOMER_ID item on your Customer Details page.

[Page: 5: P5 ROWS](#)
[Page: 8: P8 ACCOUNT MGR ID](#)
[Page: 8: P8 CITY](#)
[Page: 8: P8 COUNTRY ID](#)
[Page: 8: P8 CUSTOMER ID](#)
[Page: 8: P8 CUST EMAIL](#)
[Page: 8: P8 CUST FIRST NAME](#)
[Page: 8: P8 CUST LAST NAME](#)
[Page: 8: P8 PHONE NUMBER](#)

- 5) To change the message that is displayed when a new customer is successfully added to the table, click the **Messages** tab.

Source: Automatic Row Processing (DML)

* Table Owner: ORA01

* Table Name: OEHR_CUSTOMERS

* Item Containing Primary Key Column Value: P8_CUSTOMER_ID

* Primary Key Column: CUSTOMER_ID

Item Containing Secondary Key Column Value:

Secondary Key Column:

Row Version Column:

Allowed Operations:

- Insert
- Update
- Delete

Return Key Into Item: P8_CUSTOMER_ID

Return Second Key Into Item:

Valid Update Request Values: SAVE, APPLY CHANGES, UPDATE, UPDATE ROW, CHANGE, APPLY, APPLY%CHANGES%, GET_NEXT%, GET_PREV%

- 6) Replace the process success message with **Customer Added** and click **Apply Changes**.

Process: 2 of 4 Name: Process Row of OEHR_CUSTOMERS

Cancel Delete Apply Changes

Messages

Process Success Message:

Customer Added.

Process Error Message:

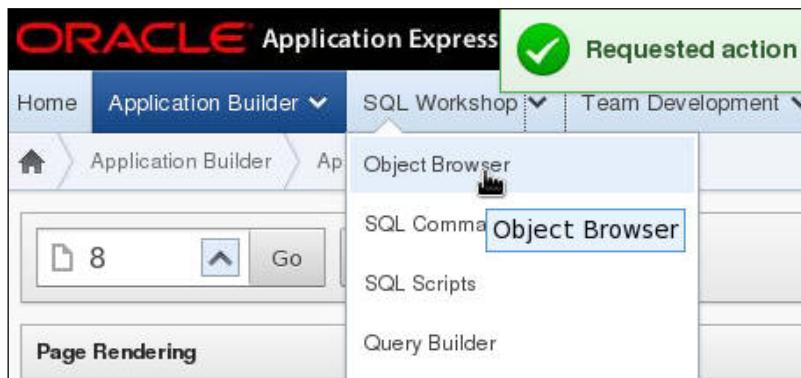
- d. Create an **OEHR_AUDITS** table by using the SQL Workshop's Object Browser and add the following details:

Column Name	Data Type	Other Details
CUSTOMER_ID (PK)	NUMBER	Not Populated
CREATED_BY	VARCHAR2	SCALE 40
CREATED_ON	DATE	N/A

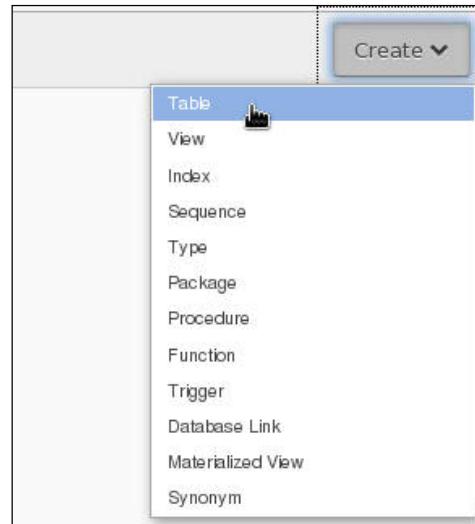
Add an After Submit PL/SQL process called audit insert, which has the following PL/SQL code (located in `/home/oracle/labs/files/lab10_2.txt`). Set the success message to "You have been audited."

```
INSERT INTO oechr_audits VALUES (:P<n>_CUSTOMER_ID, :APP_USER,
sysdate);
```

- To create the **OEHR_AUDITS** table, navigate to the Object Browser page by selecting **Object Browser** from the SQL Workshop tab menu.



- Click the down arrow in the **Create** button and select **Table**.



- 3) The Create Table Wizard opens. Enter **OEHR_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 (PK)	NUMBER	Not Populated
CREATED_BY	VARCHAR2	SCALE 40
CREATED_ON	DATE	N/A

The screenshot shows the 'Columns' step of the Create Table Wizard. The table name is 'OEHR_AUDITS'. The columns defined are:

Column Name	Type	Precision	Scale	Not Null	Move
CUSTOMER_ID	NUMBER			<input type="checkbox"/>	▼▲
CREATED_BY	VARCHAR2		40	<input type="checkbox"/>	▼▲
CREATED_ON	DATE			<input type="checkbox"/>	▼▲

- 4) Select **Not populated** for Primary Key. Select **CUSTOMER_ID (NUMBER)** from the Primary Key drop-down list and click **Next >**.

The screenshot shows the 'Primary Key' step of the Create Table Wizard. The table name is 'OEHR_AUDITS'. The primary key settings are:

- Primary Key: Not populated (radio button selected)
- Primary Key Constraint Name: OEHR_AUDITS_PK
- Primary Key: CUSTOMER_ID(NUMBER)
- Composite Primary Key: - Select Composite Primary Key -

- 5) You do not want to create a foreign key. Click **Next >**.

Foreign Keys

Add Foreign Key

Name: OEHR_AUDITS_fk

Action:

- Disallow Delete (selected)
- Cascade Delete
- Set Null on Delete

Select Key Column(s): CUSTOMER_ID, CREATED_BY, CREATED_ON

Key Column(s):

References Table:

Add

- 6) You do not want to create constraints. Click **Next >**.

Constraint Name: Type: Column(s)/Check

Type:

- Check (selected)
- Unique

Name: OEHR_AUDITS_ckpt

Add

- 7) Click **Create Table** to create the table.

Create Table

Please confirm your request.

Schema: ORA01

Table name: OEHR_AUDITS

SQL

```
CREATE table "OEHR_AUDITS" (
    "CUSTOMER_ID" NUMBER,
    "CREATED_BY" VARCHAR2(40),
    "CREATED_ON" DATE,
    constraint "OEHR_AUDITS_PK" primary key ("CUSTOMER_ID")
)
/
```

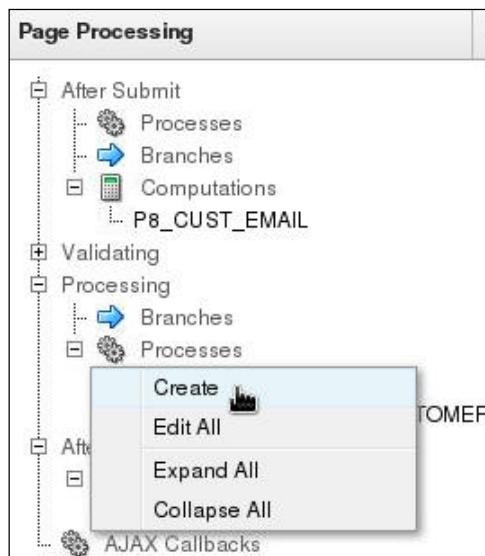
- 8) The OEHR_AUDITS table is created and displayed on the Object Browser page.

OEHR_AUDITS				
Table	Data	Indexes	Model	Constraints
Add Column	Modify Column	Rename Column	Drop Column	Rename
Copy	Drop	Truncate	Create Lookup Table	
Column Name	Data Type	Nullable	Default	Primary Key
CUSTOMER_ID	NUMBER	No	-	1
CREATED_BY	VARCHAR2(40)	Yes	-	-
CREATED_ON	DATE	Yes	-	-

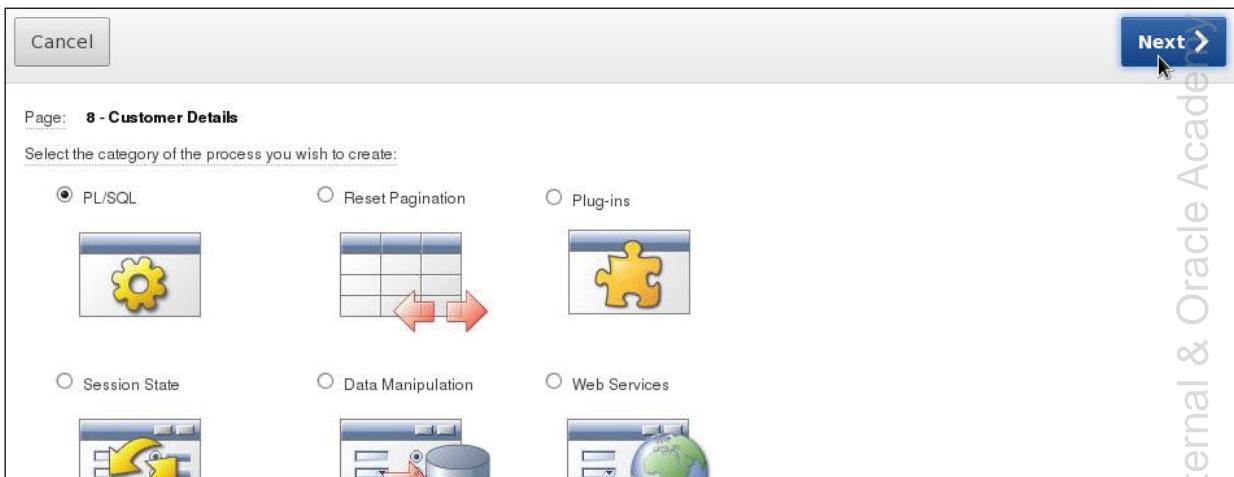
- 9) You want to create a new page process on the Customer Details page. Click Application Builder and select Database Applications. Navigate to the **Order Management** application home page and select the **Customer Details** page.

The screenshot shows the Oracle Application Management interface. At the top, there's a navigation bar with tabs for 'Application 130 - Order Management' and 'Edit Application Properties'. Below the navigation bar is a row of icons representing different application management functions: 'Run Application' (play button), 'Supporting Objects' (database cylinder with icons), 'Shared Components' (compass, pen, and padlock), 'Utilities' (ruler, hammer, wrench), and 'Export / Import' (up and down arrows). The main content area has a search bar with a magnifying glass icon and a 'Go' button, followed by a toolbar with three grid icons and an 'Actions' dropdown. To the right is a large blue button labeled 'Create Page' with a white arrow icon. Below this is a grid of 16 icons, each representing a different application page or feature, numbered 0 through 16. The icons include various document types, a smartphone, a house, and a gear.

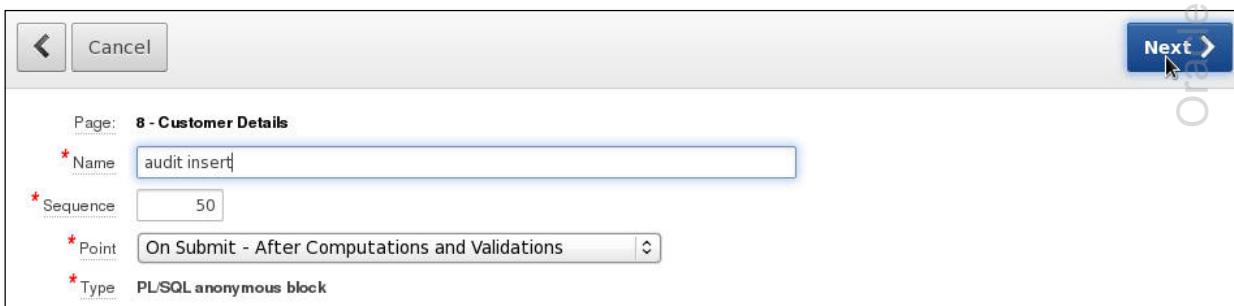
- 10) Under Page Processing, in the Processes region, right-click **Processes** and select **Create**.



- 11) Select the **PL/SQL** option and click **Next >**.



- 12) For Name, enter **audit insert** and click **Next**.



- 13) In the **Enter PL/SQL Page Process** text area, enter the following code (located in /home/oracle/labs/files/lab10_2.txt) and click **Next >**. Ensure that you change **P<n>** to your Customer Details page number.

```
INSERT INTO oechr_audits VALUES (:P<n>_CUSTOMER_ID,
:APP_USER, sysdate);
```

Page: 8 - Customer Details
 Point: On Submit - After Computations and Validations
 * Enter PL/SQL Page Process

```
INSERT INTO oeohr_audits VALUES(:P8_CUSTOMER_ID,
:APP_USER, sysdate);
```

- 14) For Success Message, enter You have been audited. For Error Message, enter Error. Click Next >.

If this process runs without generating an error the "Success Message" displays. If the page process runs and an error is raised the "Failure Message" displays. The placement and HTML template for success is controlled by the page templates, specifically the #SUCCESS_MESSAGE# substitution string. If you include this string in the page template and a error message is generated for the process, the standard error page (using the error page template) displays when the process fails. Note that processing stops when an error is encountered and the transaction is rolled back.

Page: 8 - Customer Details
 Point: On Submit - After Computations and Validations
 Success Message
 You have been audited.
 Error Message
 Error

- 15) For When Button Pressed, select CREATE from the drop-down list and click Create Process.

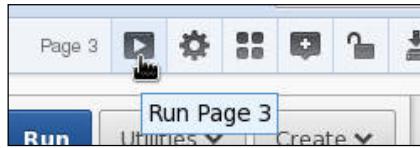
This process executes in sequence and only if the conditions identified in this step are met. You can specify a condition by making a selection from the When Button Pressed list. Any condition specified must be met before the page process executes. When Button Pressed conditions are only relevant for processes of type After Submit.

Page: 8 - Customer Details
 Point: On Submit - After Computations and Validations
 When Button Pressed **CREATE (Create)**
 Condition Type
 - Process Not Conditional -
 [PL/SQL] [item / column=value] [item / column not null] [item / column null] [request=<#>] [page in] [page not in] [exists] [never] [none]

- 16) To verify that the processes are working, navigate to the Customers page by entering 3 for Page and clicking Go.



17) Click the **Run Page** icon.



18) Click the **Create** button.

Customer Report										
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State Province	Country Id	Phone Num	Action
	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN	US	+1 317 123 4	
	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN	US	+1 317 123 4	
	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN	US	+1 812 123 4	
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN	US	+1 317 123 4	
	105	Matthias	MacGraw	4019 W 3Rd St	47404	Bloomington	IN	US	+1 812 123 4	

19) Enter the following information and click **Create**.

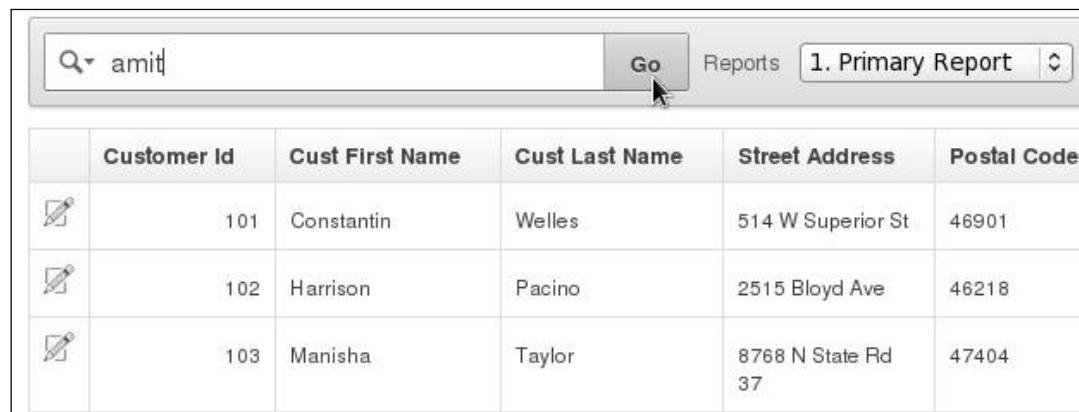
Item	Value
First Name	Amit
Last Name	Paul
Email	Amit.paul@oracle.com
Account Manager	John Russell
Country	United States of America
State	South San Francisco

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"/>	Bates, Elizabeth , Russell, John , Cambrault, Gerald
Country	<input type="text" value="United States of America"/>							
City	<input type="text" value="South San Francisco"/>							
Phone Number								

The record created or modified in this form is reflected in the Customer Report.

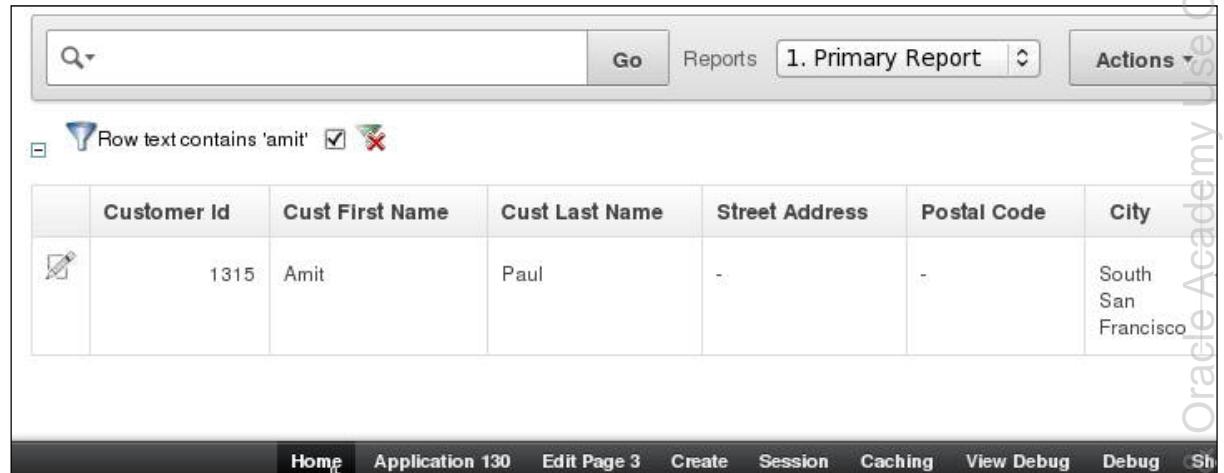
- 20) Notice the success messages for the audit and processing of the new customer. Enter **Amit** in the search area and click **Go**.



The screenshot shows a search interface with a search bar containing 'amit' and a 'Go' button. Below the search bar is a report title '1. Primary Report'. A table displays customer data with columns: Customer Id, Cust First Name, Cust Last Name, Street Address, and Postal Code. The data includes three rows: Customer Id 101 (Constantin Welles), Customer Id 102 (Harrison Pacino), and Customer Id 103 (Manisha Taylor).

	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code
	101	Constantin	Welles	514 W Superior St	46901
	102	Harrison	Pacino	2515 Bloyd Ave	46218
	103	Manisha	Taylor	8768 N State Rd 37	47404

- 21) You want to review what is in the OEHR_AUDITS table. Click the **Home** link on the Developer toolbar.



The screenshot shows a search interface with a search bar containing 'amit' and a 'Go' button. Below the search bar is a report title '1. Primary Report'. A table displays audit data with columns: Customer Id, Cust First Name, Cust Last Name, Street Address, Postal Code, and City. The data includes one row: Customer Id 1315 (Amit Paul, South San Francisco).

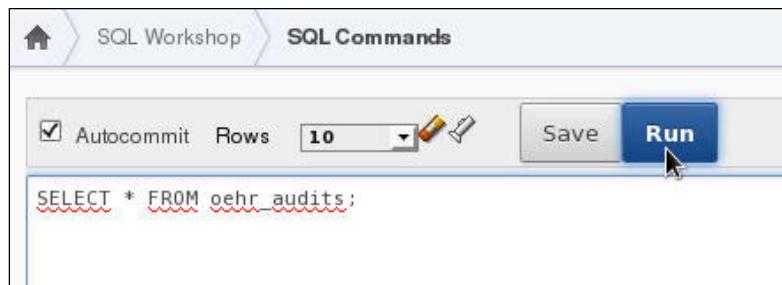
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City
	1315	Amit	Paul	-	-	South San Francisco

- 22) Click **SQL Workshop > SQL Commands**.



- 23) In the text area, enter the following and click **Run**.

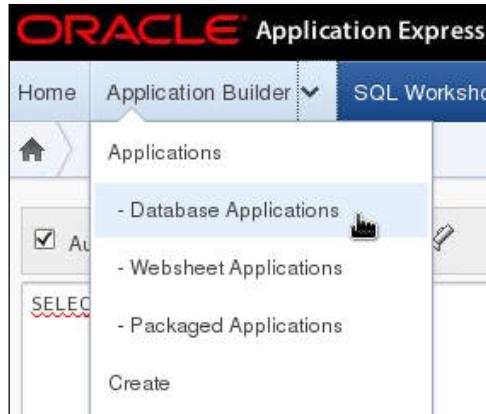
```
SELECT * FROM oehr_audits;
```



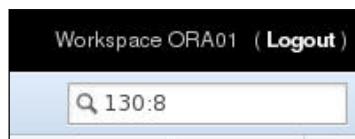
- 24) Note that the details have been added to the OEHR_AUDITS table.

CUSTOMER_ID CREATED_BY CREATED_ON		
1315	ORA01	01/02/2013
1 rows returned in 0.01 seconds Download		

- e. Create an Item String Comparison validation on the P<n>_CUST_EMAIL item to ensure that there are no spaces in the Email value. Test the page to make sure that it works.
- 1) You want to add a validation to the Customer Details page in your application. Click **Application Builder > Database Applications**.



- 2) You can navigate to your Customer Details page in the Order Management application. Alternatively, you can enter the <application id>:<page number> in the search field and press Enter.



- 3) Under Page Processing, right-click **Validating** and select **Create Validation**.

The screenshot shows the Oracle APEX Page Processing configuration for page 8. The 'Page Rendering' section on the left lists 'Customer Details' with sub-sections like 'Before Header', 'After Header', 'Regions', and 'Before Regions'. The 'Page Processing' section on the right shows 'After Submit' and 'Validating' branches. Under 'Validating', a context menu is open with options: 'Create Validation' (highlighted), 'Create Branch', 'Expand All', and 'Collapse All'. The 'audit insert' item is also listed under 'Validating'.

- 4) Make sure that **Page Item** is selected and click **Next >**.

This screenshot shows the 'Identify the validation level' step. It has two radio button options: 'Page Item' (selected) and 'Page'. Below each option is a small icon of a page with a red checkmark. The 'Next >' button is located at the top right of the screen.

- 5) Select the item for **P<n>_CUST_EMAIL** and click **Next >**.

This screenshot shows the 'Identify the Page Item that is to be validated' step. A list of items is displayed with radio buttons next to them. The item 'Customer Details: 40. P8_CUST_EMAIL (Cust Email)' has a radio button checked and is highlighted with a red arrow. The 'Next >' button is located at the top right.

- 6) Accept the default and click **Next >**.

Specify the sequence in which your validation executes. Identify a name for the validation to make it easy to locate in the future. Also specify the location where an error message display if the validation fails.

Page: 8
Item: P8_CUST_EMAIL
* Sequence: 10
* Validation Name: P8_CUST_EMAIL
Error Display Location: Inline with Field and in Notification

- 7) Select **String Comparison** for validation method and click **Next >**.

Page: 8 - Customer Details
Item: P8_CUST_EMAIL

Select a validation type:

Not Null String Comparison Regular Expression

SQL PL/SQL

- 8) Select **Item / Column specified contains no spaces** for type and click **Next >**.

Page: 8 - Customer Details
Item: P8_CUST_EMAIL

Pick the type of validation you wish to create:

- Item / Column in Expression 1 contains at least one of the characters in Expression 2
- Item / Column in Expression 1 contains only characters in Expression 2
- Item / Column in Expression 1 does NOT equal string literal in Expression2
- Item / Column in Expression 1 does not contain any of the characters in Expression 2
- Item / Column in Expression 1 equals string literal in Expression 2
- Item / Column in Expression 1 is NOT contained in Expression 2
- Item / Column in Expression 1 is contained in Expression 2
- Item / Column specified is NOT zero
- Item / Column specified contains no spaces
- Item / Column specified is NOT NULL or zero
- Item / Column specified is alphanumeric
- Item / Column specified is numeric
- Item / Column specified is a valid date
- Item / Column specified is a valid timestamp

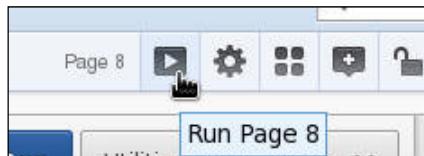
- 9) Enter **Email must not contain any spaces** for Error Message and click **Next >**.



- 10) You want this validation to fire only when the item is not null. Select **Value of Item / Column in Expression 1 is NOT NULL** for Condition Type and enter **P<n>_CUST_EMAIL** for Expression 1. Click **Create Validation**. Make sure that you replace the **<n>** in **P<n>_CUST_EMAIL** with the current page number.



- 11) To see how the validation works, run the page. Click the **Run** icon.



- 12) You want to edit a record. Click **Cancel** to return to the Customer Report so that you can edit a record. This step is not required if the form is already filled.

Customer Details

Cust First Name *

Cust Last Name *

Cust Email

Account Manager

[Bates, Elizabeth](#), [Russell, John](#), [Cambrault, Gerald](#)

Country

City

Phone Number

The record created or modified in this form is reflected in the Customer Report.

Cancel **Create**

- 13) Click the **Edit** icon for one of the rows.

		<input type="button" value="Go"/>	Reports	1. Primary Report	<input type="button" value="Actions"/>		
	Customer Id	Cust First Name	Cust Last Name	Street Address	Postal Code	City	State
<input type="button" value="Edit"/>	101	Constantin	Welles	514 W Superior St	46901	Kokomo	IN
<input type="button" value="Edit"/>	102	Harrison	Pacino	2515 Bloyd Ave	46218	Indianapolis	IN
<input type="button" value="Edit"/>	103	Manisha	Taylor	8768 N State Rd 37	47404	Bloomington	IN
<input type="button" value="Edit"/>	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254	Indianapolis	IN

14) Add a space to the email and click **Apply Changes**.

Manisha Taylor Customer Details

Cust First Name * Manisha

Cust Last Name * Taylor

Cust Email Manisha.Taylor@AUKLET.COM

Account Manager Bates, Elizabeth

Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country United States of America

City Bloomington

Phone Number +1 812 123 4115

The record created or modified in this form is reflected in the Customer Report.

Cancel Delete Apply Changes

15) Notice that you receive an error message inline and also at the top of the page.

Order Management

Home Customers Products

1 error has occurred

* Email must not contain any spaces ([Go to error](#))

In the News

News and Events

Visit us at www.oracle.com

Manisha Taylor Customer Details

Cust First Name * Manisha

Cust Last Name * Taylor

Cust Email MANISHA.TAYLOR@AUKLET.COM

Email must not contain any spaces

Account Manager Bates, Elizabeth

Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country United States of America

City Bloomington

Phone Number

The record created or modified in this form is reflected in the Customer Report.

Cancel Delete Apply Changes

- f. 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?

- 1) 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**.

Manisha Taylor Customer Details

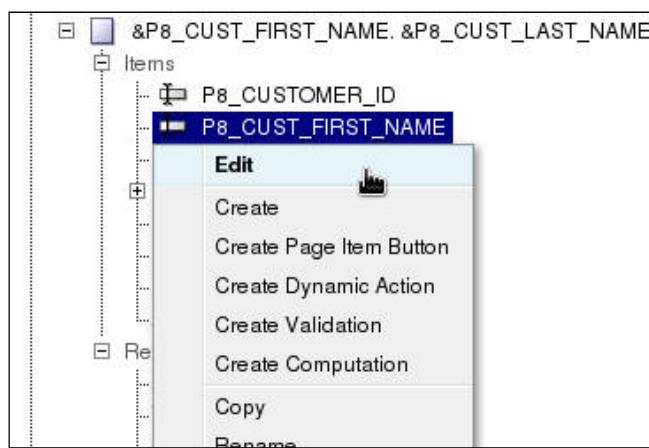
Cancel **Delete** **Apply Changes**

Cust First Name *	<input type="text"/>
Cust Last Name *	Taylor
Cust Email	MANISHA.TAYLOR@AUKLET.COM
Email must not contain any spaces	
Account Manager	Bates, Elizabeth <input type="button" value="▼"/>
Bates, Elizabeth , Russell, John , Cambrault, Gerald	
Country	United States of America <input type="button" value="▼"/>
City	Bloomington <input type="button" value="▲"/>
Phone Number	
The record created or modified in this form is reflected in the Customer Report.	

- 2) 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 **Edit Page** link on the Developer toolbar.

The screenshot shows the Order Management application. A modal dialog box is open, indicating "1 error has occurred" with the message "Cust First Name must have some value." (Go to error). The main page displays news and events, and a form titled "Taylor Customer Details" is open. The "Cust First Name" field is highlighted in red, and the error message "Cust First Name must have some value." is displayed above it. Other fields visible include "Cust Last Name" (Taylor), "Cust Email" (MANISHA.TAYLOR@AUKLET.COM), "Account Manager" (Bates, Elizabeth), "Country" (United States of America), and "City" (Bloomington). Buttons for "Cancel", "Delete", and "Apply Changes" are at the top right of the form. The status bar at the bottom shows various developer tools like Home, Application 130, Edit Page 8, Create, Session, Caching, View Debug, Debug, Show Edit Links, and Stop.

- 3) Right-click P<n>_CUST_FIRST_NAME and select **Edit**.



- 4) Click the **Settings** tab.

Page Item: P8_CUST_FIRST_NAME

Cancel Delete Apply Change

Show All Identification User Interface Grid Layout Label Settings Element Source Default Quick Picks Condition

Identification

Page: 8 Customer Details

* Name: P8_CUST_FIRST_NAME

Display As: Text Field

Text, Number, Date, Textarea, Select List, Radio, Popup List of Values, Checkbox, Display Only, Hidden

- 5) Notice that the 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 it this way will allow you to specify the error message to be displayed. Click the **Application <n>** breadcrumb.

Application Builder > Application 130 > Page 8 > Edit Page Item

Application 130

Page Item: P8_CUST_FIRST_NAME

Cancel Delete Apply

Show All Identification User Interface Grid Layout Label Settings Element Source Default Quick P

Settings

Value Required: Yes

Subtype: Text

Submit when Enter pressed: No

Disabled: No

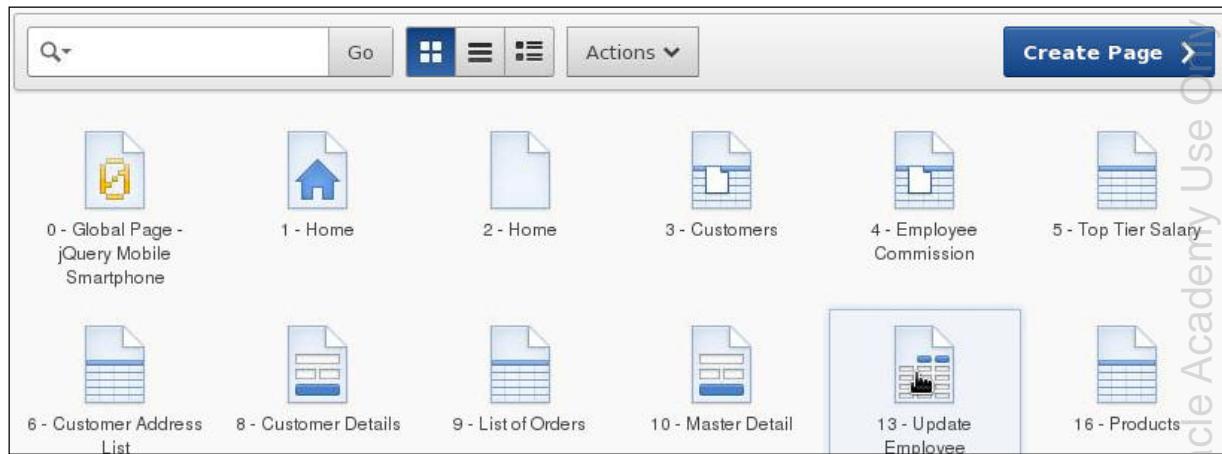
- g. Create a Tabular Form validation. If the `JOB_ID` is '`SA_REP`', then a commission needs to be entered. If the commission is not entered for the `JOB_ID` '`SA_REP`', then display an error message. Use the following PL/SQL code (located in `/home/oracle/labs/files/lab10_3.txt`):

```

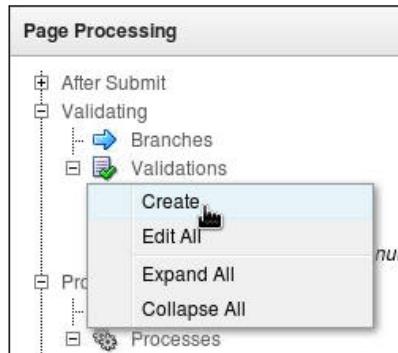
Declare
begin
    If :JOB_ID = 'SA_REP' and :COMMISSION_PCT is not null then
        Return true;
    Else
        Return false;
    End if;
End;

```

- Select the **Update Employee Information** page.



- Under **Page Processing**, right-click **Validations** and select **Create**.



- 3) For Tabular Form, select **Update Employee Information** from the drop-down list and select **Tabular Form Row** for "Identify the validation level." Click **Next >**.

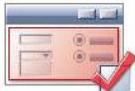
Cancel **Next >**

Page: 13 - Update Employee Information

Tabular Form: **Update Employee Information**

Identify the validation level:

Column Tabular Form Row

- 4) Enter **Job Commission** for Validation Name and click **Next >**.

Cancel **Next >**

Specify the sequence in which your validation executes. Identify a name for the validation to make it easy to locate in the future. Also specify the location where an error message display if the validation fails.

Page: 15

Tabular Form: **Update Employee Information**

* Sequence: 70

* Validation Name: **Job Commission**

Error Display Location: **Inline in Notification**

- 5) Select **PL/SQL** for validation type and click **Next >**.

Cancel **Next >**

Page: 13 - Update Employee Information

Tabular Form: **Update Employee Information**

Select a validation type:

SQL PL/SQL

- 6) Select **Function Returning Boolean** for type of validation and click **Next >**.

Cancel **Next >**

Page: 13 - Update Employee Information

Tabular Form: **Update Employee Information**

Pick the type of validation you wish to create:

PL/SQL Expression
 PL/SQL Error
 Function Returning Boolean
 Function Returning Error Text

- 7) In the Validation Code box, enter the following code (located in /home/oracle/labs/files/lab10_3.txt):

```
declare
begin
    if :JOB_ID = 'SA_REP' and :COMMISSION_PCT is not null then
        return true;
    else
        return false;
end if;
end;
```

In the Error Message field, enter "Please enter the commission percentage." and click

Next >

The screenshot shows the Oracle Database Validation dialog box. The validation type is set to "Function Returning Boolean". The validation code is pasted into the "Validation Code" text area:

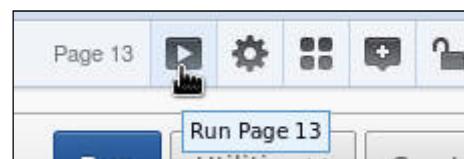
```
Declare
begin
    If :JOB_ID = 'SA_REP' and :COMMISSION_PCT is not null then
        Return true;
    Else
        Return false;
End If;
End;
```

The "Error Message" field contains the text "Please enter the commission percentage." The "Next >" button is highlighted.

- 8) Select **Submit** for When Button Pressed and click **Create Validation**.

The screenshot shows the Oracle Database Validation dialog box again. The "When Button Pressed" dropdown is set to "SUBMIT (Submit)". The "Create Validation" button is highlighted.

- 9) Click the **Run page** icon.



- 10) Edit one of the Employee's information. Change the Job_Id to SA_REP and click Submit.

Update Employee Information

<input type="checkbox"/>	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	SA_REP	
<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 [Next >](#)

[Add Row](#)

- 11) An error message is displayed because the commission percentage has not been entered.

Order Management

1 error has occurred

- Please enter the commission percentage. (Row 7)

Update Employee Information

<input type="checkbox"/>	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	SA_REP	
<input type="checkbox"/>	Diana	Lorentz	DLORENTZ	IT_PROG	
<input type="checkbox"/>	Nancy	Greenberg	NGREENBE	FI_MGR	

- 12) Enter the commission percentage for the employee and click **Submit**.

Update Employee Information

<input type="checkbox"/>	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	SA_REP	.3
<input type="checkbox"/>	Diana	Lorentz	DLORENTZ	IT_PROG	
<input type="checkbox"/>	Nancy	Greenberg	NGREENBE	FI_MGR	

The employee information is successfully updated.

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 your application.

Assumptions

You have performed the previous practices or imported the `LAB101_SOLN.sql` packaged application.

Tasks

- a. Run the Advisor and correct the warning on the Customer Address page by specifying a sort order.
- b. Run the Advisor for the Customer Address List page only.
- c. Run the Advisor and correct the warning on the `P<n>_CUST_EMAIL` item by defining help text.
- d. Change the settings in the Advisor so that you do not get any more errors or warnings.

Practice 11-2: Managing Your Attribute Dictionary

Overview

In this practice, you update the Attribute Dictionary based on the items and report columns on your page.

Assumptions

You have performed the previous practices in this lesson.

Tasks

- a. Change the widths of items on the Customer Details page of the Order Management application to the following.

Item	Attribute	Value
P<n>_CUST_FIRST_NAME	Width	18
P<n>_CUST_LAST_NAME	Width	18
P<n>_CUST_EMAIL	Width	18

- b. Add the items on the Customer Details page to the Attribute Dictionary.
- c. 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.
- d. Make sure that OEHR_CUSTOMERS is not in the Table Dictionary.
- e. Update the Attribute Dictionary for the items on the Customer Detail page.
- f. Update the Customers page to use the Attribute Dictionary defaults. Verify by showing the help text for the First Name column in the report.
- g. Create a new forms page based on the OEHR_CUSTOMERS table. Make sure that UI Defaults is enabled. Run the page to see that the Attribute Dictionary is used.

Practice 11-3: Debugging and Troubleshooting Common Issues in Your Application

Overview

In this practice, you debug your application and resolve some common issues that may occur while developing your application.

Assumptions

You have performed the previous practices in this lesson.

Tasks

- a. Import an application with some issues to resolve.
- b. Run and debug the application.
- c. Review and make changes to the SQL Query in the Interactive Report.
- d. Why does the Create button not do anything when you click it?
- e. Optional: When you edit an employee on page 3 (the Employee Report), why is the employee record not displayed on page 4? See if you can figure this out on your own without looking at the solution.

Solution 11-1: Using the Advisor

Overview

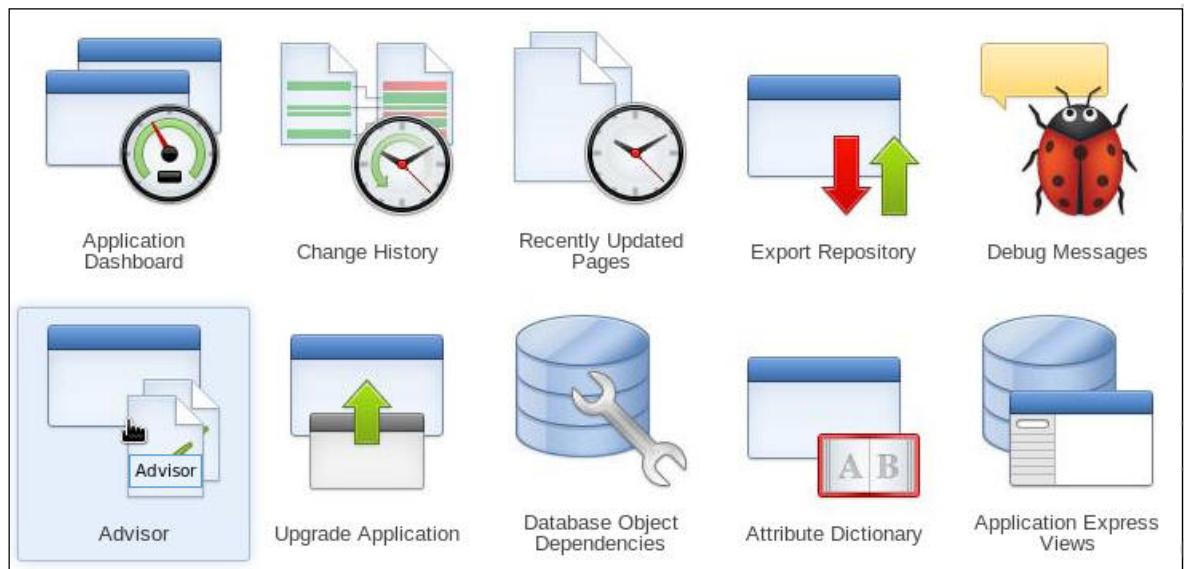
In this practice, you run the Advisor and correct some of the warnings that appear.

Tasks

- a. Run the Advisor and correct the warning on the Customer Address List page by specifying a sort order.
 - 1) Navigate to the **Order Management** application home page and select **Utilities**.



- 2) Click **Advisor**.



3) Click **Perform Check**.

The screenshot shows a dialog box titled 'Checks to Perform'. At the top right is a blue button labeled 'Perform Check' with a cursor pointing at it. Below the button are three tabs: 'Show All', 'Checks to Perform', and 'Check Page(s)'. The 'Checks to Perform' tab is selected. The main area is divided into four sections: 'Errors', 'Performance', 'Usability', and 'Quality Assurance'. Under 'Errors', there are 14 items listed with checkboxes. Under 'Performance', there are 2 items. Under 'Usability', there are 2 items. Under 'Quality Assurance', there are 3 items. At the bottom left are two buttons: 'Select All' and 'Deselect All'.

4) 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 **Customer Address List** page. Scroll down and locate the warning.

The screenshot shows a dialog box titled 'Filter Result'. It contains a list of selected categories with checkboxes. The selected categories are: 'Error (1)' (with 'References with Substitution Syntax (1)' checked), 'Quality Assurance (8)' (with 'Report has Default Order (6)' and 'Page Item has Help Text (2)' checked).

- 5) Click the **View** link.

Applications > 130 - Order Management > Pages > 6 - Customer Address List > Regions > Customer Address List	
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 "OEHR_CUSTOMERS"."CUST_FIRST_NAME" "CUST_FIRST_NAME", "OEHR_CUSTOMERS"."CUST_LAST_NAME" "CUST_LAST_NAME", "OEHR_CUSTOMERS"."STREET_ADDRESS" "STREET_ADDRESS", "OEHR_CUSTOMERS"."CITY" "CITY", "OEHR_CUSTOMERS"."STATE_PROVINCE" "STATE_PROVINCE", "OEHR_COUNTRIES"."COUNTRY_NAME" "COUNTRY_NAME" FROM "OEHR_CUSTOMERS", "OEHR_COUNTRIES" WHERE "OEHR_CUSTOMERS"."COUNTRY_ID" = "OEHR_COUNTRIES"."COUNTRY_ID" </pre>
	View

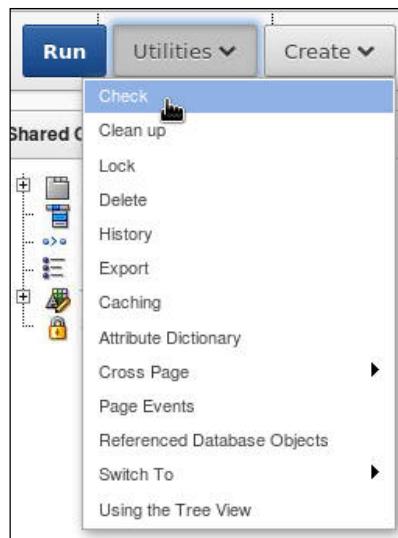
- 6) Click the **Report Attributes** tab.

Region Definition	Report Attributes	Query Definition	Print Attributes
	<input type="button" value="Report Attributes"/> Region: 1 of 1 Name: Customer Address List		<input type="button" value="Cancel"/>
<input type="button" value="Show All"/> <input type="button" value="Identification"/> <input type="button" value="Source"/> <input type="button" value="User Interface"/> <input type="button" value="Grid Layout"/> <input type="button" value="Attributes"/> <input type="button" value="Header and Footer"/> <input type="button" value="Conditions"/>			
Identification <p>Page: 6 Customer Address List</p> <p>* Title: <input type="text" value="Customer Address List"/></p> <p>Type: SQL Query (Structured Query)</p>			

- 7) You want to sort by Country Name. Select the Sort check box and select 1 for Sort Sequence for COUNTRY_NAME, and click **Apply Changes**.

Alias	Link	Edit	Heading	Column Width	Column Alignment	Heading Alignment	Show	Sum	Sort	Sort Sequence
CUST_FIRST_NAME			First Name		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
CUST_LAST_NAME			Last Name		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
COUNTRY_NAME			Country Name		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1
STREET_ADDRESS			Street Address		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
CITY			City		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
STATE_PROVINCE			State Province		left	center	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-

- b. Run the Advisor for the Customers Address List page only.
- You can run the Advisor again just for the current page. Click **Utilities** and select **Check**.

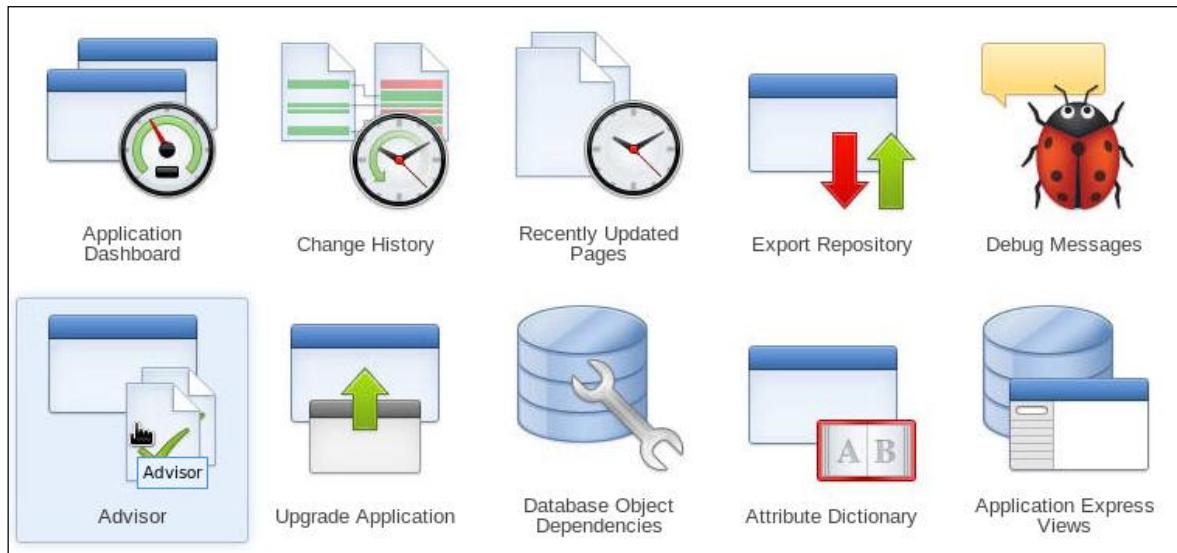


- Notice that you do not receive any more violations for this page. To run the Advisor again for the entire application, click the **Application Utilities** icon in the upper-right corner of the window.

Selected Page(s):	Change Settings
6	
Check Result	
No errors/warnings found for the specified checks.	

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.

3) Click **Advisor**.



4) Click **Perform Check**.

		Perform Check															
<input type="button" value="Show All"/> <input type="button" value="Checks to Perform"/> <input type="button" value="Check Page(s)"/>																	
Checks to Perform																	
<table border="0"> <tr> <td>Errors:</td> <td>Performance:</td> </tr> <tr> <td> <input checked="" type="checkbox"/> References with Substitution Syntax <input checked="" type="checkbox"/> References with Column Syntax <input checked="" type="checkbox"/> References with Bind Variable Syntax <input checked="" type="checkbox"/> Declarative References of Application Items, Page Items, Columns or Interactive Report Filters <input checked="" type="checkbox"/> Referenced Page Number Exists <input checked="" type="checkbox"/> Is Valid SQL or PL/SQL Code <input checked="" type="checkbox"/> Fetch, DML, MR* Processes are Valid <input checked="" type="checkbox"/> Unconditional Branch before other Branches <input checked="" type="checkbox"/> Referenced Button in When Button Pressed exists <input checked="" type="checkbox"/> Button is not compatible with Dynamic Actions </td> <td> <input checked="" type="checkbox"/> V Function used in SQL Statements </td> </tr> <tr> <td>Security:</td> <td>Usability:</td> </tr> <tr> <td> <input checked="" type="checkbox"/> Target Page Authorization equals current Component Authorization <input checked="" type="checkbox"/> Inappropriate use of Substitution Syntax </td> <td> <input type="checkbox"/> Target Page Authorization is also set for Current Component <input checked="" type="checkbox"/> Associated Item or Column of Validations </td> </tr> <tr> <td>Warnings:</td> <td>Quality Assurance:</td> </tr> <tr> <td> <input type="checkbox"/> Referenced Item is on Current Page <input checked="" type="checkbox"/> Referenced Item is Page Item of Target Page <input checked="" type="checkbox"/> References of Page Item in a String <input checked="" type="checkbox"/> Clear Cache Page Number equals Target or Current Page <input checked="" type="checkbox"/> Length of Item or Tabular Form Column Name <input checked="" type="checkbox"/> Inconsistent references between Dynamic Actions and Buttons <input checked="" type="checkbox"/> Protected items in AJAX calls </td> <td> <input checked="" type="checkbox"/> Hardcoded Application ID <input checked="" type="checkbox"/> Report has Default Order <input checked="" type="checkbox"/> Page Item has Help Text </td> </tr> <tr> <td colspan="3"> <input type="button" value="Select All"/> <input type="button" value="Deselect All"/> </td> </tr> </table>			Errors:	Performance:	<input checked="" type="checkbox"/> References with Substitution Syntax <input checked="" type="checkbox"/> References with Column Syntax <input checked="" type="checkbox"/> References with Bind Variable Syntax <input checked="" type="checkbox"/> Declarative References of Application Items, Page Items, Columns or Interactive Report Filters <input checked="" type="checkbox"/> Referenced Page Number Exists <input checked="" type="checkbox"/> Is Valid SQL or PL/SQL Code <input checked="" type="checkbox"/> Fetch, DML, MR* Processes are Valid <input checked="" type="checkbox"/> Unconditional Branch before other Branches <input checked="" type="checkbox"/> Referenced Button in When Button Pressed exists <input checked="" type="checkbox"/> Button is not compatible with Dynamic Actions	<input checked="" type="checkbox"/> V Function used in SQL Statements	Security:	Usability:	<input checked="" type="checkbox"/> Target Page Authorization equals current Component Authorization <input checked="" type="checkbox"/> Inappropriate use of Substitution Syntax	<input type="checkbox"/> Target Page Authorization is also set for Current Component <input checked="" type="checkbox"/> Associated Item or Column of Validations	Warnings:	Quality Assurance:	<input type="checkbox"/> Referenced Item is on Current Page <input checked="" type="checkbox"/> Referenced Item is Page Item of Target Page <input checked="" type="checkbox"/> References of Page Item in a String <input checked="" type="checkbox"/> Clear Cache Page Number equals Target or Current Page <input checked="" type="checkbox"/> Length of Item or Tabular Form Column Name <input checked="" type="checkbox"/> Inconsistent references between Dynamic Actions and Buttons <input checked="" type="checkbox"/> Protected items in AJAX calls	<input checked="" type="checkbox"/> Hardcoded Application ID <input checked="" type="checkbox"/> Report has Default Order <input checked="" type="checkbox"/> Page Item has Help Text	<input type="button" value="Select All"/> <input type="button" value="Deselect All"/>		
Errors:	Performance:																
<input checked="" type="checkbox"/> References with Substitution Syntax <input checked="" type="checkbox"/> References with Column Syntax <input checked="" type="checkbox"/> References with Bind Variable Syntax <input checked="" type="checkbox"/> Declarative References of Application Items, Page Items, Columns or Interactive Report Filters <input checked="" type="checkbox"/> Referenced Page Number Exists <input checked="" type="checkbox"/> Is Valid SQL or PL/SQL Code <input checked="" type="checkbox"/> Fetch, DML, MR* Processes are Valid <input checked="" type="checkbox"/> Unconditional Branch before other Branches <input checked="" type="checkbox"/> Referenced Button in When Button Pressed exists <input checked="" type="checkbox"/> Button is not compatible with Dynamic Actions	<input checked="" type="checkbox"/> V Function used in SQL Statements																
Security:	Usability:																
<input checked="" type="checkbox"/> Target Page Authorization equals current Component Authorization <input checked="" type="checkbox"/> Inappropriate use of Substitution Syntax	<input type="checkbox"/> Target Page Authorization is also set for Current Component <input checked="" type="checkbox"/> Associated Item or Column of Validations																
Warnings:	Quality Assurance:																
<input type="checkbox"/> Referenced Item is on Current Page <input checked="" type="checkbox"/> Referenced Item is Page Item of Target Page <input checked="" type="checkbox"/> References of Page Item in a String <input checked="" type="checkbox"/> Clear Cache Page Number equals Target or Current Page <input checked="" type="checkbox"/> Length of Item or Tabular Form Column Name <input checked="" type="checkbox"/> Inconsistent references between Dynamic Actions and Buttons <input checked="" type="checkbox"/> Protected items in AJAX calls	<input checked="" type="checkbox"/> Hardcoded Application ID <input checked="" type="checkbox"/> Report has Default Order <input checked="" type="checkbox"/> Page Item has Help Text																
<input type="button" value="Select All"/> <input type="button" value="Deselect All"/>																	

- c. Run the Advisor and correct the warning on the `P<n>_CUST_EMAIL` item by defining help text.

- 1) Scroll to the result that pertains to P<n>_CUST_EMAIL. Click the **View** link to go directly to the page item definition.

Applications > 130 - Order Management > Pages > 8 - Customer Details > Regions > &P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details > Page Items > P8_CUST_EMAIL	
Attribute	Item Help Text
Check	Page Item has Help Text
Category	Quality Assurance
Message	No help text defined.
Value	
View	

- 2) Click the **Help Text** tab.

Page Item: P8_CUST_EMAIL

Cancel Delete Apply Changes

Show All	Identification	User Interface	Grid Layout	Label	Settings	Element	Source	Default	Quick Picks	Conditions	Read Only	Security	Configuration	Help Text	Com
Identification															
Page: 8 Customer Details															
* Name <input type="text" value="P8_CUST_EMAIL"/> Display As <input type="text" value="Text Field"/> <small>Text , Number , Date , Textarea , Select List , Radio , Popup List of Values , Checkbox , Display Only , Hidden</small>															

- 3) Enter **Customer Email** for Help Text and click **Apply Changes**.

Page Item: P8_CUST_EMAIL

Cancel Delete Apply Changes

Show All	Identification	User Interface	Grid Layout	Label	Settings	Element	Source	Default	Quick Picks	Conditions	Read Only	Security
Help Text												
Help Text <input type="text" value="Customer Email"/>												

- d. Change the settings in the Advisor so that you do not get any more errors or warnings.

- 1) Click the **Application Utilities** icon.



- 2) Click **Advisor**.



- 3) You can change the checks that the Advisor performs. Deselect **References with Substitution Syntax**, **Report has Default Order**, and **Page Item has Help Text**, and click **Perform Check**.

The screenshot shows the 'Checks to Perform' page of the Oracle Application Builder Advisor. At the top, there are three tabs: 'Show All', 'Checks to Perform' (which is selected), and 'Check Page(s)'. Below the tabs is a 'Perform Check' button with a mouse cursor hovering over it. The main area is divided into several sections: 'Errors', 'Performance', 'Usability', 'Quality Assurance', 'Security', and 'Warnings'. Under 'Errors', several checkboxes are listed, including 'References with Substitution Syntax' (unchecked), 'References with Column Syntax' (checked), 'References with Bind Variable Syntax' (checked), 'Declarative References of Application Items, Page Items, Columns or Interactive Report Filters' (checked), 'Referenced Page Number Exists' (checked), 'Is Valid SQL or PL/SQL Code' (checked), 'Fetch, DML, MR* Processes are Valid' (checked), 'Unconditional Branch before other Branches' (checked), 'Referenced Button in When Button Pressed exists' (checked), and 'Button is not compatible with Dynamic Actions' (checked). Under 'Performance', 'V Function used in SQL Statements' is checked. Under 'Usability', 'Target Page Authorization is also set for Current Component' is unchecked, while 'Associated Item or Column of Validations' is checked. Under 'Quality Assurance', 'Hardcoded Application ID' is checked, while 'Report has Default Order' and 'Page Item has Help Text' are unchecked. Under 'Security', 'Target Page Authorization equals current Component Authorization' and 'Inappropriate use of Substitution Syntax' are checked. Under 'Warnings', several checkboxes are listed, including 'Referenced Item is on Current Page' (unchecked), 'Referenced Item is Page Item of Target Page' (checked), 'References of Page Item in a String' (checked), 'Clear Cache Page Number equals Target or Current Page' (checked), 'Length of Item or Tabular Form Column Name' (checked), 'Inconsistent references between Dynamic Actions and Buttons' (checked), and 'Protected items in AJAX calls' (checked). At the bottom left are 'Select All' and 'Deselect All' buttons.

- 4) Note that you do not receive any errors or warnings on any of the checks that were still selected.

The screenshot shows the 'Results' page of the Oracle Application Builder Advisor. The navigation bar at the top includes 'Application Builder', 'Application 130' (which is selected and highlighted in blue), 'Utilities', 'Advisor', and 'Results'. To the right of the navigation bar is a page number 'Page 8'. Below the navigation bar is a 'Change Settings' button. The main content area is titled 'Check Result' and contains a message: 'No errors/warnings found for the specified checks.' with a green checkmark icon.

Solution 11-2: Managing Your Attribute Dictionary

Overview

In this solution, you manage attributes in your Attribute Dictionary.

Tasks

- Change the widths of items on the Customer Details page of the Order Management application to the following.

Item	Attribute	Value
P<n>_CUST_FIRST_NAME	Width	18
P<n>_CUST_LAST_NAME	Width	18
P<n>_CUST_EMAIL	Width	18

- Navigate to the **Order Management** application home page and click the **Application Utilities** icon.



- Under Page Specific Utilities, select **Item Utilities**.



- Click the **Items** tab.



- Make sure that the Customer Details page number is entered for Page and select the Customer Details region from the Region select list. Click **Go**.

Items	Reassign Region Items	Delete Multiple Items	Utilities	History
Item Name <input type="text"/> Page <input type="text" value="8"/> <input type="button" value="▲"/> Region <input type="text" value="&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)"/> <input type="button" value="Go"/>				

- 5) Change the Width for P<n>_CUST_FIRST_NAME, P<n>_CUST_LAST_NAME and P<n>_CUST_EMAIL to 18 and click **Apply Changes**.

Sequence	Name	Prompt	Field Template	Region	New Line	New Field	Width	Height	Column Span
10	P8_CUSTOMER_ID	Customer Id	26. Optional	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)	Yes	Yes			
20	P8_CUST_FIRST_NAME	Cust First Name	26. Required with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)	Yes	Yes	18	1	
30	P8_CUST_LAST_NAME	Cust Last Name	26. Required with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)	Yes	Yes	18	1	
40	P8_CUST_EMAIL	Cust Email	26. Optional with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)	Yes	Yes	18	1	
50	P8_ACCOUNT_MGR_ID	Account Manager	26. Optional with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)	Yes	Yes	30	1	

- 6) The three rows are updated. You want to add help text for P<n>_ACCOUNT_MGR_ID. Click the Edit icon for that row.

Sequence	Name	Prompt	Field Template	Region
10	P8_CUSTOMER_ID	Customer Id	26. Optional	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)
20	P8_CUST_FIRST_NAME	Cust First Name	26. Required with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)
30	P8_CUST_LAST_NAME	Cust Last Name	26. Required with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)
40	P8_CUST_EMAIL	Cust Email	26. Optional with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)
50	P8_ACCOUNT_MGR_ID	Account Manager	26. Optional with help	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details (0)

- 7) Click the **Help Text** subtab.

Page Item: P8_ACCOUNT_MGR_ID

Show All Identification User Interface Grid Layout Label Settings List of Values Element Source Default Quick Picks Conditions Read Only Security Configuration Help Text Comments

Identification

Page: 8 Customer Details
Name: P8_ACCOUNT_MGR_ID
Display As: Select List

Text , Number , Date , Textarea , Select List , Radio , Popup List of Values , Checkbox , Display Only , Hidden

- 8) Enter **Person assigned to account.** for Help Text and click **Apply Changes**.

Page Item: P8_ACCOUNT_MGR_ID

Show All Identification User Interface Grid Layout Label Settings List of Values Element Source Default Quick Picks

Help Text

Help Text
Person assigned to account.

- 9) Click the **Run Page** icon.



- 10) Note that the three items for which you changed the width are displayed correctly. Select the **Account Manager** label.

Customer Details

Cust First Name *

Cust Last Name *

Cust Email

Account Manager

Bates, Elizabeth, Russell, John, Cambrault, Gerald

Country

City

Phone Number

The record created or modified in this form is reflected in the Customer Report.

11) The Help Text window is displayed. Click the Close icon.



12) Click the Edit Page link on the Developer toolbar.

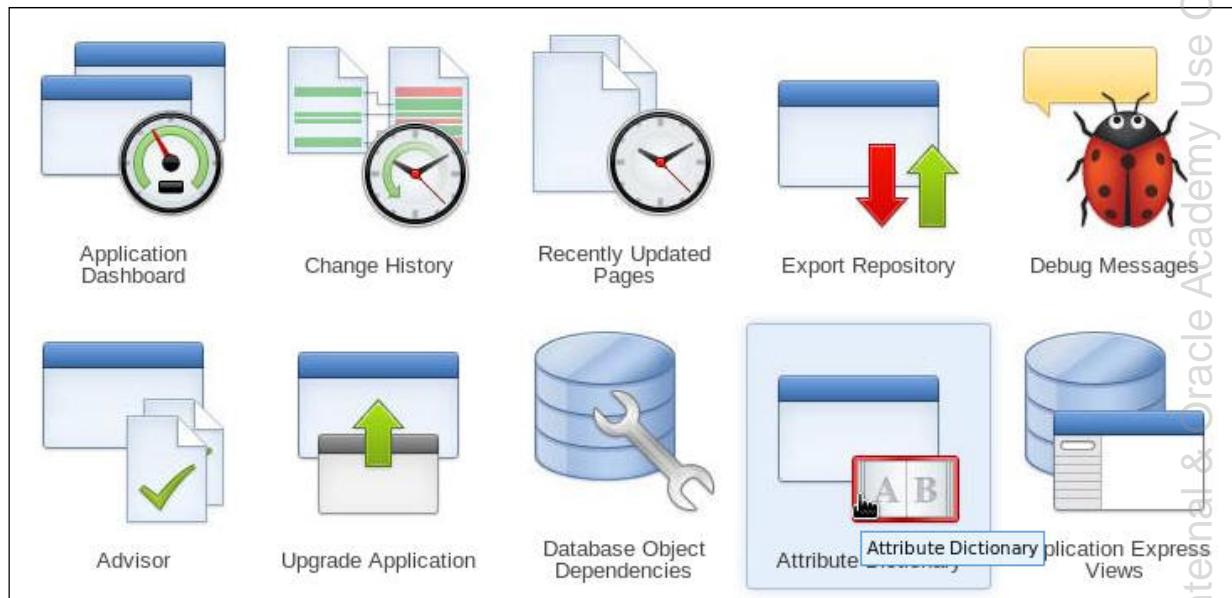


b. Add the items on the Customer Details page to the Attribute Dictionary.

1) Click the **Application Utilities** icon.



2) Click **Attribute Dictionary**.



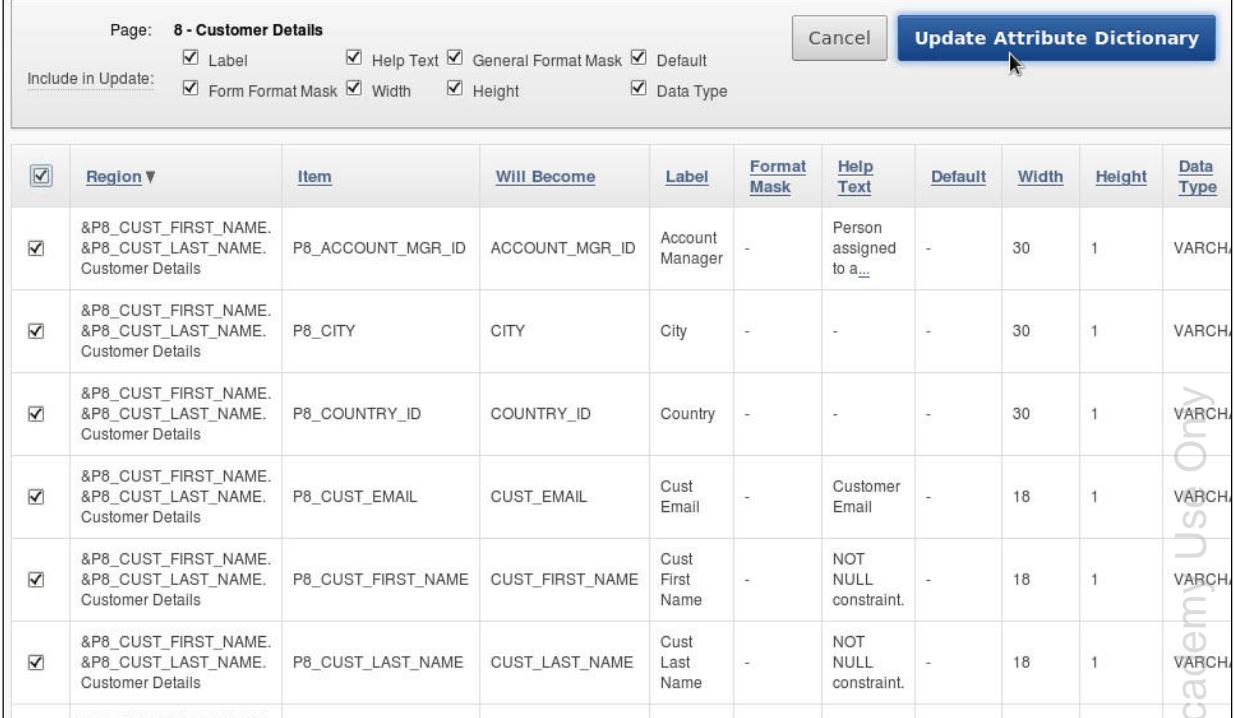
- 3) Click the link for the Customer Details page.

Page	Name	Page Type	Group Name	Displayed Items	Displayed Report Columns
0	Global Page - jQuery Mobile Smartphone	Global Page	Unassigned	0	0
1	Home	Home	Unassigned	0	0
2	Home	Static HTML	Unassigned	0	0
3	Customers	Interactive Report	Unassigned	0	14
4	Employee Commission	Interactive Report	Unassigned	0	4
5	Top Tier Salary	Report	Unassigned	2	3
6	Customer Address List	Report	Unassigned	0	6
8	Customer Details	DML Form	Unassigned	7	0
9	List of Orders	Report	Unassigned	0	7
10	Master Detail	DML Form	Unassigned	8	4
13	Update Employee Information	Tabular Form	Unassigned	0	5
16	Products	Report	Unassigned	0	5

- 4) You need to review the items that you want to add to the Attribute Dictionary. Click the **Review <n> items for insert into the Attribute Dictionary** link.

Page Items	Report Columns																				
Update Page  • 0 Items for update	Update Page  • 0 Report Columns for update																				
Update Attribute Dictionary  • Review 7 Items for insert into the Attribute Dictionary • 0 Items for update of the Attribute Dictionary	Update Attribute Dictionary  • 0 Items for insert into the Attribute Dictionary • 0 Report Columns for update of the Attribute Dictionary																				
Summary <table> <tr> <td>Total Page Items</td> <td>8</td> </tr> <tr> <td>Displayed Items</td> <td>7</td> </tr> <tr> <td>Potential New Entries</td> <td>7</td> </tr> <tr> <td>Potential Updates</td> <td>0</td> </tr> <tr> <td>Identical Attributes</td> <td>0</td> </tr> </table>	Total Page Items	8	Displayed Items	7	Potential New Entries	7	Potential Updates	0	Identical Attributes	0	Summary <table> <tr> <td>Total Report Columns</td> <td>0</td> </tr> <tr> <td>Displayed Report Columns</td> <td>0</td> </tr> <tr> <td>Potential New Entries</td> <td>0</td> </tr> <tr> <td>Potential Updates</td> <td>0</td> </tr> <tr> <td>Identical Attributes</td> <td>0</td> </tr> </table>	Total Report Columns	0	Displayed Report Columns	0	Potential New Entries	0	Potential Updates	0	Identical Attributes	0
Total Page Items	8																				
Displayed Items	7																				
Potential New Entries	7																				
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Total Report Columns	0																				
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Potential New Entries	0																				
Potential Updates	0																				
Identical Attributes	0																				

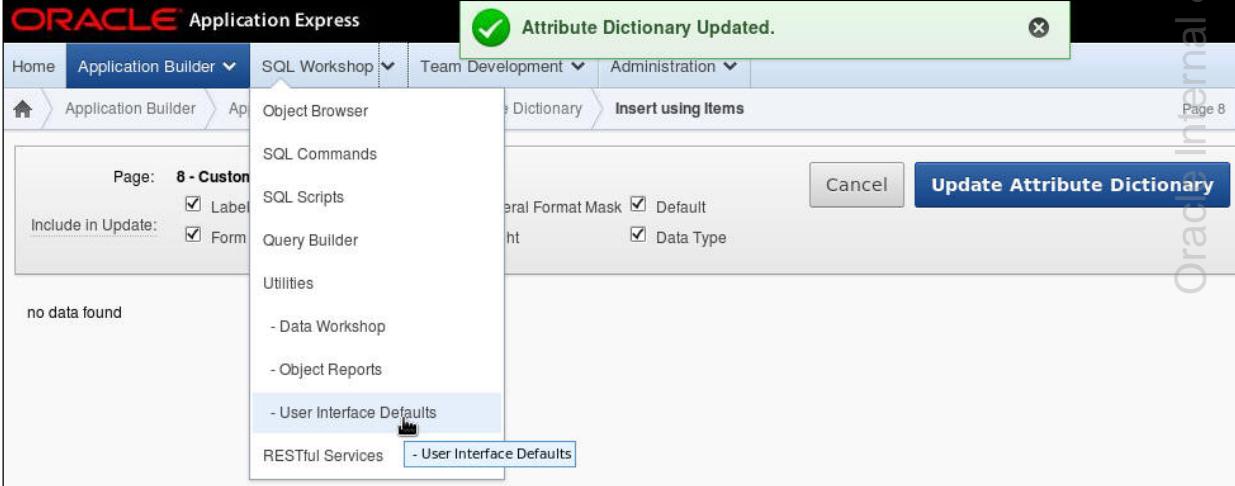
- 5) Note the items that you have on the page and the changes that you made previously. Select the check box in the header to the left of the Region header to select all the entries in the list, and click **Update Attribute Dictionary**.



The screenshot shows the 'Attribute Dictionary' update dialog for page 8 - Customer Details. The table lists various items with their corresponding labels, formats, and data types. The 'Region' column is selected, indicated by a checked checkbox.

<input type="checkbox"/>	Region ▾	Item	Will Become	Label	Format Mask	Help Text	Default	Width	Height	Data Type
<input checked="" type="checkbox"/>	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details	P8_ACCOUNT_MGR_ID	ACCOUNT_MGR_ID	Account Manager	-	Person assigned to a...	-	30	1	VARCHAR
<input checked="" type="checkbox"/>	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details	P8_CITY	CITY	City	-	-	-	30	1	VARCHAR
<input checked="" type="checkbox"/>	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details	P8_COUNTRY_ID	COUNTRY_ID	Country	-	-	-	30	1	VARCHAR
<input checked="" type="checkbox"/>	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details	P8_CUST_EMAIL	CUST_EMAIL	Cust Email	-	Customer Email	-	18	1	VARCHAR
<input checked="" type="checkbox"/>	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details	P8_CUST_FIRST_NAME	CUST_FIRST_NAME	Cust First Name	-	NOT NULL constraint.	-	18	1	VARCHAR
<input checked="" type="checkbox"/>	&P8_CUST_FIRST_NAME. &P8_CUST_LAST_NAME. Customer Details	P8_CUST_LAST_NAME	CUST_LAST_NAME	Cust Last Name	-	NOT NULL constraint.	-	18	1	VARCHAR

- c. 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.
- To view and make changes to the items in the Attribute Dictionary, select **SQL Workshop > User Interface Defaults**.



The screenshot shows the 'User Interface Defaults' dialog in the SQL Workshop. A green banner at the top indicates 'Attribute Dictionary Updated'. The dialog lists various items with their labels, formats, and data types. The 'Region' column is selected, indicated by a checked checkbox.

2) Click **Manage Attribute Dictionary**.

Table Dictionary		Attribute Dictionary	
Count of tables with defaults	4	Count of attributes	7
Updated	6 days ago	Updated	44 seconds ago
Default schema	ORA01		

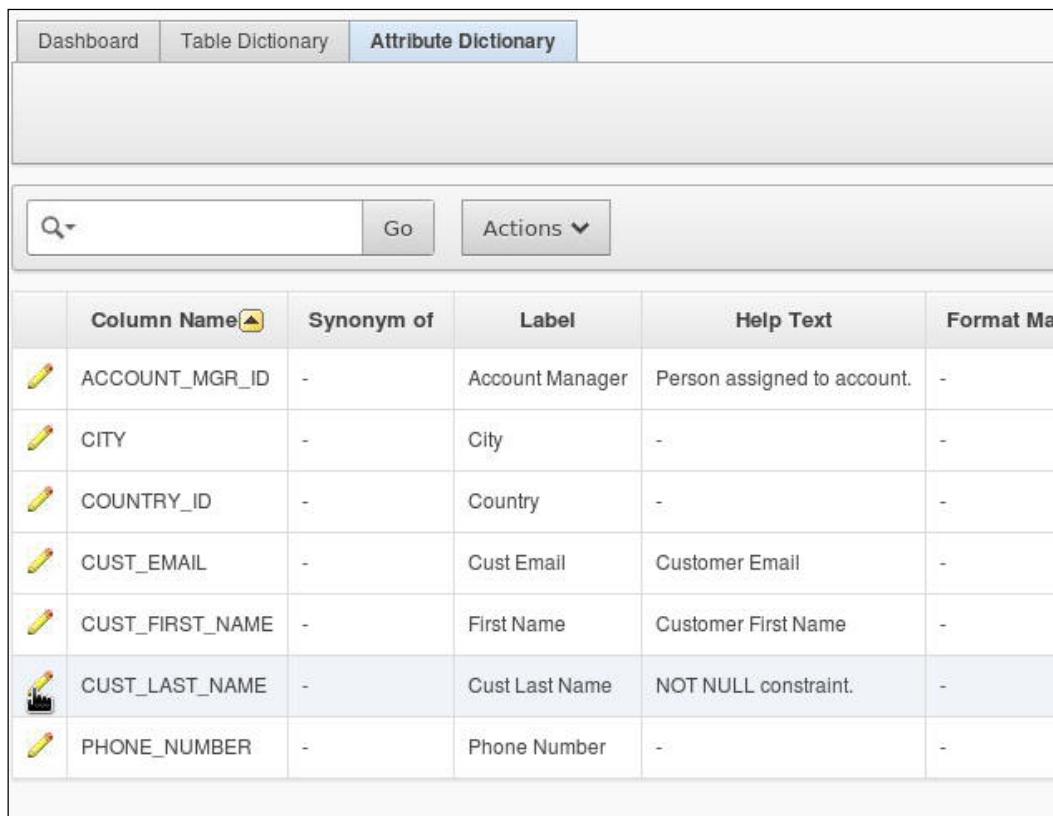
- 3) You see the attributes that you added to the dictionary. You can modify them here. Click the **Edit** icon for the `CUST_FIRST_NAME` column.

Column Name	Synonym of	Label	Help Text	Format Mask	Default Value
ACCOUNT_MGR_ID	-	Account Manager	Person assigned to account.	-	-
CITY	-	City	-	-	-
COUNTRY_ID	-	Country	-	-	-
CUST_EMAIL	-	Cust Email	Customer Email	-	-
CUST_FIRST_NAME	-	Cust First Name	NOT NULL constraint.	-	-
CUST_LAST_NAME	-	Cust Last Name	NOT NULL constraint.	-	-
PHONE_NUMBER	-	Phone Number	-	-	-

- 4) Change the Label to **First Name** and Help Text to **Customer First Name** and click **Apply Changes**.

Column: 5 of 7	
Show All	Details
Form Specific Attributes	Report Specific Attributes
Details	
* Column Name	<input type="text" value="CUST_FIRST_NAME"/>
Label	<input type="text" value="First Name"/>
Format Mask	<input type="text"/>
Default Value	<input type="text"/>
Help Text	<input type="text" value="Customer First Name"/>

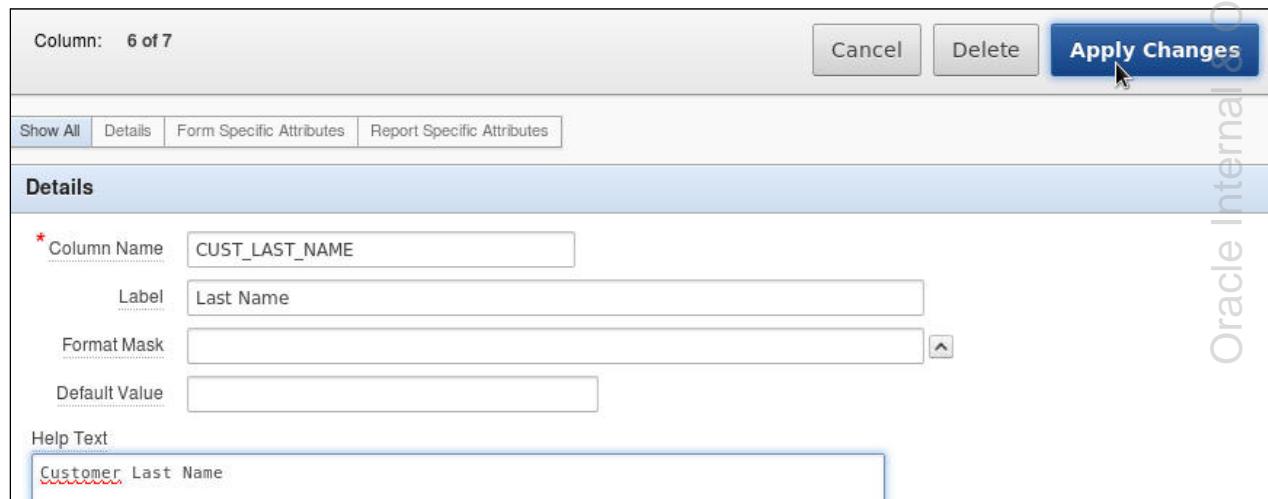
- 5) The changes are reflected in the list. You want to also change the CUST_LAST_NAME. Click the Edit icon for that row.



The screenshot shows the Attribute Dictionary page. At the top, there are tabs for Dashboard, Table Dictionary, and Attribute Dictionary, with Attribute Dictionary selected. Below the tabs is a search bar with a magnifying glass icon and a 'Go' button, followed by an 'Actions' dropdown menu. The main area is a table with the following columns: Column Name, Synonym of, Label, Help Text, and Format Mask. Each row contains an edit icon (pencil) in the first column. The rows represent the following data:

	Column Name	Synonym of	Label	Help Text	Format Ma
	ACCOUNT_MGR_ID	-	Account Manager	Person assigned to account.	-
	CITY	-	City	-	-
	COUNTRY_ID	-	Country	-	-
	CUST_EMAIL	-	Cust Email	Customer Email	-
	CUST_FIRST_NAME	-	First Name	Customer First Name	-
	CUST_LAST_NAME	-	Cust Last Name	NOT NULL constraint.	-
	PHONE_NUMBER	-	Phone Number	-	-

- 6) Change Label to **Last Name** and Help Text to **Customer Last Name**, and click **Apply Changes**.



The screenshot shows the Attribute Details dialog box. At the top, it says 'Column: 6 of 7' and has buttons for Cancel, Delete, and Apply Changes (which is highlighted with a mouse cursor). Below that are buttons for Show All, Details, Form Specific Attributes, and Report Specific Attributes. The main area is titled 'Details' and contains fields for Column Name (CUST_LAST_NAME), Label (Last Name), Format Mask, Default Value, and Help Text (Customer Last Name).

The changes are reflected in the list.

- d. Make sure that `OEHR_CUSTOMERS` is not in the Table Dictionary.

- 1) Click the **Table Dictionary** tab.

The screenshot shows the Oracle Application Express interface with the 'Table Dictionary' tab selected. A green checkmark icon in the top right corner indicates 'Action Processed'. The page displays a table of columns for the 'OEHR_CUSTOMERS' table, including 'Column Name', 'Synonym of', 'Label', 'Help Text', 'Format Mask', and 'Default' columns. The columns listed are:

Column Name	Synonym of	Label	Help Text	Format Mask	Default
ACCOUNT_MGR_ID	-	Account Manager	Person assigned to account.	-	-
CITY	-	City	-	-	-
COUNTRY_ID	-	Country	-	-	-
CUST_EMAIL	-	Cust Email	Customer Email	-	-
CUST_FIRST_NAME	-	First Name	Customer First Name	-	-
CUST_LAST_NAME	-	Last Name	Customer Last Name	-	-
PHONE_NUMBER	-	Phone Number	-	-	-

- 2) Notice that `OEHR_CUSTOMERS` is in the list. Select `OEHR_CUSTOMERS`.

The screenshot shows the Oracle Application Express interface with the 'Table Dictionary' tab selected. A checkbox labeled 'Defaults Exist = "Yes"' is checked. The page displays a table of objects, showing 'Object Name', 'Type', and 'Defaults Exist' columns. The objects listed are:

Object Name	Type	Defaults Exist
OEHR_COUNTRIES	TABLE	Yes
OEHR_CUSTOMERS	TABLE	Yes
OEHR_ORDERS	TABLE	Yes
TASKS	TABLE	Yes

- 3) The Table Dictionary will override the Attribute Dictionary. Because you have changed the attributes for some columns in the Attribute Dictionary, you want to remove the table from the Table Dictionary. Under Tasks, click the **Remove from Table Dictionary** link.

Column Name	Sequence	Label	Column Group	Alignment	Display In Report	Display In Form	Required	Help Length
CUSTOMER_ID	1	Customer Id	-	Right	✓	✓	✓	19
CUST_FIRST_NAME	2	Cust First Name	-	Left	✓	✓	✓	20
CUST_LAST_NAME	3	Cust Last Name	-	Left	✓	✓	✓	20
STREET_ADDRESS	4	Street Address	-	Left	✓	✓	-	52
		Postal						

- 4) Click **Remove Defaults**.

Remove from Table Dictionary

Schema: ORA01
Table Name: OEHR_CUSTOMERS
Columns: 14

Cancel Remove Defaults

- 5) The table is removed. Select **Application Builder > Database Applications**.

ORACLE Application Express

User interface default removed.

Home Application Builder SQL Workshop Team Development Administration

Applications Interface Defaults Table Dictionary

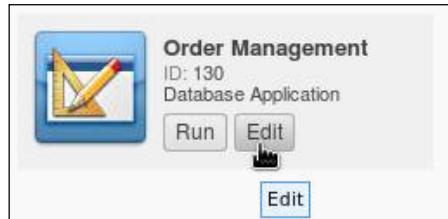
- Database Applications

- Websheet Applications

- Packaged Applications

Create Import

- 6) Select the **Order Management** application.

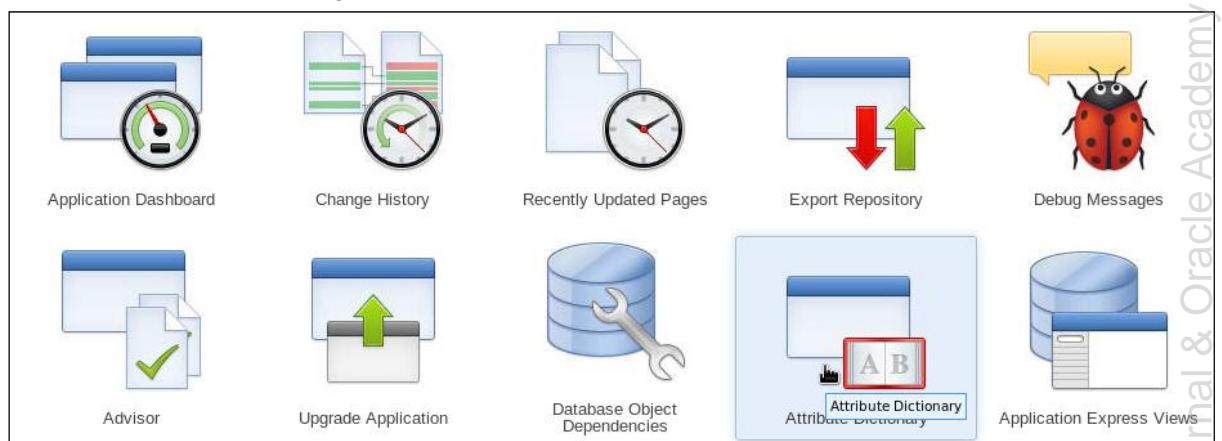


- e. Update the Attribute Dictionary for the items on the Customer Detail page.

- 1) Click **Utilities**.



- 2) Click **Attribute Dictionary**.



- 3) Click the link for the Customer Details page.

Page	Name	Page Type	Group Name	Displayed Items	Displayed Report Columns
0	Global Page - jQuery Mobile Smartphone	Global Page	Unassigned	0	0
1	Home	Home	Unassigned	0	0
2	Home	Static HTML	Unassigned	0	0
3	Customers	Interactive Report	Unassigned	0	14
4	Employee Commission	Interactive Report	Unassigned	0	4
5	Top Tier Salary	Report	Unassigned	2	3
6	Customer Address List	Report	Unassigned	0	6
8	Customer Details	DML Form	Unassigned	7	0
9	List of Orders	Report	Unassigned	0	7
10	Master Detail	DML Form	Unassigned	8	4
13	Update Employee Information	Tabular Form	Unassigned	0	5
16	Products	Report	Unassigned	0	6
17	Global Page - Desktop	Global Page	Unassigned	0	0
18	Customer Feedback	Navigation Form	Unassigned	3	6

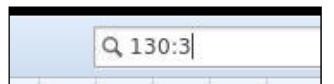
- 4) Notice that you have two items to review for update to the Attribute Dictionary.
Click the **Review 2 Items for update of the Attribute Dictionary** link.

Page Items	Report Columns																				
Update Page <ul style="list-style-type: none"> Review 2 Items for update 	Update Page <ul style="list-style-type: none"> 0 Report Columns for update 																				
Update Attribute Dictionary <ul style="list-style-type: none"> 0 Items for insert into the Attribute Dictionary Review 2 Items for update of the Attribute Dictionary 	Update Attribute Dictionary <ul style="list-style-type: none"> 0 Items for insert into the Attribute Dictionary 0 Report Columns for update of the Attribute Dictionary 																				
Summary <table> <tr> <td>Total Page Items</td> <td>8</td> </tr> <tr> <td>Displayed Items</td> <td>7</td> </tr> <tr> <td>Potential New Entries</td> <td>0</td> </tr> <tr> <td>Potential Updates</td> <td>2</td> </tr> <tr> <td>Identical Attributes</td> <td>5</td> </tr> </table>	Total Page Items	8	Displayed Items	7	Potential New Entries	0	Potential Updates	2	Identical Attributes	5	Summary <table> <tr> <td>Total Report Columns</td> <td>0</td> </tr> <tr> <td>Displayed Report Columns</td> <td>0</td> </tr> <tr> <td>Potential New Entries</td> <td>0</td> </tr> <tr> <td>Potential Updates</td> <td>0</td> </tr> <tr> <td>Identical Attributes</td> <td>0</td> </tr> </table>	Total Report Columns	0	Displayed Report Columns	0	Potential New Entries	0	Potential Updates	0	Identical Attributes	0
Total Page Items	8																				
Displayed Items	7																				
Potential New Entries	0																				
Potential Updates	2																				
Identical Attributes	5																				
Total Report Columns	0																				
Displayed Report Columns	0																				
Potential New Entries	0																				
Potential Updates	0																				
Identical Attributes	0																				

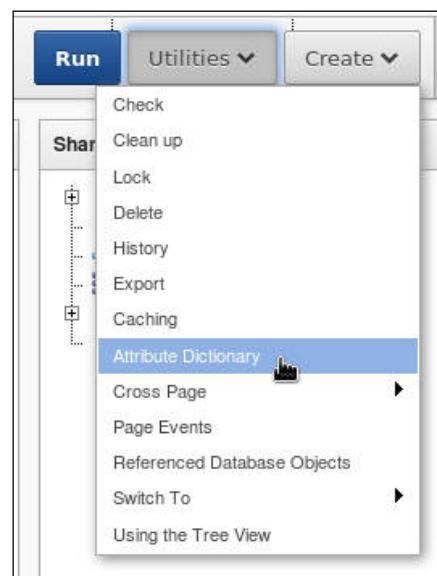
- 5) Notice that the column in the Attribute Dictionary is the one that you want, rather than the help text for the item. You will leave it as is.

Source	Name	Label	Help Text	General Format Mask	Form Format Mask	Default	Width	Height	Data Type
Region: &P8_CUST_FIRST_NAME, &P8_CUST_LAST_NAME. Customer Details	P8_CUST_FIRST_NAME	Cust First Name	NOT NULL constraint.	-	-	-	18	1	VAR
from Attribute Dictionary	CUST_FIRST_NAME	First Name	Customer First Name	-	-	-	18	1	VAR
Region: &P8_CUST_FIRST_NAME, &P8_CUST_LAST_NAME. Customer Details	P8_CUST_LAST_NAME	Cust Last Name	NOT NULL constraint.	-	-	-	18	1	VAR
from Attribute Dictionary	CUST_LAST_NAME	Last Name	Customer Last Name	-	-	-	18	1	VAR

- 6) You also want to apply the attributes from the dictionary to your report page. In the search area, enter *<your Order Management application id>:3* (for the Customers page), and click the magnifying glasses.



- f. Update the Customers page to use the Attribute Dictionary defaults. Verify by showing the help text for the First Name column in the report.
- Notice that page 3 in your application is displayed. Click **Utilities** and select **Attribute Dictionary**.



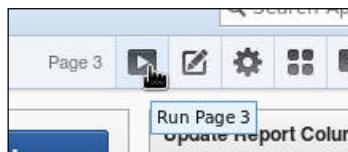
- 2) Because you want to update the page, you want to review the columns for update. Click the **Review <n> Report Columns for update** link.

Page Items	Report Columns
Update Page  • 0 Items for update	Update Page  • Review 7 Report Columns for update
Update Attribute Dictionary  • 0 Items for insert into the Attribute Dictionary • 0 Items for update of the Attribute Dictionary	Update Attribute Dictionary  • Review 7 Report Columns for insert into the Attribute Dictionary • Review 7 Report Columns for update of the Attribute Dictionary
Summary Total Page Items 0 Displayed Items 0 Potential New Entries 0 Potential Updates 0 Identical Attributes 0	Summary Total Report Columns 14 Displayed Report Columns 14 Potential New Entries 7 Potential Updates 7 Identical Attributes 0

- 3) Review the list. Select the check box in front of the **CUST_FIRST_NAME** item and click **Update Report Columns**.

Page: 3 - Customers			
		<input checked="" type="checkbox"/> Label	<input checked="" type="checkbox"/> Help Text
Include in Update:		<input checked="" type="checkbox"/> Format Mask	<input checked="" type="checkbox"/> Report Column Alignment
<input type="checkbox"/>	Source	Name	Label
<input type="checkbox"/>	Region: Customer Report	ACCOUNT_MGR_ID	Account Mgr Id
	from Attribute Dictionary	Account Manager	Person assigned to a...
<input type="checkbox"/>	Region: Customer Report	CITY	City
	from Attribute Dictionary		City
<input type="checkbox"/>	Region: Customer Report	COUNTRY_ID	Country Id
	from Attribute Dictionary		Country
<input type="checkbox"/>	Region: Customer Report	CUST_EMAIL	Cust Email
	from Attribute Dictionary	Cust Email	Customer Email
<input checked="" type="checkbox"/>	Region: Customer Report	CUST_FIRST_NAME	Cust First Name
	from Attribute	First	Customer First Name

- 4) You can run the page to see the results. Click the **Run Page** icon.

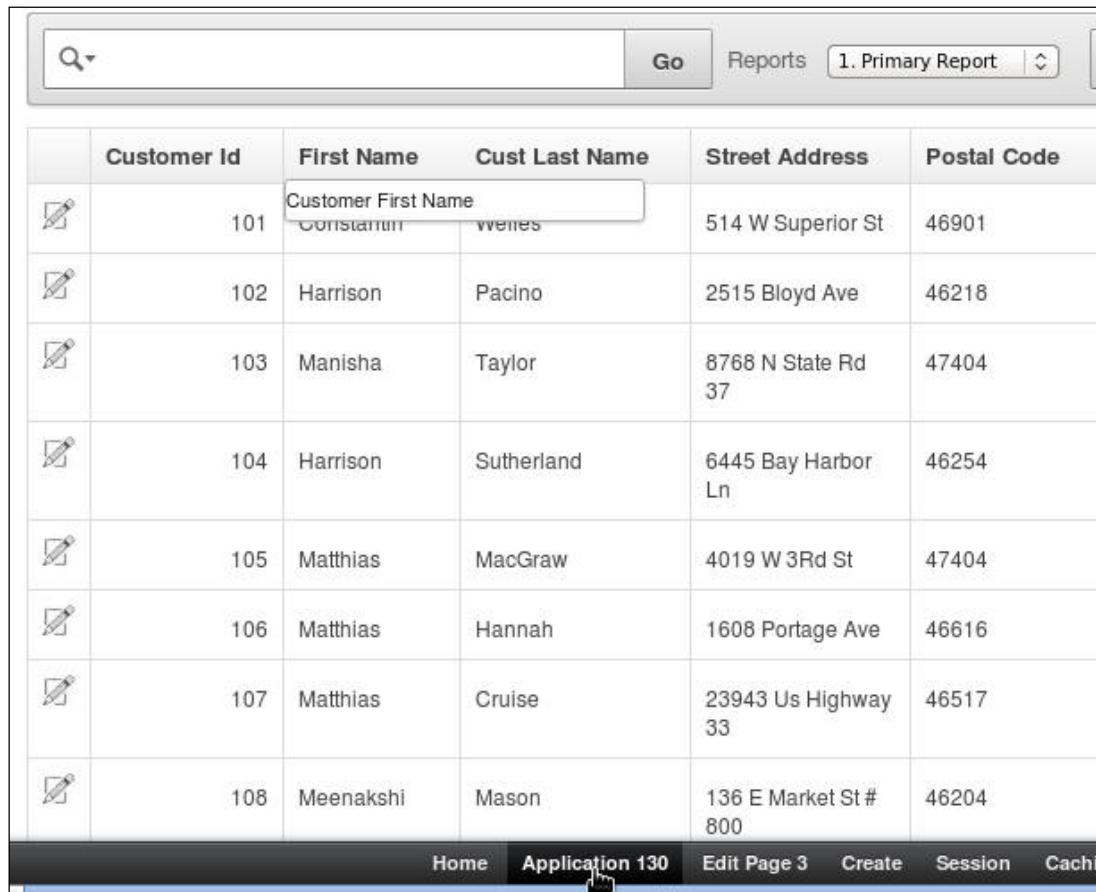


- 5) To see the help text, select the **First Name** header in the report and click the **Information** icon.

A screenshot of an Oracle Database report page titled "1. Primary Report". The report displays customer data in a table with columns: Customer Id, First Name, Cust Last Name, Street Address, and Postal. The "First Name" column is currently selected, as indicated by a blue selection bar above the column headers. A context menu is open over the selected column, with the "Column Information" option highlighted. The report data is as follows:

Customer Id	First Name	Cust Last Name	Street Address	Postal
101	Ajay		514 W Superior St	46901
102	Alain		2515 Bloyd Ave	46218
103	Alan		8768 N State Rd 37	47404
104	Albert			
	Alec		6445 Bay Harbor Ln	46254
	Alexander			
	Alfred			
105	Ali		4019 W 3Rd St	47404
	Alice			
	Ally		1608 Portage Ave	46616
106	Alonso			
	Matthias	Cruise	23943 Us Highway	46517
107				

- 6) 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** link on the Developer toolbar.

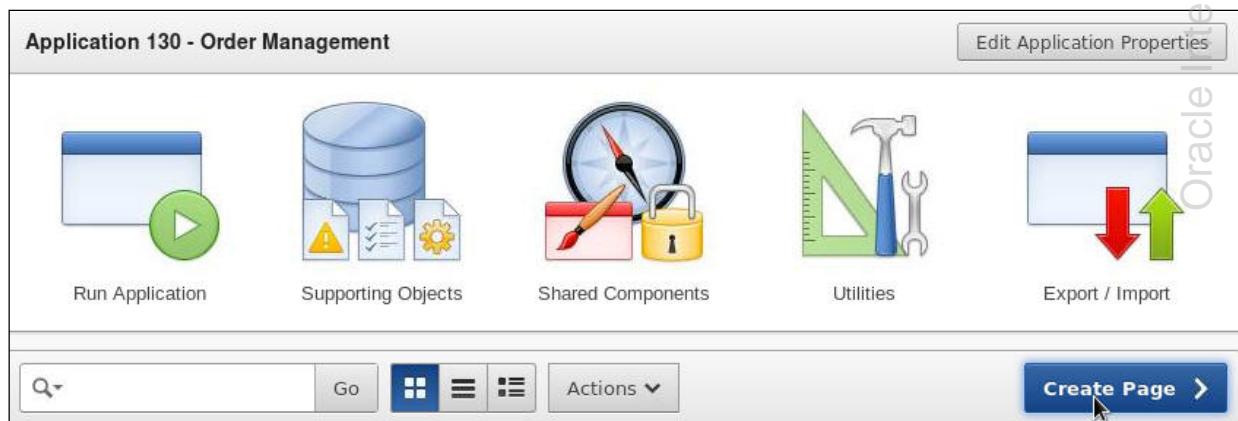


The screenshot shows a table with columns: Customer Id, First Name, Cust Last Name, Street Address, and Postal Code. Row 101 has a tooltip for 'Customer First Name' with the value 'Constantine Venes'. Row 102 has a tooltip for 'First Name' with the value 'Harrison'. Row 103 has a tooltip for 'Last Name' with the value 'Taylor'. Row 104 has a tooltip for 'Street Address' with the value '6445 Bay Harbor Ln'. Row 105 has a tooltip for 'Postal Code' with the value '46254'. Row 106 has a tooltip for 'First Name' with the value 'Matthias'. Row 107 has a tooltip for 'Last Name' with the value 'Cruise'. Row 108 has a tooltip for 'Street Address' with the value '136 E Market St # 800'. The developer toolbar at the bottom includes links for Home, Application 130, Edit Page 3, Create, Session, and Cache.

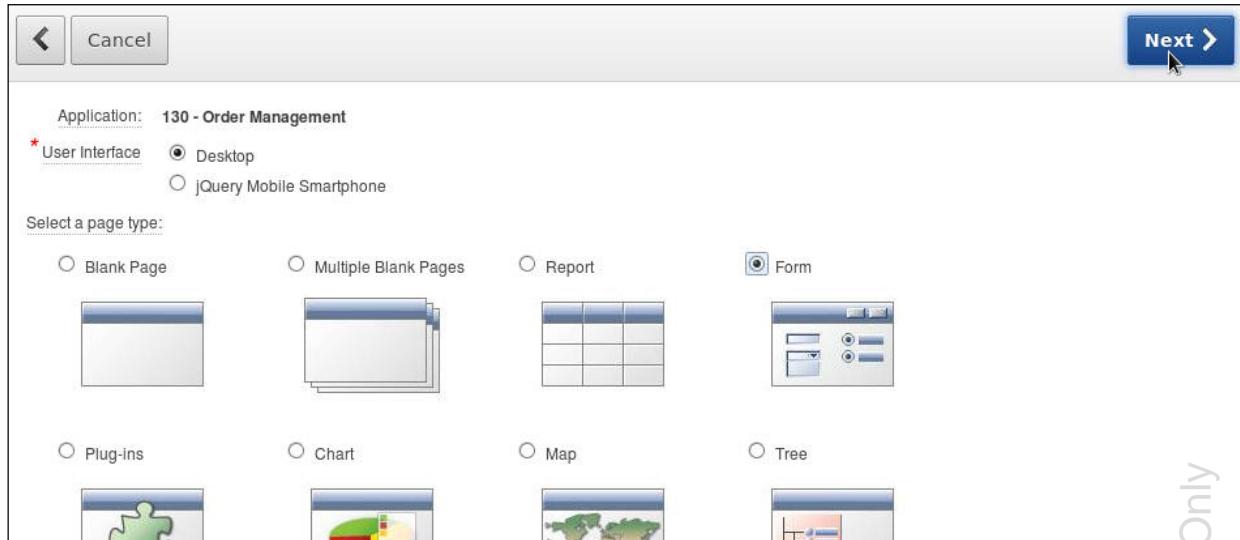
	Customer Id	First Name	Cust Last Name	Street Address	Postal Code
	101	Customer First Name Constantine	Venes	514 W Superior St	46901
	102	Harrison	Pacino	2515 Bloyd Ave	46218
	103	Manisha	Taylor	8768 N State Rd 37	47404
	104	Harrison	Sutherland	6445 Bay Harbor Ln	46254
	105	Matthias	MacGraw	4019 W 3Rd St	47404
	106	Matthias	Hannah	1608 Portage Ave	46616
	107	Matthias	Cruise	23943 Us Highway 33	46517
	108	Meenakshi	Mason	136 E Market St # 800	46204

- g. Create a new forms page based on the `OEHR_CUSTOMERS` table. Make sure that UI Defaults is enabled. Run the page to see that the Attribute Dictionary is used.

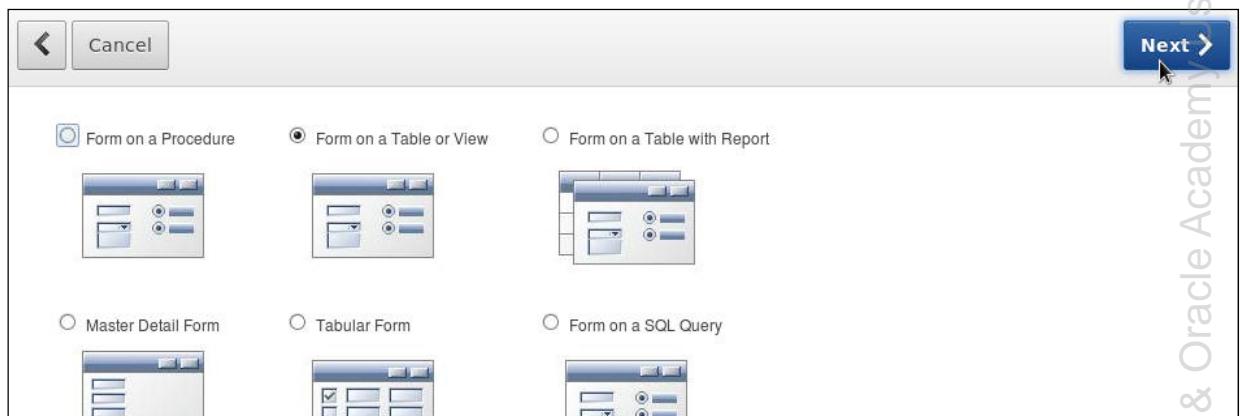
1) Click **Create Page >**.



- 2) Select **Form** and click **Next >**.



- 3) Select **Form on a Table or View** and click **Next >**.



- 4) Select **OEHR_CUSTOMERS** for the Table Name and click **Next >**.



- 5) Enter **Maintain Customers** for Page Name and Region Title. Notice that Use User Interface Defaults is set to Yes. Click **Next >**.

Specify page and region information. If the page you specify does not exist, the page will be created.

Owner: ORA01
Table / View Name: OEHR_CUSTOMERS
* Page Number: 19
Use User Interface Defaults: No Yes
* Page Name: Maintain Customers
* Region Title: Maintain Customers
* Region Template: Form Region
Breadcrumb: - do not add breadcrumb region to page -

- 6) Accept the default and click **Next >**.

Page: 19
Tab Options: Do not use tabs
 Use an existing tab set and create a new tab within the existing tab set.
 Use an existing tab set and reuse an existing tab within that tab set.

- 7) Select **Select Primary Key Column(s)** for Primary Key Type and click **Next >**.

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.

Page: 19
Owner: ORA01
Table / View Name: OEHR_CUSTOMERS
* Primary Key Type: Managed by Database (ROWID) Select Primary Key Column(s)
* Primary Key Column 1: CUSTOMER_ID
* Primary Key Column 2: - Select Primary Key 2 -

- 8) Select **Existing sequence**, select `OEHR_CUSTOMERS_SEQ` from the Sequence list, and click **Next >**.

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.

Owner: ORA01
Table / View Name: OEHR_CUSTOMERS
Primary Key Column 1: CUSTOMER_ID
* Source Type:
 Existing trigger Custom PL/SQL function Existing sequence



* Sequence OEHR_CUSTOMERS_SEQ

- 9) Remove all the columns except `CUST_FIRST_NAME`, `CUST_LAST_NAME`, `CITY`, `STATE_PROVINCE`, `PHONE_NUMBER`, `CUST_EMAIL`, and `ACCOUNT_MGR_ID`, and click the right arrow (>). Click **Next >**.

Select the columns to include on the form.

Page: 19
Owner: ORA01
Table / View Name: OEHR_CUSTOMERS
* Select Column(s)

STREET_ADDRESS (Varchar2)	CUST_FIRST_NAME (Varchar2)
POSTAL_CODE (Varchar2)	CUST_LAST_NAME (Varchar2)
COUNTRY_ID (Char)	CITY (Varchar2)
NLS_LANGUAGE (Varchar2)	STATE_PROVINCE (Varchar2)
NLS_TERRITORY (Varchar2)	PHONE_NUMBER (Varchar2)
CREDIT_LIMIT (Number)	CUST_EMAIL (Varchar2)
	ACCOUNT_MGR_ID (Number)

- 10) Accept the default and click **Next >**.

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.

Page: 19
Owner: ORA01
Table / View Name: OEHR_CUSTOMERS
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

- 11) Enter your new page number for both branches and click **Next >**.

Page: 19
Owner: ORA01
Table / View Name: OEHR_CUSTOMERS

* After Page Submit and Processing Branch to Page: 19
* When Cancel Button Pressed Branch to this Page: 19

- 12) Click **Create**.

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

Application	130
Page	19
Page Name	Maintain Customers
Tab Set	TS1
Tab Label	
Region Title	Maintain Customers
Region Template	Form Region
Table / View Owner	ORA01
Table / View Name	OEHR_CUSTOMERS
Primary Key Column 1	CUSTOMER_ID
Primary Key Column 2	
Display Columns	CUST_FIRST_NAME CUST_LAST_NAME CITY STATE_PROVINCE PHONE_NUMBER CUST_EMAIL ACCOUNT_MGR_ID
Process Options	Insert,Update,Delete

- 13) Click **Run Page**.

The form on a table has been created successfully.

- 14) Notice that the labels are the same as from the Attribute Dictionary. Select the Account Manager label to see the help text.

The screenshot shows a web-based application titled "Order Management". At the top, there is a navigation bar with links for "Home", "Customers", and "Products". On the right side of the header, there are user profile and logout links. Below the header, there is a sidebar with sections for "In the News" and "News and Events", and a link to "www.oracle.com". The main content area is titled "Maintain Customers". It contains several input fields with labels: "First Name *", "Last Name *", "City", "State Province", "Phone Number", "Cust Email", and "Account Manager". The "Account Manager" field has a tooltip "Person assigned to account." displayed above it. On the right side of the form, there are "Cancel" and "Create" buttons. A small window titled "Account Manager" is overlaid on the page, containing the tooltip text.

Solution 11-3: Debugging and Troubleshooting Common Issues in Your Application

Overview

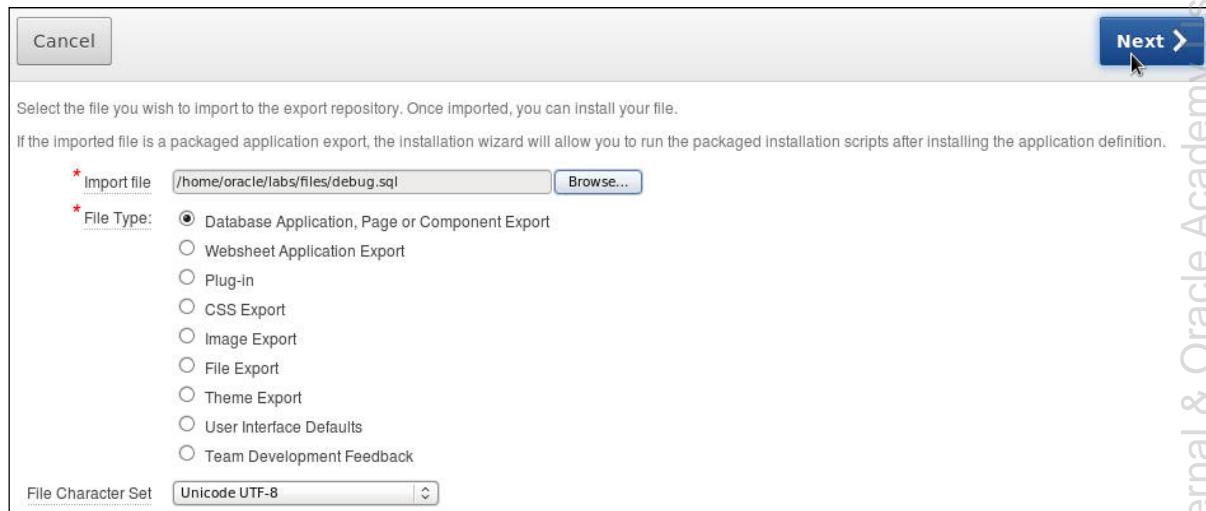
In this practice, you debug your application and resolve some common issues that may occur while developing your application.

Steps

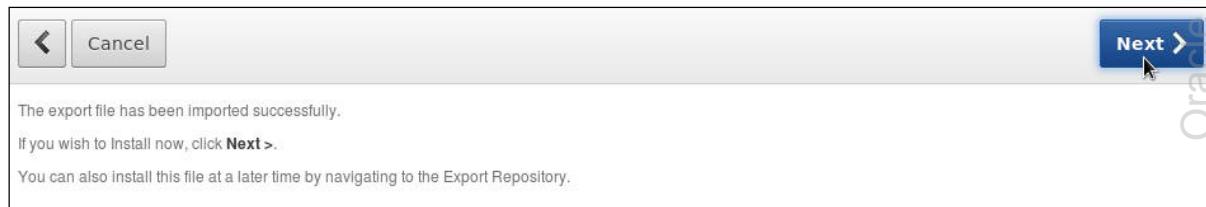
- a. Import an application with some issues to resolve.
 - 1) On the **Application Builder** page, click **Import**.



- 2) Click **Browse** and select the `debug.sql` file from the `/home/oracle/labs/files` directory, and click **Open**. Then click **Next >**.



- 3) Click **Next >**.



- 4) Select the ora<n> schema and click **Install Application**.

When you install an application having the same ID as an existing application in the current workspace, the existing application is deleted and then replaced by the new application. If you attempt to install an application having the same ID as an existing application in a different workspace, a benign error message displays. If you are importing a packaged Application Express application, the installation wizard will allow you to install supporting objects.

Current Workspace: ORA01
 Export File Workspace ID: 441900211556854352
 Export File Application ID: 101101
 Export File Version: 2012.01.01
 Export File Parsing Schema: APEX_TRAIN
 Application Origin: This application was exported from another workspace.
 * Parsing Schema: ORA01
 * Build Status: Run and Build Application
 * Install As Application: Auto Assign New Application ID
 Reuse Application ID 101101 From Export File
 Change Application ID

- 5) Click **Run Application**.

Application 129 installed.

- b. Debug the application.

- 1) If necessary, enter your user information and click **Login**.

Login

Username: ora01
 Password: *****

- 2) On the Home page, click the **Department Employee** link.

- 3) The report is displayed. Click the **Debug** link on the Developer toolbar.

	Employee Name	Email	Department Name	Order Date	Order Mode	Customer Name
	Steven King	SKING	Administration	06-APR-12 12.00.00.000000 AM	direct	Adjani
	Steven King	SKING	Administration	06-APR-12 12.00.00.000000 AM	direct	Adjani
	Steven King	SKING	Administration	06-APR-12 12.00.00.000000 AM	direct	Alexander
	Steven King	SKING	Administration	06-APR-12 12.00.00.000000 AM	direct	Alexander
	Steven King	SKING	Administration	06-APR-12 12.00.00.000000 AM	direct	Altman
	Steven King	SKING	Administration	06-APR-12 12.00.00.000000 AM	direct	Altman
	Steven King	SKING	Administration	06-APR-12 12.00.00.000000 AM	direct	Altman

- 4) The page is refreshed in debug mode. To view the debug result, click **View Debug** on the Developer toolbar.

	Employee Name	Email	Department Name	Order Date	Order Mode	Customer Name
	Steven King	SKING	Administration	06-APR-12 12:00:00.000000 AM	direct	Adajani
	Steven King	SKING	Administration	06-APR-12 12:00:00.000000 AM	direct	Adajani
	Steven King	SKING	Administration	06-APR-12 12:00:00.000000 AM	direct	Alexan
	Steven King	SKING	Administration	06-APR-12 12:00:00.000000 AM	direct	Alexan
	Steven King	SKING	Administration	06-APR-12 12:00:00.000000 AM	direct	Altmar
	Steven King	SKING	Administration	06-APR-12 12:00:00.000000 AM	direct	Altmar
	Steven King	SKING	Administration	06-APR-12 12:00:00.000000 AM	direct	Altmar

- 5) Select the **View Identifier** link number.

Items	Pages	Queries	Tables	PL/SQL	Images	Debug	Session	Errors
								Reset
<input type="text" value="Q-"/> <input type="button" value="Go"/>				<input type="button" value="Actions ▾"/>				
 Application = 125	<input checked="" type="checkbox"/>							
 Page = 3	<input checked="" type="checkbox"/>							
View Identifier	Session Id	User	Application	Page	Path Info	Entries	Timestamp	
 67	25680952782103	ORA01	125	3	show	107	36 seconds ago	

- 6) Notice in the graph that there is one statement that is taking a very long time to run.

The screenshot shows the Oracle Application Express Debug tab interface. At the top, there are tabs for Items, Pages, Queries, Tables, PL/SQL, Images, Debug, Session, and Errors. The Debug tab is selected. Below the tabs, there are fields for Page View Identifier (67), Application (125), Page (3), Elapsed Time (7.38899), and Maximum Execution Time (7.33087). A 'Set' button is next to the Page View Identifier field. To the right, there is a 'Select Page View Identifier' dropdown and a 'Run' button. The main area is a timeline showing the execution of various steps. One step, labeled '87 - IR binding: "APXWS_MAX_ROW_CNT" value="1 - 7"', is highlighted with a large gray bar, indicating it is the long-running statement. Below the timeline, there is a search bar, a 'Go' button, and an 'Actions' dropdown menu. A table below the timeline lists the steps with columns for Elapsed, Execution, Message, Level, and Graph.

Elapsed	Execution	Message	Level	Graph
0.00635	0.00016	S H O W: application="125" page="3" workspace="" request="" session="25680952782103"	4	
0.00649	0.00054	Reset NLS settings	4	
0.00704	0.00026	alter session set NLS_LANGUAGE="AMERICAN"	4	
0.00729	0.00020	alter session set NLS_TERRITORY="AMERICA"	4	

- 7) It appears that the query to produce the results is taking over 7 seconds to run. This is unacceptable.

The screenshot shows the Oracle Application Express Debug tab interface, similar to the previous one but with more detailed information. The timeline highlights a long execution time for a specific step, labeled '87 - IR binding: "APXWS_MAX_ROW_CNT" value="1 - 7"', which took 7.33087 seconds. Other steps listed include 'g_worksheet_attributes.show_download: Y CSV:HTML:EMAIL', 'I_select_list="NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME",', 'using existing report settings (different id)', '...Execute Statement: select null as apxws_row_pk, "NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME", count(*) over () as apxws_row_cnt from (select * from (select e.EMPLOYEE_ID, e.FIRST_NAME||"|"||e.LAST_NAME name, d.DEPARTMENT_NAME, e.EMAIL, o.ORDER_DATE, o.ORDER_MODE, c.CUST_LAST_NAME from OEHR_ORDERS o, OEHR_DEPARTMENTS d, OEHR_EMPLOYEES e, OEHR_CUSTOMERS c) r) where rownum <= to_number(APXWS_MAX_ROW_CNT)', '...Execute Statement: select null as apxws_row_pk, "NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME", count(*) over () as apxws_row_cnt from (select * from (select e.EMPLOYEE_ID, e.FIRST_NAME||"|"||e.LAST_NAME name, d.DEPARTMENT_NAME, e.EMAIL, o.ORDER_DATE, o.ORDER_MODE, c.CUST_LAST_NAME from OEHR_ORDERS o, OEHR_DEPARTMENTS d, OEHR_EMPLOYEES e, OEHR_CUSTOMERS c) r) where rownum <= to_number(APXWS_MAX_ROW_CNT)', 'IR binding: "APXWS_MAX_ROW_CNT" value="1000000"', 'Printing rows. Row window: 1-15. Rows found: 16', 'Evaluate which sub regions should be rendered', '...No sub regions to render', and 'Evaluate which regions should be rendered for display point REGION_POSITION_03'. The table has columns for Elapsed, Execution, Message, Level, and Graph.

Elapsed	Execution	Message	Level	Graph
0.04445	0.00477	g_worksheet_attributes.show_download: Y CSV:HTML:EMAIL	4	
0.04913	0.00056	I_select_list="NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME",	4	
0.04969	0.00279	using existing report settings (different id)	4	
0.05249	0.00099	...Execute Statement: select null as apxws_row_pk, "NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME", count(*) over () as apxws_row_cnt from (select * from (select e.EMPLOYEE_ID, e.FIRST_NAME " " e.LAST_NAME name, d.DEPARTMENT_NAME, e.EMAIL, o.ORDER_DATE, o.ORDER_MODE, c.CUST_LAST_NAME from OEHR_ORDERS o, OEHR_DEPARTMENTS d, OEHR_EMPLOYEES e, OEHR_CUSTOMERS c) r) where rownum <= to_number(APXWS_MAX_ROW_CNT)	4	
0.05348	0.00019	...Execute Statement: select null as apxws_row_pk, "NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME", count(*) over () as apxws_row_cnt from (select * from (select e.EMPLOYEE_ID, e.FIRST_NAME " " e.LAST_NAME name, d.DEPARTMENT_NAME, e.EMAIL, o.ORDER_DATE, o.ORDER_MODE, c.CUST_LAST_NAME from OEHR_ORDERS o, OEHR_DEPARTMENTS d, OEHR_EMPLOYEES e, OEHR_CUSTOMERS c) r) where rownum <= to_number(APXWS_MAX_ROW_CNT)	4	
0.05366	7.33087	IR binding: "APXWS_MAX_ROW_CNT" value="1000000"	4	
7.38454	0.00116	Printing rows. Row window: 1-15. Rows found: 16	4	
7.38570	0.00005	Evaluate which sub regions should be rendered	4	
7.38574	0.00015	...No sub regions to render	4	
7.38590	0.00004	Evaluate which regions should be rendered for display point REGION_POSITION_03	4	

- c. Review and make changes to the SQL Query in the Interactive Report.
- 1) Switch to the Report and click the **Edit Page** link on the Developer toolbar.

	Employee Name	Email	Department Name	Order Date
	Steven King	SKING	Administration	06-APR-12 12.00.00
	Steven King	SKING	Administration	06-APR-12 12.00.00
	Steven King	SKING	Administration	06-APR-12 12.00.00
	Steven King	SKING	Administration	06-APR-12 12.00.00
	Steven King	SKING	Administration	06-APR-12 12.00.00
	Steven King	SKING	Administration	06-APR-12 12.00.00
	Steven King	SKING	Administration	06-APR-12 12.00.00

Home Application 125 Edit Page 3 Create Session Cache

- 2) Right-click **Department Employee** and select **Edit**.

- Page Rendering
- Department Employee
 - Before Header
 - After Header
 - Before Regions
 - Regions
 - Body (3)
 - Department Employee
 - Edit**
 - Edit Report Attributes
 - Edit Saved Reports
 - Edit Print Attributes
 - Create
 - Create Page Item
 - After R
 - Before F
 - After F
 - Dynam

- 3) Note that the SQL is selecting from multiple tables without a where clause to join the tables.

Source
Region Source <pre>select e.EMPLOYEE_ID, e.FIRST_NAME ' ' e.LAST_NAME name, d.DEPARTMENT_NAME, e.EMAIL, o.ORDER_DATE, o.ORDER_MODE, c.CUST_LAST_NAME from OEHR_ORDERS o, OEHR_DEPARTMENTS d, OEHR_EMPLOYEES e, OEHR_CUSTOMERS c</pre>

- 4) Change the SQL query to the following and click **Apply Changes**.

```
select e.EMPLOYEE_ID,
       e.FIRST_NAME,
       e.LAST_NAME,
       d.DEPARTMENT_NAME,
       e.EMAIL,
       o.ORDER_DATE,
       o.ORDER_MODE,
       c.CUSTOMER_ID
  from OEHR_ORDERS o,
       OEHR_DEPARTMENTS d,
       OEHR_EMPLOYEES e,
       OEHR_CUSTOMERS c
 where d.department_id = e.department_id
   and o.customer_id = c.customer_id
   and o.sales_rep_id = e.employee_id
```

The screenshot shows the 'Region Definition' dialog box with the following details:

- Region Definition Tab:** Selected tab.
- Report Attributes Tab:** Unselected tab.
- Saved Reports Tab:** Unselected tab.
- Print Attributes Tab:** Unselected tab.

Region: 1 of 1 Name: Department Employee

Buttons: Cancel, Delete, Apply Changes (highlighted with a cursor).

Identification Tab:

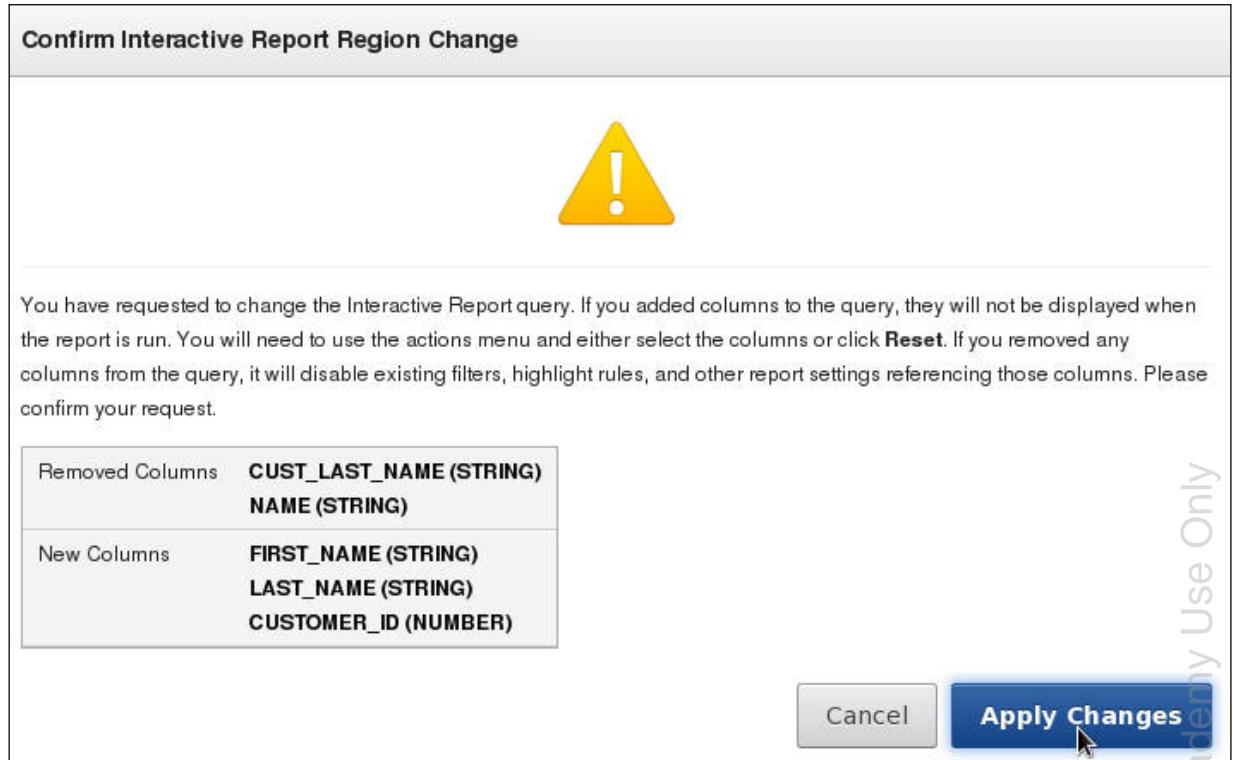
- Page:** 3 Department Employee
- Title:** Department Employee
- Type:** Interactive Report

Source Tab:

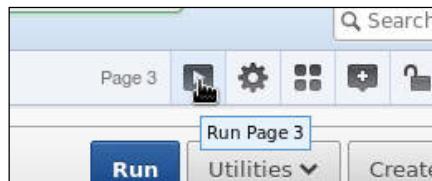
Region Source:

```
select e.EMPLOYEE_ID,
       e.FIRST_NAME||' '||e.LAST_NAME name,
       d.DEPARTMENT_NAME,
       e.EMAIL,
       o.ORDER_DATE,
       o.ORDER_MODE,
       c.CUST_LAST_NAME
  from OEHR_ORDERS o,
       OEHR_DEPARTMENTS d,
       OEHR_EMPLOYEES e,
       OEHR_CUSTOMERS c
 where d.department_id = e.department_id
   and o.customer_id = c.customer_id
   and o.sales_rep_id = e.employee_id
```

- 5) Click **Apply Changes** to confirm the interactive report changes.



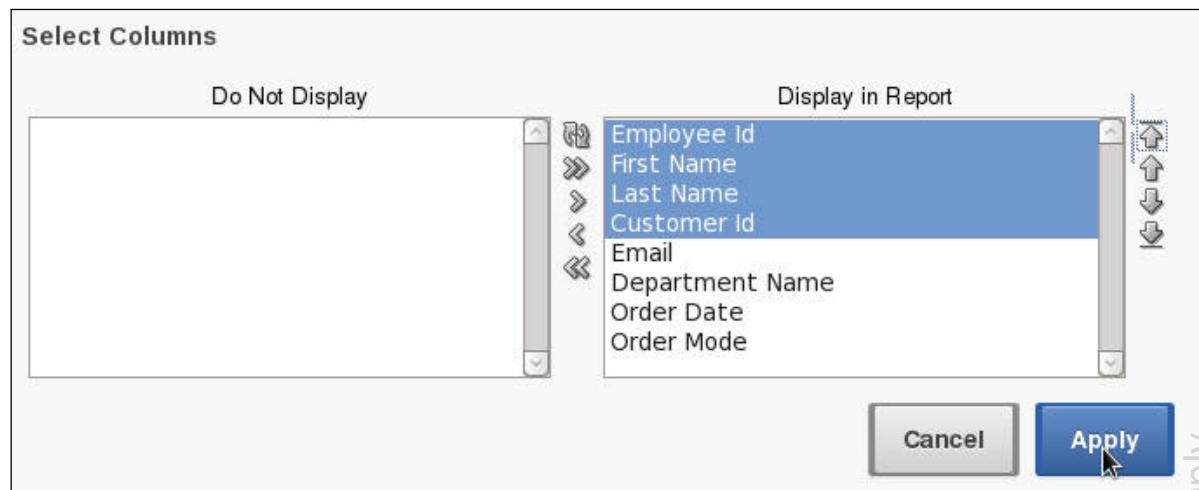
- 6) You want to run the page again. Click the **Run Page** icon.



- 7) Add the columns you changed. Select **Actions > Select Columns**.



- 8) Add all the columns using the double right arrow (>>), and then move them all to the top. Then click **Apply**.

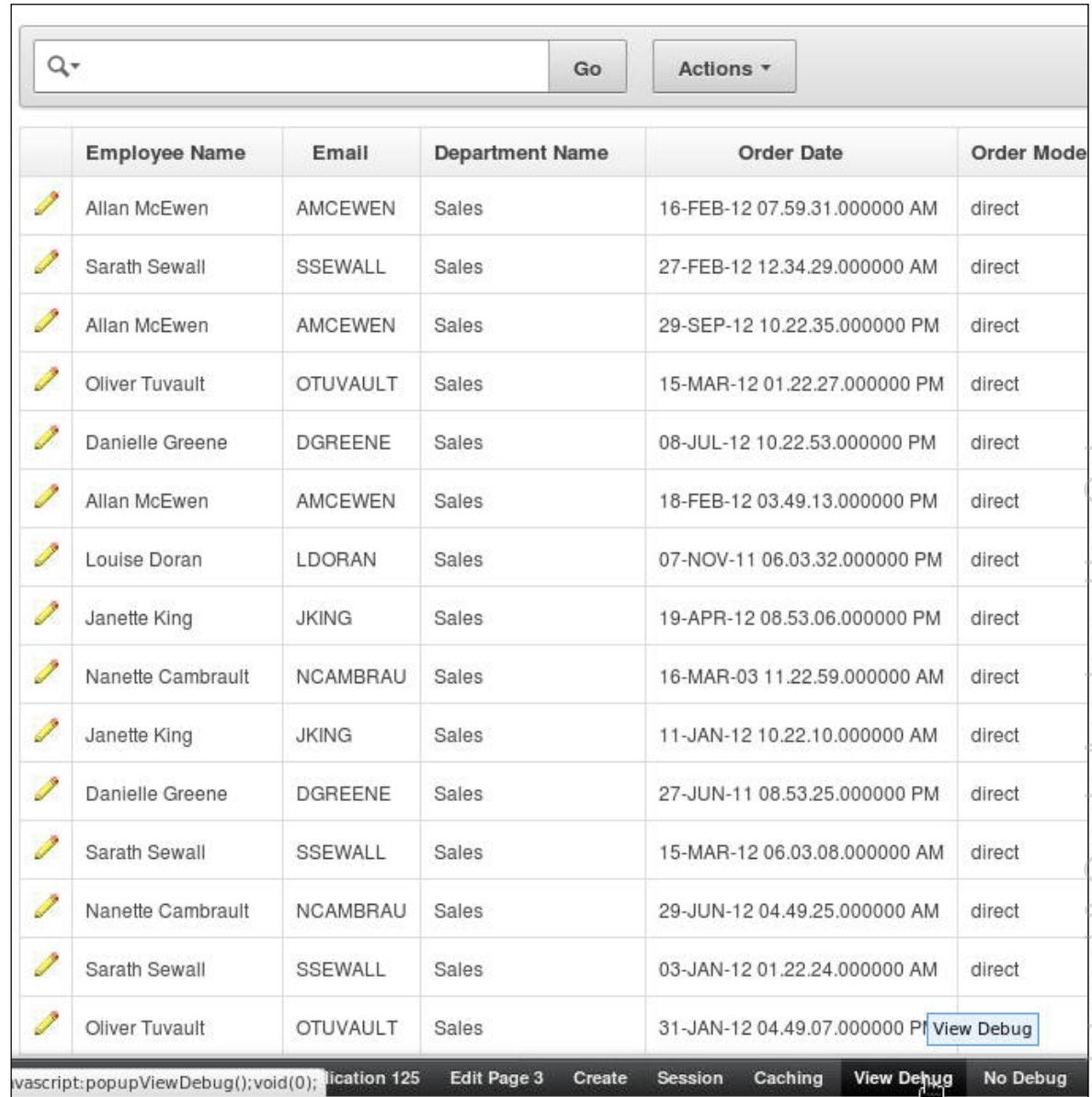


- 9) Click **Debug** on the Developer toolbar again.

	Employee Name	Email	Department Name	Order Date	Order Mode	Customer Name
1	Allan McEwen	AMCEWEN	Sales	16-FEB-12 07.59.31.000000 AM	direct	Alexander
2	Sarath Sewall	SSEWALL	Sales	27-FEB-12 12.34.29.000000 AM	direct	Boyer
3	Allan McEwen	AMCEWEN	Sales	29-SEP-12 10.22.35.000000 PM	direct	Cage
4	Oliver Tuvault	OTUVault	Sales	15-MAR-12 01.22.27.000000 PM	direct	Cage
5	Danielle Greene	DGREENE	Sales	08-JUL-12 10.22.53.000000 PM	direct	Capshaw
6	Allan McEwen	AMCEWEN	Sales	18-FEB-12 03.49.13.000000 PM	direct	Chandar
7	Louise Doran	LDORAN	Sales	07-NOV-11 06.03.32.000000 PM	direct	Cruise
8	Janette King	JKING	Sales	19-APR-12 08.53.06.000000 PM	direct	Cruise
9	Nanette Cambraut	NCAMBRAU	Sales	16-MAR-03 11.22.59.000000 AM	direct	Cruise
10	Janette King	JKING	Sales	11-JAN-12 10.22.10.000000 AM	direct	Davis
11	Danielle Greene	DGREENE	Sales	27-JUN-11 08.53.25.000000 PM	direct	Edwards
12	Sarath Sewall	SSEWALL	Sales	15-MAR-12 06.03.08.000000 AM	direct	Edwards
13	Nanette Cambraut	NCAMBRAU	Sales	29-JUN-12 04.49.25.000000 AM	direct	Edwards
14	Sarath Sewall	SSEWALL	Sales	03-JAN-12 01.22.24.000000 AM	direct	Fawcett
15	Oliver Tuvault	OTUVault	Sales	31-JAN-12 04.49.07.000000 PM	direct	Debug
16						Fawcett

http://localhost:8080/apex/f?p=125:3:25680952782103::YES e 3 Create Session Caching View Debug Debug Show Edit Links Stop

- 10) Click **View Debug** on the Developer toolbar again.



	Employee Name	Email	Department Name	Order Date	Order Mode
	Allan McEwen	AMCEWEN	Sales	16-FEB-12 07.59.31.000000 AM	direct
	Sarath Sewall	SSEWALL	Sales	27-FEB-12 12.34.29.000000 AM	direct
	Allan McEwen	AMCEWEN	Sales	29-SEP-12 10.22.35.000000 PM	direct
	Oliver Tuvault	OTUVault	Sales	15-MAR-12 01.22.27.000000 PM	direct
	Danielle Greene	DGREENE	Sales	08-JUL-12 10.22.53.000000 PM	direct
	Allan McEwen	AMCEWEN	Sales	18-FEB-12 03.49.13.000000 PM	direct
	Louise Doran	LDORAN	Sales	07-NOV-11 06.03.32.000000 PM	direct
	Janette King	JKING	Sales	19-APR-12 08.53.06.000000 PM	direct
	Nanette Cambrault	NCAMBRAU	Sales	16-MAR-03 11.22.59.000000 AM	direct
	Janette King	JKING	Sales	11-JAN-12 10.22.10.000000 AM	direct
	Danielle Greene	DGREENE	Sales	27-JUN-11 08.53.25.000000 PM	direct
	Sarath Sewall	SSEWALL	Sales	15-MAR-12 06.03.08.000000 AM	direct
	Nanette Cambrault	NCAMBRAU	Sales	29-JUN-12 04.49.25.000000 AM	direct
	Sarath Sewall	SSEWALL	Sales	03-JAN-12 01.22.24.000000 AM	direct
	Oliver Tuvault	OTUVault	Sales	31-JAN-12 04.49.07.000000 PM	View Debug

- 11) Select the most recent **View Identifier** link which should be the first one in the list.

View Identifier	Session Id	User	Application	Page	Path Info	Entries	Timestamp	Seconds
70	25680952782103	ORA01	125	3	show	107	22 seconds ago	0.0598
67	25680952782103	ORA01	125	3	show	107	8 minutes ago	7.3890

- 12) If you scroll down to the same statement as before, you see that the time taken to execute the query has been drastically reduced.

0.04139	0.00052	I_select_list= "NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME",	4	
0.04191	0.00269	using existing report settings (different id)	4	
0.04459	0.00264	...Execute Statement: select null as apxws_row_pk, "NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME", count(*) over () as apxws_row_cnt from (select * from (select e.EMPLOYEE_ID, e.FIRST_NAME ' ' e.LAST_NAME name, d.DEPARTMENT_NAME, e.EMAIL, o.ORDER_DATE, o.ORDER_MODE, c.CUST_LAST_NAME from OEHR_ORDERS o, OEHR_DEPARTMENTS d, OEHR_EMPLOYEES e, OEHR_CUSTOMERS c where d.department_id = e.department_id and o.customer_id = c.customer_id and o.sales_rep_id = e.employee_id) r) r where rownum <= to_number(:APXWS_MAX_ROW_CNT)	4	
0.04724	0.00022	...Execute Statement: select null as apxws_row_pk, "NAME", "EMAIL", "DEPARTMENT_NAME", "ORDER_DATE", "ORDER_MODE", "CUST_LAST_NAME", count(*) over () as apxws_row_cnt from (select * from (select e.EMPLOYEE_ID, e.FIRST_NAME ' ' e.LAST_NAME name, d.DEPARTMENT_NAME, e.EMAIL, o.ORDER_DATE, o.ORDER_MODE, c.CUST_LAST_NAME from OEHR_ORDERS o, OEHR_DEPARTMENTS d, OEHR_EMPLOYEES e, OEHR_CUSTOMERS c where d.department_id = e.department_id and o.customer_id = c.customer_id and o.sales_rep_id = e.employee_id) r) r where rownum <= to_number(:APXWS_MAX_ROW_CNT)	4	
0.04745	0.00786	IR binding: "APXWS_MAX_ROW_CNT" value="1000000"	4	
0.05531	0.00117	Printing rows. Row window: 1-15. Rows found: 16	4	
0.05649	0.00005	Evaluate which sub regions should be rendered	4	
0.05653	0.00014	...No sub regions to render	4	
0.05657	0.00004	Evaluate which sub regions should be rendered for display at REGION POSITION 02	4	

- d. Why does the Create button not do anything when you click it?

- 1) Switch back to the report and click the **Create** button.

Order Date	Order Mode	Customer Name
16-FEB-12 07.59.31.000000 AM	direct	Alexander
27-FEB-12 12.34.29.000000 AM	direct	Boyer
29-SEP-12 10.22.35.000000 PM	direct	Cage

- 2) Click View Debug on the Developer toolbar again and select **View Identifier** for the accept Path Info row.

View Identifier	Session Id	User	Application	Page	Path Info	Entries	Timestamp	Seconds
80	3030554245394	ORA01	125	3	accept	56	6 seconds ago	0.0293
87	3030554245394	ORA01	125	3	show	106	12 seconds ago	0.0589
84	16164721778211	ORA01	125	3	show	107	2 minutes ago	1.8949

- 3) Notice that Request=CREATE. Scroll down to the bottom of the page.

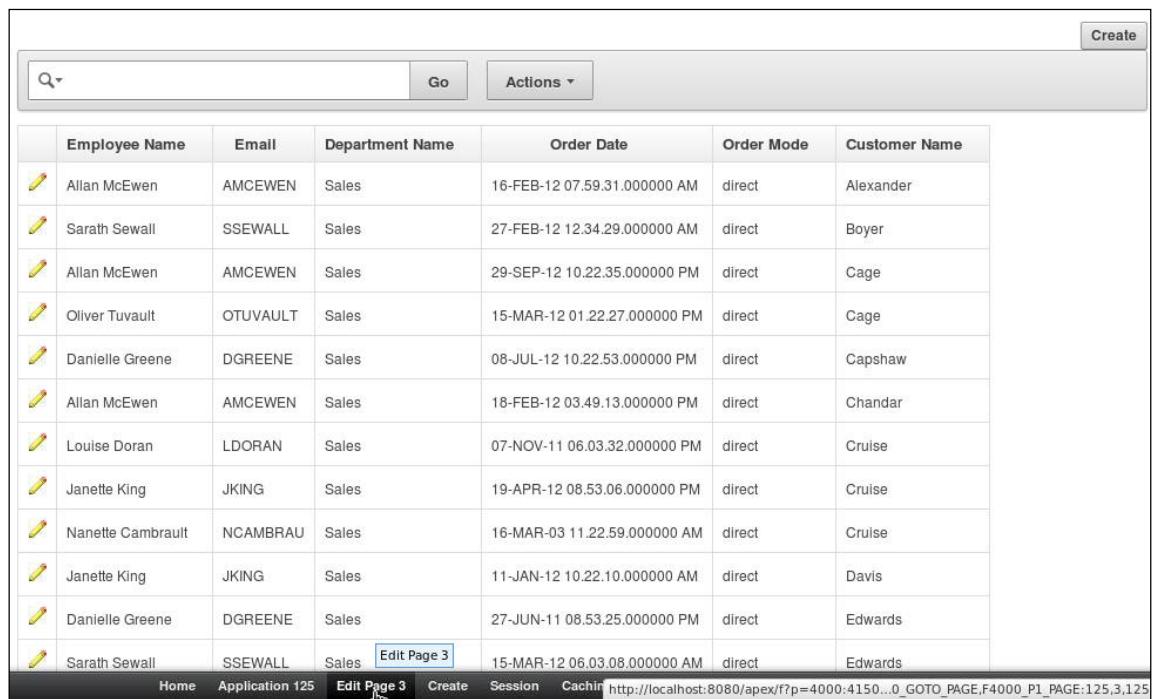
Elapsed	Execution	Message	Level	Graph
0.00198	0.00028	A C C E P T: Request="CREATE"	4	
0.00225	0.00263	Reset NLS settings	4	
0.00489	0.00030	alter session set NLS_LANGUAGE="AMERICAN"	4	

- 4) There is no branch so the button redirects to the current page.

Elapsed	Execution	Message	Level	Graph
0.02194	0.00027	Tabs: Perform Branching for Tab Requests	4	
0.02221	0.00013	Branch point: Before Validation	4	
0.02234	0.00029	Validations:	4	
0.02263	0.00021	Perform basic and predefined validations:	4	
0.02284	0.00032	Perform custom validations:	4	
0.02317	0.00008	Branch point: Before Processing	4	
0.02324	0.00006	Processes - point: AFTER_SUBMIT	4	
0.02331	0.00005	Branch point: After Processing	4	
0.02334	0.00036	...No branch specified, redirect to current page	4	
0.02370	0.00017	Stop APEX Engine detected	4	
0.02387	0.00009	Stop APEX Engine detected	4	
0.02395	-	Final commit	4	-

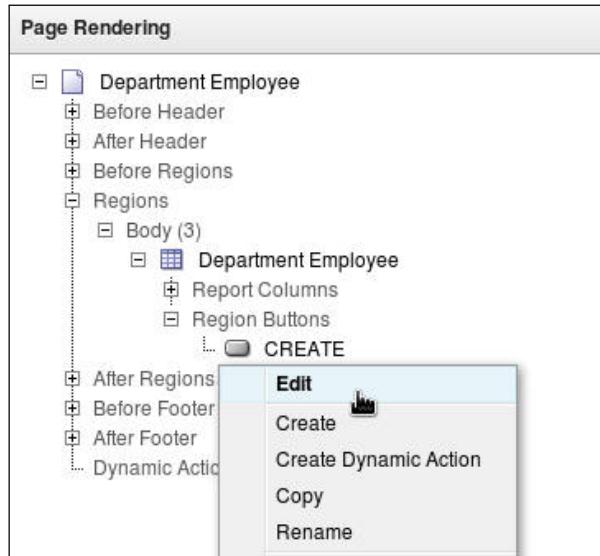
1 - 55

- 5) You want to review the definition for the button. Click **Edit Page** on the Developer toolbar.



	Employee Name	Email	Department Name	Order Date	Order Mode	Customer Name
	Allan McEwen	AMCEWEN	Sales	16-FEB-12 07.59.31.000000 AM	direct	Alexander
	Sarah Sewall	SSEWALL	Sales	27-FEB-12 12.34.29.000000 AM	direct	Boyer
	Allan McEwen	AMCEWEN	Sales	29-SEP-12 10.22.35.000000 PM	direct	Cage
	Oliver Tuvault	OTUVULT	Sales	15-MAR-12 01.22.27.000000 PM	direct	Cage
	Danielle Greene	DGREENE	Sales	08-JUL-12 10.22.53.000000 PM	direct	Capshaw
	Allan McEwen	AMCEWEN	Sales	18-FEB-12 03.49.13.000000 PM	direct	Chandar
	Louise Doran	LDORAN	Sales	07-NOV-11 06.03.32.000000 PM	direct	Cruise
	Janette King	JKING	Sales	19-APR-12 08.53.06.000000 PM	direct	Cruise
	Nanette Cambraut	NCAMBRAU	Sales	16-MAR-03 11.22.59.000000 AM	direct	Cruise
	Janette King	JKING	Sales	11-JAN-12 10.22.10.000000 AM	direct	Davis
	Danielle Greene	DGREENE	Sales	27-JUN-11 08.53.25.000000 PM	direct	Edwards
	Sarah Sewall	SSEWALL	Sales	15-MAR-12 06.03.08.000000 AM	direct	Edwards

- 6) Right-click **CREATE** and select **Edit**.



- 7) Click the **Action When Button Clicked** subtab.

Page Button: 1 of 1 Name: CREATE

Show All Name Displayed Attributes Action When Button Clicked Conditions Security Configuration

Name

Page: 3 Department Employee

* Button Name: CREATE

* Text Label / Alt: Create

Cancel Delete Apply Changes

- 8) Change Action to **Redirect to Page in this Application**. Enter 4 for Page and Clear Cache and click **Apply Changes**.

Page Button: 1 of 1 Name: CREATE

Show All Name Displayed Attributes Action When Button Clicked Conditions Security Configuration Comments

Action When Button Clicked

Action: Redirect to Page in this Application

* Page: 4

reset pagination for this page

Request:

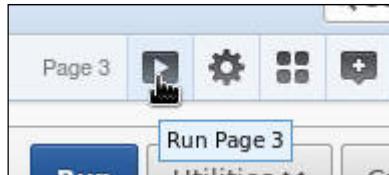
Clear Cache: 4 (comma separated page numbers)

Set These Items:

With These Values:

Cancel Delete Apply Changes

- 9) Click the Run Page icon.



10) Click the **Create** button again.

	Employee Name	Email	Department Name	Order Date	Order Mode	Customer Name
	Allan McEwen	AMCEWEN	Sales	16-FEB-12 07.59.31.000000 AM	direct	Alexander
	Sarath Sewall	SSEWALL	Sales	27-FEB-12 12.34.29.000000 AM	direct	Boyer
	Allan McEwen	AMCEWEN	Sales	29-SEP-12 10.22.35.000000 PM	direct	Cage
	Oliver Tuvault	OTUVAUTL	Sales	15-MAR-12 01.22.27.000000 PM	direct	Cage
	Danielle Greene	DGREENE	Sales	08-JUL-12 10.22.53.000000 PM	direct	Capshaw
	Allan McEwen	AMCEWEN	Sales	18-FEB-12 03.49.13.000000 PM	direct	Chandar
	Louise Doran	LDORAN	Sales	07-NOV-11 06.03.32.000000 PM	direct	Cruise
	Janette King	JKING	Sales	19-APR-12 08.53.06.000000 PM	direct	Cruise
	Natália Peixoto	NPBIXTO	Sales	16-MAR-12 09.56.00.000000 PM	direct	Cruise

11) Page 4 to create a new Employee is displayed.

Employee Detail

Employee Id *	<input type="text"/>
First Name	<input type="text"/>
Last Name *	<input type="text"/>
Email *	<input type="text"/>
Phone Number	<input type="text"/>
Hire Date *	<input type="text"/>
Job Id *	<input type="text"/>
Salary	<input type="text"/>
Commission Pct	<input type="text"/>
Manager Id	<input type="text"/>
Department Id	<input type="text"/>
Rating	<input type="text"/>

Create

- e. Optional: When you edit an employee on page 3 (the Employee Report), why is the employee record not displayed on page 4? See if you can figure this out on your own without looking at the solution.

- 1) Enter **Oliver** in the search area and click **Go**.

	Employee Id	First Name	Last Name	Customer Id	Email	Department
	153	Christopher	Olsen	101	COLSEN	Sales

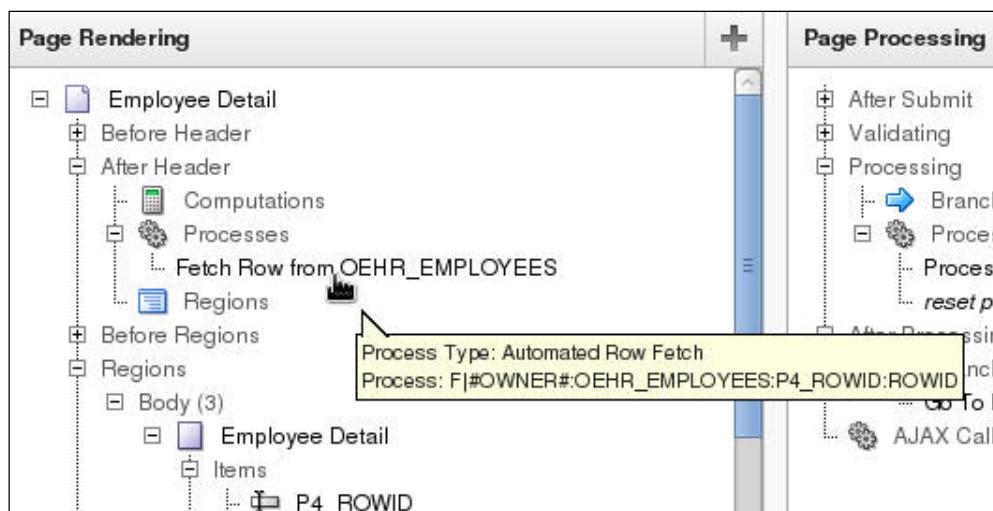
- 2) Click the Edit icon in the first row.

	Employee Id	First Name	Last Name	Customer Id	Email	Department
	155	Oliver	Tuvault	104	OTUVault	Sales
	155	Oliver	Tuvault	105	OTUVault	Sales

- 3) Notice that all the employee information is not retrieved and displayed. You will examine why this happened and how to correct it. Review the URL. Notice that the value being passed into the form is P4_EMPLOYEE_ID. Let us see what is being fetched. Click the **Edit Page** link on the Developer toolbar.

The screenshot shows a web browser displaying an Oracle APEX application. The title bar says "localhost:8080/apex/f?p=131:4:3585470173806::NO::P4_EMPLOYEE_ID:155". The main content area is titled "Debug Example" and contains a sub-section titled "Employee Detail". The page includes several input fields: Employee Id (with value 155), First Name, Last Name, Email, Phone Number, Hire Date (with a calendar icon), Job Id, Salary, Commission Pct, Manager Id, and Department. At the bottom of the page, there is a toolbar with links: Home, Application 131, Edit Page 4, Create, Session, Cache, and http://localhost:8080/apex/f?p=131:4:3585470173806::NO::P4_EMPLOYEE_ID:155. The "Edit Page" link is highlighted with a mouse cursor.

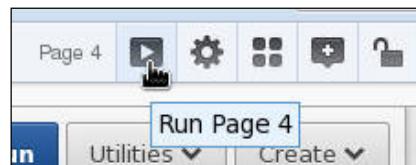
- 4) You can see that the Automated Row Fetch is using ROWID not EMPLOYEE_ID. Double-click **Fetch Row from OEHR_EMPLOYEES**.



- 5) Change the Item Containing Primary Key Column Value to **P4_EMPLOYEE_ID** and Primary Key Column to **EMPLOYEE_ID**, and click Apply Changes.

The screenshot shows the 'Process: 1 of 3 Name: Fetch Row from OEHR_EMPLOYEES' configuration screen. The 'Apply Changes' button is highlighted in blue with a cursor icon. The 'Name' section shows 'Page: 4 Employee Detail' and 'Type: Automated Row Fetch'. The 'Process Point' section includes 'Sequence: 10', 'Process Point: On Load - After Header', and 'Run Process: Once Per Page Visit (default)'. The 'Source: Automatic Row Processing (DML)' section specifies 'Table Owner: ORA01', 'Table Name: OEHR_EMPLOYEES', 'Item Containing Primary Key Column Value: P4_EMPLOYEE_ID', and 'Primary Key Column: EMPLOYEE_ID'.

- 6) Run the page.



- 7) Notice that the fetch retrieves the information correctly now.

The screenshot shows the 'Employee Detail' page with the following data:

Employee Id *	155
First Name	Oliver
Last Name *	Tuvault
Email *	OTUVAU@ORCL.COM
Phone Number	011.44.1344.486508
Hire Date *	23-NOV-99
Job Id *	SA_REP
Salary	7000
Commission Pct	.15
Manager Id	145

