



Oracle Application Express: Developing Database Web Applications

Hands-On-Labs Guide

Unit 5: Developing Reports

This exercise includes three hands-on-labs.

HOL 5-1 Creating a Classic Report: In this hands-on-lab, you create a classic report region on the Dashboard page of the Demo Projects application.

HOL 5-2 Creating an Interactive Report: In this hands-on lab, you create a new database application and then using the Create Page wizard, you add an interactive report page.

HOL 5-3 Creating an Interactive Grid: In this hands-on lab, you use the Create Page wizard and add an interactive grid page in the Budget App application.

HOL 5-4 Creating a Faceted Search Page: In this hands-on lab, you create and use a Faceted Search Page.

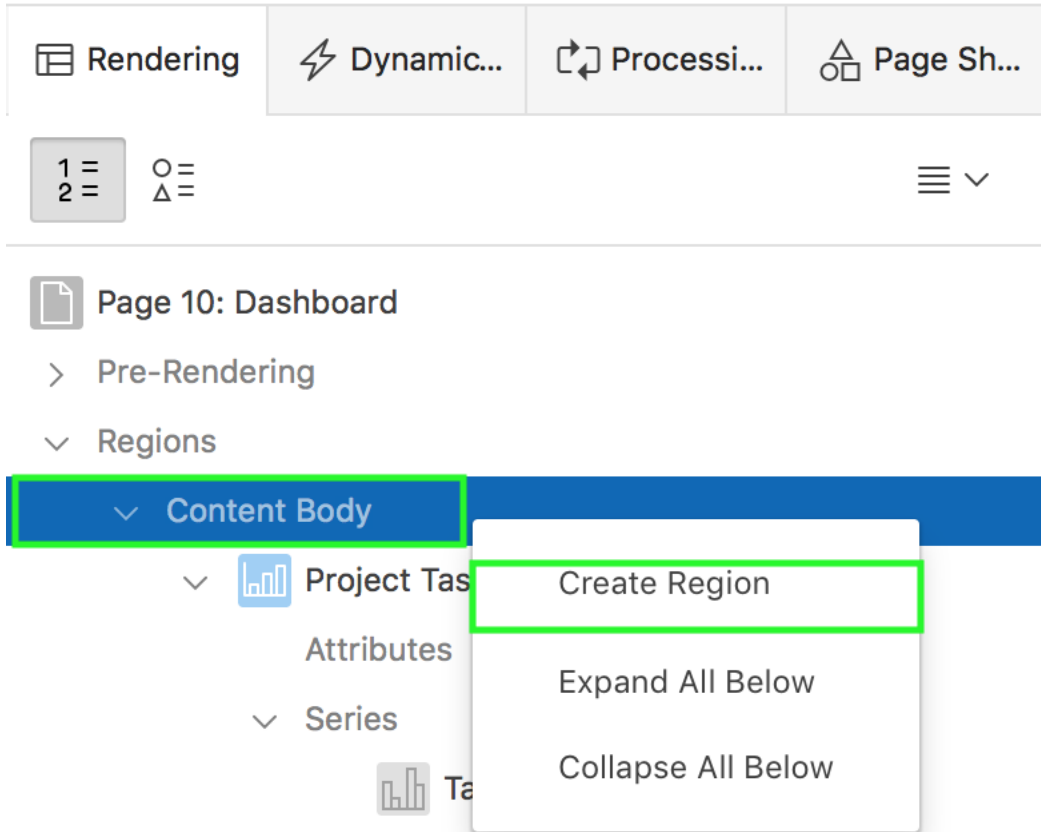
HOL 5-1 Creating a Classic Report

In the Demo Projects application, you create a report that allows each Team Member to see their outstanding tasks.

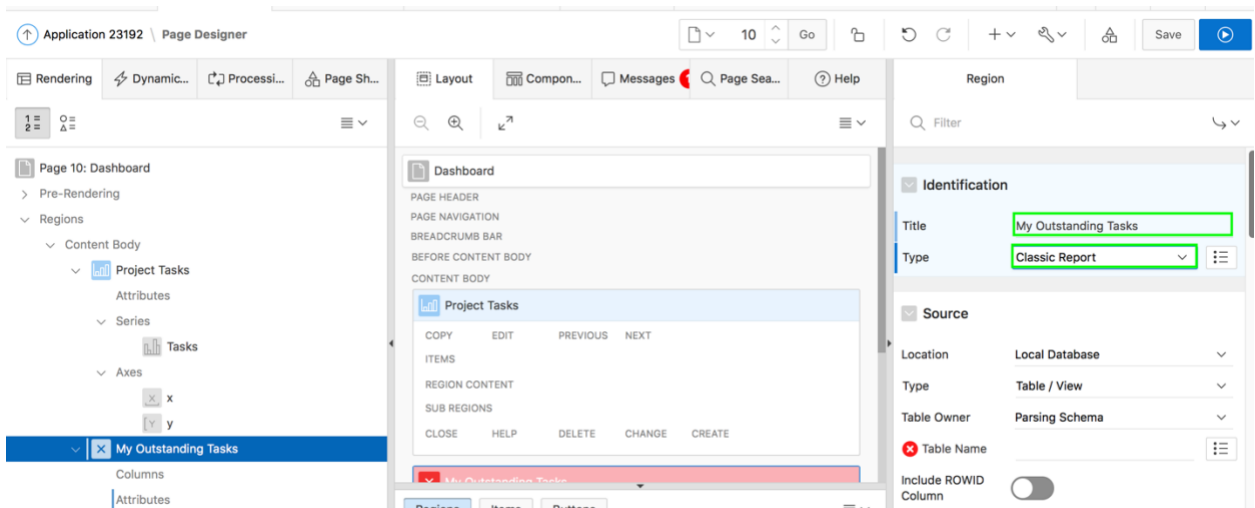
1. View the Dashboard page in page designer. If you are on the Dashboard page, then click **Edit Page <n>** in the Developer Toolbar.



2. In the Rendering tree, right-click **Content Body** and select **Create Region**.



3. In the property editor, under Identification, enter **My Outstanding Tasks** for Title. Select **Classic Report** for Type.



4. In the property editor, under Source, select **SQL Query** for Type. Then, copy and paste the following code for SQL Query.

```
select p.name project
, t.name task
, t.end_date
from demo_proj_tasks t
, demo_projects p
, demo_proj_milestones m
, demo_proj_team_members tm
where p.id = t.project_id
and m.id = t.milestone_id (+)
and tm.id = t.assignee and nvl(t.is_complete_yn, 'N') = 'N'
and upper(tm.username) = upper(:APP_USER)
order by t.end_date
```

Note: The where condition of username = :APP_USER restricts the records to those assigned to the person running the application.

Region

Filter

▼ Identification

Title My Outstanding Tasks

Type Classic Report ▼

▼ Source

Location Local Database ▼

Type SQL Query ▼

✖ SQL Query

```

select p.name project
, t.name task
, t.end_date
from demo_proj_tasks t
, demo_projects p
, demo_proj_milestones m
, demo_proj_team_members tm
where p.id = t.project_id
and m.id = t.milestone_id (+)
and tm.id = t.assignee and nvl(t.is_complete_yn,
'N') = 'N'
and upper(tm.username) = upper(:APP_USER)

```

- In the Property Editor, locate Appearance > Template Options and click **Use Template Defaults, Scroll - Default**.

Region

Filter

Appearance

Template Standard

Template Options Use Template Defaults, Scroll - Default

CSS Classes

Icon

Item Display Position Above Content

- For General, enable **Remove Body Padding**, and for Body Height select **480px**. Click **OK**.

Template Options ✕

▼ Common

General

☒ Use Template Defaults

☒ Remove Body Padding

☐ Show Maximize Button

☐ Show Region Icon

Body Height

480px ▼

Header

Visible - Default ▼

Accent

Default ▼

Style

Default ▼

▼ Advanced

Body Overflow

Scroll - Default ▼

Item Padding

Default ▼

Cancel






OK

7. Locate the Rendering tree. Under the My Outstanding Tasks region, click **Attributes**.

Rendering Dynamic... Processi... Page Sh...

1 = 0 = Δ = ≡

Page 10: Dashboard

- > Pre-Rendering
- ✓ Regions
 - ✓ Content Body
 - ✓  Project Tasks
 - Attributes
 - ✓ Series
 -  Tasks
 - ✓ Axes
 -  x
 -  y
 - ✓  My Outstanding Tasks
 - > Columns

Attributes

- In the Property Editor, under Attributes, locate Appearance > Template Options and click **Use Template Defaults, Enable, Enable**.

Attributes

Filter
 ↶ ↷

Layout

Number of Rows Type

Static Value

↵

Number of Rows

15

Appearance

Template Type

Theme

↵

Template

Standard

↵

>

Template Options

Use Template Defaults, Enable, Enable

CSS Classes

⋮

Show Null Values as

-

- For General, enable **Stretch Report**, and for Report Border, select **No Outer Borders**. Click **OK**.

Note: Region Template Options (such as Body Height, Header, Style and so on) alter the overall presentation of a region. However, Attribute Template Options (such as Stretch Report, Row Highlighting and so on) alter the way the records within a region display.

Template Options

✕

▼ Common

General

☒ Use Template Defaults

☒ Stretch Report

Alternating Rows

Enable

▼

Row Highlighting

Enable

▼

Report Border

No Outer Borders

▼

▼ Advanced

Pagination Display

Default

▼

Cancel

OK

10. Run the application to see how the Home page looks now. Click **Save and Run Page**.

Attributes

Filter

Layout

Number of Rows Type Static Value

Number of Rows 15

Appearance

Template Type Theme

Template Standard

Template Options Use Template Defaults, Stretch Report, Enable, Enable, No Outer Borders

11. Your Dashboard page might look like:



12. In the Developer Toolbar, click **Home**.

HOL 5-2 Creating an Interactive Report

In this lab, you create an interactive report on the `HARDWARE` table. You created this table in HOL 2-2. First, you create a database application and then you create the interactive report page.

1. Create a database application. Perform the following steps:
 - a) Navigate to App Builder. Click **Create**.
 - b) Click **New Application**.
 - c) Enter **Hardware** for Name, accept the remaining defaults and click **Create Application**.

ORACLE APEX App Builder SQL Workshop Team Development App Gallery

View Blueprint Load Blueprint

Create an Application

Name: **Hardware** Appearance: Vita, Side Menu

Pages ?

+ Add Page

Home Blank Edit

Features ? Check All

- ☐ About Page: Add about this application page
- ☐ Access Control: Enable role-based user authorization
- ☐ Activity Reporting: Include user activity and error reports
- ☐ Configuration Options: Enable or disable application features
- ☐ Feedback: Allow users to provide feedback
- ☐ Theme Style Selection: Update default application look and feel

Settings ?

Application ID: 118519 Schema: LOWCODE Authentication: Application Express Accounts

Language: English (en) Advanced Settings User Interface Defaults

Cancel Create Application

2. Now, create an interactive report on the `HARDWARE` table. On the application home page, click **Create Page**.

ORACLE APEX App Builder SQL Workshop Team Development App Gallery

Application 118519

Application 118519 - Hardware [Edit Application Properties](#)

Run Application Supporting Objects Shared Components Utilities Export / Import

Search Go Actions [Create Page >](#)

0 - Global Page - Desktop 1 - Home 9999 - Login Page

3. For Page Type, select **Report**.

Create a Page ×

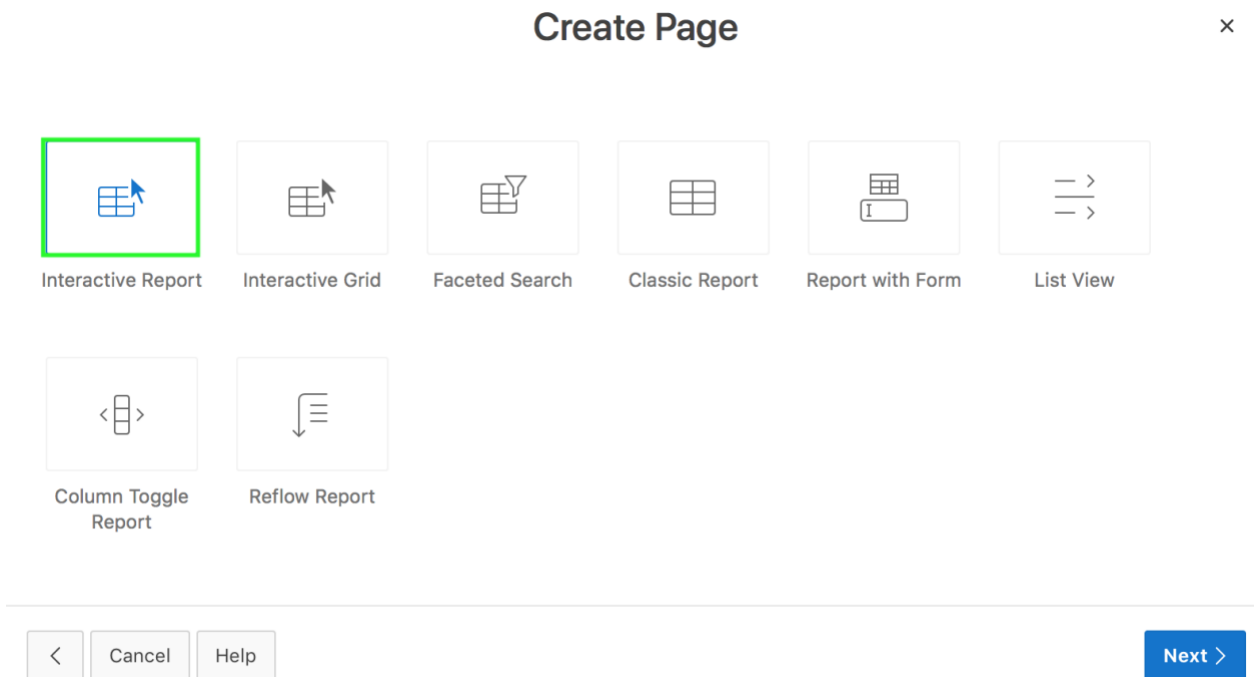
Page Type **Component** Feature ?

Blank Page **Report** Form Master Detail Plug-ins Chart

Dashboard Calendar Tree Wizard Data Loading Legacy Page

Cancel Help [Next >](#)

4. Next, select **Interactive Report**.



5. For Page Attributes:
- Page Name: Enter **Hardware Interactive Report**
 - Breadcrumb: Select **Breadcrumb**
 - Parent Entry: **Home(Page1)**
 - Entry Name: Enter **Hardware Interactive Report**

Click **Next**.

Create Interactive Report ×

Page Attributes

Type**Interactive Report**

* Page Number

2

?

* Page Name

Hardware Interactive Report

?

Page Mode

Normal

Modal Dialog

?

Breadcrumb

Breadcrumb

?

Parent Entry

Home (Page 1)

?

Entry Name

Hardware Interactive Report

?

<

Cancel

Next >

6. For Navigation Menu:

- Navigation Preference: Select **Create a new navigation menu entry**
- Parent Navigation Menu Entry: **Home**

Click **Next**.

17

Create Interactive Report

✓

●

Navigation Menu

Navigation Preference

☐ Do not associate this page with a navigation menu entry

☒ Create a new navigation menu entry

☐ Identify an existing navigation menu entry for this page

* New Navigation Menu Entry

Hardware Interactive Report

Parent Navigation Menu Entry

- No parent selected -

Home

< Cancel

Next >

7. For Report Source > Table / View Name, select **HARDWARE(table)** and click **Create**.

Create Interactive Report ×

✓ ✓ ● **Report Source**

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

* Source Type **Table** SQL Query ?

* Table / View Owner LOWCODE ?

* Table / View Name **HARDWARE (table)** ?

> Lookup Columns
> Columns

<
Cancel
Create

8. Click **Save and Run Page**.

Enter your Workspace username and password. Click **Sign In**. Your interactive report might look like:

Hardware
lowcode

Home
Hardware Interactive Report

Hardware Interactive Report

Go
Actions

Id	Serial	Cpu Type	Cpu Speed	Purchase Date	Brand	Model	Form Factor	Purchase Price	Department Id
1	0C8765T	Pentium III	200	10/9/2004	Dell	Optiplex	D	2343	2
2	1U09CM2423	Pentium III	667	6/1/2005	Dell	Optiplex	D	3256	2
3	0KBU4	Pentium IV	1000	5/12/2001	Dell	Optiplex	L	4532	1
4	51214246AB	Pentium IV	450	6/14/2001	Dell	Optiplex	L	5401	3
5	HQMHC12	Pentium IV	1700	6/15/2002	Dell	Optiplex	D	6588	4
6	W112FGHZ456	Pentium IV	800	1/12/2001	Dell	Optiplex	D	5330	5
7	2DLP1	Celeron	366	4/1/2005	Dell	Optiplex	D	1399	3
8	6ZQ11	Pentium III	200	10/24/2004	Dell	Optiplex	D	2378	2
9	59785246GH	Pentium IV	650	3/20/2000	Dell	Optiplex	L	5122	5
10	12375936YT	Pentium III	166	3/1/2004	Dell	Optiplex	L	2266	3
11	LTS5133	Pentium IV	100	1/1/2004	Dell	Optiplex	L	2188	1
12	A492CSLZE265	Pentium IV	750	6/23/2005	Dell	Optiplex	D	5066	6

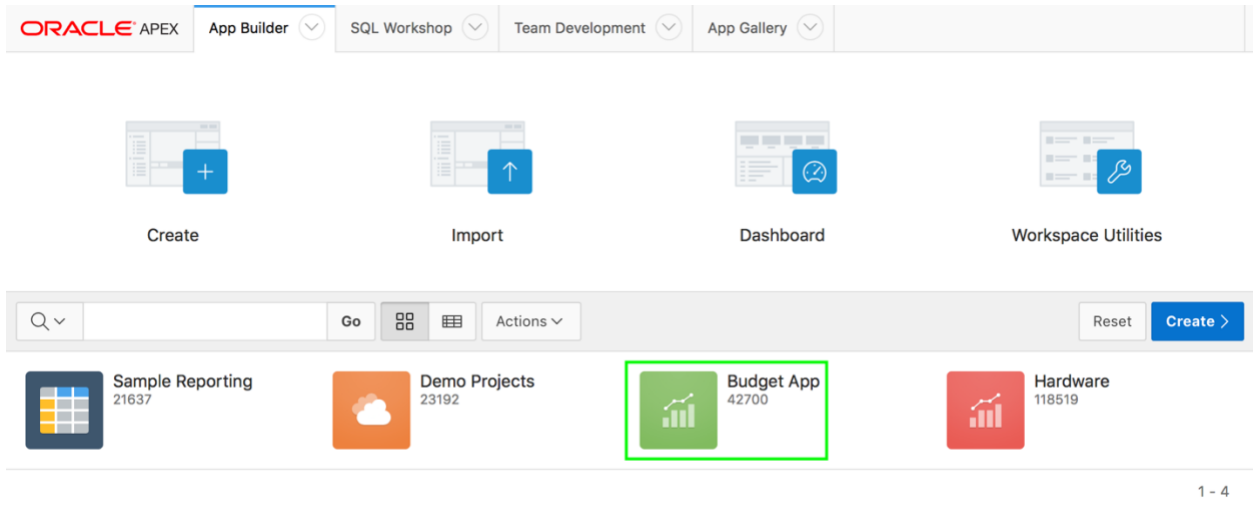
Home Application 118519 Edit Page 2 Session View Debug Debug Page Info Quick Edit Theme Roller

9. In the Developer Toolbar, click **Home**.

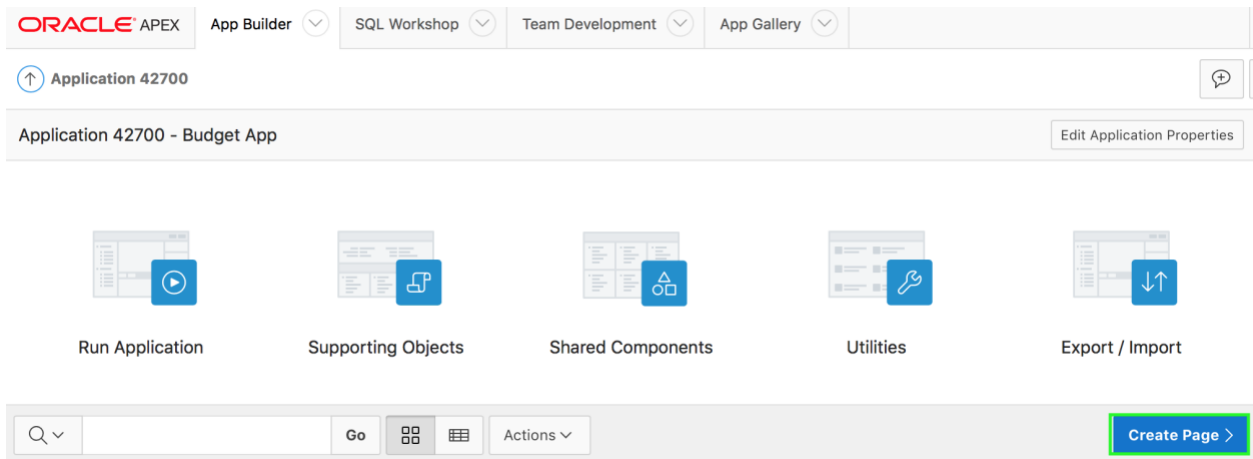
HOL 5-3 Creating an Interactive Grid

In this lab, you create an interactive grid on the PROJECT_BUDGET table. You already created the Budget App application in HOL 3-2. Now, you create an interactive grid in the Budget App application.

1. Navigate to **App Builder**. Select **Budget App**. If you are in the View Report mode, select **Budget App** under Name.




2. Click **Create Page**.

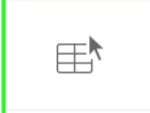


3. Select **Report**, and on the next page select **Interactive Grid**.

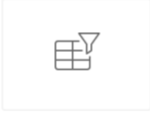
Create Page ×



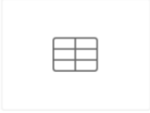
Interactive Report




Interactive Grid



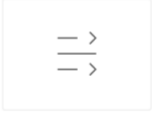
Faceted Search




Classic Report




Report with Form



List View



Column Toggle Report



Reflow Report

<
Cancel
Help

Next >

4. For Page Attributes, Enter **Project Budget Interactive Grid** for Page Name and click **Next**.

Create Interactive Grid ×

Page Attributes

Type **Interactive Grid**

* Page Number ?

* Page Name ?

Page Mode **Normal** Modal Dialog ?

Breadcrumb ?

<
Cancel

Next >

5. For Navigation Menu:
- Navigation Preference: Select **Create a new navigation menu entry**
 - New Navigation Menu Entry: Enter **Interactive Grid**
Click **Next**.

Create Interactive Grid ×

✓ ● ●

Navigation Menu

Navigation Preference ?

☐ Do not associate this page with a navigation menu entry

☒ **Create a new navigation menu entry**

☐ Identify an existing navigation menu entry for this page

* New Navigation Menu Entry ?

Interactive Grid

Parent Navigation Menu Entry ?

- No parent selected -

Home

Dashboard

Project Budget Search

Project Budget Report

Calendar

Administration

< Cancel
Next >

6. In the Report Source dialog, note that you can set the Editing Enabled to either enabled or not. In this lab, you accept the default, which is not enabled. Select **Project_Budget** for Table / View Name and click **Create**.

Create Interactive Grid ×

✓ ✓ ●

Report Source

Data Source ?

Local Database REST Enabled SQL Service Web Source

Editing Enabled ?

☐

* Source Type ?

Table SQL Query

* Table / View Owner ?

LOWCODE

* Table / View Name ?

PROJECT_BUDGET (table)

> Columns

< Cancel
Create

7. Click **Save and Run Page**. Log in using the Workspace username and password. The interactive grid displays. Your screen might look like:

Budget App lowcode

- Home
- Dashboard
- Project Budget Search
- Project Budget Report
- Calendar
- Interactive Grid**
- Administration

Project Budget Interactive Grid

Search: All Text Columns Go Actions Reset

	Id	Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget
	1	ACME Web E...	Identify serv...	1/26/2019	1/27/2019	Closed	John Watson	200	500
	2	ACME Web E...	Determine W...	1/28/2019	1/28/2019	Closed	James Cassi...	600	500
	3	ACME Web E...	Run installa...	1/31/2019	1/31/2019	Closed	James Cassi...	200	200
	4	ACME Web E...	Create pilot ...	2/2/2019	2/2/2019	Closed	John Watson	100	100
	5	ACME Web E...	Specify secu...	2/7/2019	2/7/2019	Open	John Watson	200	300
	6	ACME Web E...	Configure W...	2/8/2019	2/8/2019	Open	John Watson	200	100
	7	ACME Web E...	Select serve...	2/11/2019	2/13/2019	Open	James Cassi...	200	600
	8	Bug Tracker	Document q...	12/12/2017	12/15/2017	Closed	Myra Sutcliffe	3000	2000
	9	Bug Tracker	Review auto...	12/16/2017	12/19/2017	Closed	Myra Sutcliffe	750	1500
	10	Bug Tracker	Implement b...	12/31/2017	12/31/2017	Closed	Myra Sutcliffe	100	100
	11	Bug Tracker	Train develo...	1/7/2019	1/12/2019	On-Hold	Myra Sutcliffe	1000	2000
	12	Bug Tracker	Measure eff...	1/19/2019	1/19/2019	Pending	Myra Sutcliffe	0	500
	13	Convert Spr...	Collect missi...	1/25/2019	1/26/2019	Closed	Pam King	2500	4000

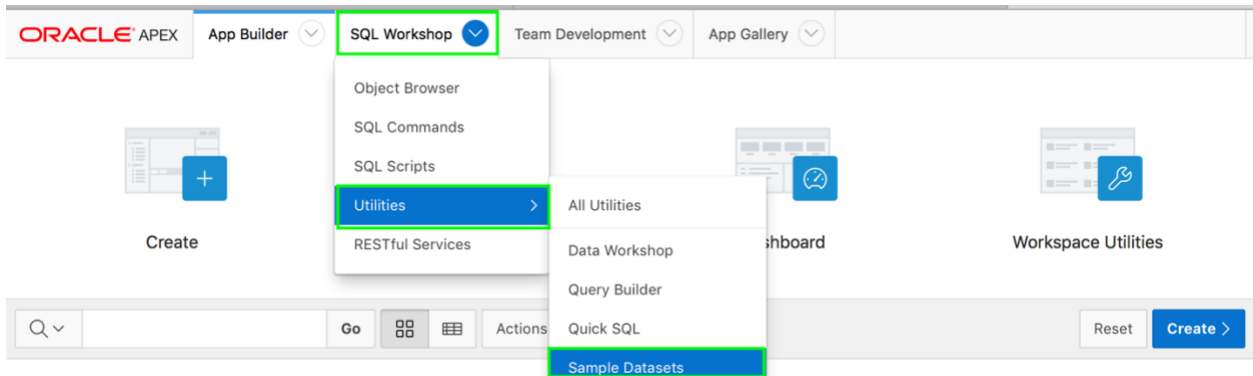
Home
Application 42700
Edit Page 7
Session
View Debug
Debug
Page Info
Quick Edit
Theme Roller
Total 73

8. In the Developer Toolbar, click **Home**.

HOL 5-4 Creating a Faceted Search Page

In this lab, you create an application by loading the sample EMP / DEPT data. The application includes a faceted search page. You review this report and perform some filtering of the data. Later, you edit the page and modify the facet properties.

1. Navigate to your Workspace home page. Navigate to **SQL Workshop > Utilities > Sample Datasets**.



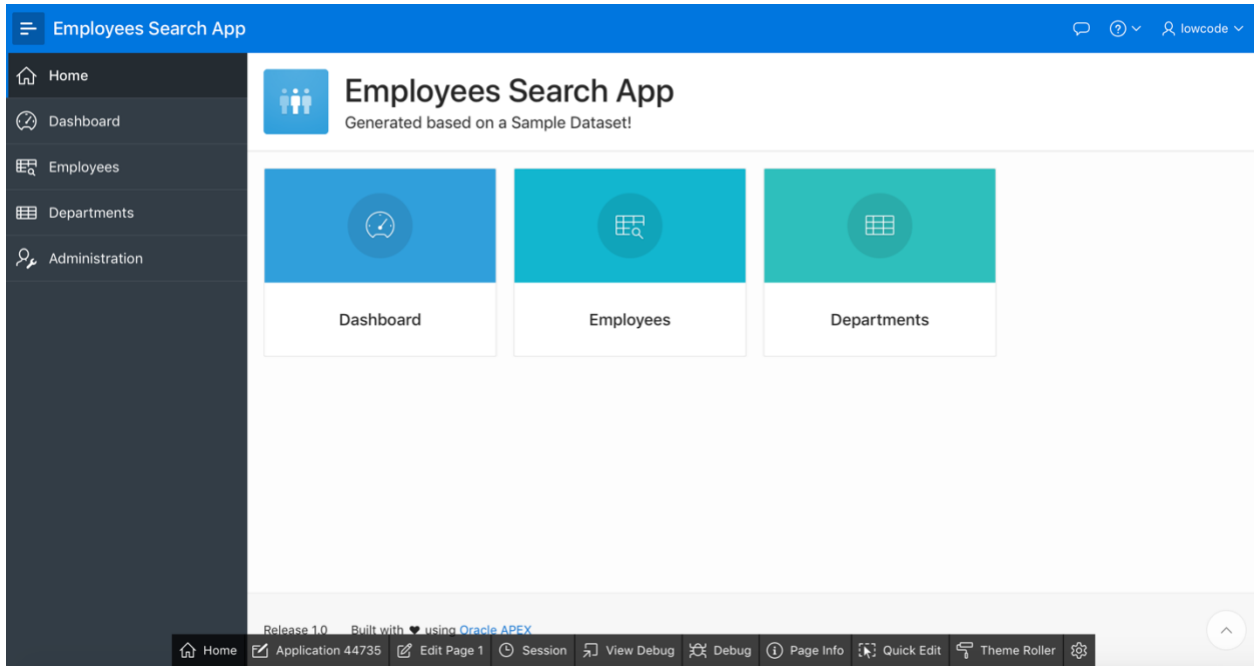
2. Click Install for EMP / DEPT. This installs the generic EMP and DEPT tables

Action	Name	Languages	Description	Schema	Date Installed	Refresh Available
<input type="button" value="Install"/>	Project Data	English	A collection of projects, milestones, tasks, and more. This dataset includes master-detail-detail relationships and a useful view for charting.			
<input type="button" value="Install"/>	EMP / DEPT	English, Chinese, Czech, French, German, Japanese, Korean, Polish, Russian, Spanish	The generic EMP and DEPT tables.			
<input type="button" value="Install"/>	HR Data	English	The generic HR tables commonly used by Oracle Education.			
<input type="button" value="Install"/>	Tasks Spreadsheet	English	A single table with unnormalized data containing tasks, dates, status, assigned to, cost, and budget.			
<input type="button" value="Install"/>	Customer Orders	English	A collection of customers, stores, products, and orders. This dataset includes JSON data for the product description, and longitude / latitude for the stores.			

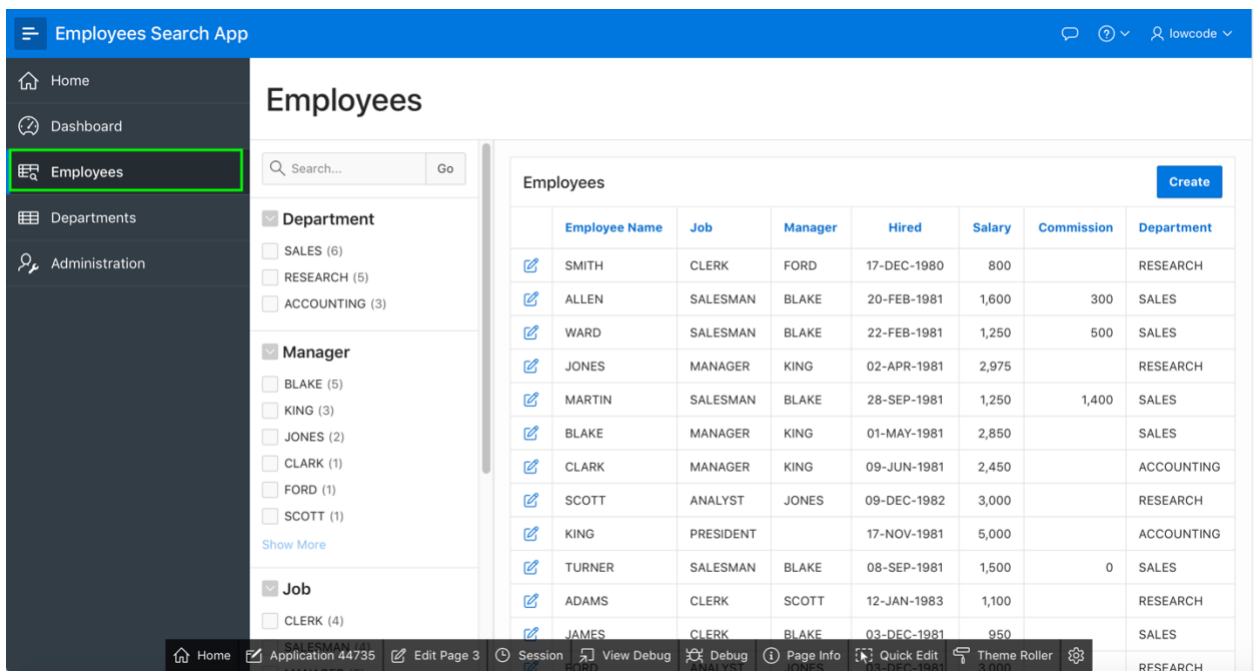
1 - 5

3. Click **Next**.
4. Click **Install Dataset**.
5. Click **Create Application**.
6. Enter **Employees Search App** for Name. Click **Create Application**.
7. The application is now successfully created. Click **Run Application**.

8. Login using your Workspace username and password.



9. In the left navigation menu, click Employees. The faceted search page is displayed.



10. Under Manager, select the **King** checkbox. Notice that the report is filtered and refreshed. Notice that based on this selection, values for other facets are also adjusted.

Employees

Search... Go

Department

☐ ACCOUNTING (1)

☐ RESEARCH (1)

☐ SALES (1)

Manager [Clear](#)

☐ BLAKE (5)

☒ **KING (3)**

☐ JONES (2)

☐ CLARK (1)

☐ FORD (1)

☐ SCOTT (1)

[Show More](#)

Job

☐ MANAGER (3)

Employees [Create](#)

	Employee Name	Job	Manager	Hired	Salary	Commission	Department
✎	JONES	MANAGER	KING	02-APR-1981	2,975		RESEARCH
✎	BLAKE	MANAGER	KING	01-MAY-1981	2,850		SALES
✎	CLARK	MANAGER	KING	09-JUN-1981	2,450		ACCOUNTING

Release 1.0 Built with ❤️ using [Oracle APEX](#)

11. Click **Clear** to remove the filter.

12. Now, under Job, select **CLERK**. Then, under Salary, select **900 – 1300**. Notice that the report is filtered and refreshed.

Employees

Department

☐ RESEARCH (1)

☐ SALES (1)

Manager

☐ BLAKE (1)

☐ SCOTT (1)

[Show More](#)

Job [Clear](#)

☒ **CLERK (2)**

☐ SALESMAN (2)

Salary [Clear](#)

☐ <900 (1)

☒ **900 - 1300 (2)**

☐ 1300 - 2000 (1)

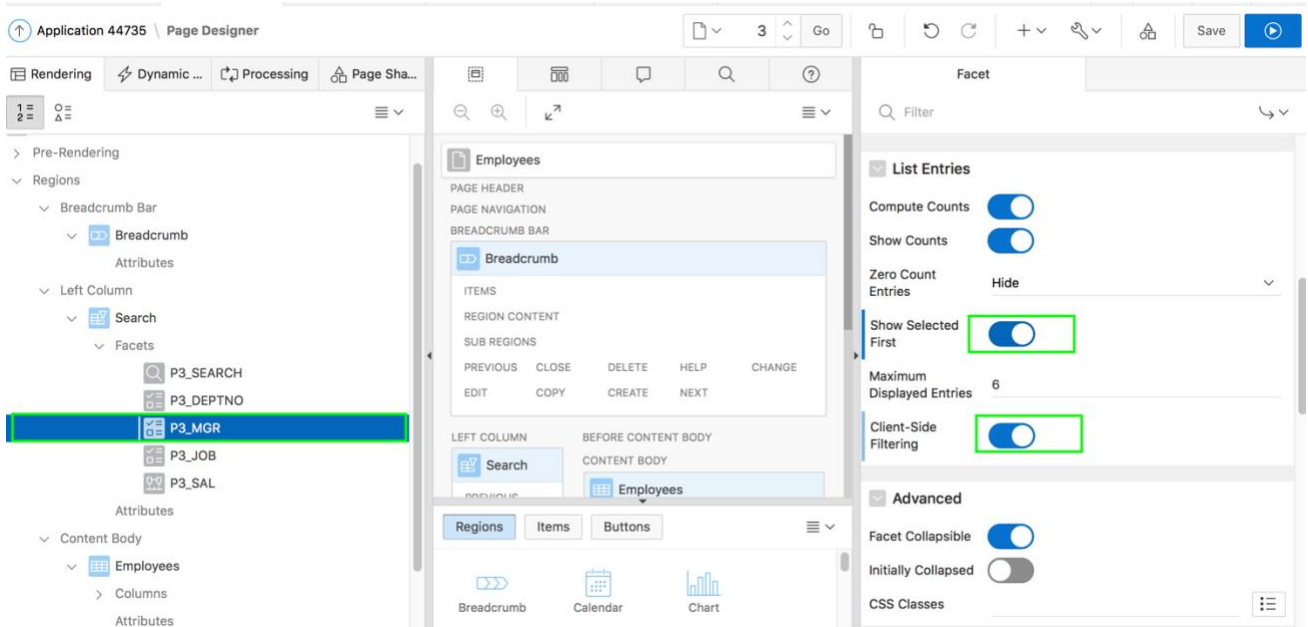
Employees [Create](#)

	Employee Name	Job	Manager	Hired	Salary	Commission	Department
✎	ADAMS	CLERK	SCOTT	12-JAN-1983	1,100		RESEARCH
✎	JAMES	CLERK	BLAKE	03-DEC-1981	950		SALES

13. Click **Clear** for both Salary and Job.

14. In the Developer Toolbar, click **Edit Page 3**.

15. Under Rendering, expand Facets and select **P3_MGR**.
16. In the property editor, navigate to List Entries and click to enable **Client-side Filtering** and **Show Selected First**. Click **Save and Run Page**.



17. Under Manager, select **KING**. Notice that the report is filtered and refreshed. Also, under the Manager facet you see KING appears first.

Employees

☒ **Department**

- ☐ SALES (6)
- ☐ RESEARCH (5)
- ☐ ACCOUNTING (3)

☒ **Manager**

- ☐ BLAKE (5)
- ☒ **KING (3)**
- ☐ JONES (2)
- ☐ CLARK (1)
- ☐ FORD (1)
- ☐ SCOTT (1)

[Show More](#)

Employees <input type="button" value="Create"/>							
	Employee Name	Job	Manager	Hired	Salary	Commission	Department
	SMITH	CLERK	FORD	17-DEC-1980	800		RESEARCH
	ALLEN	SALESMAN	BLAKE	20-FEB-1981	1,600	300	SALES
	WARD	SALESMAN	BLAKE	22-FEB-1981	1,250	500	SALES
	JONES	MANAGER	KING	02-APR-1981	2,975		RESEARCH
	MARTIN	SALESMAN	BLAKE	28-SEP-1981	1,250	1,400	SALES
	BLAKE	MANAGER	KING	01-MAY-1981	2,850		SALES
	CLARK	MANAGER	KING	09-JUN-1981	2,450		ACCOUNTING
	SCOTT	ANALYST	JONES	09-DEC-1982	3,000		RESEARCH
	KING	PRESIDENT		17-NOV-1981	5,000		ACCOUNTING
	TURNER	SALESMAN	BLAKE	08-SEP-1981	1,500	0	SALES
	ADAMS	CLERK	SCOTT	12-JAN-1983	1,100		RESEARCH

Employees

Search... Go

☒ **Department**

☐ ACCOUNTING (1)

☐ RESEARCH (1)

☐ SALES (1)

☒ **Manager** [Clear](#)

Filter Manager

☒ **KING (3)**

☐ BLAKE (5)

☐ JONES (2)

☐ CLARK (1)

☐ FORD (1)

☐ SCOTT (1)

[Show More](#)

Employees

[Create](#)

	Employee Name	Job	Manager	Hired	Salary	Commission	Department
✎	JONES	MANAGER	KING	02-APR-1981	2,975		RESEARCH
✎	BLAKE	MANAGER	KING	01-MAY-1981	2,850		SALES
✎	CLARK	MANAGER	KING	09-JUN-1981	2,450		ACCOUNTING

- Click **Clear** for Manager.
- Under Manager, enter K in the Filter Manager box. Notice that the facets' values are updated. Then enter I and see that the values are further refreshed.

▼ Department

☐ SALES (6)

☐ RESEARCH (5)

☐ ACCOUNTING (3)

▼ Manager

☐ BLAKE (5)

☐ KING (3)

☐ JONES (2)

☐ CLARK (1)

☐ FORD (1)

☐ SCOTT (1)

[Show More](#)

Employees

▼ Department

☐ SALES (6)

☐ RESEARCH (5)

☐ ACCOUNTING (3)

▼ Manager

☐ BLAKE (5)

☐ KING (3)

☐ CLARK (1)

▼ Job

☐ CLERK (4)

☐ SALESMAN (4)

☐ MANAGER (3)

Employees

☒ **Department**

- ☐ SALES (6)
- ☐ RESEARCH (5)
- ☐ ACCOUNTING (3)

☒ **Manager**

- ☐ KING (3)

☒ **Job**

- ☐ CLERK (4)
- ☐ SALESMAN (4)
- ☐ MANAGER (3)
- ☐ ANALYST (2)
- ☐ PRESIDENT (1)

20. Clear the Filter Manager text box.
21. In the Developer Toolbar, click **Edit Page 3**.
22. Under Rendering, expand Facets and select **P3_SAL**.

23. In the property editor, navigate to List of Values and click **Static Values**.

The screenshot shows the Oracle APEX property editor interface. At the top, there is a 'Facet' label and a search bar. Below this is a 'Filter' section with a magnifying glass icon and a dropdown arrow. The main section is titled 'List of Values' with a dropdown arrow. Underneath, there is a 'Type' section with a dropdown menu currently set to 'Static Values'. Below the 'Type' section, there is a text area containing the following values: '<900, 900 - 1300, 1300 - 2000, 2000 - 2500, >=2500'. This text area is highlighted with a green border.

24. In the Static Values dialog, adjust the display and return values and click **OK**.

- Display Value: **900 – 1500** ; Return Value: **900 | 1500**
- Display Value: **1500 – 2000** ; Return Value: **1500 | 2000**

Static Values

✕

▼ Values

Display Value	Return Value			
<900	900	✕		↓
900 - 1500	900 1500	✕	↑	↓
1500 - 2000	1500 2000	✕	↑	↓
2000 - 2500	2000 2500	✕	↑	↓
>=2500	2500	✕	↑	↓
		✕	↑	

> Sort

Cancel

OK

25. Click **Save and Run Page**.

26. In the report page, scroll down to Salary facet. Notice that the range values are now updated.

Employees

- ☐ JONES (2)
☐ CLARK (1)
☐ FORD (1)
☐ SCOTT (1)

Show More

Job

- ☐ CLERK (4)
☐ SALESMAN (4)
☐ MANAGER (3)
☐ ANALYST (2)
☐ PRESIDENT (1)

Salary

- ☐ <900 (1)
☒ 900 - 1500 (5)
☐ 1500 - 2000 (2)
☐ 2000 - 2500 (1)
☐ >=2500 (5)

Employees

Create

	Employee Name	Job	Manager	Hired	Salary	Commission	Department
	SMITH	CLERK	FORD	17-DEC-1980	800		RESEARCH
	ALLEN	SALESMAN	BLAKE	20-FEB-1981	1,600	300	SALES
	WARD	SALESMAN	BLAKE	22-FEB-1981	1,250	500	SALES
	JONES	MANAGER	KING	02-APR-1981	2,975		RESEARCH
	MARTIN	SALESMAN	BLAKE	28-SEP-1981	1,250	1,400	SALES
	BLAKE	MANAGER	KING	01-MAY-1981	2,850		SALES
	CLARK	MANAGER	KING	09-JUN-1981	2,450		ACCOUNTING
	SCOTT	ANALYST	JONES	09-DEC-1982	3,000		RESEARCH
	KING	PRESIDENT		17-NOV-1981	5,000		ACCOUNTING
	TURNER	SALESMAN	BLAKE	08-SEP-1981	1,500	0	SALES
	ADAMS	CLERK	SCOTT	12-JAN-1983	1,100		RESEARCH
	JAMES	CLERK	BLAKE	03-DEC-1981	950		SALES



Oracle is committed to developing practices and products that help protect the environment

Oracle Corporation
 World Headquarters
 500 Oracle Parkway
 Redwood Shores, CA 94065
 U.S.A.

Worldwide Inquiries:
 Phone: +1.650.506.7000
 Fax: +1.650.506.7200
oracle.com

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