



Oracle Application Express: Developing Database Web Applications

Hands-On-Labs Guide

Unit 15: Creating and Using Dynamic Actions and Plug-ins

This exercise includes nine hands-on-labs. HOL 15-1 through 15-8 use the Demo Projects application.

HOL 15-1 Creating and Using a Dynamic Action on the Maintain Project Page: In this lab, you add a dynamic action on the Maintain Project page to show or hide the Completed Date based on the value of Status.

HOL 15-2 Creating and Using a Dynamic Action on the Maintain Task Page: In this lab, you add a dynamic action on the Maintain Task page to populate the Due Date whenever the Milestone is changed.

HOL 15-3 Creating and Using Dynamic Actions on the Project Tree Page: This lab covers creating two buttons that you use to expand and contract the project tree nodes. You create a dynamic action on each of these buttons. Then, for each of the button, you set the action as defined by the dynamic action.

HOL 15-4 Creating and Using a Plug-in: In this hands-on lab, you create a copy of the Badge List Plug-in from the Sample Charts packaged app. Then, on the Reports page, you create a badge list region. On this region, you display three different badges: Open Projects, Upcoming Milestones, and Open Tasks.

HOL 15-5 Adding Additional Reports: In this lab, you clean up the Dashboard page by moving two regions as separate pages. Later, you add in new regions to the Dashboard page.

HOL 15-6 Updating the Reports Page: In this lab, you add new components to the Reports page of the Demo Projects application.

HOL 15-7 Updating the Dashboard Page: In this lab, you update the Dashboard page of the Demo Projects application. The Dashboard should display the Project Status chart, Upcoming Milestones report and Incomplete Tasks.

HOL 15-8 Updating the Home Page: In this lab, you update the navigation menu of the Demo Projects application and also update the List region on the Home page.

HOL 15-9 Making the Music Video Report Searchable: In this lab, you use the APEX and REST application that you created in HOL 11-2. You expand the music video report and make it dynamically searchable.

HOL 15-1: Creating and Using a Dynamic Action on the Maintain Project Page

On the Maintain Project page, the Completed Date field is displayed irrespective of the value of Status. In this lab, you add a dynamic action on the page to show or hide the Completed Date based on the value of Status.

1. Navigate to App Builder and click the **Demo Projects** application.

Application	Name	Pages	Type	Updated By	Updated	Run
94613	Demo Projects	35	Database Application	nimuthapa@gmail.com	32 minutes ago	(Run)
100312	Sample Reporting	39	Productivity or Sample Application	nimuthapa@gmail.com	2 weeks ago	(Run)
102405	Budget App	30	Database Application	nimuthapa@gmail.com	5 days ago	(Run)
105804	Hardware	4	Database Application	nimuthapa@gmail.com	11 days ago	(Run)

2. In the Demo Projects application home page, click **Shared Components**.

Run Application	Supporting Objects	Shared Components	Utilities	Export / Import
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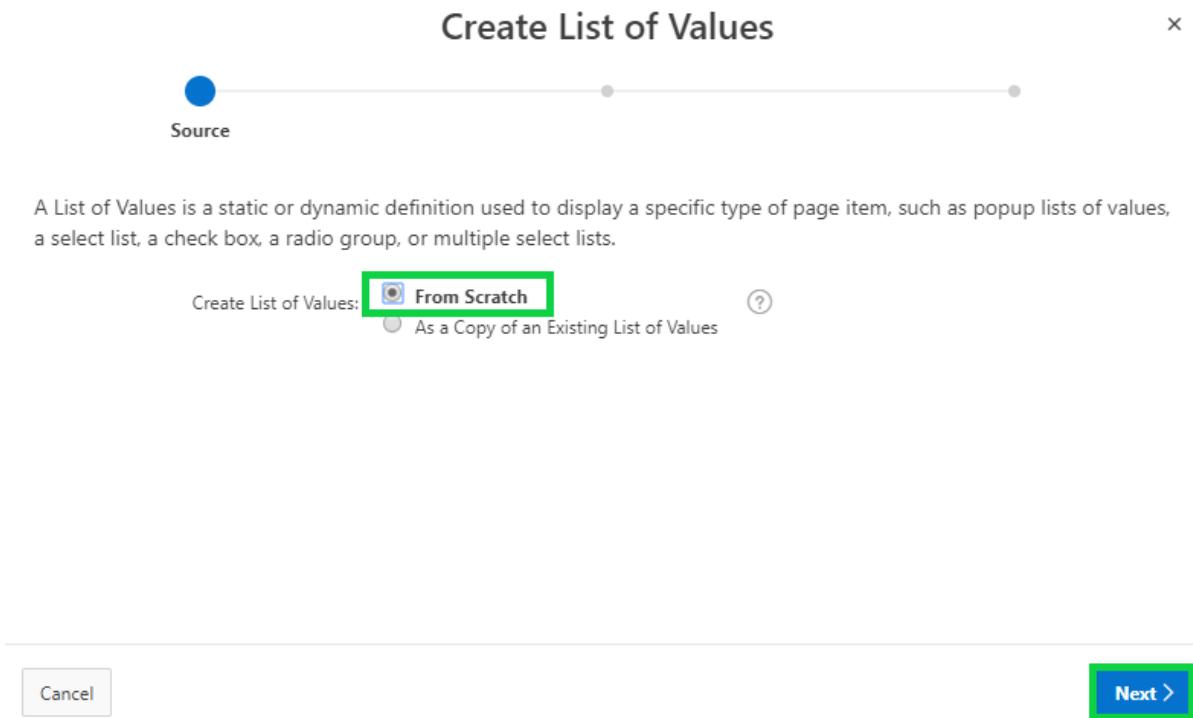
3. You want to create a dynamic LOV for Status. Under Other Components, click **List of Values**.

The screenshot shows the Oracle Application Express Shared Components interface. The top navigation bar includes links for Application Logic, Security, and Other Components. The 'Other Components' section is currently selected and highlighted with a green border. Inside this section, the 'List of Values' item is also highlighted with a green border. Other items listed include Plug-ins, Component Settings, Shortcuts, and Email Templates.

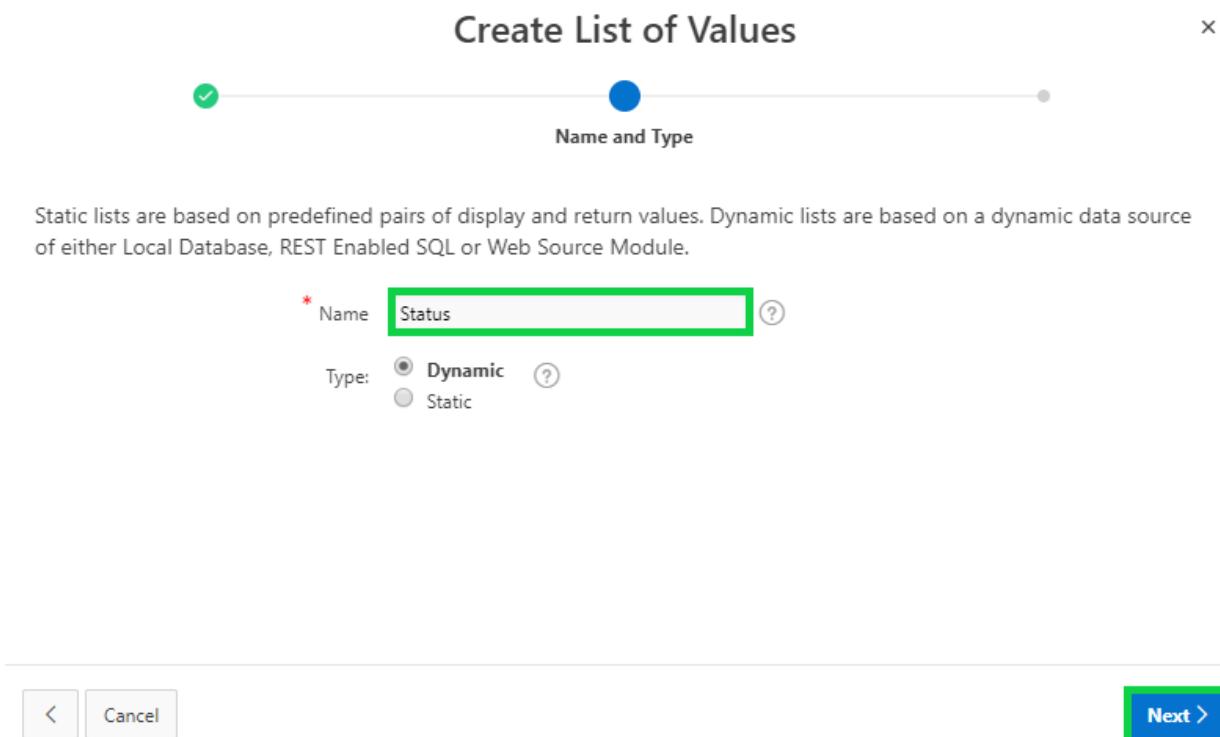
4. Click **Create**.

The screenshot shows the Oracle Application Express Lists of Values page. The top navigation bar includes links for App Builder, SQL Workshop, Team Development, and App Gallery. The main content area shows a table with columns for Name, Type, Updated, Entry Count, Subscribed From, and Subscribers. A search bar and a 'Create' button are visible at the top of the table area. The 'Create' button is highlighted with a green border.

5. Accept the default for Source and click **Next**.



6. For Name, enter **Status**, and click **Next**.



7. In List of Values Source, for Source Type select **SQL Query**, and for Query, copy and paste the following SQL:

```
select description d, cd r
from demo_proj_status
order by display_order
```

Click Next.

Create List of Values

List of Values Source

Data Source Local Database REST Enabled SQL Service Web Source ?

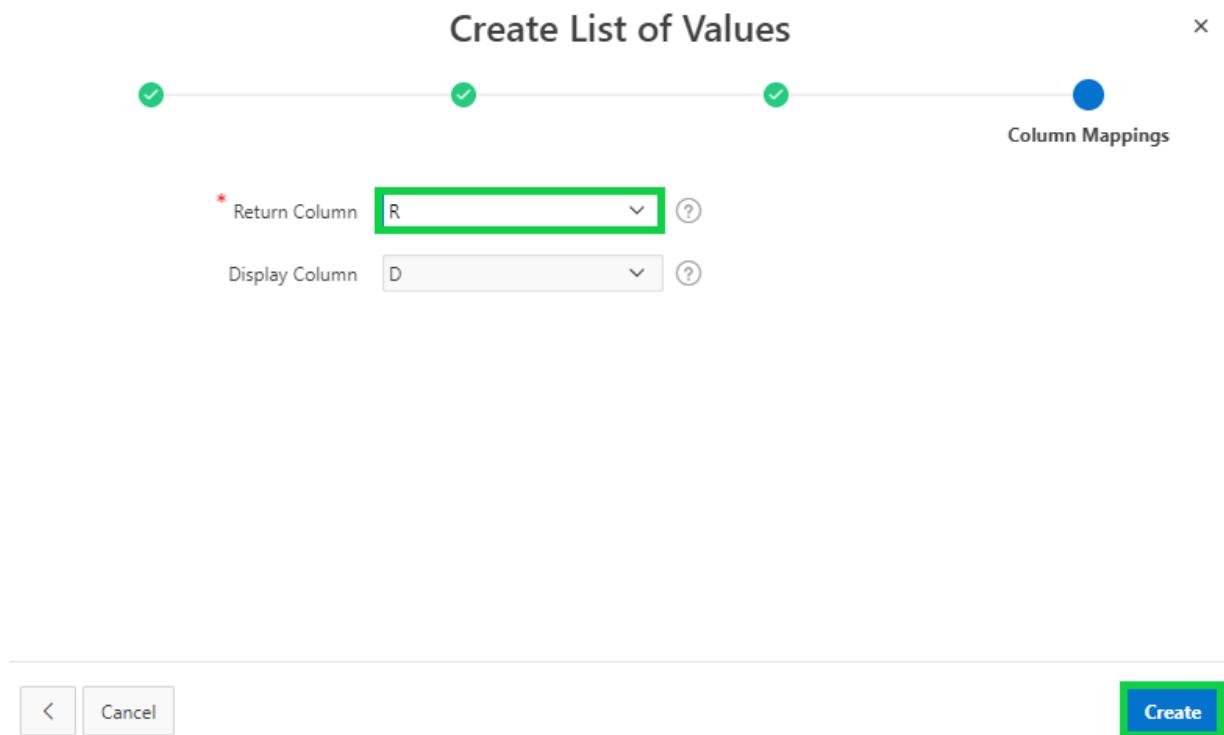
* Source Type Table SQL Query Function Returning SQL ?

* Enter a SQL SELECT statement ?

```
1 select description d, cd r
2 from demo_proj_status
3 order by display_order|
```

< Cancel Next

8. In Column Mappings, Select **R** for Return Column and click **Create**.



In the Application Express toolbar, click **Run Page <n>**.

9. In the Demo Projects application runtime environment, click **Projects** in the navigation menu. Then, in the interactive report, select a project name with status as IN-PROGRESS or ASSIGNED.

In the dialog page, for Status, select each of the values Assigned, Completed, and In-Progress. Notice that the Completed Date field is displayed irrespective of the status.

You want to create a dynamic action that will allow the display of the Completed Date field only if the status is *Completed*.

In the Developer toolbar, click **Edit Page 5**.

Maintain Project

Project Lead: Miyazaki Yokohama

Name: Migrate Legacy Applications

Description: Move the data and redevelop the applications currently running on top of legacy servers

Status Cd: In-Progress

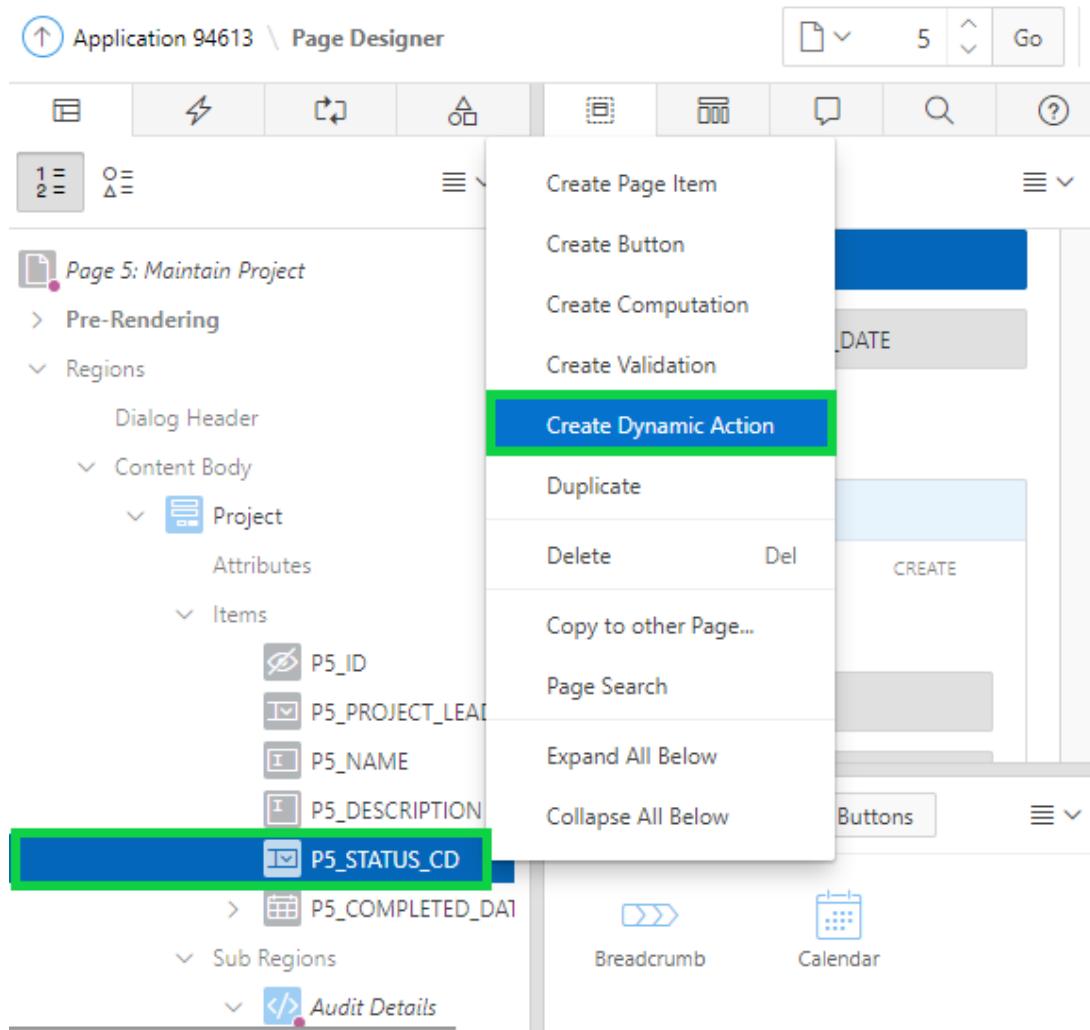
Completed Date:

Audit Details

Apply Changes

Edit Page 5

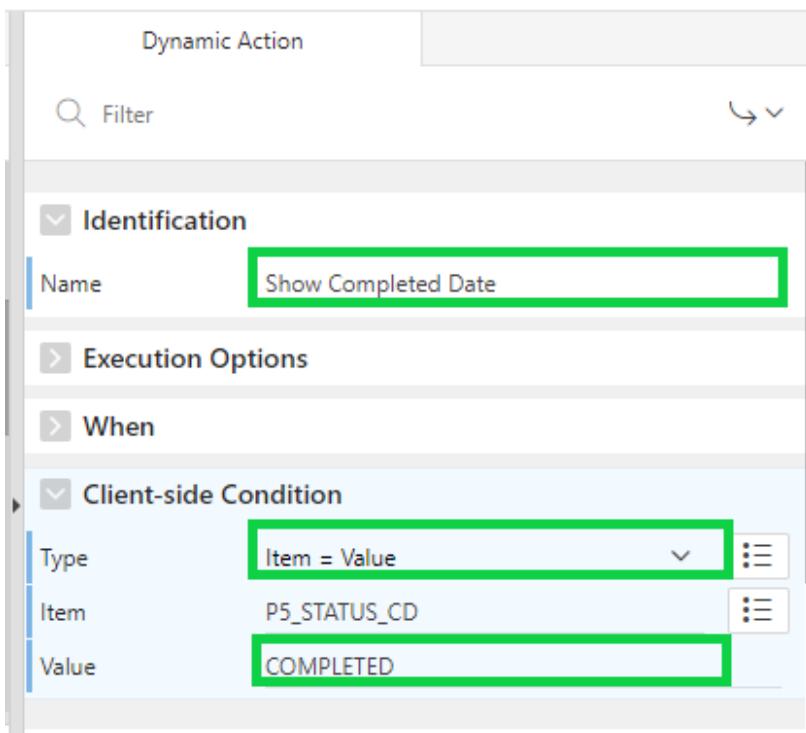
10. In the page designer, expand **Regions > Project > Items**.
Right-click the **P5_STATUS_CD** item and select **Create Dynamic Action**.



11. In the property editor:

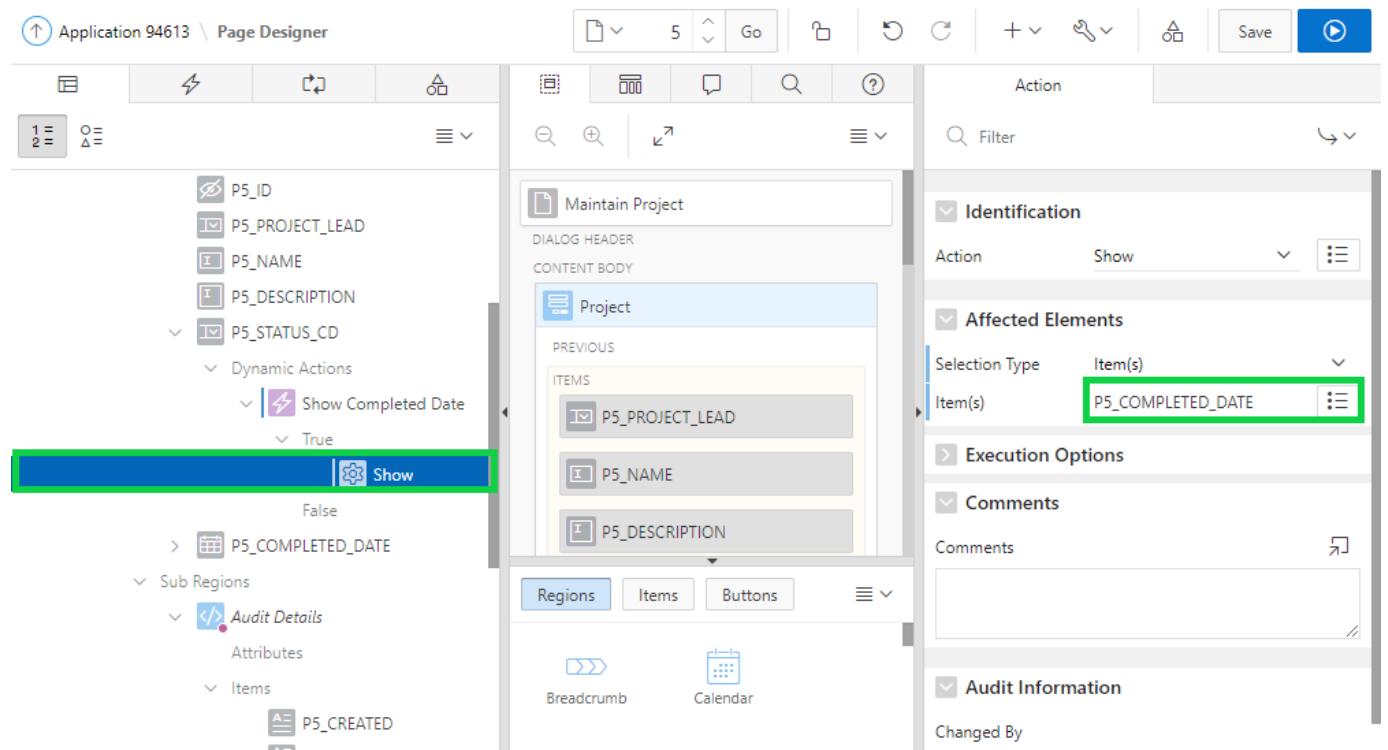
- Identification > Name: Enter **Show Completed Date**
- Client-side Condition > Type: Select **Item = Value**
- Client-side Condition > Value: Enter **COMPLETED**

Note: The capitalization and spelling of the value must match the data entry value exactly in order for the dynamic action to fire.

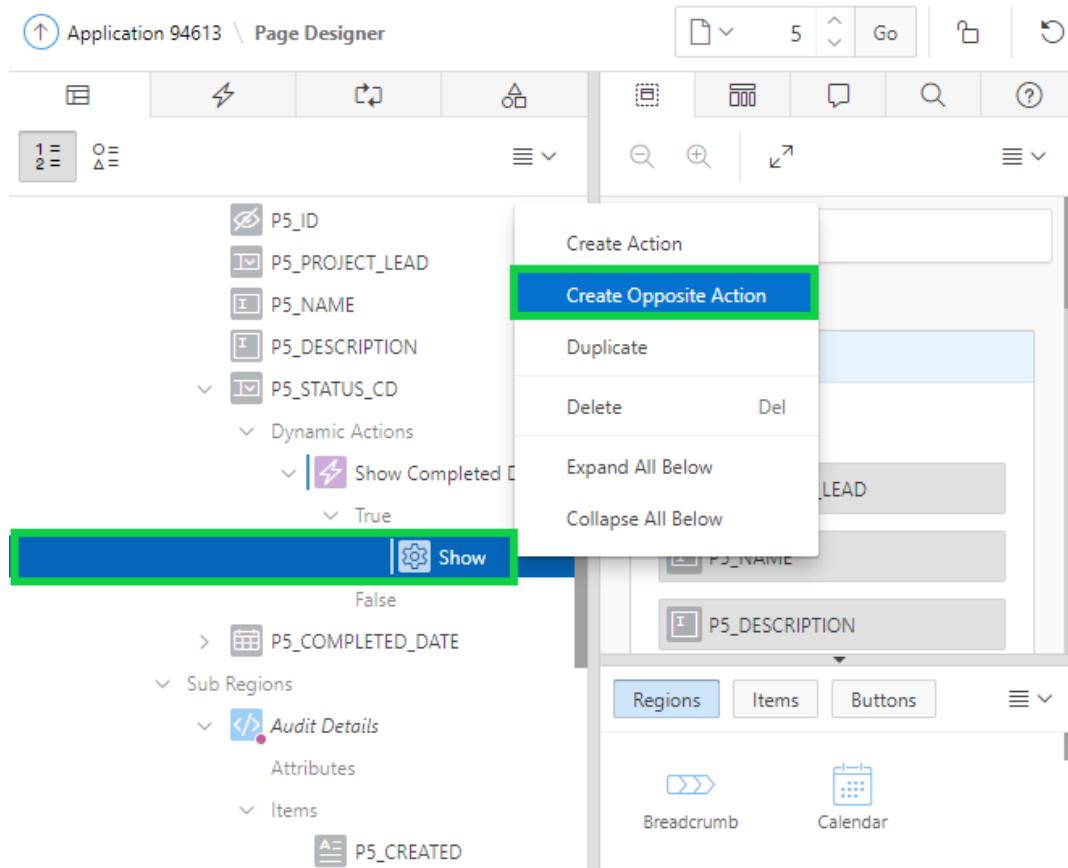


12. In the Rendering tree, under the Show Completed Date dynamic action, expand the **True** node and select **Show**.

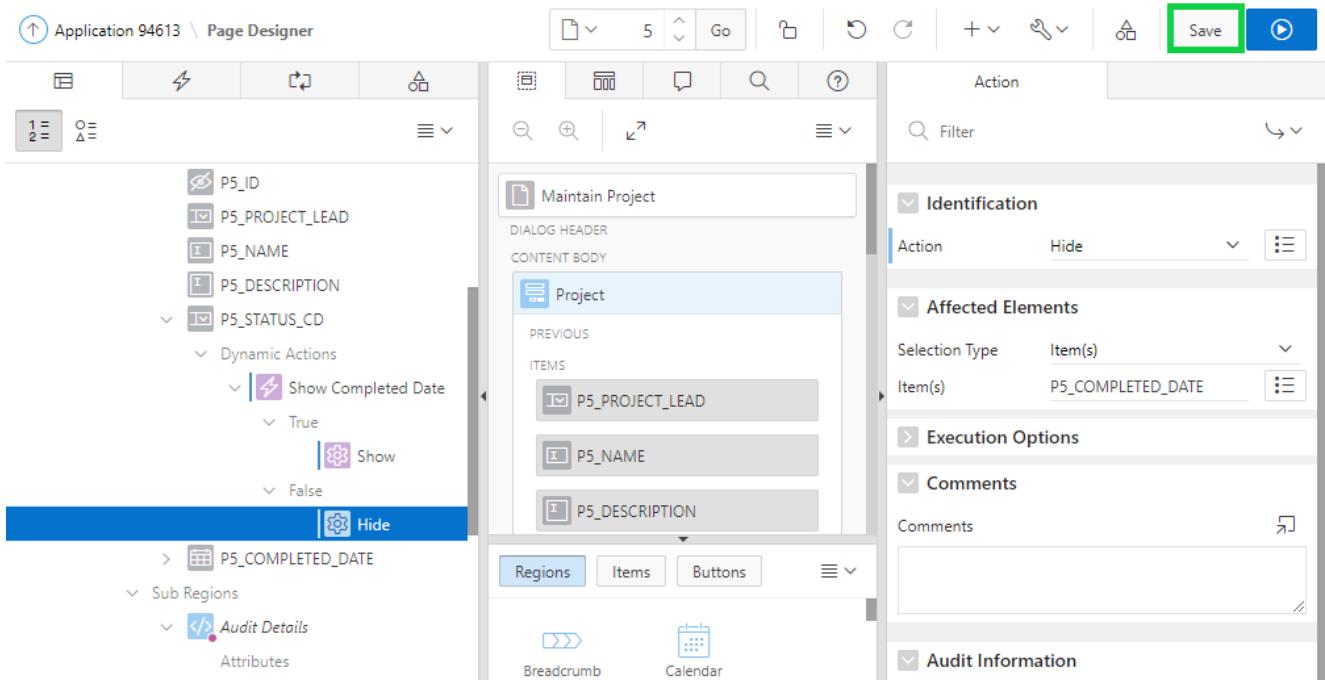
In the Property Editor, for Item(s) select **P5_COMPLETED_DATE**.



13. Right-click **Show** and select **Create Opposite Action**.



14. Notice that the opposite action is created now. The Completed Date field will be hidden if the Status includes a value other than COMPLETED.
Click **Save**.



15. Now, you can verify to see if the dynamic action works as expected.

Navigate to the Demo Projects application runtime environment. If the Maintain Project dialog is open, click **Cancel**.

In the navigation menu, click **Projects** and then in the report, click any project name with the Status as **COMPLETED**.

Notice that the Completed Date field is displayed.

The screenshot shows the 'Maintain Project' dialog for a project titled 'Train Developers on Web development tool'. The 'Status Cd' field is set to 'Completed'. The 'Delete' button at the bottom left is highlighted with a red box. The 'Audit Details' section is collapsed.

Milestones	Tasks
5	17
2	6
3	9
2	7
0	6
12	45

16. In the Maintain Project dialog, for Status, select either Assigned or In-Progress.
 Notice that this time, the Completed Date field is hidden.
 Click the **Cancel** button.

Maintain Project



Project Lead
Lucille Beatie

Name
Train Developers on Web development tool

Description
Ensure all developers who will be developing with the new tool get the appropriate training.

Status Cd
In-Progress

Audit Details

Cancel

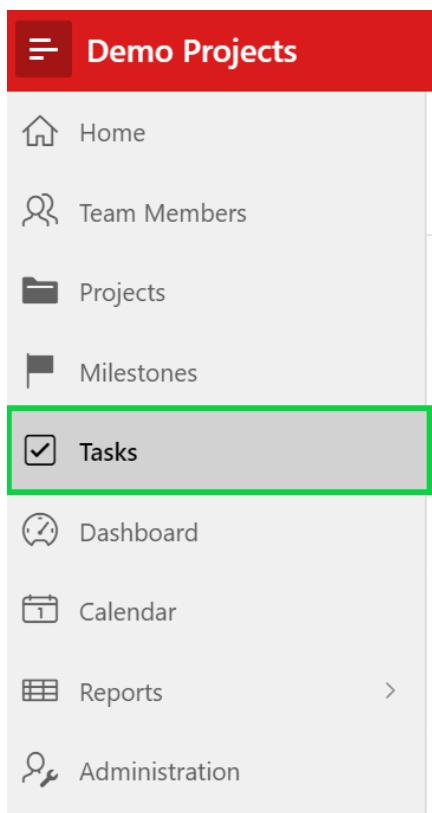
Delete

Apply Changes

HOL 15-2: Creating and Using a Dynamic Action on the Maintain Task Page

In this hands-on lab, you add a dynamic action on the Maintain Task page to populate the Due Date whenever the Milestone is changed.

1. In the Demo Projects application runtime environment, click **Tasks** in the navigation menu.



2. In the interactive report, click the Edit icon for a task name.

Tasks

Task	Assignee	Start Date	End Date	Completed?
Identify Server Requirements	Nimuthapa	10/13/2019	10/14/2019	Yes
Install Web development tool	Mei Yu	10/15/2019	10/15/2019	Yes
Configure Web Listeners	Harold Youngblood	10/15/2019	10/15/2019	Yes
Configure Web development tool Instance Administration Settings	Bernard Jackman	10/16/2019	10/16/2019	Yes

3. In the Developer Toolbar, click **Edit Page 9**.

On this page, you want to populate the Due Date whenever the Milestone is changed. In order to achieve this, you will use a Dynamic Action with an action of Set Value, which can execute an AJAX call to retrieve data from the database.

Maintain Task

Project
Configure Web Development Tool Environment

Milestone
-Select Milestone-

Task
Identify Server Requirements

Description
Determine which databases will be used to install Web development tool for Development, QA, and Production.
Also specify which Web Listeners will be used for the three environments.

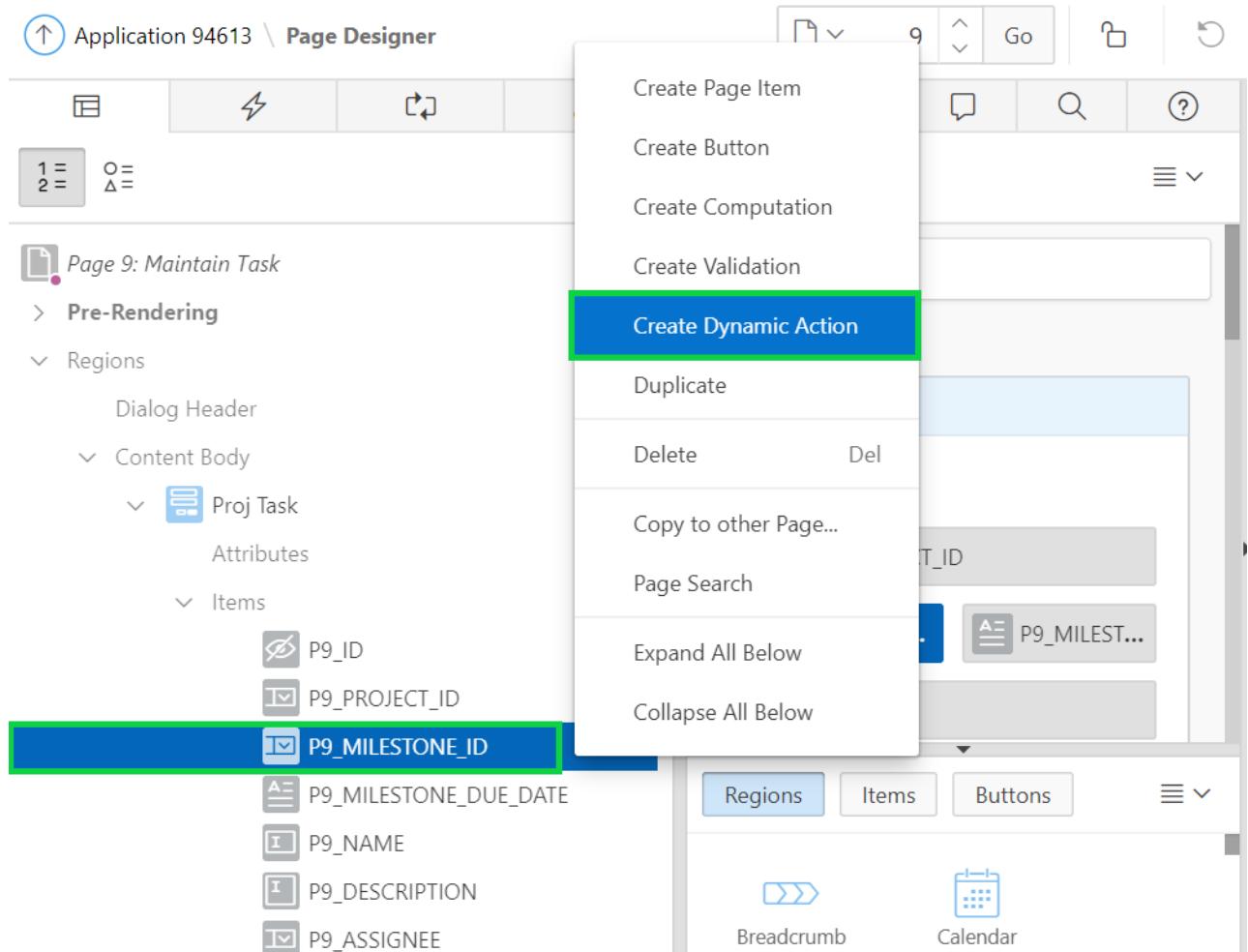
Assignee
Nimuthapa

Start Date
10/13/2019

Cancel Delete Apply Changes

Home Application 94613 Edit Page 9 Session View Debug Debug Page Info Quick Edit Theme Roller

- Under Rendering > Regions > Maintain Task, expand items.
Right-click **P9_MILESTONE_ID** and select **Create Dynamic Action**.

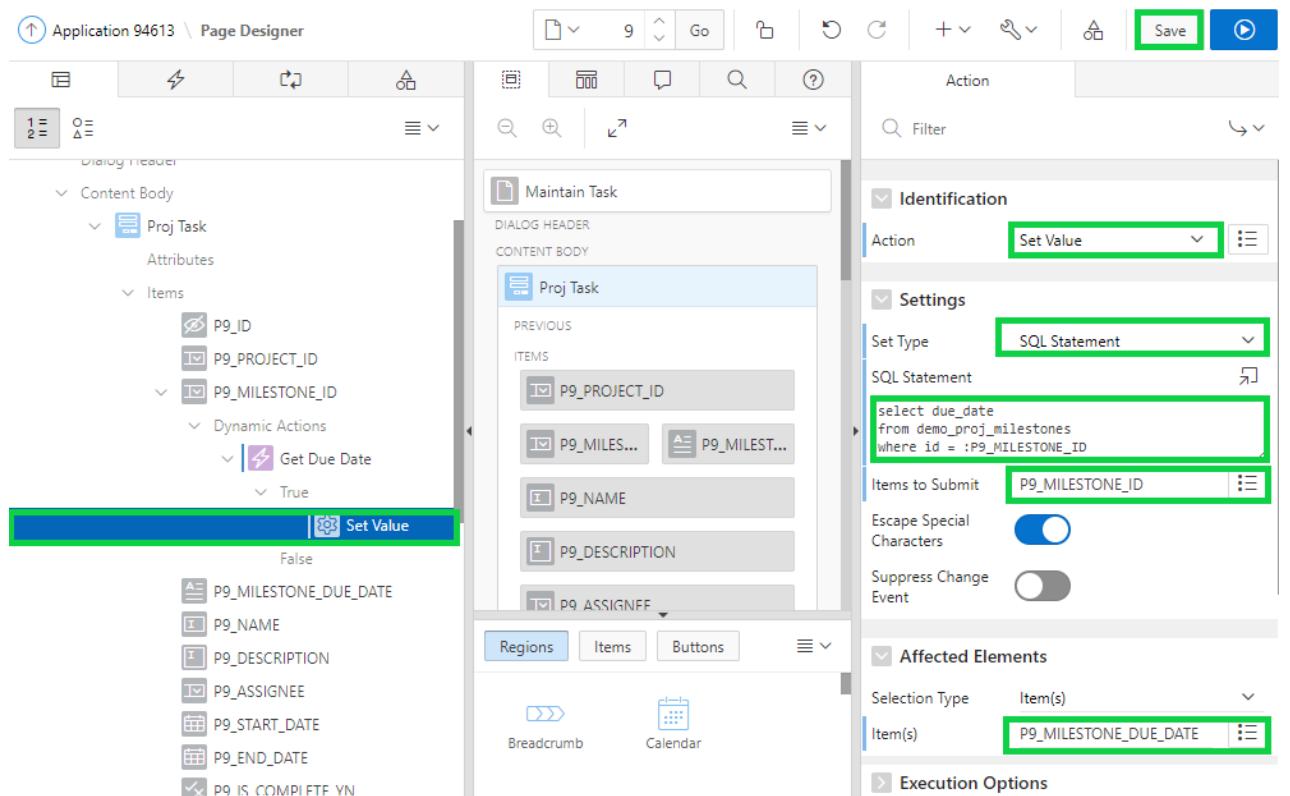


- For the new Dynamic Action, in the Property Editor, for Name enter **Get Due Date**.
- In the Rendering tree, under the P9_MILESTONE_ID item, select the **Action** under the True node (currently labeled X Show).
In the Property Editor:
 - Identification: Action - select **Set Value**
 - Settings: Set Type - select **SQL Statement**
 - Settings: SQL Statement - copy and paste the following code:

```
select due_date
from demo_proj_milestones
where id = :P9_MILESTONE_ID
```

- Settings: Items to Submit - select **P9_MILESTONE_ID**

- Affected Elements: Item(s) - select **P9_MILESTONE_DUE_DATE**



Click Save.

- Navigate to Demo Projects application runtime environment.
In the navigation menu, click **Tasks**.
In the interactive report, click the Edit icon for a task with milestones.

The screenshot shows the Oracle Application Express Demo Projects application. The left sidebar has a checked 'Tasks' option. The main area displays three tables of tasks:

- Milestone 1: Define Production App Scope**

Task	Assignee	Start Date	End Date	Completed?
Finalize User Experience	Madison Smith	11/25/2019	11/26/2019	No
Finalize Partner App Data Model	Daniel James Lee	11/25/2019	11/26/2019	No
Define production scope of Partner Portal App.	Nimuthapa	11/25/2019	11/26/2019	No
- Milestone 2: Perform Beta testing with select Partners**

Task	Assignee	Start Date	End Date	Completed?
Train Partners	Miyazaki Yokohama	12/4/2019	12/4/2019	No
Monitor Partners	Eva Jelinek	12/5/2019	12/10/2019	No
Review Beta Feedback	Nimuthapa	12/11/2019	12/11/2019	No
- Milestone 3: Roll out Phase 1 of Partner Portal app**

Task	Assignee	Start Date	End Date	Completed?
Install Partner Portal app onto Production Server	Tameka Hall	1/8/2020	1/8/2020	No

- Try selecting different values for **Milestone** to see how the Due Date is updated based on the selection.

Maintain Task

Project
Develop Production Partner Portal

Milestone
Build Phase 1 of Production Partner Portal App

Due Date
12/3/2019

Task
Finalize User Experience

Description
Write developer standards on UX and development standards on how partners will interact with the application.

Assignee
Madison Smith

Start Date
11/25/2019

End Date
11/26/2019

Completed?

Maintain Task



Project

Develop Production Partner Portal

Milestone

Define Production App Scope

Due Date

11/26/2019

-Select Milestone-

Build Phase 1 of Production Partner Portal App

Complete Phase 1 Development of Partner Portal app

Define Production App Scope

Perform Beta testing with select Partners

Roll out Phase 1 of Partner Portal app

on how partners will interact with the application.

Assignee

Madison Smith

Start Date

11/25/2019



End Date

11/26/2019

[Cancel](#)[Delete](#)[Apply Changes](#)

Maintain Task

Project

Develop Production Partner Portal



Milestone

Complete Phase 1 Development of Partner Portal a

Due Date

1/7/2020

Task

Finalize User Experience

Description

Write developer standards on UX and development standards on how partners will interact with the application.

Assignee

Madison Smith



Start Date

11/25/2019



End Date

11/26/2019



Completed?



[Cancel](#)

[Delete](#)

[Apply Changes](#)

HOL 15-3: Creating and Using Dynamic Actions on the Project Tree Page

In this lab, you update the Project Tree page that you created in HOL 14-6. You add two buttons: Collapse All and Expand All. You use them to expand and contract the project tree nodes. You also create a dynamic action on each of these buttons. Then, for each of the button, you set the action as defined by the dynamic action.

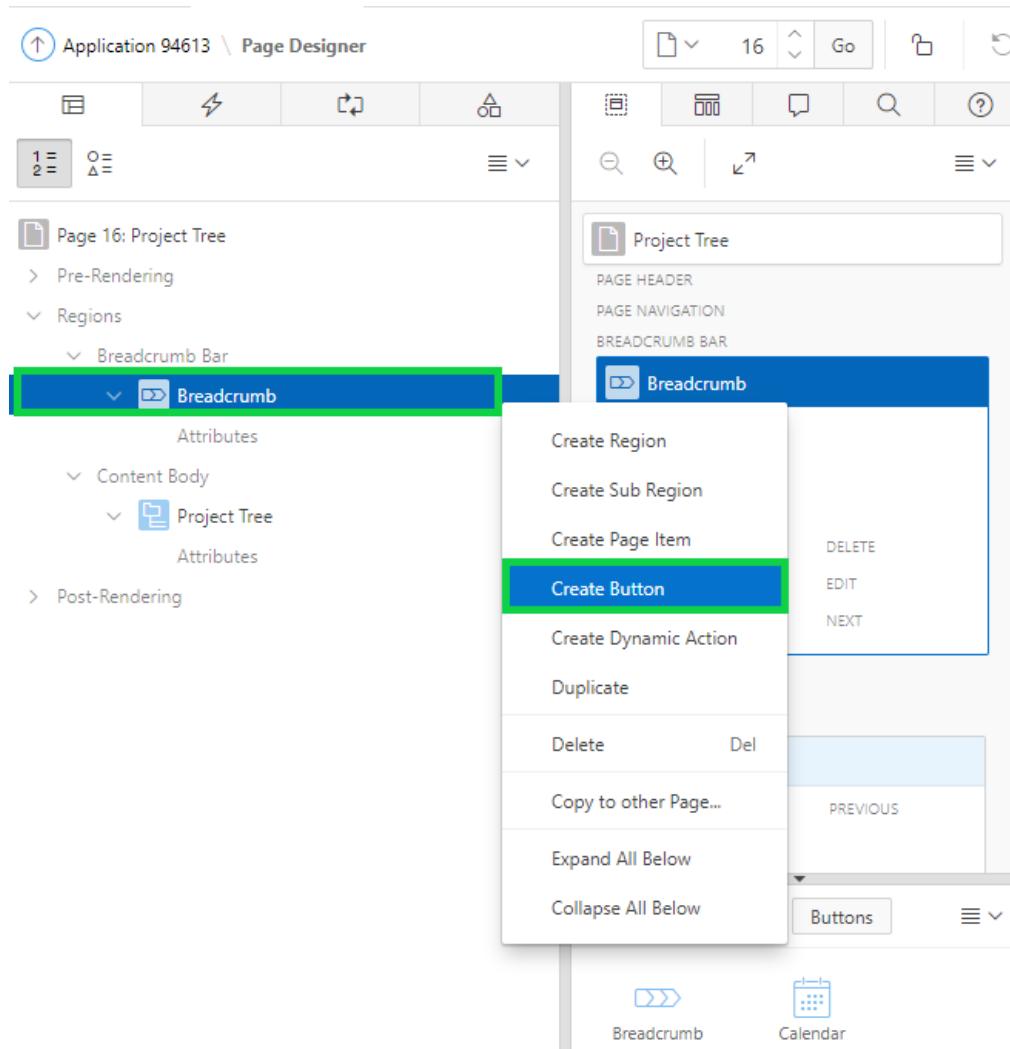
1. Navigate to Demo Projects application runtime environment. In the navigation menu, under Reports, click **Project Tree**.

In the Developer Toolbar, click **Edit Page <n>**.

2. Now, to expand and collapse the project tree nodes, you want to create Expand All and Collapse All buttons on the Project Tree button. These buttons' actions are defined by dynamic actions.

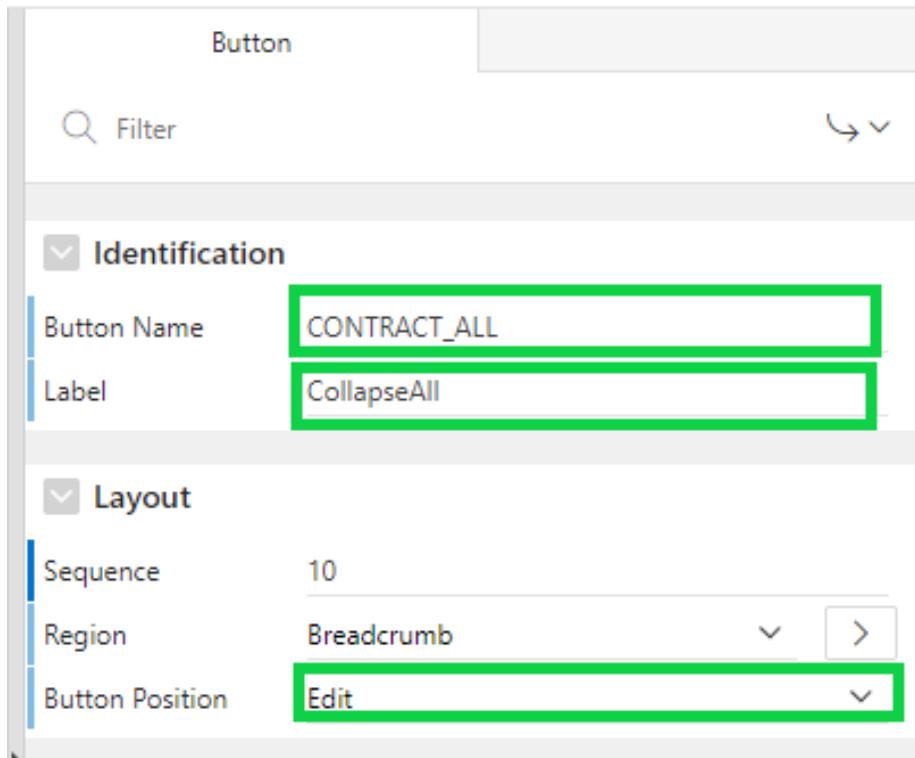
Under Rendering, expand **Regions > Breadcrumb**.

Right-click **Breadcrumb** and select **Create Button**.

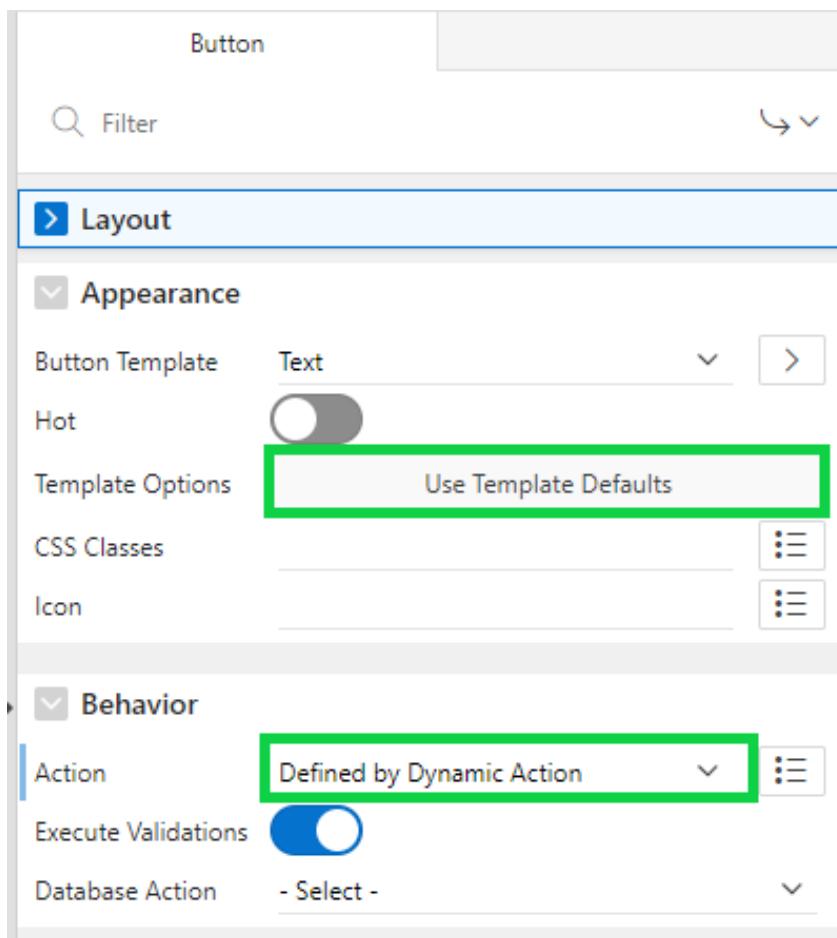


3. In the Property Editor:

- Identification > Button Name: Enter **CONTRACT_ALL**
- Identification > Label: Enter **Collapse All**
- Layout > Button Position: Select **Edit**



4. In the Property Editor, for Behavior > Action: Select **Defined by Dynamic Action**. Under Appearance, click **Template Options** button.



5. Deselect the **Use Template Defaults** check box and click **OK**.

Template Options

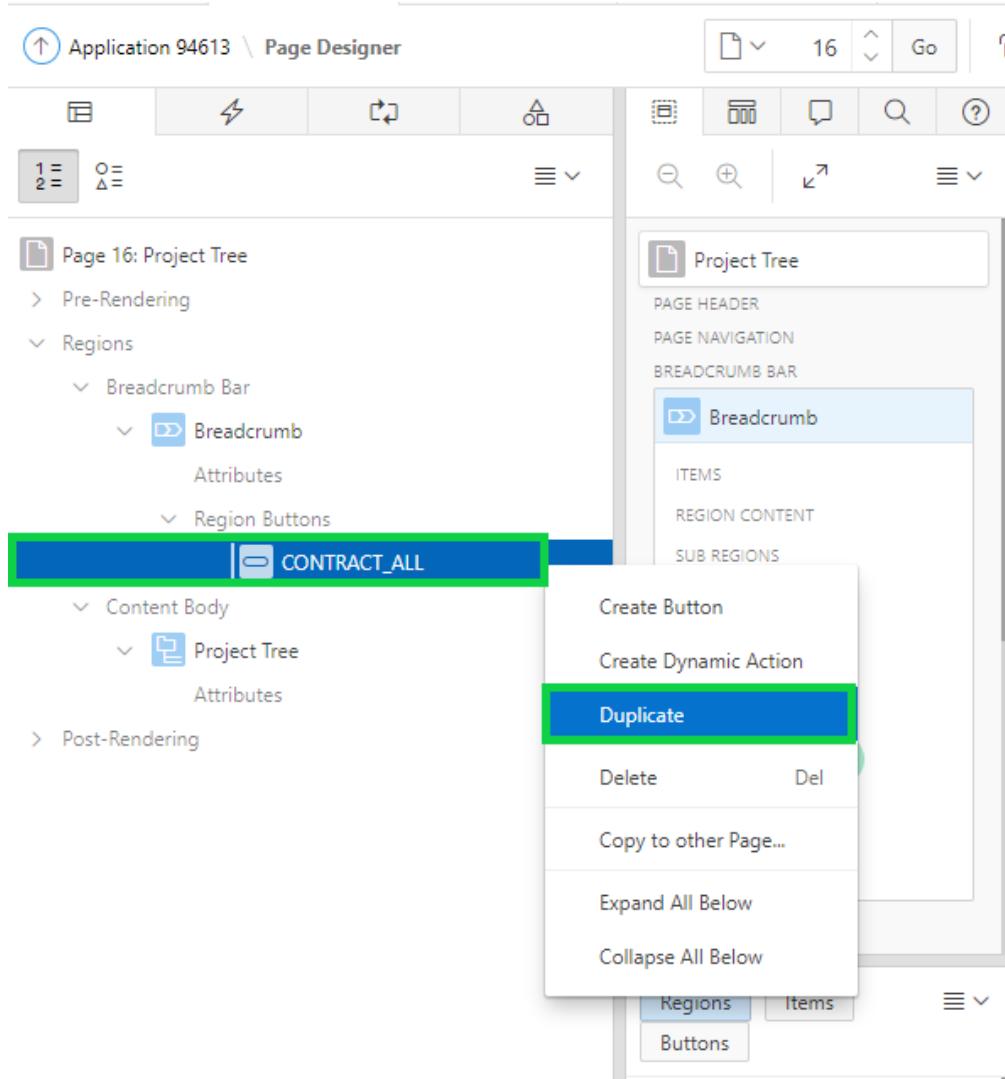
 Common

General	<input checked="" type="checkbox"/> Use Template Defaults
Size	Default
Type	Normal
Style	Default

 Advanced

Button Set	Default
Width	Auto - Default
Spacing Left	Default
Spacing Right	Default
Spacing Top	Default
Spacing Bottom	Default

6. Now, right-click the **CONTRACT_ALL** button and select **Duplicate**.



7. In the Property Editor:

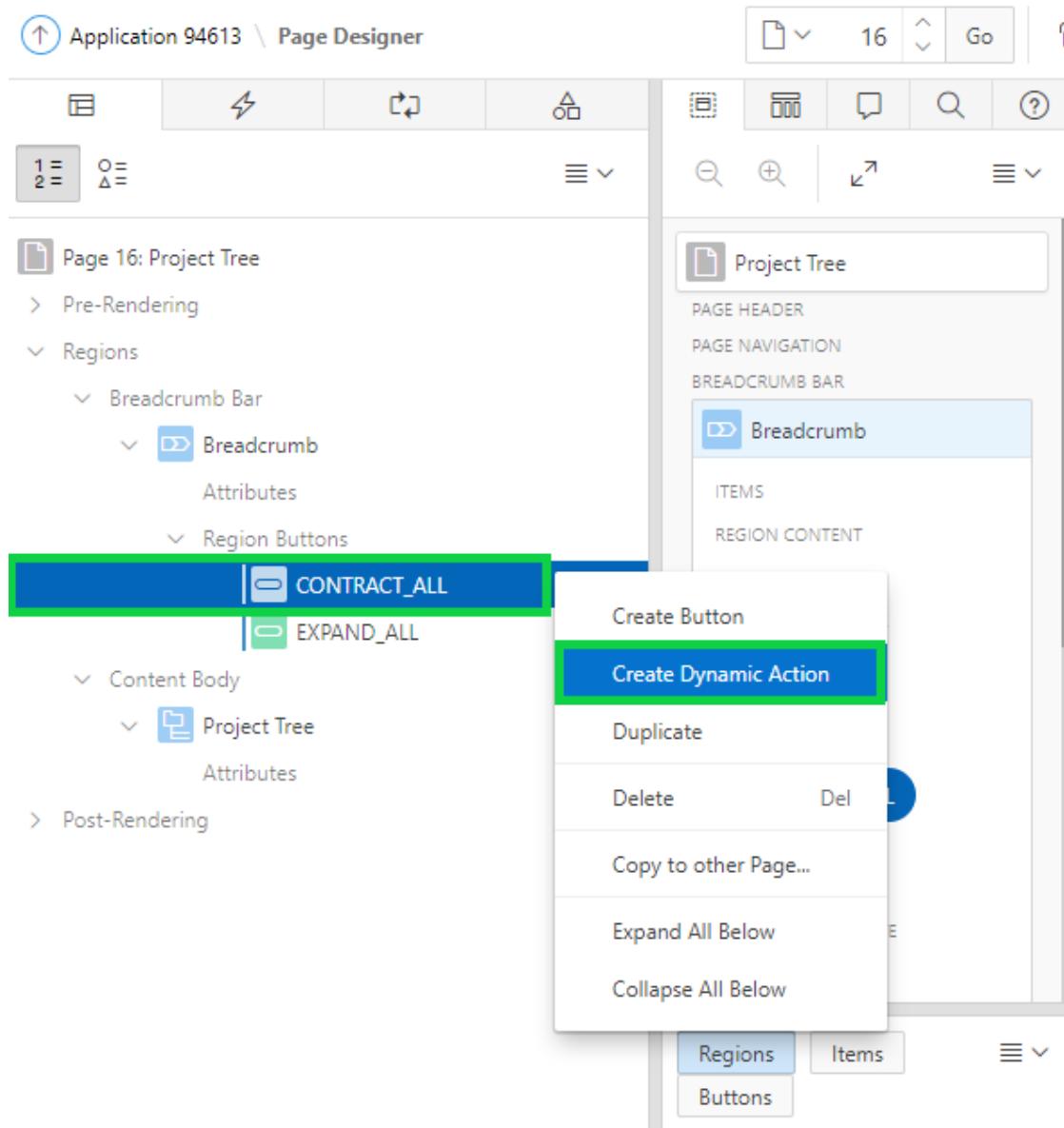
- Identification > Button Name: Enter **EXPAND_ALL**
- Identification > Label: Enter **Expand All**
- Layout > Button Position: Select **Edit**
- Behavior > Action: Select **Defined by Dynamic Action**

Under Appearance, click **Template Options** button. Make sure the **Use Template Defaults** check box is deselected and click **OK**.

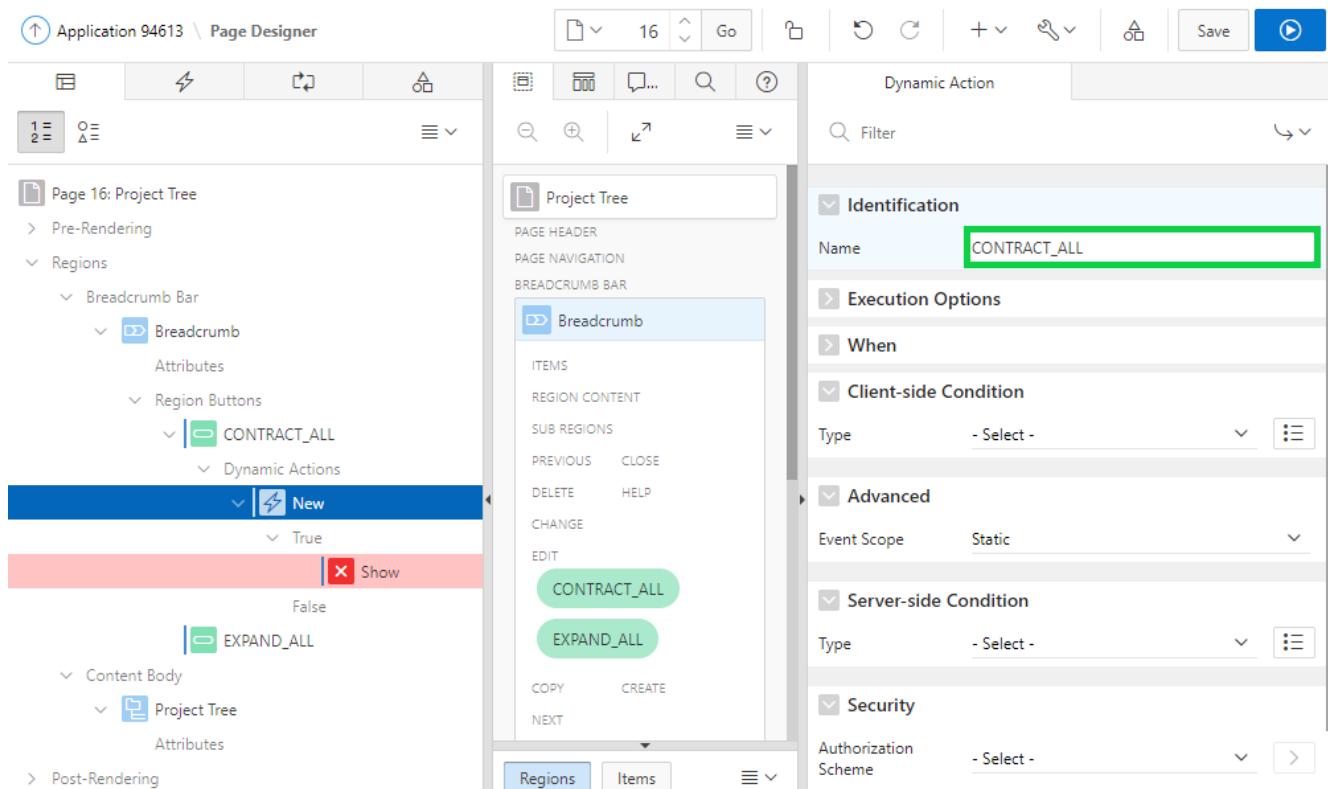
8. Now you want to create a dynamic action for each of these two buttons.

Under Rendering, expand Regions > Breadcrumb > Region Buttons.

Right-click the **CONTRACT_ALL** button and select **Create Dynamic Action**.



9. In the property editor, for Identification > Name, enter **CONTRACT_ALL**.

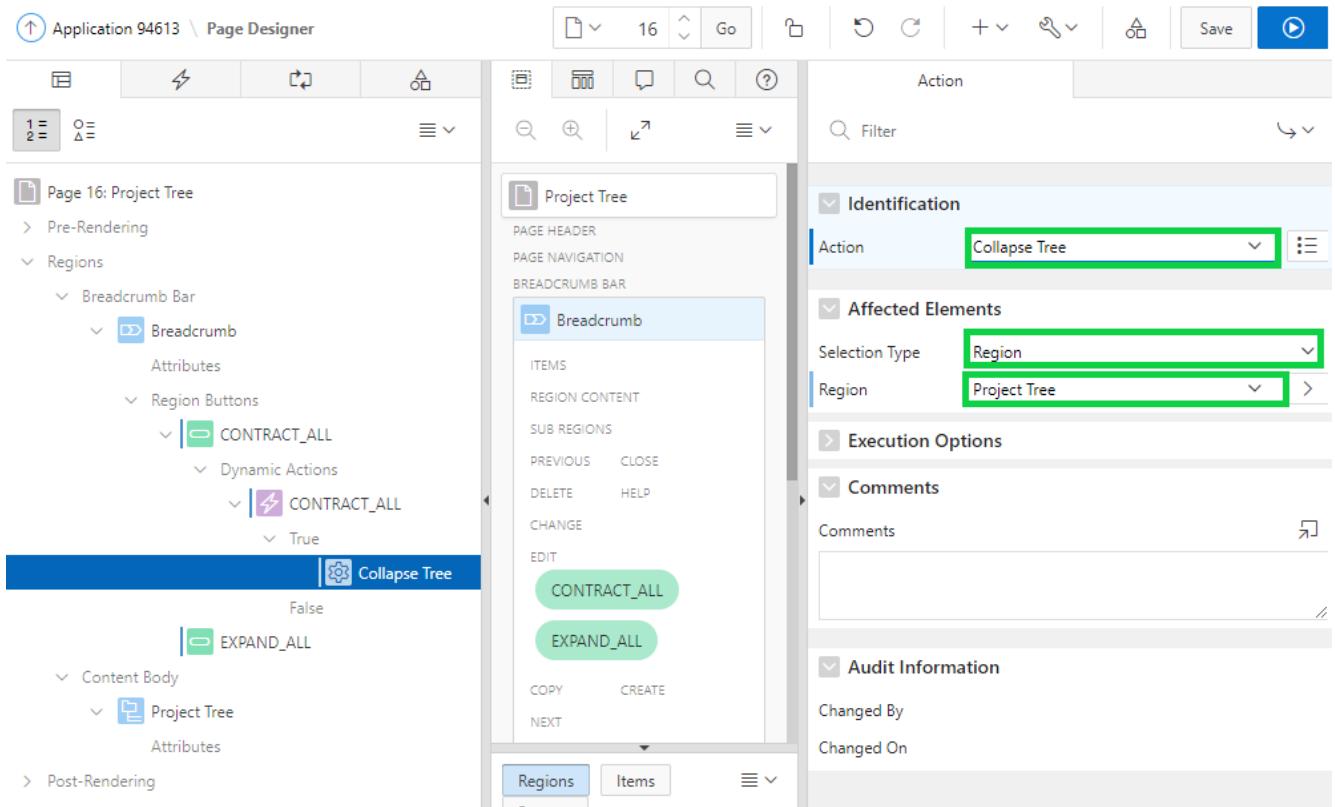


10. Under Rendering, navigate to the CONTRACT_ALL region button and expand Dynamic Actions. Select Show.

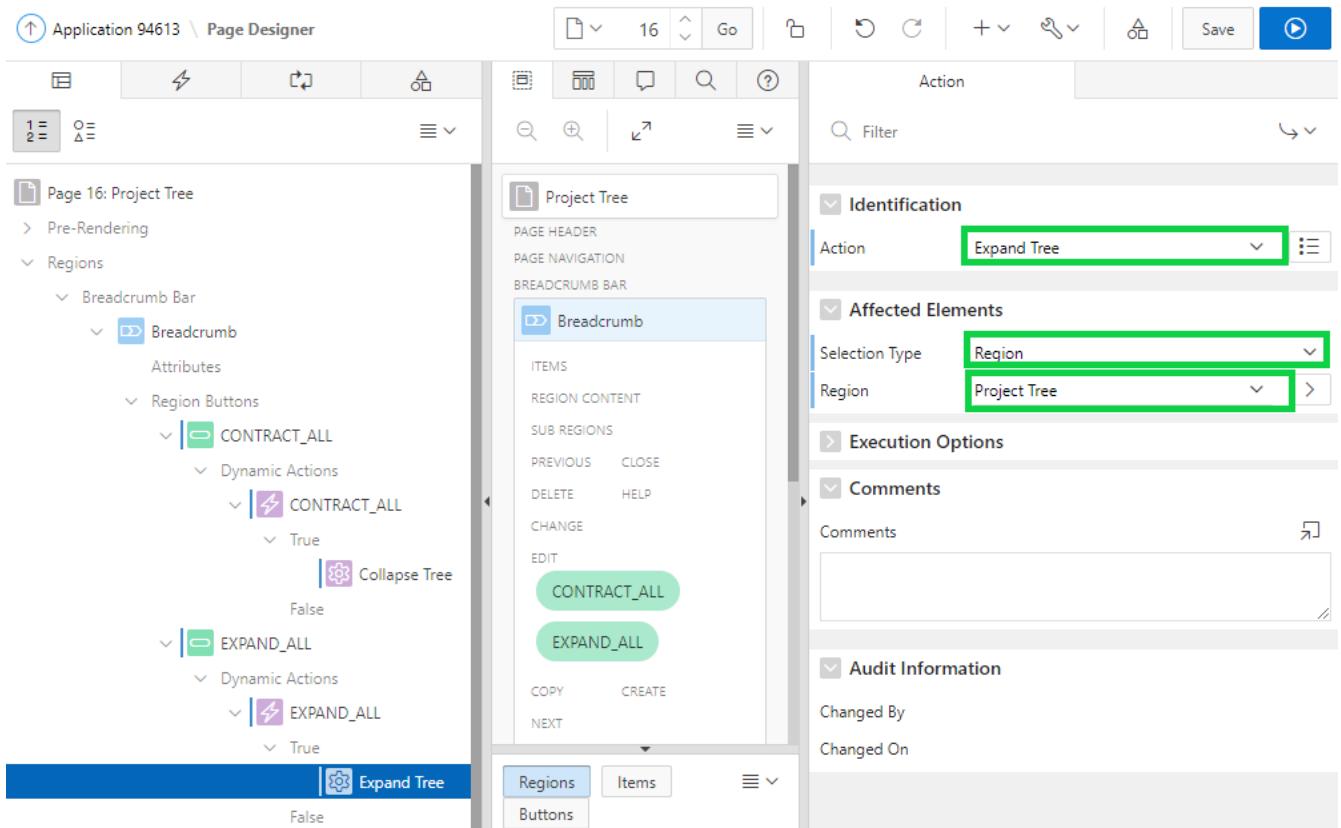
In the property editor, for Identification > Action, select **Collapse Tree**.

For Affected Elements > Selection Type, select **Region**.

For Affected Elements > Region, select **Project Tree**.



11. Under Rendering, expand Regions > Breadcrumb > Region Buttons.
Right-click the **EXPAND_ALL** button and select **Create Dynamic Action**.
12. In the property editor, for Identification > Name, enter **EXPAND_ALL**.
13. Under Rendering, navigate to the EXPAND_ALL region button and expand Dynamic Actions.
Select **Show**.
In the property editor, for Identification > Action, select **Expand Tree**.
For Affected Elements > Selection Type, select **Region**.
For Affected Elements > Region, select **Project Tree**.



14. Click **Save and Run Page**.

15. The project tree is now displayed in collapsed mode. Click the **Expand All** button.

Reports \

Project Tree

Expand All

- ▼ **All Projects**
 - ▶ **Configure Web Development Tool Environment**
 - ▶ **Train Developers on Web development tool**
 - ▶ **Migrate Legacy Applications**
 - ▶ **Develop Partner Portal POC**
 - ▶ **Develop Production Partner Portal**

16. The project tree is expanded now. Click the **Collapse All** button.

Reports \

Project Tree

[Collapse All](#)[Expand All](#)

- ▼ All Projects
 - ▼ Configure Web Development Tool Environment
 - Identify Server Requirements
 - Configure Web Listeners
 - Install Web development tool
 - Configure Web development tool Instance Administration Settings
 - Assign Workspace Administrators
 - Define Workspaces
 - ▼ Train Developers on Web development tool
 - ▼ Train the Trainers
 - Prepare Course Outline
 - Develop Training Exercises
 - Write Training Guide
 - Conduct Train-the-Trainer session
 - Load full production data
 - ▼ All Developers Trained
 - Train Developers I
 - Train Developers II
 - ▼ Migrate Legacy Applications
 - ▼ Move Data Structures
 - Create New Tables
 - Convert transaction logic
 - Migrate data from Legacy Server

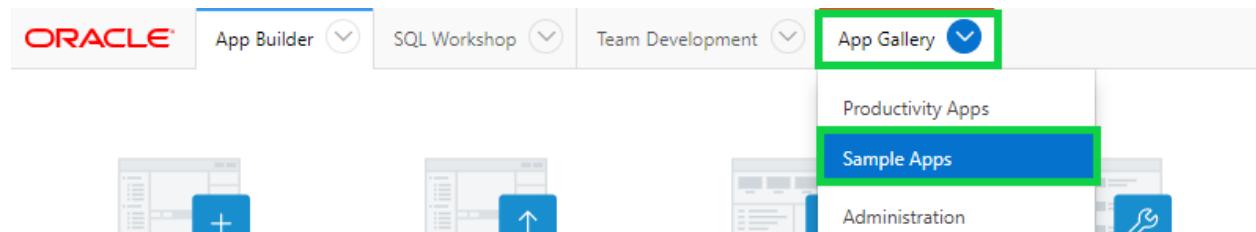
17. In the Developer Toolbar, click **Application < n >**.

The screenshot shows the Oracle Application Express interface for a project titled "Demo Projects". The left sidebar menu includes links for Home, Team Members, Projects, Milestones, Tasks, Dashboard, Calendar, Reports (selected), My Outstanding Tasks, and Project Tree (selected). The main content area displays a "Project Tree" report under the "Reports \\" section. The report shows a single item: "All Projects". The bottom navigation bar includes links for Home, Application 94613 (highlighted with a green box), Edit Page 16, Session, View Debug, Debug, Page Info, Quick Edit, Theme Roller, and a gear icon. The status bar at the bottom indicates "Release 1.0 Built with ❤ using Oracle APEX".

HOL 15-4: Creating and Using a Plug-in

In this hands-on lab, you create the Badge List Plug-in as a copy of the plug-in from the Sample Charts application. On the Reports page, you create a badge list region. On this region, you display three different badges: Open Projects, Upcoming Milestones, and Open Tasks.

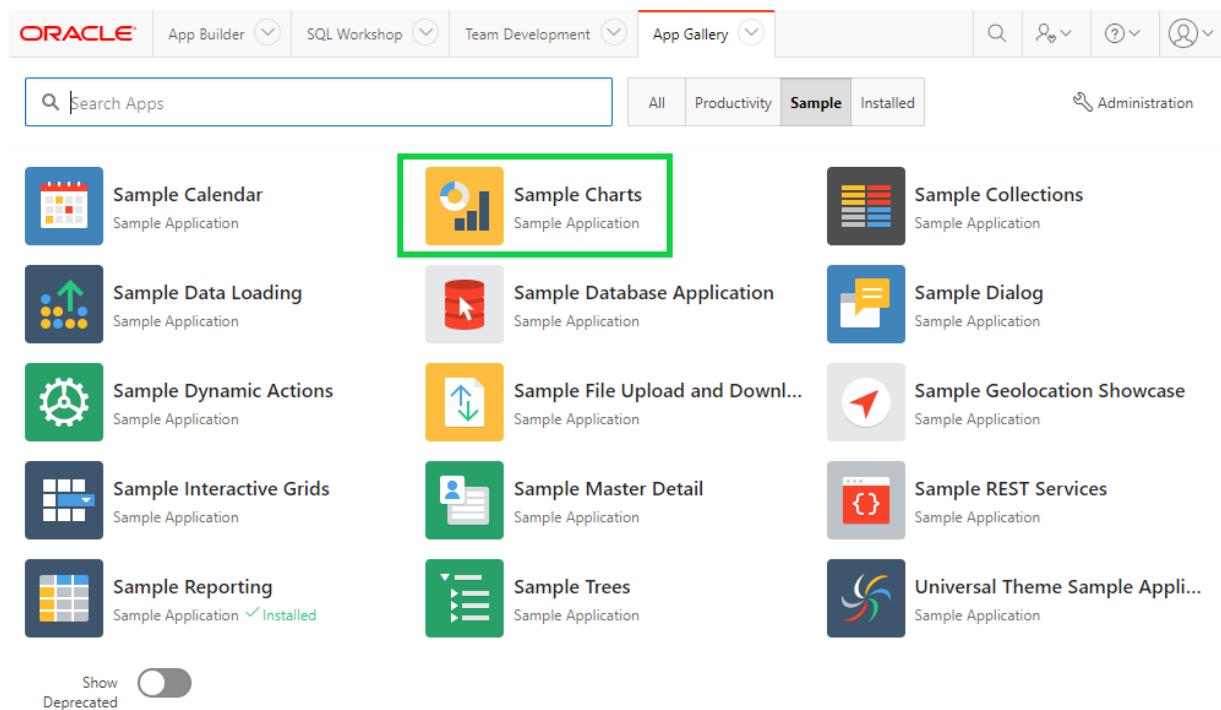
1. Install the Sample Charts application so that you can subscribe to the badge list plug-in. Navigate to App Builder and click **App Gallery > Sample Apps**.



The screenshot shows the Oracle Application Express App Builder interface. At the top, there are tabs for ORACLE, App Builder, SQL Workshop, Team Development, and App Gallery. The App Gallery tab is highlighted with a green box. A dropdown menu is open under App Gallery, showing options: Productivity Apps, Sample Apps (which is also highlighted with a green box), and Administration. Below the menu, there are four icons: Create (with a plus sign), Import (with an upward arrow), Dashboard, and Workspace Utilities (with a wrench icon). Underneath these, there is a search bar with a magnifying glass icon, a Go button, and a Create button. A table below lists four sample applications: Demo Projects, Sample Reporting, Budget App, and Hardware. The table columns are Application (with a sort arrow), Name, Pages, Type, Updated By, Updated, and Run. The Run column contains four circular icons with arrows. The bottom right corner of the table area shows the page number 1 - 4.

Application	Name	Pages	Type	Updated By	Updated	Run
94613	Demo Projects	35	Database Application	nimuthapa@gmail.com	9 minutes ago	
100312	Sample Reporting	39	Productivity or Sample Application	nimuthapa@gmail.com	2 weeks ago	
102405	Budget App	30	Database Application	nimuthapa@gmail.com	5 days ago	
105804	Hardware	4	Database Application	nimuthapa@gmail.com	12 days ago	

2. Click **Sample Charts**.



3. Click **Install App**.

The screenshot shows the Oracle Application Express App Details page for the 'Sample Charts' application. The top navigation bar is identical to the one in the previous screenshot. Below the navigation bar, there is a 'App Details' header with a back arrow icon. The main content area features the application's logo (a yellow square with a blue chart icon), the application name 'Sample Charts', its subtitle 'Sample Application', and a prominent blue 'Install App' button. The entire 'Install App' button is highlighted with a green border.

4. Accept the default authentication and click **Next**.

Install App

x

Application Name: **Sample Charts**

Authentication: **Application Express Accounts**

Workspace Name: **DEMO-HOL**

Schema: **BRHHGSEJHTEWGE**

[Cancel](#)

[Next >](#)

5. Click **Install App**.

Install App

x

Application Name: **Sample Charts**

Authentication: **Application Express Accounts**

Workspace Name: **DEMO-HOL**

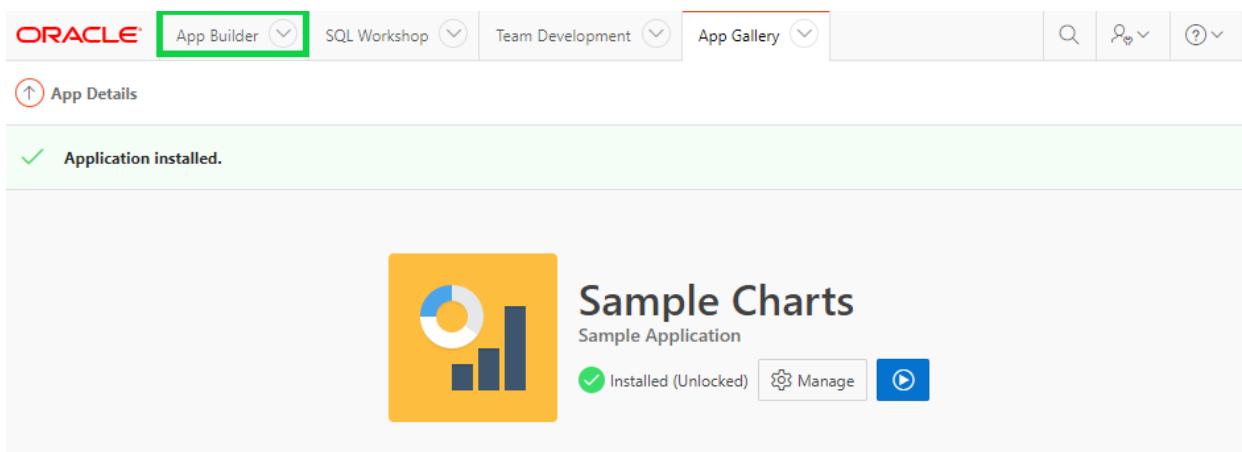
Schema: **BRHHGSEJHTEWGE**

[«](#)

[Cancel](#)

[Install App](#)

6. The Sample Charts application is now installed.
Click **App Builder**.



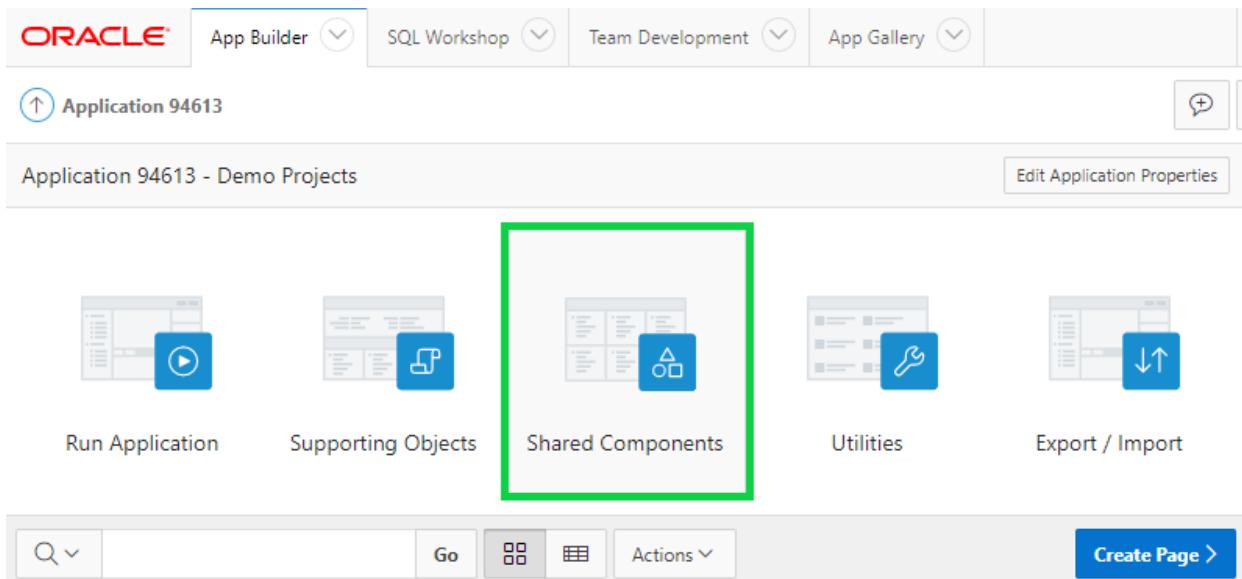
7. In the report, select **Demo Projects** application.

The screenshot shows the Oracle Application Express App Builder workspace. The top navigation bar includes tabs for ORACLE, App Builder (highlighted with a blue box), SQL Workshop, Team Development, and App Gallery. Below the navigation is a search bar and other navigation icons. On the left, there are four buttons: Create, Import, Dashboard, and Workspace Utilities. The main area is a table listing applications:

Application	Name	Pages	Type	Updated By	Updated	Run
94613	Demo Projects	35	Database Application	nimuthapa@gmail.com	20 minutes ago	(Run)
100312	Sample Reporting	39	Productivity or Sample Application	nimuthapa@gmail.com	2 weeks ago	(Run)
102405	Budget App	30	Database Application	nimuthapa@gmail.com	5 days ago	(Run)
105804	Hardware	4	Database Application	nimuthapa@gmail.com	12 days ago	(Run)
110576	Sample Charts	49	Productivity or Sample Application	nimuthapa@gmail.com	81 seconds ago	(Run)

To the right of the table is a sidebar with sections for About, Recent, Tasks, and Migrations. The "Recent" section lists several applications with their IDs and names. The "Tasks" section has links for "Install Sample App" and "Install Productivity App". The "Migrations" section has a link for "Oracle Forms Migrations".

8. In the application home page, click **Shared Components**.



9. Under Other Components, click **Plug-ins**.

The screenshot shows the 'Shared Components' page under Application 94613. The 'Other Components' section is highlighted with a green box around the 'Plug-ins' item. Other items in the list include List of Values, Component Settings, Shortcuts, and Email Templates.

Application Logic	Security	Other Components
Application Definition Attributes Application Items Application Processes Application Computations Application Settings Build Options	Security Attributes Authentication Schemes Authorization Schemes Application Access Control Session State Protection Web Credentials	List of Values Plug-ins Component Settings Shortcuts Email Templates

10. In the Plug-ins page, click **Create**.

Application 94613 \ Shared Components \ Plug-ins

Plug-ins Utilization History

Actions ▾

Create >

No plug-ins found.

11. For Create Plug-in, select **As a Copy of an Existing Plug-in** and click **Next**.

Application 94613 \ Shared Components \ Plug-ins \ Create

Method

When you create a new plug-in, you have two options. You can create a new plug-in from scratch or you reuse implementations that already exist in your application or in other applications within your workspace.

Create Plug-in: From Scratch As a Copy of an Existing Plug-in [?](#)

Cancel Next >

12. For Copy From Application, select <xxx>**Sample Charts** and click **Next**.

Application 94613 \ Shared Components \ Plug-ins \ Create

Create Plug-in

Copy From

Use this page to copy a plug-in from another application.

* Copy From Application 110576 Sample Charts [?](#)

< Cancel Next >

13. At the bottom of the page, click the **Deselect All** button.

Type	Name	Subscribed	To Name	Copy?
Region	Badge List		Badge List	Copy and Subscribe ▾
Region	Gantt Chart		Gantt Chart	Copy and Subscribe ▾
Region	HTML 5 Bar Chart		HTML 5 Bar Chart	Copy and Subscribe ▾
Region	JET Legend		JET Legend	Copy and Subscribe ▾
Region	Sample Apps Footer		Sample Apps Footer	Copy and Subscribe ▾
Region	Source Display		Source Display	Copy and Subscribe ▾
Region	Translated Message		Translated Message	Copy and Subscribe ▾

Deselect All

Copy Plug-ins

< Cancel

14. Now, for Badge List, select **Copy and Subscribe**.
Then, click **Copy Plug-ins**.

Identify the Plug-in to be copied and select the copy option. Copy options include:

- **Yes.** Copy the Plug-in.
- **No.** Do not copy this Plug-in.
- **Copy and Subscribe.** Subscribing to a Plug-in puts a copy of it in your application and sets the plugin master reference.

Type	Name	Subscribed	To Name	Copy?
Region	Badge List		Badge List	Copy and Subscribe ▾
Region	Gantt Chart		Gantt Chart	No ▾
Region	HTML 5 Bar Chart		HTML 5 Bar Chart	No ▾
Region	JET Legend		JET Legend	No ▾
Region	Sample Apps Footer		Sample Apps Footer	No ▾
Region	Source Display		Source Display	No ▾
Region	Translated Message		Translated Message	No ▾

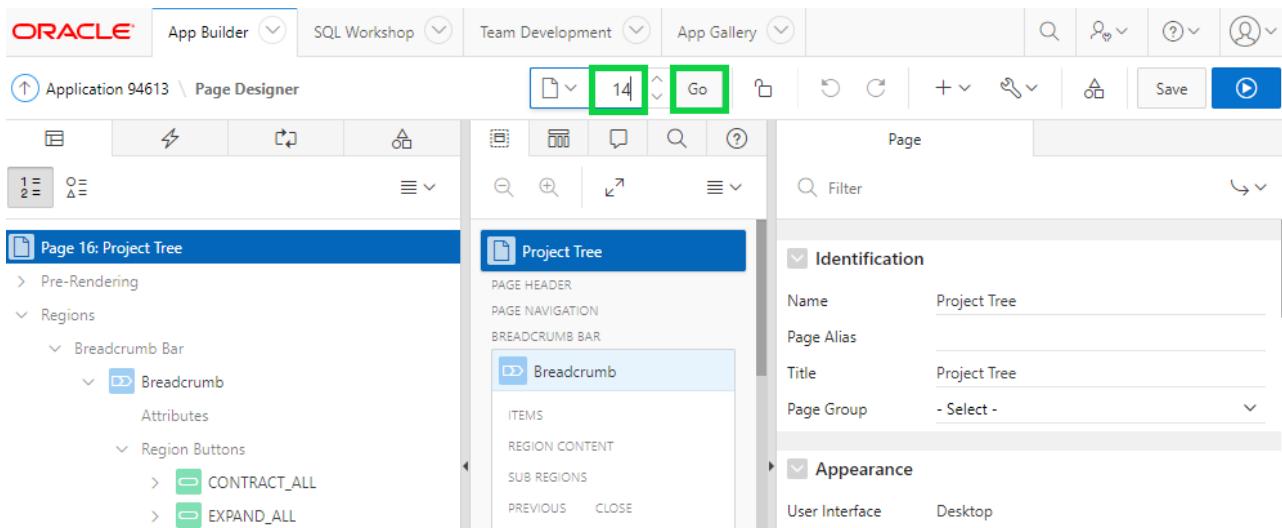
[Deselect All](#)

Copy Plug-ins

15. In the Application Express toolbar, click **Edit Page <n>**.

The screenshot shows the Oracle Application Express toolbar. The 'Edit Page' button is highlighted with a green box. The toolbar also includes buttons for App Builder, SQL Workshop, Team Development, and App Gallery. Below the toolbar, the page navigation bar shows 'Application 94613 \ Shared Components \ Plug-ins'. A message 'Plug-ins copied.' is displayed with a green checkmark. The main content area shows a table of plug-ins with columns for Name, Type, Status, and Actions. A tooltip on the right explains what a plug-in is: 'A plug-in is an extension to the built-in types of Application Express. Use plug-ins for declarative use of new item, region, dynamic action process, authentication scheme and authorization scheme types in your application.'

16. In the page finder, enter the **Reports page number** and click **Go**.



17. Use Page Designer's drag-and-drop functionality to quickly add a Badge List from the Gallery to the Layout.

In Page Designer, within the Gallery (directly below the Layout), click **Regions**, and locate **Badge List**.

Click and hold **Badge List [Plug-In]** and drag it into **Content Body**. It should appear as a darkened tile before you drop it into place.

Note: When you drag the region up, and hover over the small yellow section, below Content Body, the yellow section will expand. A darker yellow section, with a black box around it, will indicate where the region will be placed.

The screenshot shows the Oracle Application Express Page Designer interface for Page 14: Reports. The left sidebar lists regions: Pre-Rendering, Regions (Breadcrumb Bar, Breadcrumb), Content Body, and Post-Rendering. The main area displays the 'Breadcrumb' region configuration. A green arrow points from the 'CONTENT BODY' label in the page header to the 'Content Body' region in the sidebar. The right panel contains the 'Page' settings, including 'Appearance' (User Interface: Desktop, Page Mode: Normal), 'Page Template' (Theme Default), and 'Template Options' (Use Template Defaults). A 'Badge List [Plug-In]' item is highlighted with a green box in the toolbar.

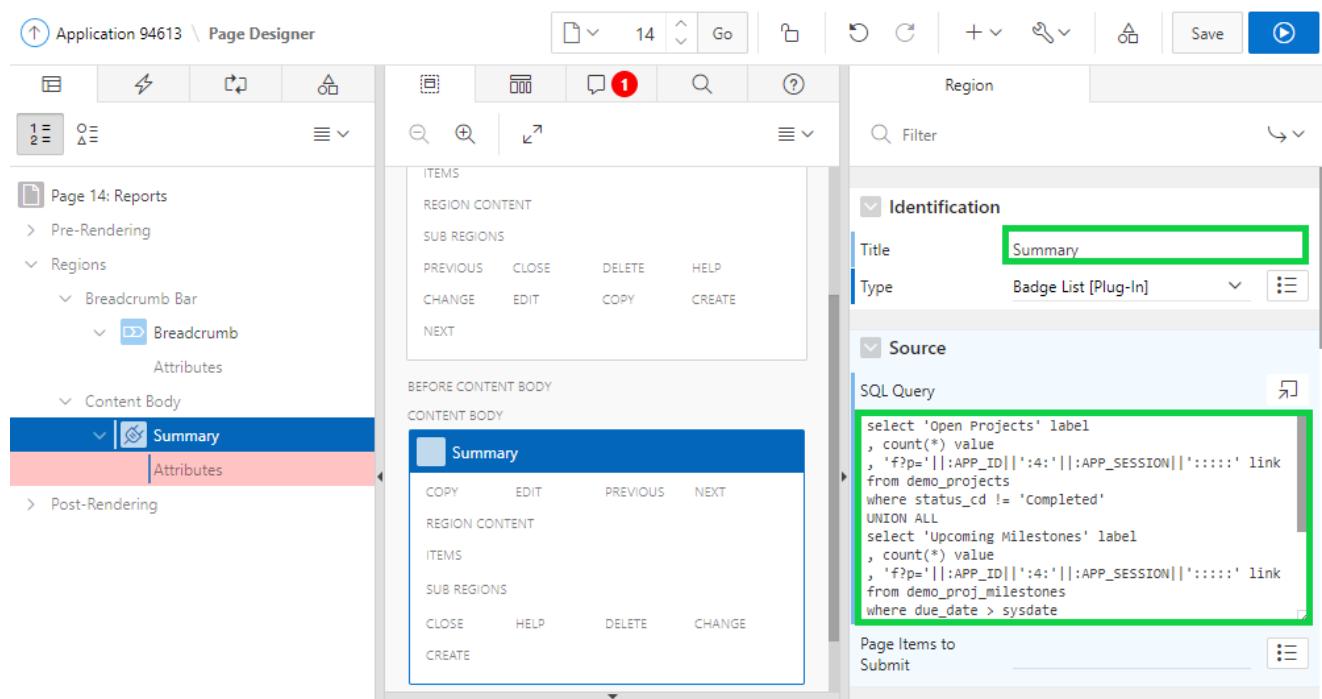
The screenshot shows the Oracle Application Express Page Designer interface for Page 14: Reports. The left sidebar lists regions: Pre-Rendering, Regions (Breadcrumb Bar, Breadcrumb), Content Body (New), and Post-Rendering. The 'Content Body' region is currently selected and has a pink background. A modal dialog titled 'New' is open over the Content Body region, containing fields for 'COPY', 'EDIT', 'PREVIOUS', and 'NEXT'. The right panel shows the 'Identification' section with 'Title' set to 'New' and 'Type' set to 'Badge List [Plug-In]'. The 'Source' section shows a red error message 'SQL Query' with an empty text field. The 'Layout' section shows 'Sequence' set to '10' and 'Parent Region' set to 'Select'. A 'Badge List [Plug-In]' item is highlighted with a green box in the toolbar.

18. In the Property Editor:

- Identification: Title - enter **Summary**
- Source: SQL Query - copy and paste the following:

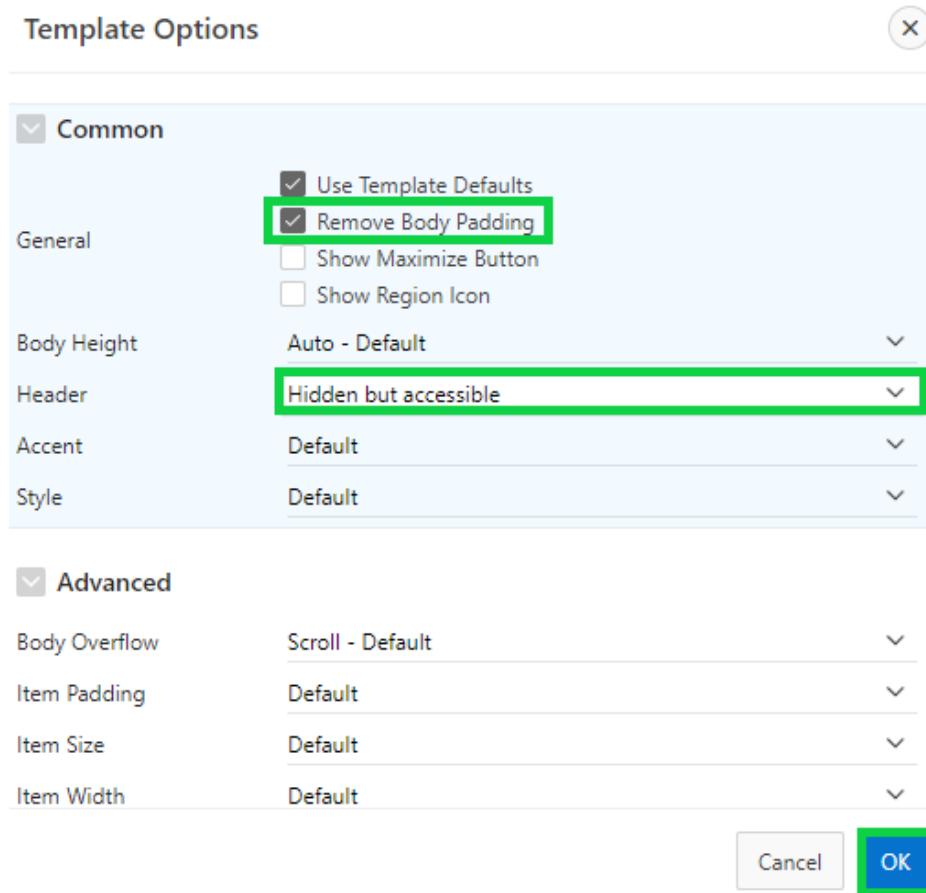
```
select 'Open Projects' label
, count(*) value
, 'f?p='||:APP_ID||':4'||:APP_SESSION||::::::' link
from demo_projects
where status_cd != 'Completed'
UNION ALL
select 'Upcoming Milestones' label
, count(*) value
, 'f?p='||:APP_ID||':4'||:APP_SESSION||::::::' link
from demo_proj_milestones
where due_date > sysdate
UNION ALL
select 'Open Tasks' label
, count(*) value
, 'f?p='||:APP_ID||':4'||:APP_SESSION||::::::' link
from demo_proj_tasks
where is_complete_yn = 'N'
```

Note: This query has three sub-queries, separated by UNION ALL that will be displayed as three separate badges within the region.



19. In the property editor, navigate to Appearance and click **Template Options**.

20. In the Template Options dialog, select the **Remove Body Padding** check box.
For Header, select **Hidden but accessible**.
Click **OK**.

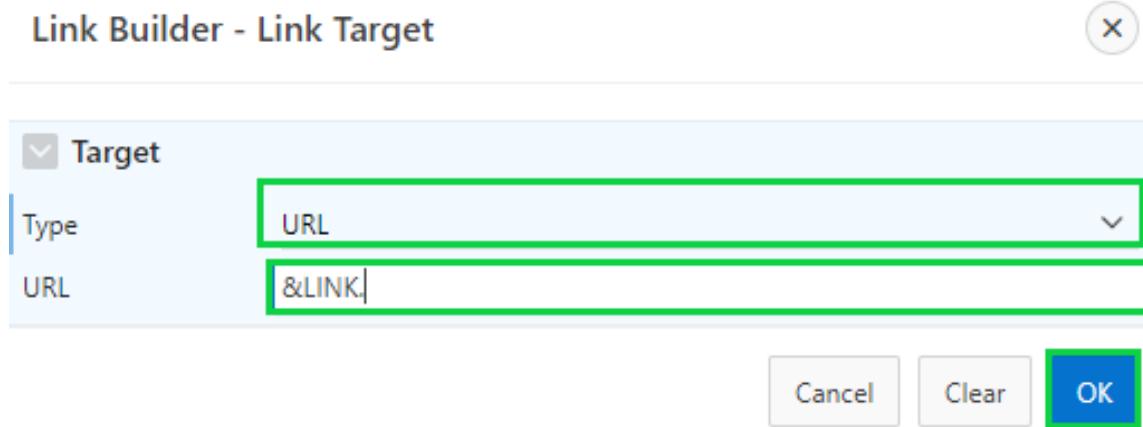


21. In the Rendering tree, under the Summary region, click **Attributes**.
In the Property Editor:
 - Settings: Top Label - select **LABEL**
 - Settings: Value - select **VALUE**For Link Target, click **No Link Defined**.

The screenshot shows the Oracle Application Express Page Designer interface. On the left, the navigation tree for 'Page 14: Reports' is visible, with 'Breadcrumb Bar' selected. In the center, a 'Breadcrumb' item is being edited, with its 'Attributes' tab selected. On the right, the 'Attributes' panel is open, showing settings for the badge style. The 'Top Label' dropdown is set to 'LABEL' and is highlighted with a green border. The 'Value' dropdown is set to 'VALUE'. The 'Link Target' dropdown is set to 'No Link Defined'. Other settings like 'Bottom Label', 'Layout', and 'Color' are also shown.

22. In the Link Builder – Link Target dialog, select URL for Type. For URL, enter **&LINK.**
Click **OK**.

Note: When you enter **&LINK.** ensure you include the period.



23. Click **Save and Run Page**.

24. In the Developer Toolbar, click **Application < n >**.

HOL 15-5: Adding Additional Reports

The Dashboard page includes the Tasks Review and Milestones Review chart regions. You want to clean up the Dashboard page by moving these two regions as separate pages. Later, you add in new regions to the Dashboard page. In this lab, you create two new pages as Tasks Review and Milestones Review. You also move the My Outstanding Tasks report as a region on the Reports page.

1. In the application home page, click **Create Page**.
2. Select **Blank Page**.
3. Enter / select the following for Page Attributes and click **Next**.
 - Name: **Tasks Review**
 - Breadcrumb: **Breadcrumb**
 - Parent Entry: **Reports**
 - Entry Name: **Tasks Review**

Create a Blank Page

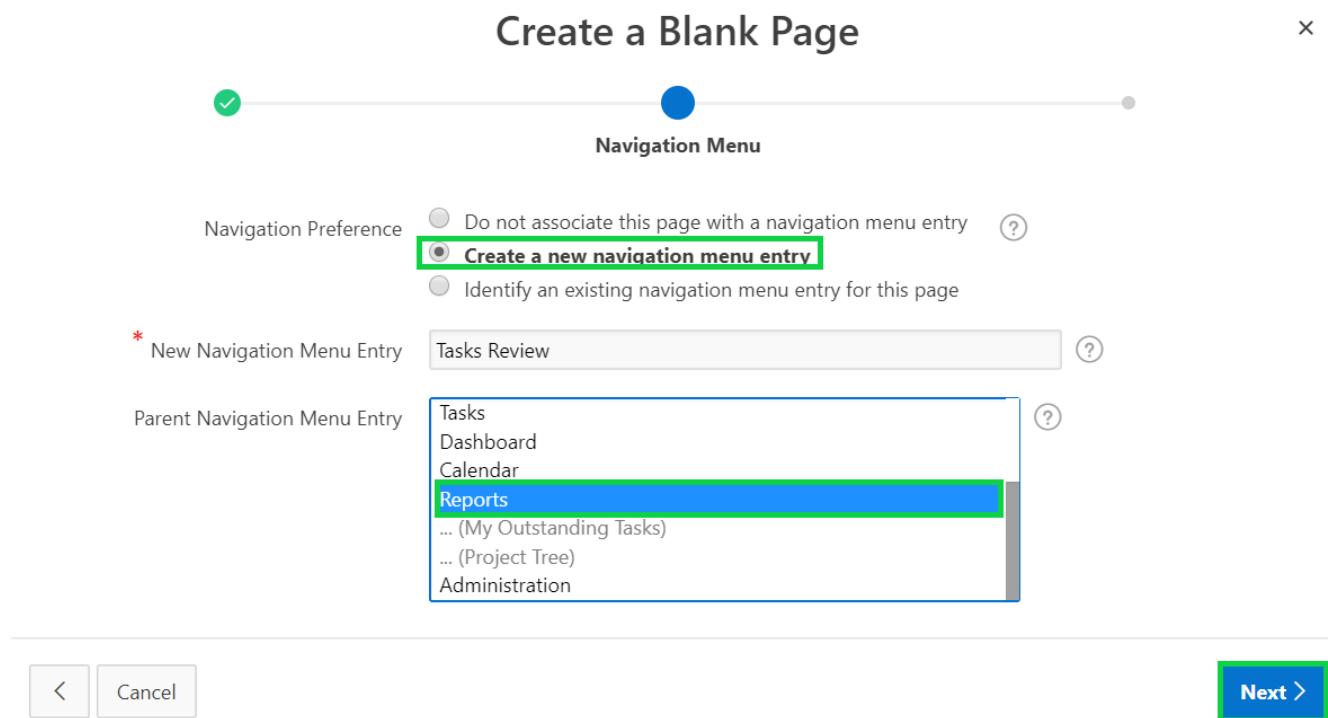
Page Attributes

* Page Number	11	(?)		
* Name	Tasks Review	(?)		
* Page Mode	Normal	Modal Dialog	Non-Modal Dialog	(?)
Page Group	- Select Page Group -	(?)		
Breadcrumb	Breadcrumb	(?)		
Parent Entry	Reports (Page 14)	(?)		
Entry Name	Tasks Review	(?)		

> Optional Static Content Regions

(Back) Cancel Next >

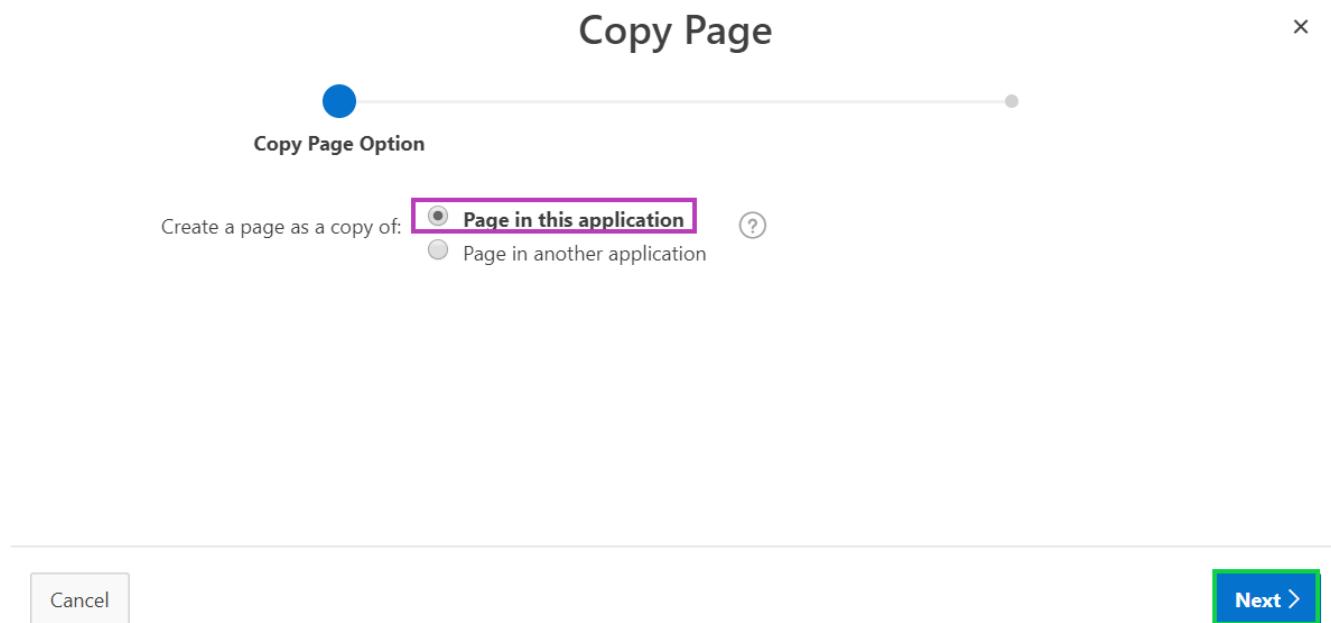
4. Enter / select the following for Navigation Menu and click **Next**.
 - Navigation Preference: **Create a new navigation menu entry**
 - Parent Navigation Menu Entry: **Reports**



5. On the confirm page, click **Finish**.
6. In the Page Designer, click **Create** and select **Page as Copy**.

The screenshot shows the Oracle Application Express Page Designer for 'Page 11: Tasks Review'. The top navigation bar includes a back arrow, a search bar, and various icons. The main area shows the page structure with regions like 'PAGE HEADER', 'PAGE NAVIGATION', and 'BREADCRUMB BAR'. A context menu is open at the top right, with the 'Page' tab selected. Under the 'Identify' section, the 'Page as Copy' option is checked and highlighted with a green box. Other options like 'Page Component' and 'Breadcrumb Region' are also listed. The 'Appearance' section is expanded, showing settings for 'User Interface' (Desktop), 'Page Mode' (Normal), and 'Page Template' (Theme Default). The 'Regions' tab is active in the bottom navigation bar.

7. For Create a page as a copy, keep the default selection and click **Next**.



8. Enter / select the following and click **Next**.
 - Copy From Page: < n >. **Tasks Review**
 - New Page Name: **Milestones Review**
 - Breadcrumb: **Breadcrumb**
 - Parent Entry: **Reports**
 - Entry Name: **Milestones Review**

Copy Page

x

Page to Copy

Application: 94613 [?](#)

* Copy From Page: [?](#)

* New Page Number: [?](#)

* New Page Name: [?](#)

Breadcrumb: [?](#)

Parent Entry: [?](#)

Entry Name: [?](#)

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

Next >

9. For Navigation Menu, enter / select the following and click **Next**.

- Navigation Preference: **Create a new navigation menu entry**
- New Navigation Menu Entry: **Milestones Review**
- Parent Navigation Menu Entry: **Reports**

Copy Page

x

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

(?)

Parent Navigation Menu Entry

Dashboard
(?)

Calendar
(?)

Reports

... (My Outstanding Tasks)

... (Project Tree)

... (Tasks Review)

Administration

<
Cancel
Next >

10. Click **Copy**.

Copy Page

x

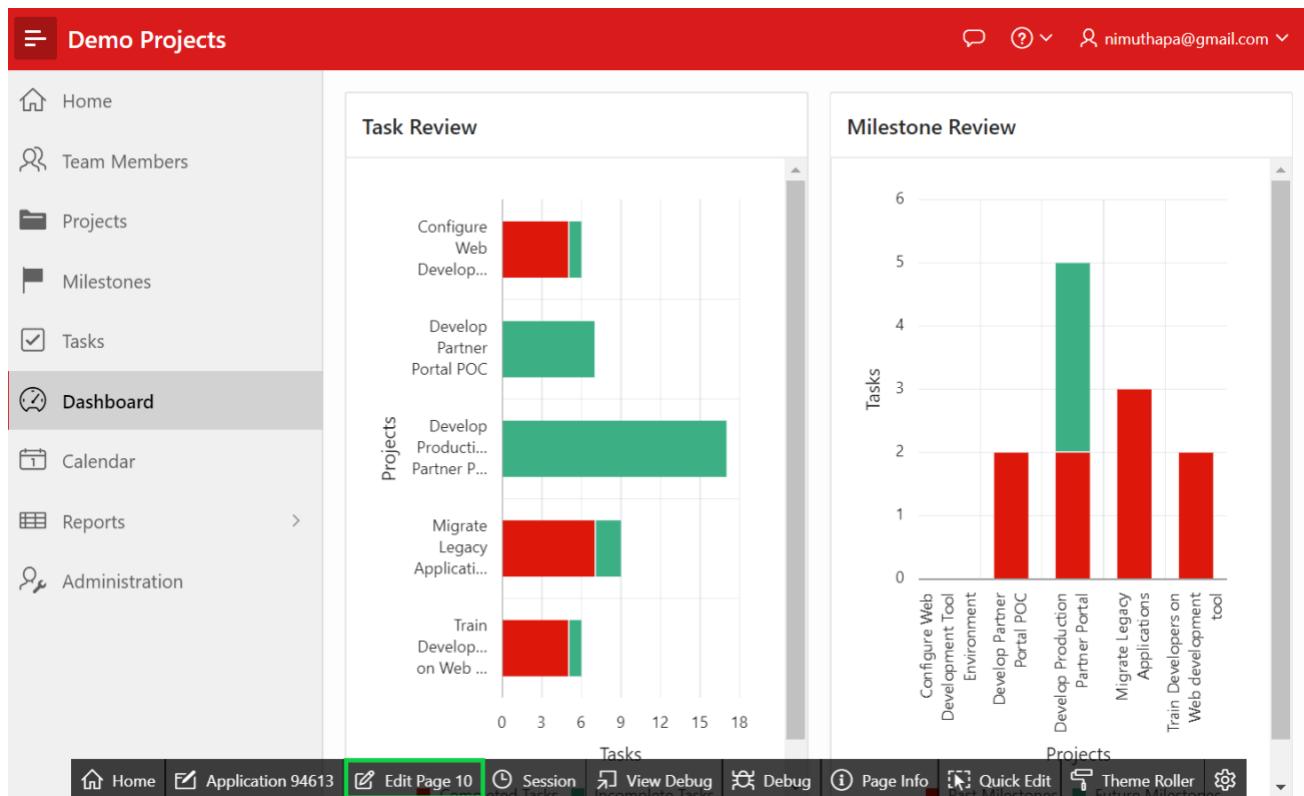
New Names

Type	Old Value	Static ID	New Value	New Static ID
Region	Breadcrumb		<input type="text" value="Breadcrumb"/>	<input type="text"/>

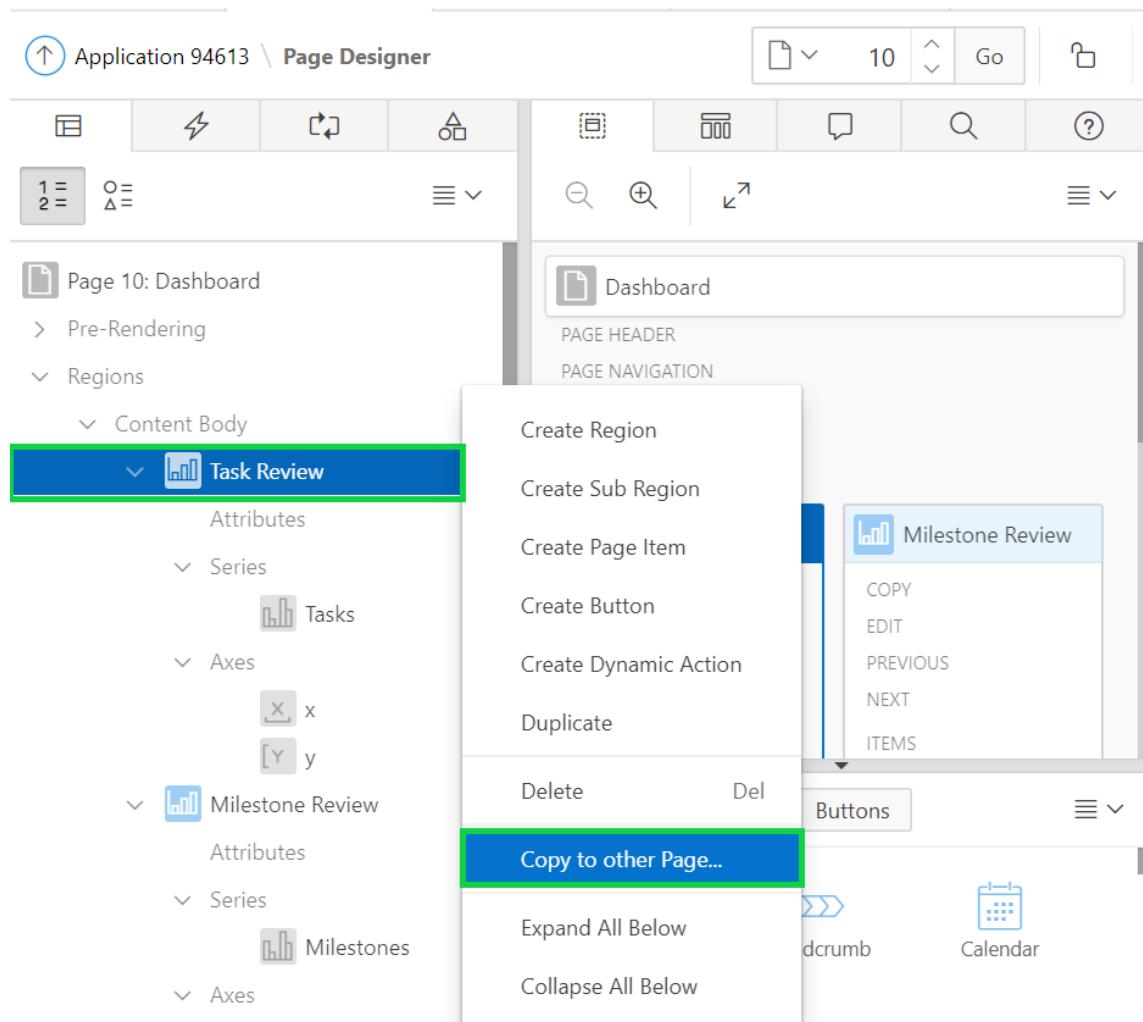
<
Cancel
Copy

11. Click **Save and Run Page**. Then, click **Dashboard** in the navigation menu.

12. In the Developer Toolbar, click **Edit Page 10**.



13. In the Page Designer, right-click Tasks Review chart region and select **Copy to other page**.



14. For To Page, select the **Tasks Review** page that you created earlier in this lab. You can use the Search dialog to locate the page.
Click **Next**.

Copy Region

To Page

Identify page for new region.

* To Page ⋮ (?)

> **Copy From Region**

> **Recently Edited Pages**

< Cancel Next >

15. Accept the defaults and click **Copy**.

Copy Region

New Region

Copy From Page: **10. Dashboard** (?)

Copy To Page: **11. Tasks Review** (?)

Copy Region Items: **No** (?)

Copy Buttons: **No** (?)

Copy Validations: **No** (?)

Copy Processes: **No** (?)

Copy Sub Regions: **No** (?)

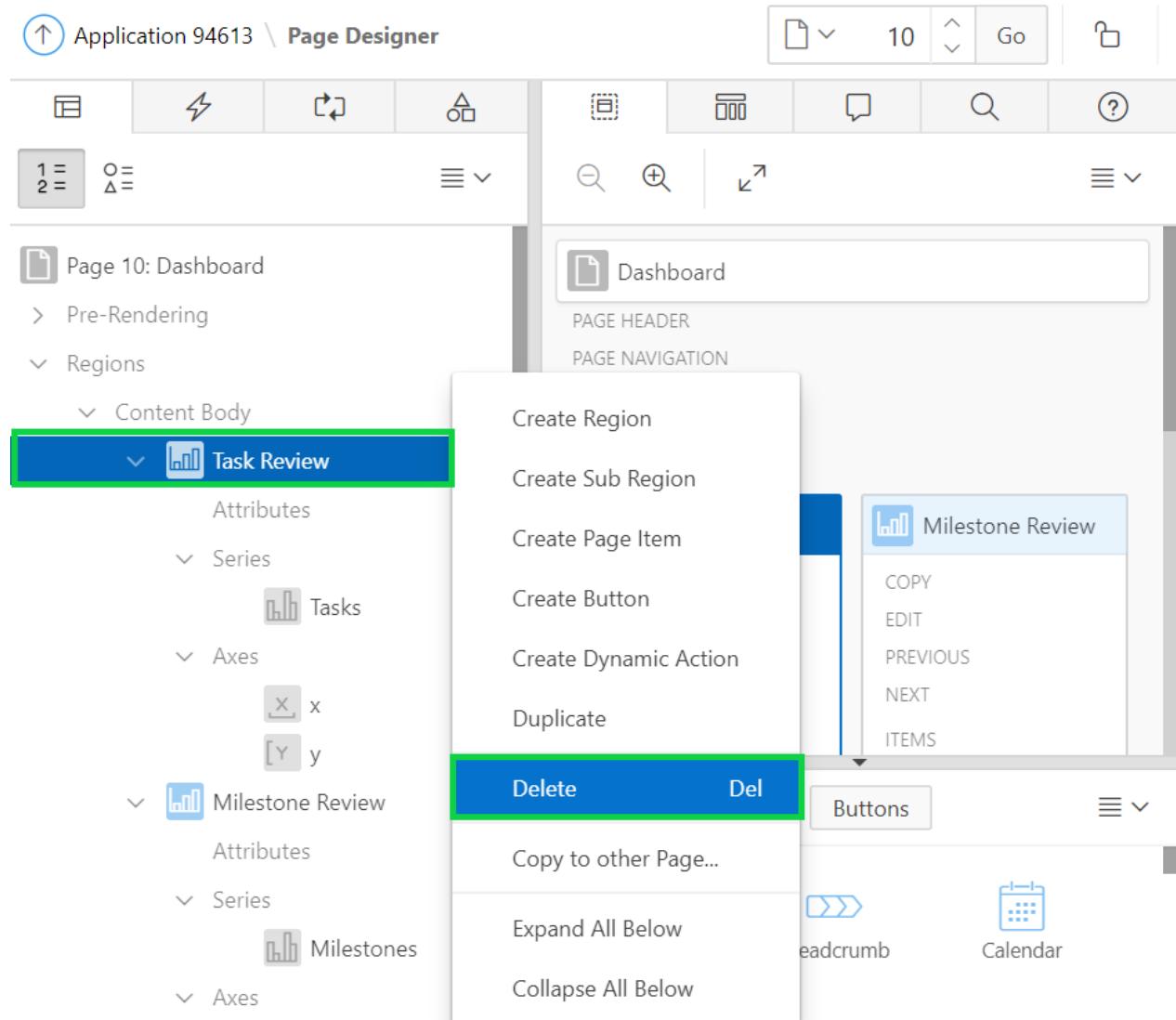
* Region Name (?)

* Sequence (?)

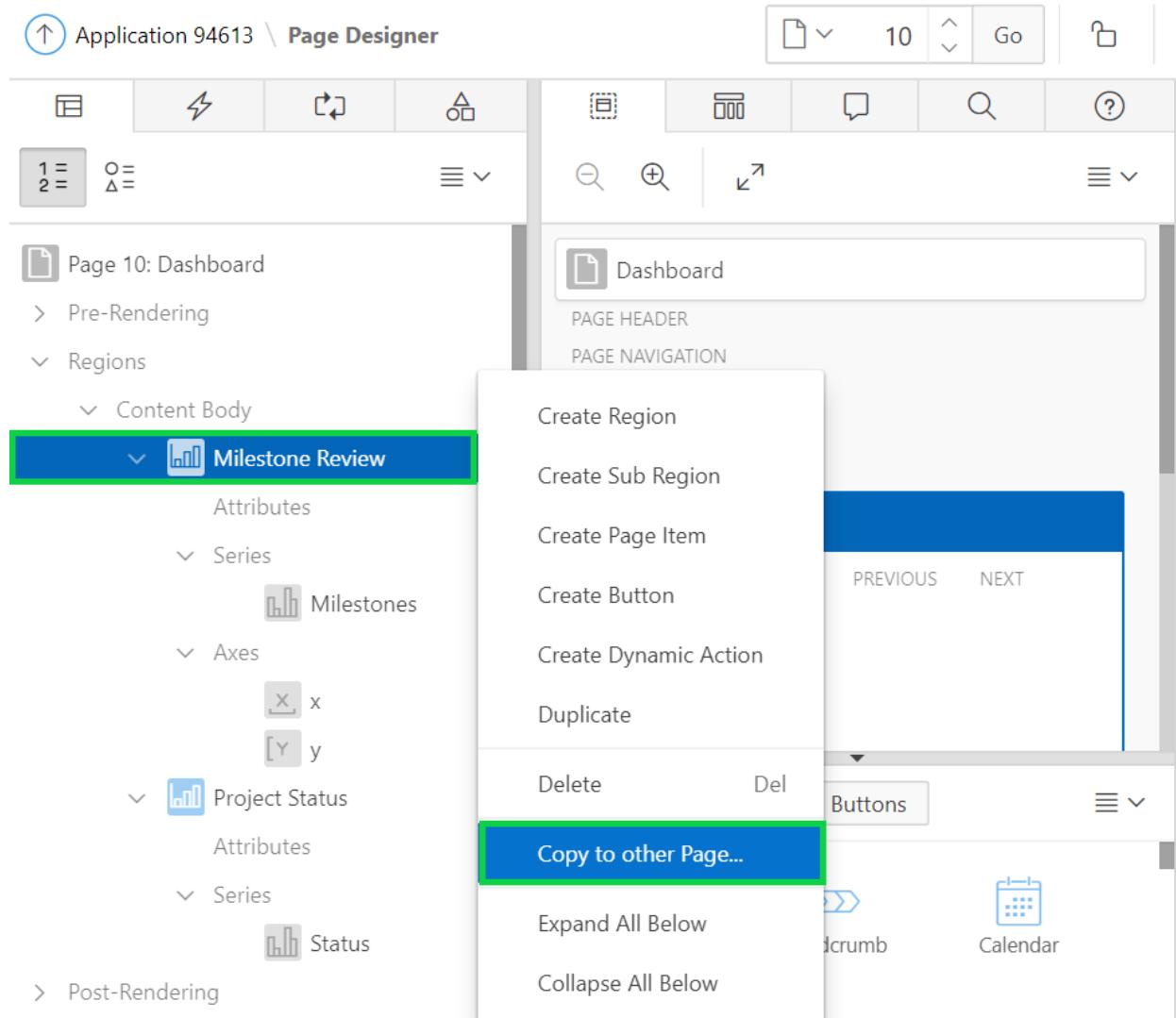
> **Advanced**

< Cancel Copy

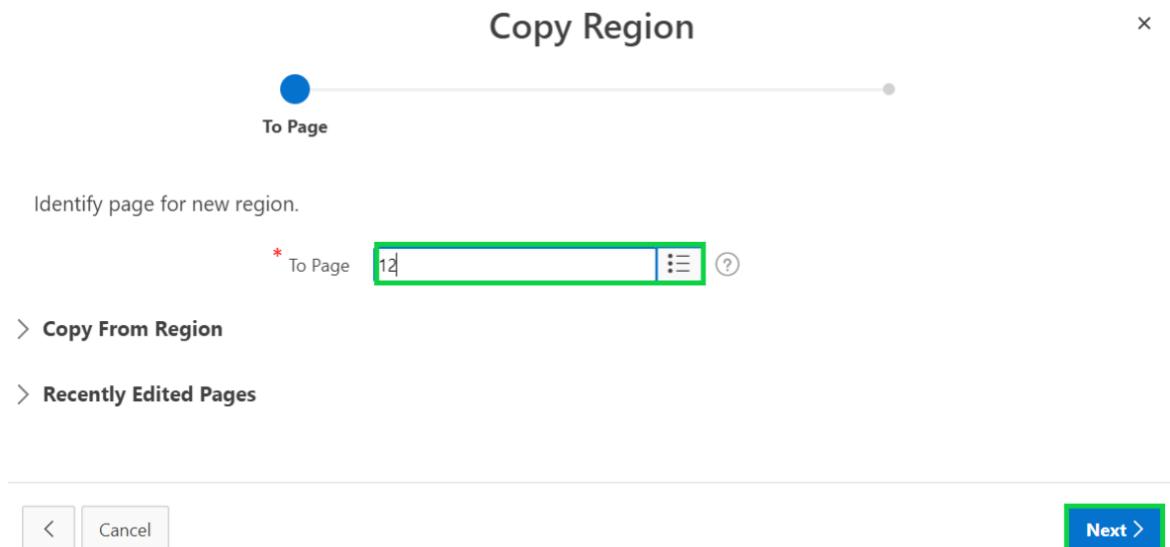
16. Now, under Rendering, right-click **Tasks Review** chart region and select **Delete**.



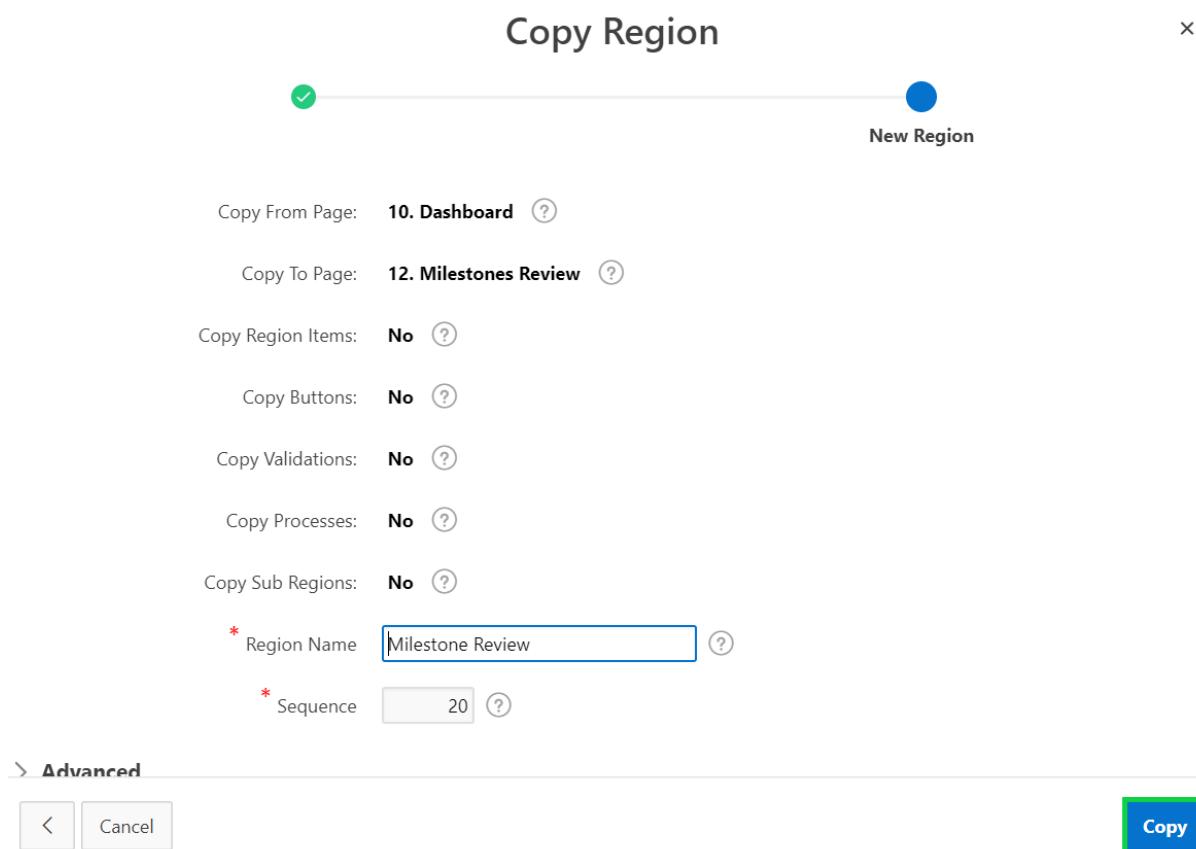
17. In the Page Designer, right-click **Milestones Review** chart region and select **Copy to other page**.



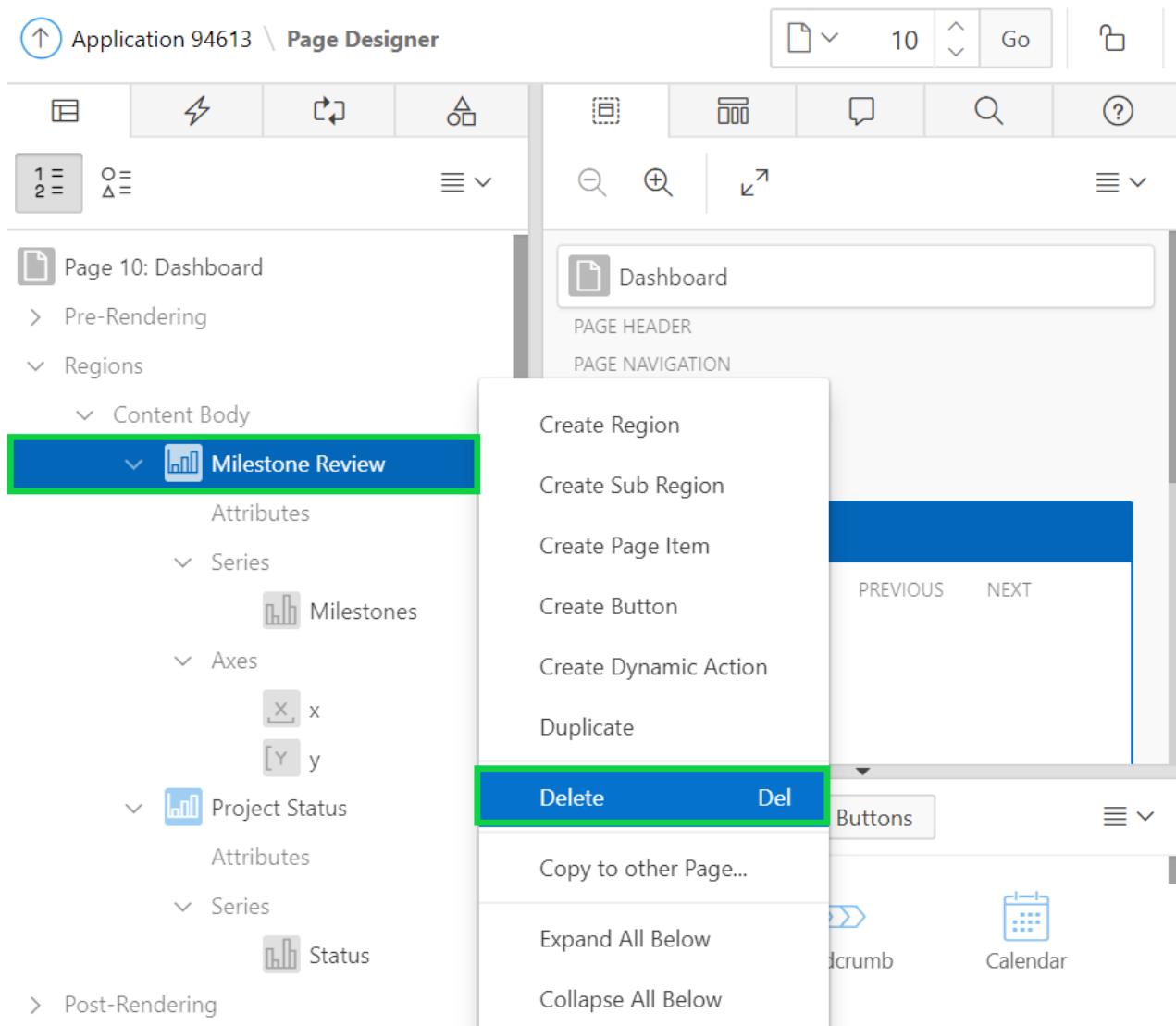
18. For To Page, select the Milestones Review page that you created earlier in this lab. You can use the Search dialog to locate the page.
Click **Next**.



19. Accept the defaults and click **Copy**.

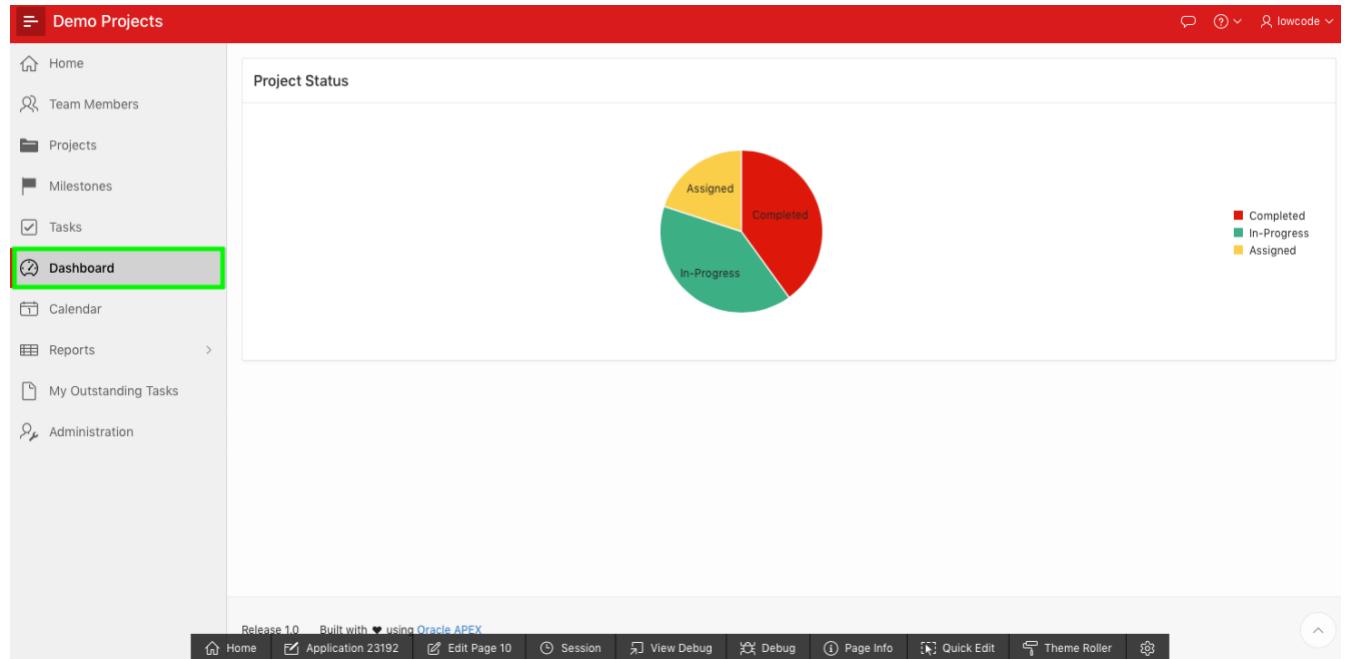


20. Now, under Rendering, right-click **Milestones Review** chart region and select **Delete**.



21. Click **Save and Run Page**.

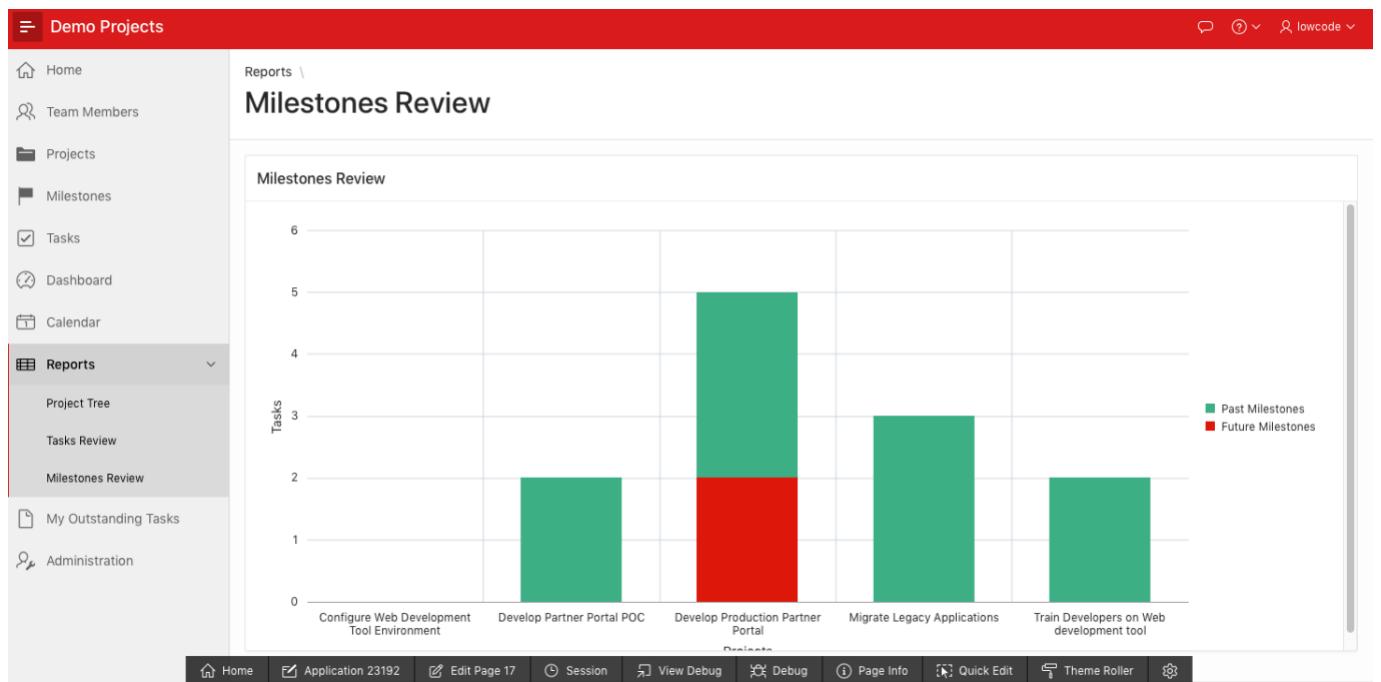
22. Notice that the Dashboard page now shows only the Project Status region.
In the navigation menu, click **Reports** and then click **Tasks Review**.



23. Then, in the navigation menu, click **Reports > Milestones Review**.



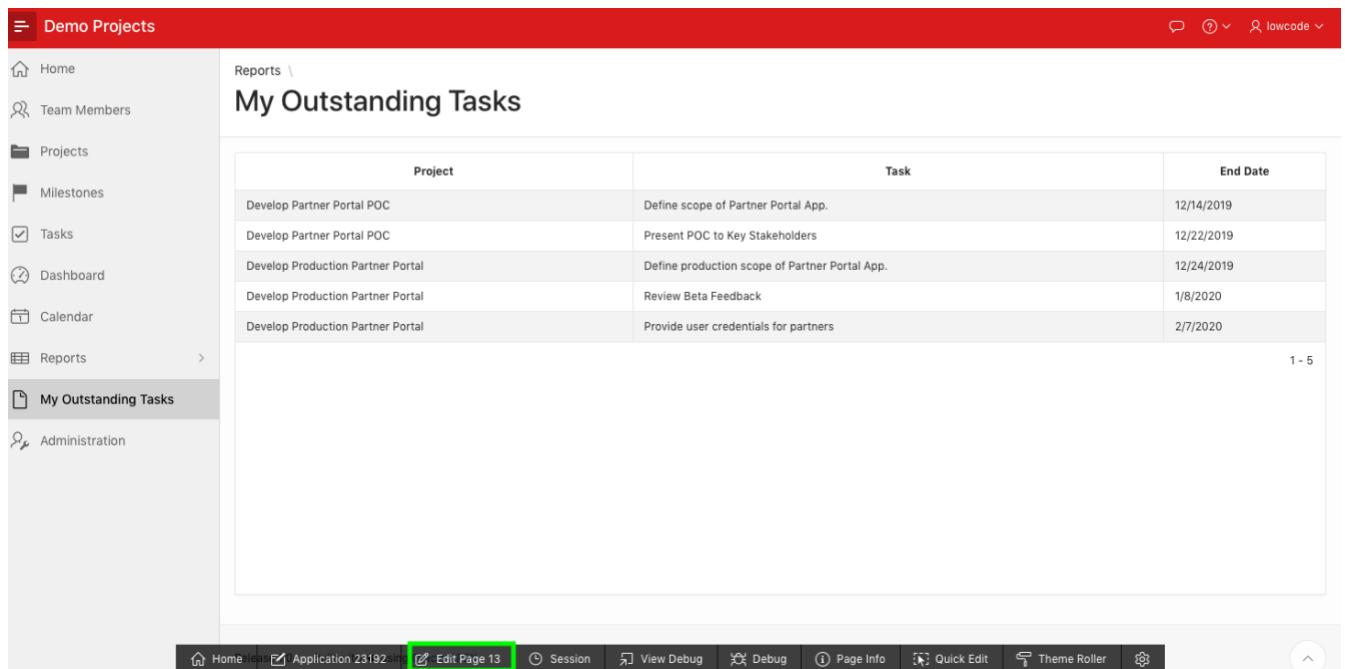
24. The Milestones Review chart page is now displayed.



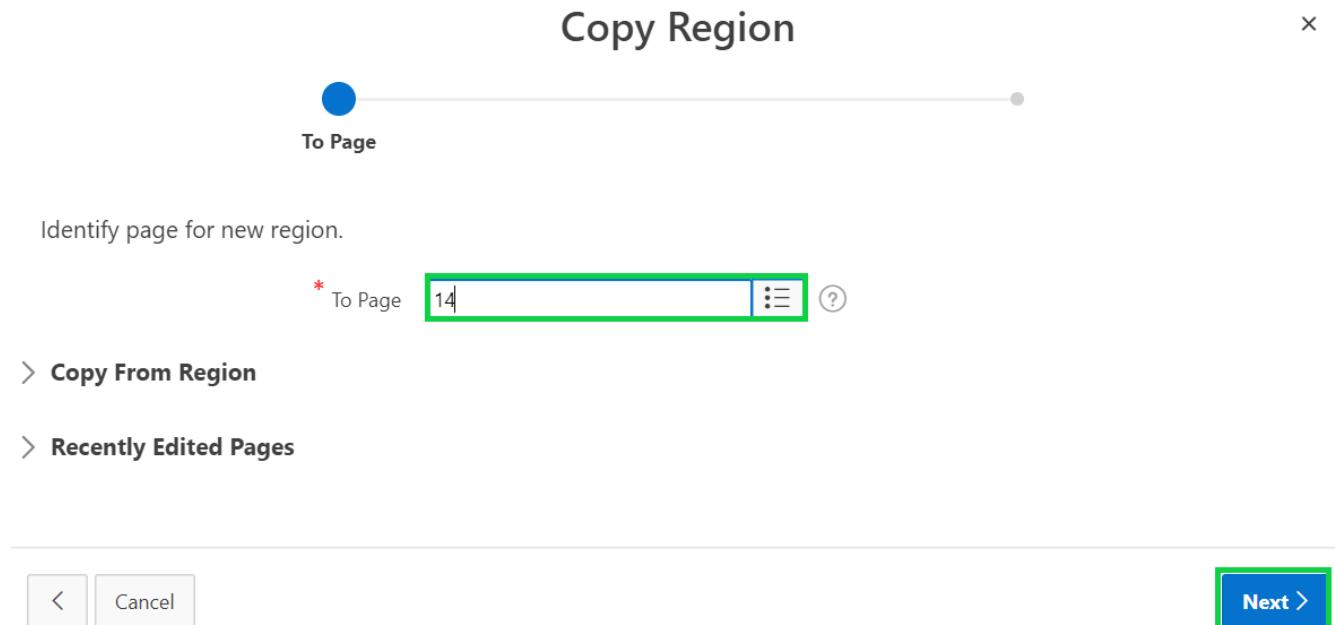
25. You do not need the My Outstanding Tasks report as a separate page. Instead, you want to move that report region to the Reports page.

In the Developer Toolbar, click **Reports > My Outstanding Tasks**.

26. In the Developer Toolbar, click **Edit Page < n >**.



27. In the Page Designer, right-click **My Outstanding Tasks** region and select **Copy to other page**.
28. For To Page, select the **Reports** page. You can use the Search dialog to locate the page.
Click **Next**.



29. Accept the defaults and click **Copy**.

Copy Region

Copy From Page: **15. My Outstanding Tasks** [?](#)

Copy To Page: **14. Reports** [?](#)

Copy Region Items: **No** [?](#)

Copy Buttons: **No** [?](#)

Copy Validations: **No** [?](#)

Copy Processes: **No** [?](#)

Copy Sub Regions: **No** [?](#)

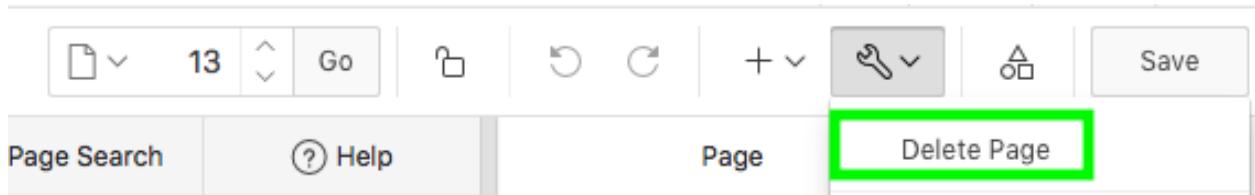
* Region Name [?](#)

* Sequence [?](#)

> Advanced

[Cancel](#) [Copy](#)

30. Now, click **Utilities** and select **Delete Page**.



31. On the Confirm Page Delete page, select **Yes – Delete corresponding list entries** for Cascade Delete.

32. Click **Permanently Delete Page**.

Associated Breadcrumb Entries

The following breadcrumb entries will be removed.

Breadcrumb Name	Short Name	Long Name	Link	Also Current For Pages
Breadcrumb	My Outstanding Tasks	-	f?p=&APP_ID:15:&SESSION.	-

Corresponding List Entries

List Name	List Entry	Target
Desktop Navigation Menu	My Outstanding Tasks	f?p=&APP_ID:15:&SESSION::&DEBUG.

1 - 1

> Regions

> Items

> Buttons

> Processes

> Validations

> Computations

> Branches

[Cancel](#)[Permanently Delete Page](#)

33. Navigate to application runtime environment and click **Reports** in the navigation menu.
 You now see the My Outstanding Tasks region on the Reports page.

Demo Projects

Home Team Members Projects Milestones Tasks Dashboard Calendar Reports Project Tree Tasks Review Milestones Review Administration

Reports

5 Open Projects	3 Upcoming Milestones	28 Open Tasks
--------------------	--------------------------	------------------

Project	Task	End Date
Develop Partner Portal POC	Define scope of Partner Portal App.	11/16/2019
Develop Partner Portal POC	Present POC to Key Stakeholders	11/24/2019
Develop Production Partner Portal	Define production scope of Partner Portal App.	11/26/2019
Develop Production Partner Portal	Review Beta Feedback	12/11/2019
Develop Production Partner Portal	Provide user credentials for partners	1/10/2020

1 - 5

HOL 15-6: Updating the Reports Page

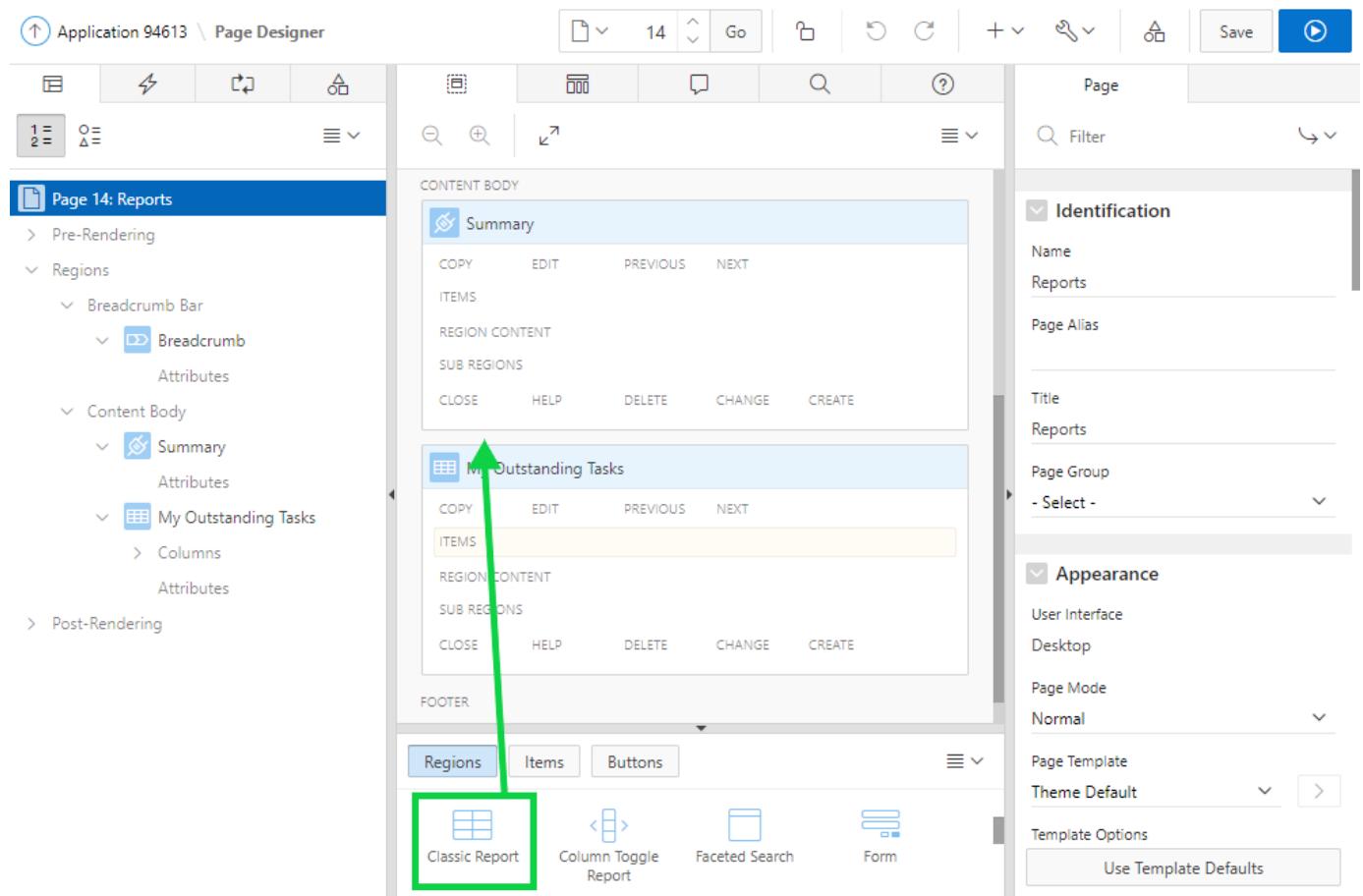
In this lab, you add new components to the Reports page of the Demo Projects application. You already created a badge list region. This lab covers adding the Recent Projects classic report region and modifying the Summary region attributes.

1. You add a new classic report region to the **Reports** page.

In the Developer Toolbar, click **Edit Page <n>**.

Now, in the Layout, navigate to **Gallery** and click **Regions**.

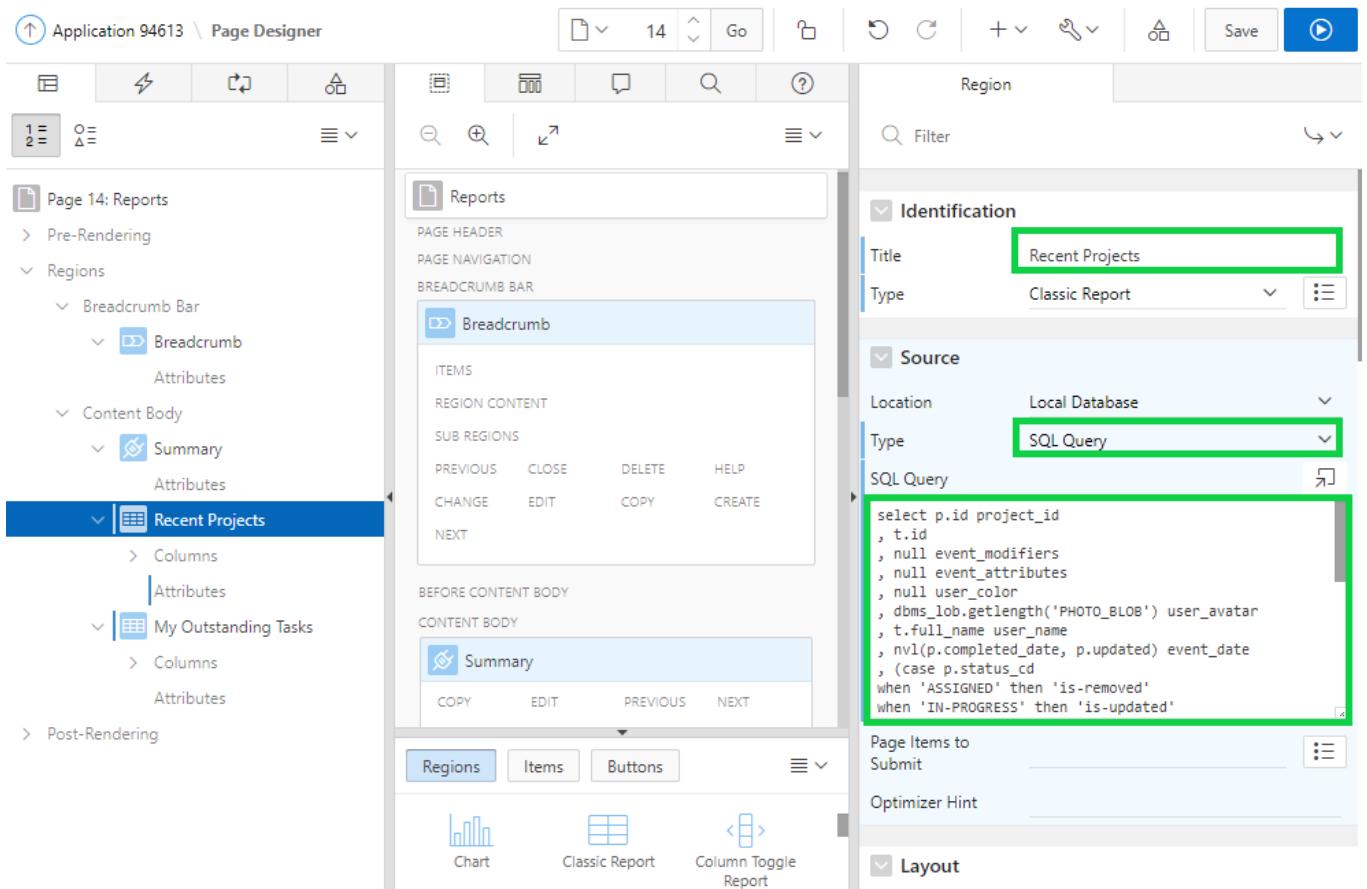
Click and hold **Classic Report** and drag it into **Content Body**, to a position directly between the **Summary** and the **My Outstanding Tasks** regions.



2. In the property editor:

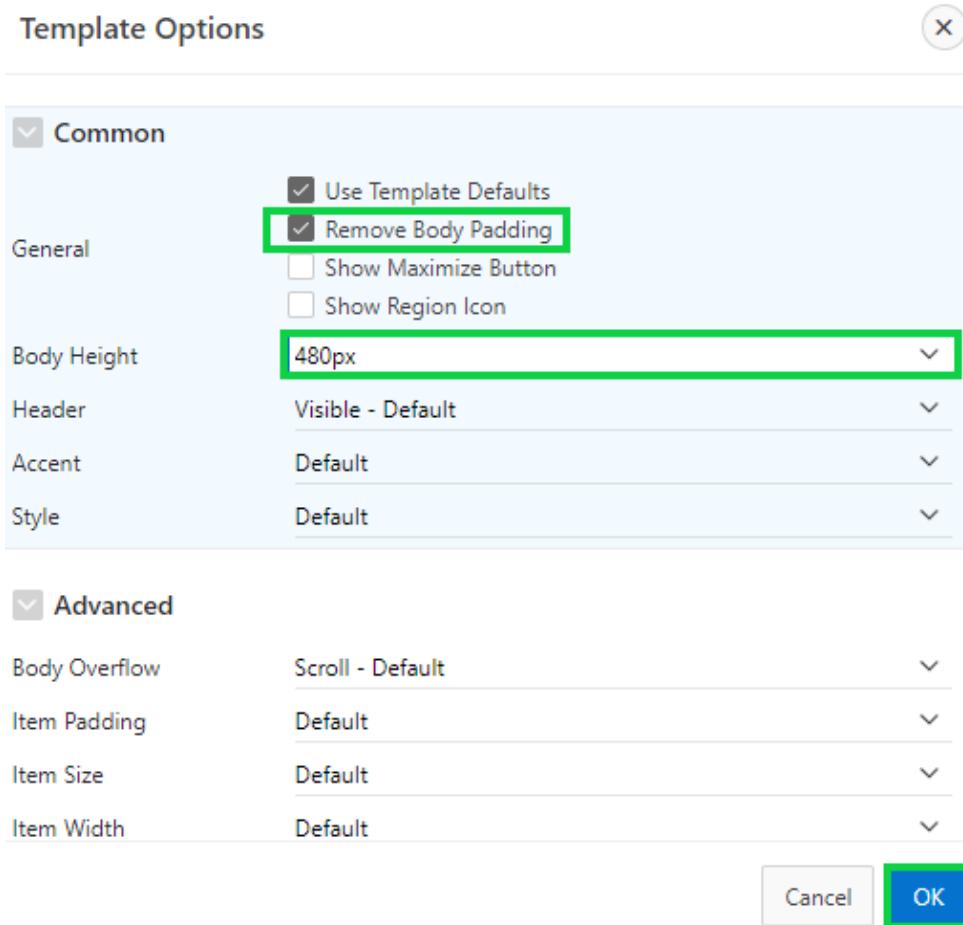
- Identification > Title: Enter **Recent Projects**
- Source > Type: **SQL Query**
- Identification > Source > SQL Query: Copy and paste the following code:

```
select p.id project_id
, t.id
, null event_modifiers
, null event_attributes
, null user_color
, dbms_lob.getlength('PHOTO_BLOB') user_avatar
, t.full_name user_name
, nvl(p.completed_date, p.updated) event_date
, (case p.status_cd
when 'ASSIGNED' then 'is-removed'
when 'IN-PROGRESS' then 'is-updated'
when 'COMPLETED' then 'is-new'
end) event_status
, (select s.description
  from demo_proj_status s
  where s.cd = p.status_cd
) event_type
, (case p.status_cd
when 'ASSIGNED' then 'fa fa-clock-o'
when 'IN-PROGRESS' then 'fa fa-refresh'
when 'COMPLETED' then 'fa fa-check'
end) event_icon
, p.name event_title
, p.description event_desc
from demo_projects p
, demo_proj_team_members t
where p.project_lead = t.id
order by p.updated desc
```

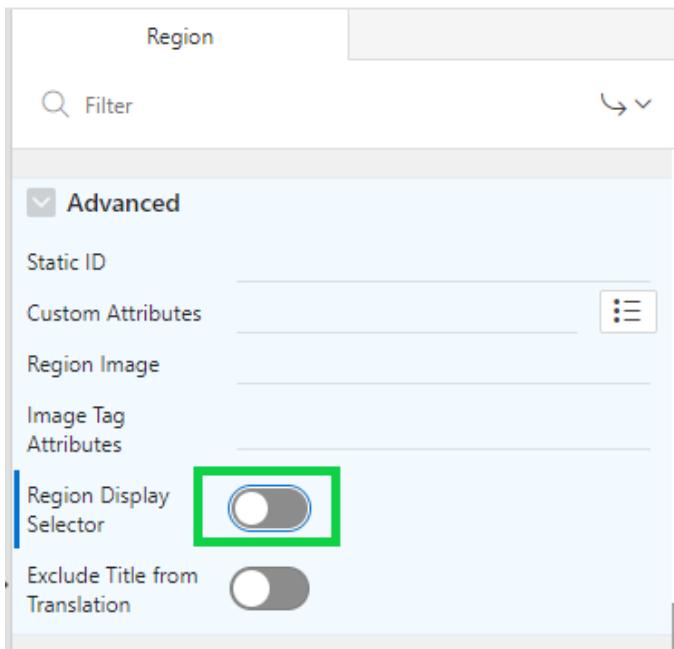


3. In the property editor, locate Appearance and click **Template Options**.
4. In the Template Options dialog:
 - For General, select the **Remove Body Padding** check box.
 - For Body Height, select **480px**.

Click **OK**.



5. In the property editor, under Advanced, click to **Disable** the Region Display Selector.

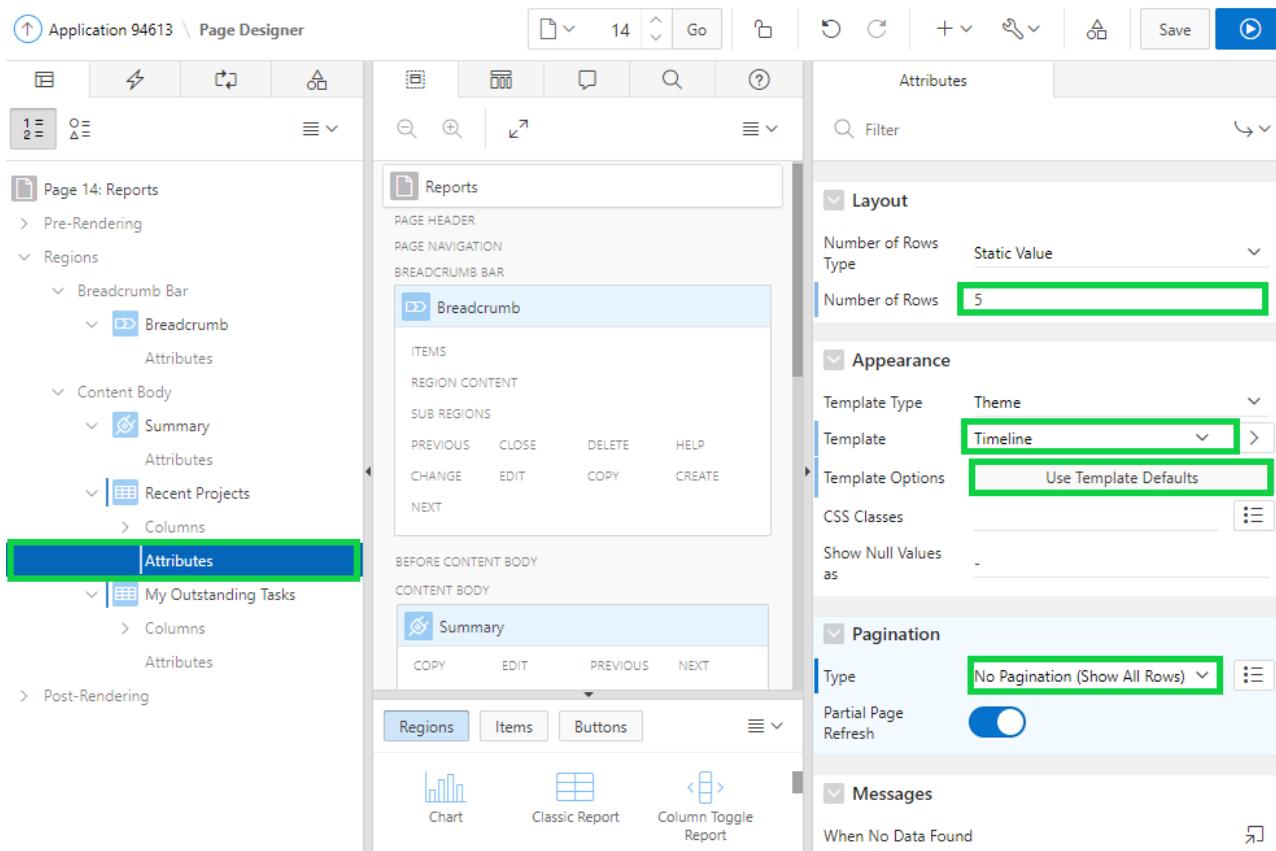


6. Under Rendering, expand **Regions > Recent Projects** and select **Attributes**.

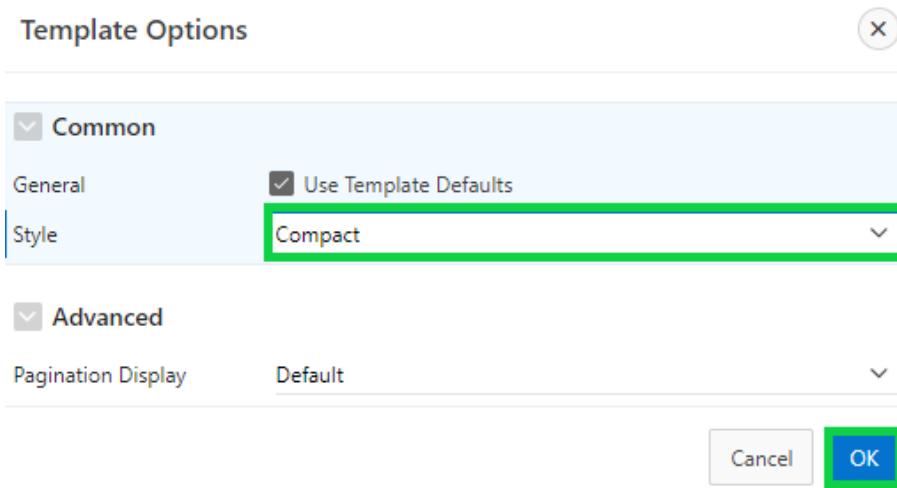
In the property editor:

- Layout > Number of Rows: Enter **5**
- Appearance > Template: Select **Timeline**
- Pagination > Type: Select **No Pagination (Show All Rows)**

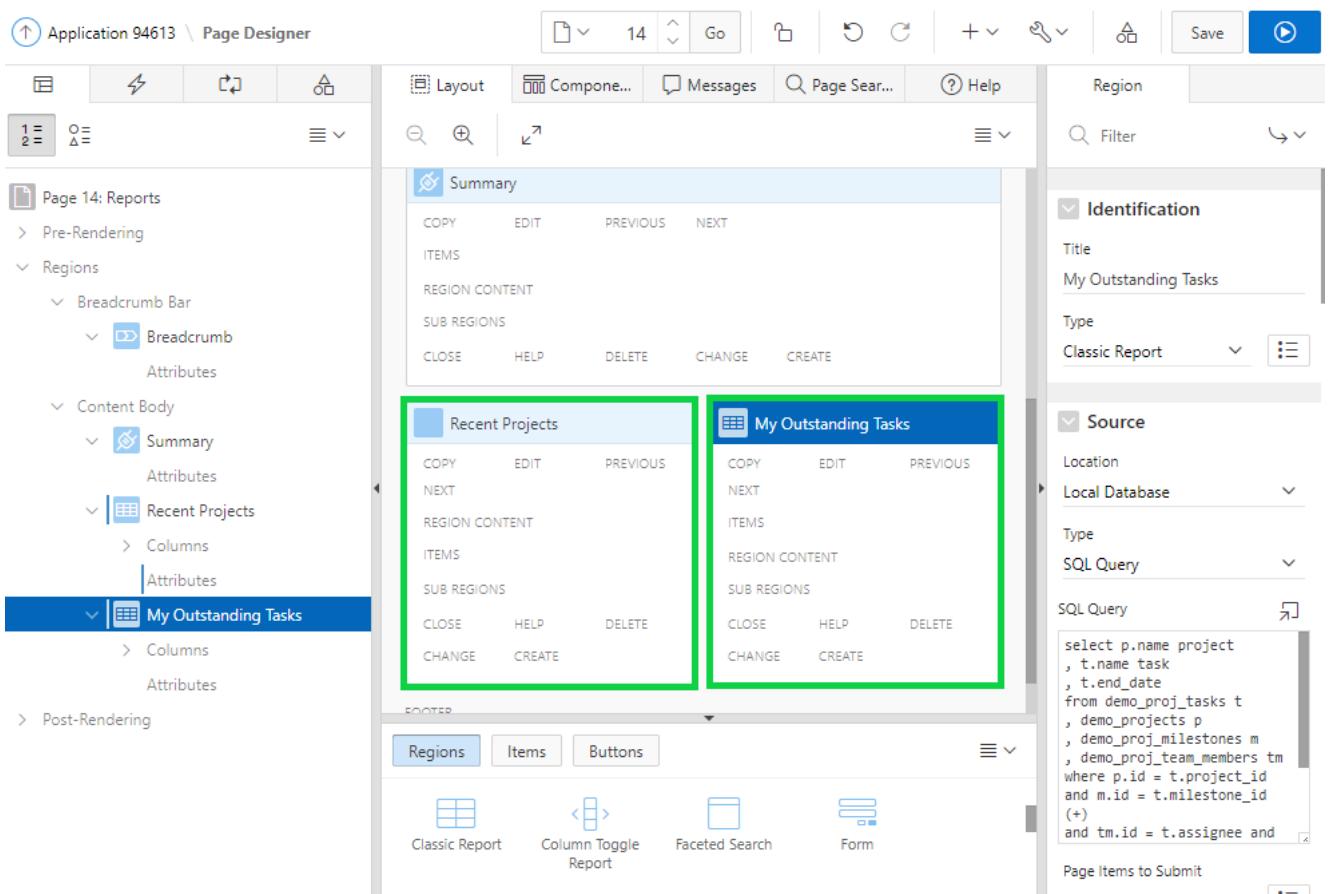
Under Appearance, click **Template Options**.



7. In the Template Options dialog, select **Compact** for Style.
Click **OK**.



8. In the Layout, click and hold the **My Outstanding Tasks** region and drag it into the position next to the Recent Projects region. Both the Recent Projects and My Outstanding Tasks regions should now appear on the same line horizontally.



9. Under Rendering, expand **Regions > Recent Projects > Columns**.

Click **USER_AVATAR**.

In the property editor:

- Identification > Type: Select **Display Image**
- BLOB Attributes > Table Name: Select **DEMO_PROJ_TEAM_MEMBERS**
- BLOB Attributes > BLOB Column: Select **PHOTO_BLOB**
- BLOB Attributes > Primary Key Column 1: Select **ID**
- BLOB Attributes > Mime Type Column: Select **PHOTO_MIMETYPE**
- BLOB Attributes > Filename Column: Select **PHOTO_FILENAME**
- BLOB Attributes > LAST_UPDATED Column: Select **PHOTO_LAST_UPDATED**

The screenshot shows the Oracle Application Express Page Designer interface. On the left, the navigation pane lists 'Page 14: Reports' and its components: Pre-Rendering, Regions, Content Body, and Recent Projects. Under 'Recent Projects', the 'Columns' section is expanded, showing columns like PROJECT_ID, ID, EVENT_MODIFIERS, EVENT_ATTRIBUTES, USER_COLOR, and USER_AVATAR. The 'USER_AVATAR' column is highlighted with a green border. In the center, the 'CONTENT BODY' area displays three report items: 'Summary', 'Recent Projects', and 'My Outstanding Tasks'. On the right, the 'Properties' panel is open, showing the 'Identification' section with 'Column Name' set to 'USER_AVATAR' and 'Type' set to 'Display Image'. Below it, the 'BLOB Attributes' section is expanded, listing various properties: Table Owner (DEMO_PROJ_TEAM_MEM), Table Name (PHOTO_BLOB), Primary Key Column 1 (ID), Primary Key Column 2 (- Select -), Mime Type Column (PHOTO_MIMETYPE), Filename Column (PHOTO_FILENAME), and Last Updated Column (PHOTO_LAST_UPDATED). The entire screenshot is framed by a thick black border.

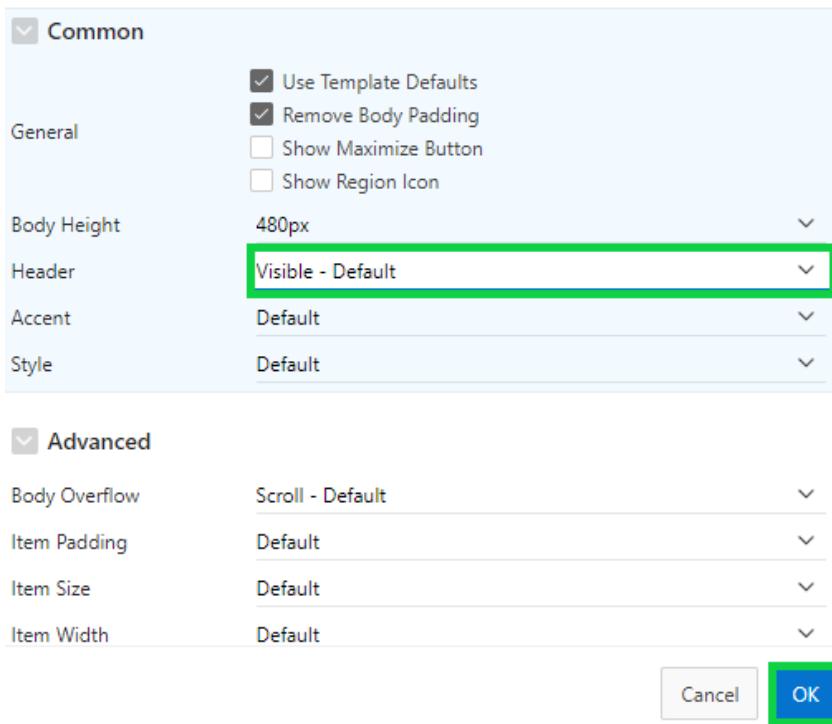
10. Under Rendering, select **My Outstanding Tasks.**

In the property editor, under Appearance, click **Template Options**.

For Header, select **Visible – Default**.

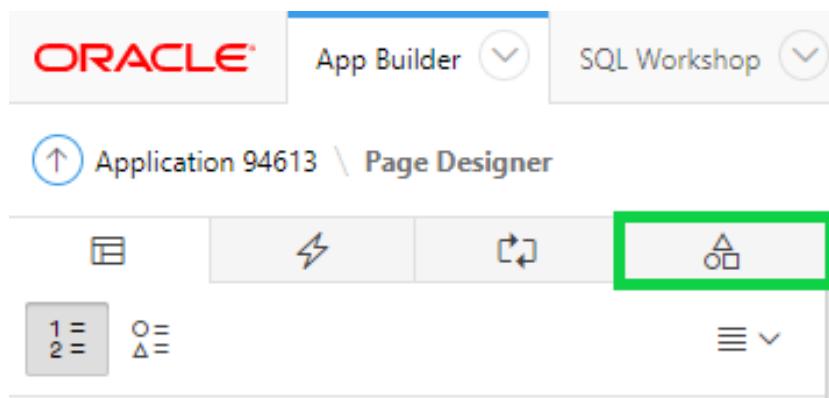
Click **OK**.

Template Options



Click **Save**.

11. Click Page Shared Components.



12. Expand Breadcrumbs and select **Breadcrumb**. In the property editor, click **Edit Component**.

The screenshot shows the Oracle Application Express Page Designer interface. On the left, the navigation tree is expanded to show categories like Navigation Menu, Navigation Bar, Lists, Authorizations, Build Options, Data Load Tables, Web Service References, and Breadcrumbs. Under Breadcrumbs, 'Breadcrumb' is selected and highlighted with a blue bar. The main content area displays the 'Breadcrumb' component's edit screen. The 'CONTENT BODY' section contains a summary table with columns for COPY, EDIT, PREVIOUS, NEXT, ITEMS, REGION CONTENT, and SUB REGIONS. Below this are buttons for CLOSE, HELP, DELETE, CHANGE, and CREATE. To the right, there is an 'Identification' panel with a checked checkbox labeled 'Breadcrumb' under the 'Name' field. A green box highlights the 'Edit Component' button in the top right corner of the main content area.

13. Click Reports.

The screenshot shows the Oracle Application Express Shared Components Breadcrumbs Entries page. At the top, there are search and filter fields for 'Breadcrumb' and 'Name or Target'. Below these are buttons for 'Edit Breadcrumb Name' and 'Create Breadcrumb Entry >'. The main area is a table with columns: Name, Sequence, Page, and Parent. A single row is visible, showing 'Reports' in the Name column, '10' in the Sequence column, '14' in the Page column, and '(null)' in the Parent column. The 'Reports' entry is highlighted with a green box. At the bottom right of the table, there is a page number '1 - 1'.

Name	Sequence	Page	Parent
Reports	10	14	(null)

14. Under Entry, enter **Summary** for Short Name. Click **Apply Changes**.

The screenshot shows the Oracle Application Express interface for creating or editing a breadcrumb entry. The top navigation bar includes links for Application 94613, Shared Components, Breadcrumbs, Entries, Create / Edit, and a help icon. The main title is "Breadcrumb Entry: Reports". Below the title are tabs for Show All, Breadcrumb, Entry, Target, Conditions, Authorization, and Configuration. The "Entry" tab is selected. A sub-header "Breadcrumb" is followed by a form with fields: Breadcrumb (dropdown), Page (text input with value 14, a grid icon, and a help icon), Sequence (text input with value 10, a help icon), Parent Entry (dropdown with placeholder - Select Parent -), Short Name (text input with value "Summary", highlighted with a green border, and a help icon), and Long Name (text input with a help icon). Buttons at the top right include Cancel, Delete, and a prominent blue "Apply Changes" button.

15. Click **Run Page <n>**.

The updated page is displayed now.

The screenshot shows the Oracle Application Express interface for the 'Demo Projects' application. The top navigation bar includes links for Home, Team Members, Projects, Milestones, Tasks, Dashboard, and Calendar. A dropdown menu for 'Reports' is open, showing options like Project Tree, Tasks Review, and Milestones Review. The main content area features a 'Summary' section with three large numbers: 5 Open Projects, 3 Upcoming Milestones, and 28 Open Tasks. Below this are two tables: 'Recent Projects' and 'My Outstanding Tasks'. The 'Recent Projects' table lists four projects: 'Develop Production Partner ...' (Assigned), 'Develop Partner Portal POC' (In Progress), 'Migrate Legacy Applications' (In Progress), and 'Train Developers on Web de...' (Completed). The 'My Outstanding Tasks' table lists five tasks across three projects: 'Define scope of Partner Portal App.', 'Present POC to Key Stakeholders', 'Define production scope of Partner Portal App.', 'Review Beta Feedback', and 'Provide user credentials for partners'. At the bottom, a developer toolbar provides links for Home, Application 94613, Edit Page 14, Session, View Debug, Debug, Page Info, Quick Edit, Theme Roller, and a gear icon.

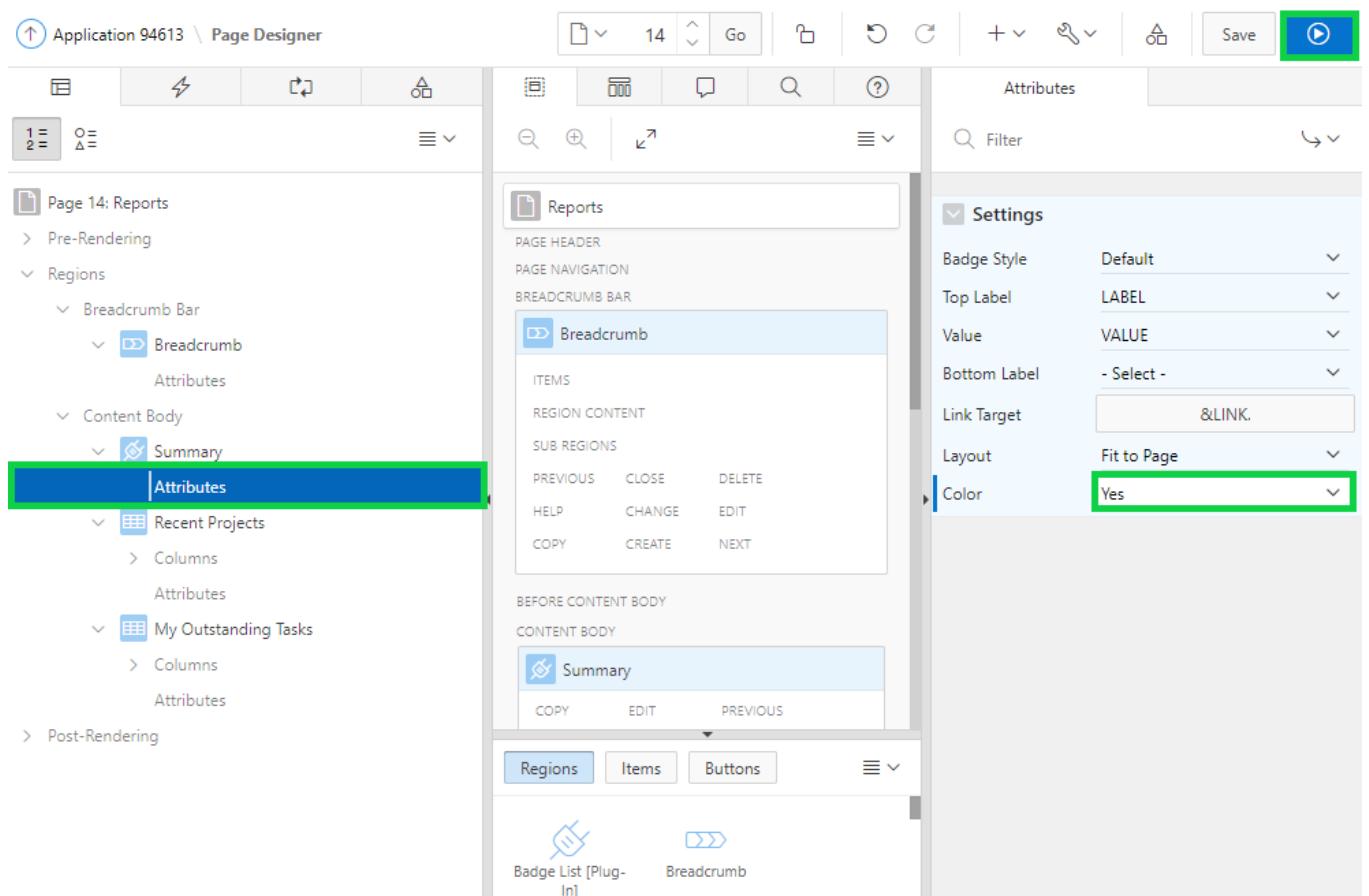
Project	Task	End Date
Develop Partner Portal POC	Define scope of Partner Portal App.	11/16/2019
Develop Partner Portal POC	Present POC to Key Stakeholders	11/24/2019
Develop Production Partner Portal	Define production scope of Partner Portal App.	11/26/2019
Develop Production Partner Portal	Review Beta Feedback	12/11/2019
Develop Production Partner Portal	Provide user credentials for partners	1/10/2020

16. You can set color for the badges.

In the Developer Toolbar, click **Edit Page <n>**. Click **Rendering**. Under Rendering, expand Regions > Summary. Then, select **Attributes**.

In the property editor, under Settings, for Color, select **Yes**.

Click **Save and Run Page**.



17. The Reports page now is displayed with the colored badges.

Demo Projects

- Home
- Team Members
- Projects
- Milestones
- Tasks
- Dashboard
- Calendar
- Reports
 - Project Tree
 - Tasks Review
 - Milestones Review
- Administration

Summary

5
 Open Projects

3
 Upcoming Milestones

28
 Open Tasks

Recent Projects			My Outstanding Tasks		
Project	Task	End Date	Project	Task	End Date
Develop Partner Portal POC	Define scope of Partner Portal App.	11/16/2019	Develop Production Partner Portal	Present POC to Key Stakeholders	11/24/2019
Develop Production Partner Portal	Define production scope of Partner Portal App.	11/26/2019	Develop Production Partner Portal	Review Beta Feedback	12/11/2019
Develop Production Partner Portal	Provide user credentials for partners	1/10/2020			

1 - 5

HOL 15-7: Updating the Dashboard Page

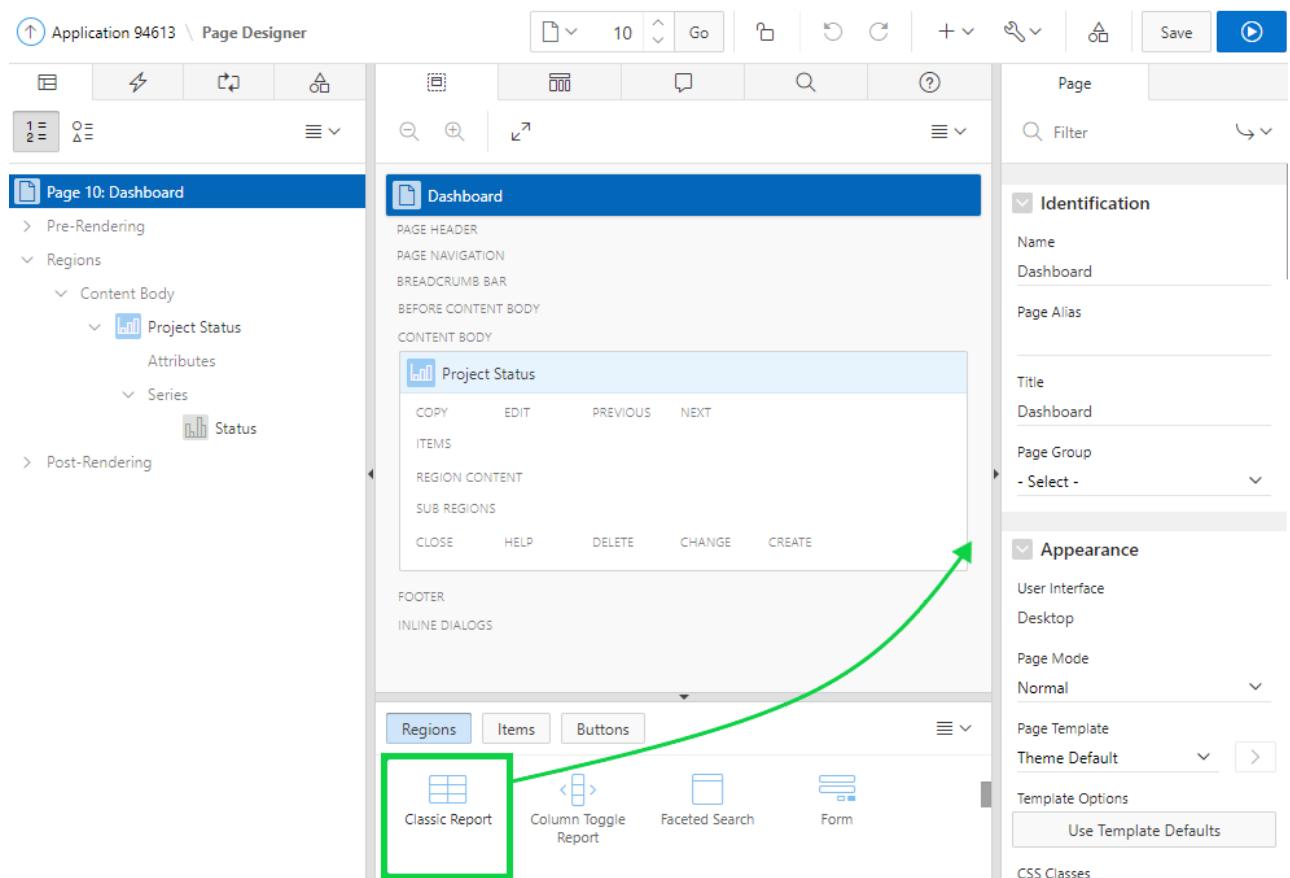
In this lab, you will update the Dashboard page of the Demo Projects application. The Dashboard should show Project Status chart, Upcoming Milestones report. At the bottom of the page it would be good to show incomplete tasks to round off the dashboard page.

1. In the left navigation menu, click **Dashboard**.

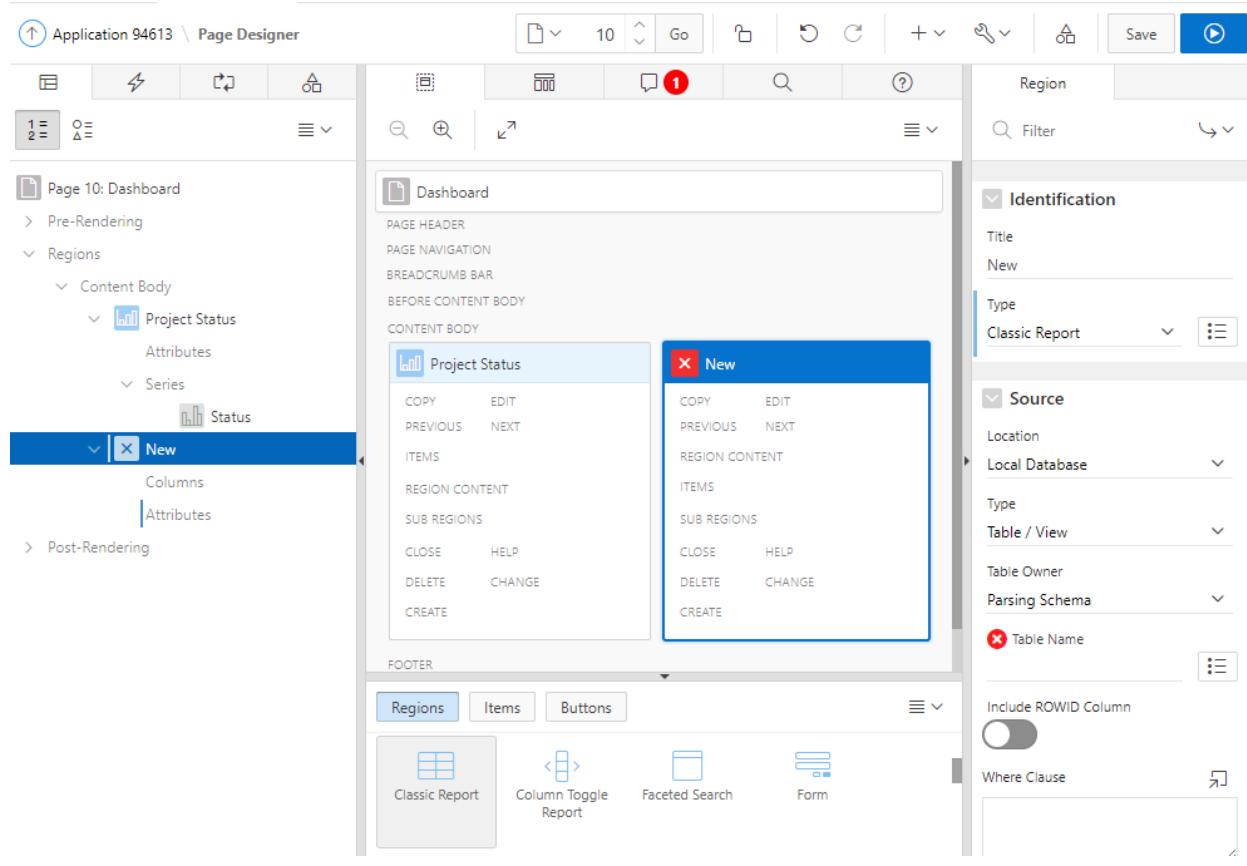
In the Developer Toolbar, click **Edit Page < n >**.

2. Under Layout, navigate to Gallery and click **Regions**.

Select **Classic Report**, and then drag and drop this region to the right side of **Project Status** region.



The new region should be placed as displayed in the screenshot below:



3. In the property editor, enter / select the following:

- Identification > Title: **Upcoming Milestones**
- Source > Type: **SQL Query**
- Source > SQL Query:

```
select p.name project
      , m.name milestone
      , m.due_date
  from demo_projects p
      , demo_proj_milestones m
 where p.id = m.project_id
 and m.due_date >= sysdate
```

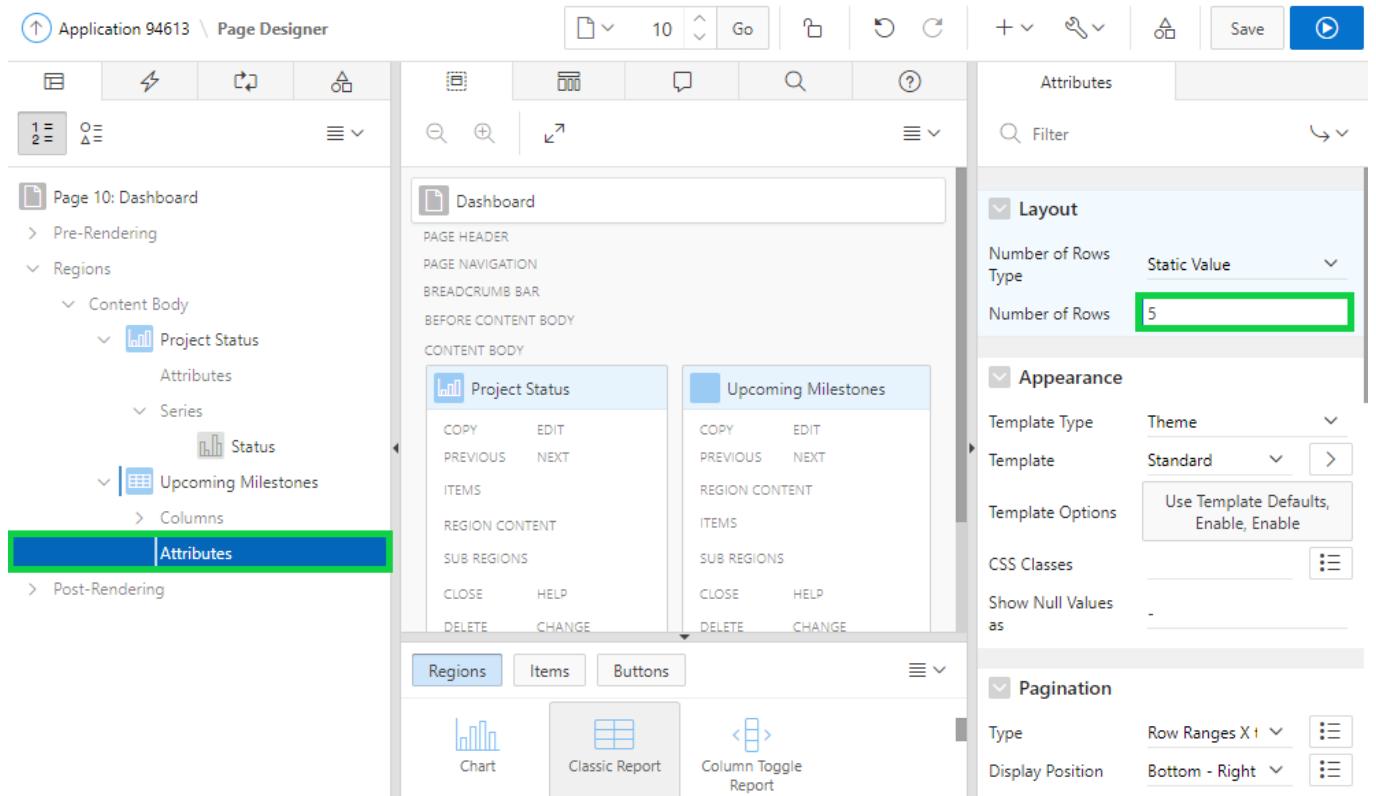
Note: To ensure only future milestones are returned, the milestone due date is compared to sysdate which represents the current date in the Oracle database.

The screenshot shows the Oracle Application Express Page Designer interface. On the left, the navigation pane lists 'Page 10: Dashboard' with sections for Pre-Rendering, Regions, Content Body (selected), Project Status (selected), and Post-Rendering. In the center, a 'Dashboard' page is displayed with regions for PAGE HEADER, PAGE NAVIGATION, BREADCRUMB BAR, BEFORE CONTENT BODY, and CONTENT BODY. The 'CONTENT BODY' region contains two reports: 'Project Status' and 'Upcoming Milestones'. The 'Upcoming Milestones' report is selected. On the right, the 'Identification' panel shows the title 'Upcoming Milestones' and type 'Classic Report'. The 'Source' panel shows the location as 'Local Database' and type as 'SQL Query'. The SQL query is:

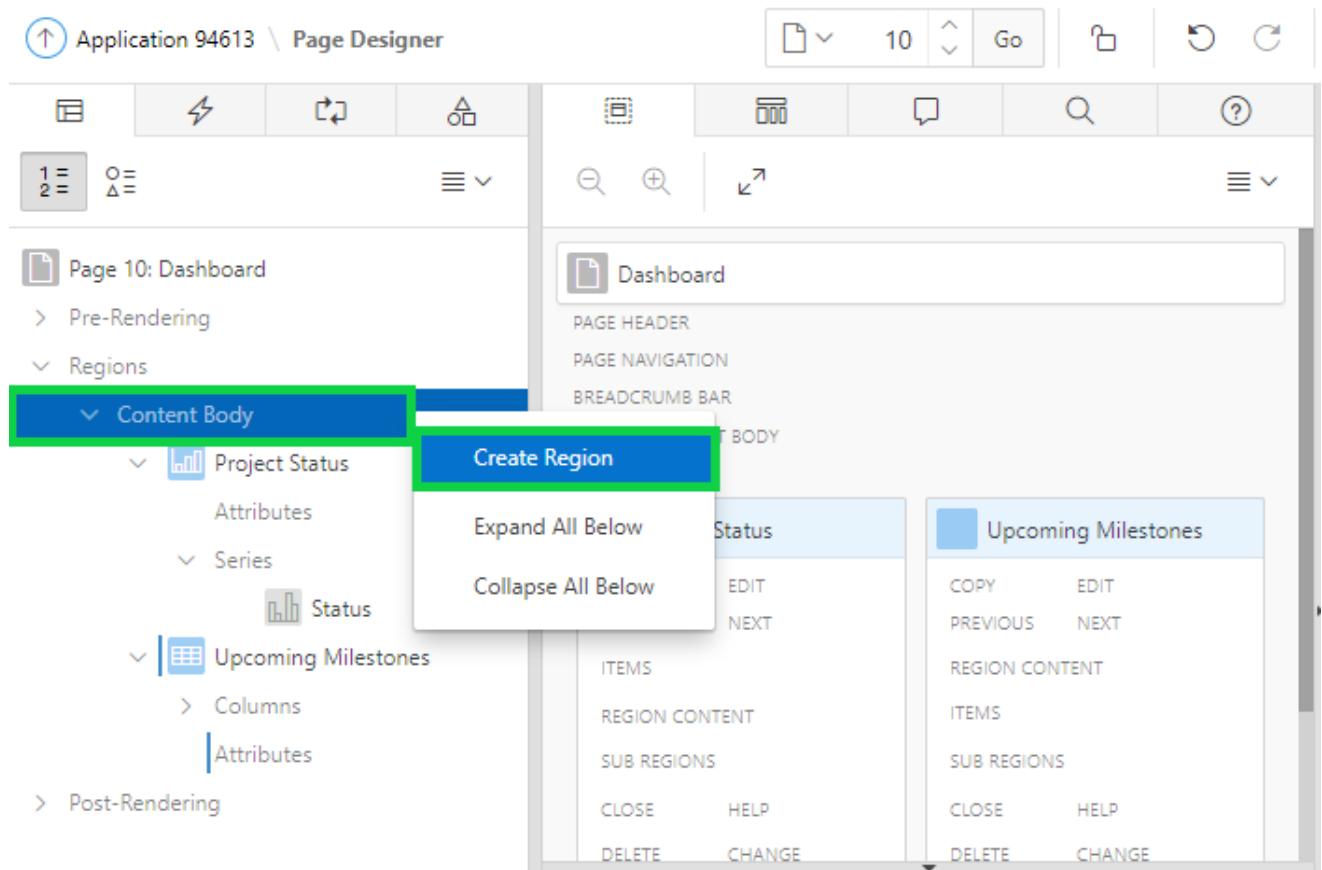
```
select p.name project
 , m.name milestone
 , m.due_date
 from demo_projects p
 , demo_proj_milestones m
 where p.id = m.project_id
 and m.due_date >= sysdate
```

4. Update the report attributes, to only display 5 records at once.

In the Rendering tab, under **Upcoming Milestones**, click **Attributes**. In the Property Editor, for Layout > Number of Rows, enter **5**.



- It would be very beneficial to also list the incomplete tasks on the dashboard page. To do so you will add another classic report at the bottom of the page.
In the Rendering tab, right-click **Content Body**, and select **Create Region**.



6. Update the report properties.

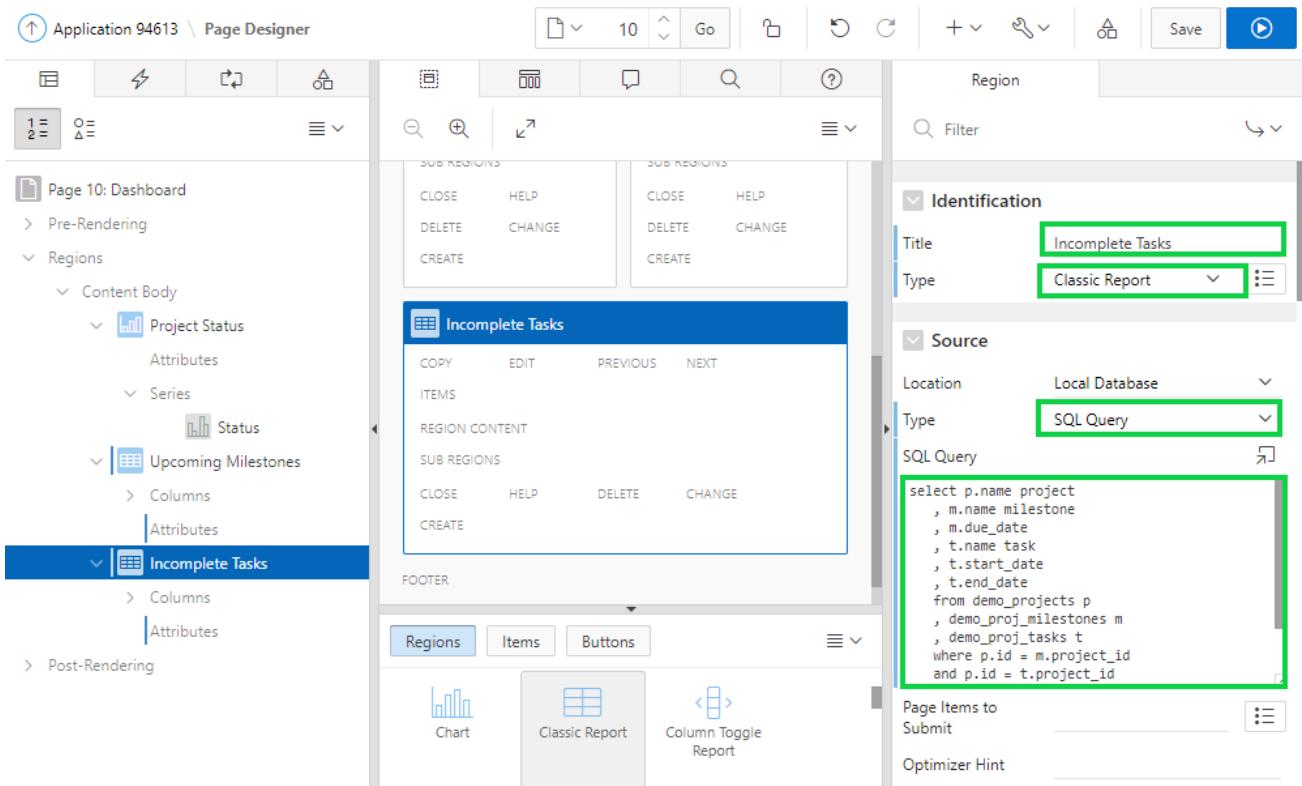
In the Property Editor, update the following:

- Identification: Title - enter **Incomplete Tasks**
- Identification: Type - select **Classic Report**
- Source: Type - select **SQL Query**
- Source: SQL Query - enter the following code:

```
select p.name project
      , m.name milestone
      , m.due_date
      , t.name task
      , t.start_date
      , t.end_date
   from demo_projects p
      , demo_proj_milestones m
      , demo_proj_tasks t
  where p.id = m.project_id
  and p.id = t.project_id
  and t.milestone_id = m.id (+)
  and nvl(is_complete_yn, 'N') = 'N'
  and nvl(is_complete_yn, 'N') = 'N'
```

Note: Milestones are only optional for tasks, therefore, when joining the tasks and milestones tables it uses an outer join (+) so that all tasks are returned, even if they don't have an associated milestone.

Only incomplete tasks are to be displayed, irrespective of their start and end dates, so the Tasks column is_complete_yn is checked.



- In the Page Designer, click **Save and Run Page**.
The updated Dashboard page is now displayed.

Demo Projects

Project Status

Upcoming Milestones

Project ↑	Milestone	Due Date
Develop Production Partner Portal	Perform Beta testing with select Partners	12/11/2019
Develop Production Partner Portal	Complete Phase 1 Development of Partner Portal app	1/7/2020
Develop Production Partner Portal	Roll out Phase 1 of Partner Portal app	1/11/2020

Incomplete Tasks

Project ↑	Milestone	Due Date	Task	Start Date	End Date
Develop Partner Portal POC	Build Proof-of-Concept	11/25/2019	Populate Data Structures for Partner Portal	11/20/2019	11/21/2019
Develop Partner Portal POC	Build Proof-of-Concept	11/25/2019	Develop Admin Screens for Partner Portal	11/20/2019	11/22/2019
Develop Partner Portal POC	Define Requirements	11/18/2019	Design User Experience	11/17/2019	11/18/2019
Develop Partner Portal POC	Define Requirements	11/18/2019	Define Partner App Data Structures	11/16/2019	11/19/2019

Home | Application 94613 | Edit Page 10 | Session | View Debug | Debug | Page Info | Quick Edit | Theme Roller |

8. Both reports can readily be improved by removing body padding.
In the Runtime Environment, within the Developer Toolbar, click **Quick Edit**.
Hover over the **Upcoming Milestones** region until a blue box appears around the outside of the region.
Click the Wrench in the top right corner.

The screenshot shows a project management application interface. On the left, a sidebar menu includes Home, Team Members, Projects, Milestones, Tasks, Dashboard (which is selected), Calendar, Reports, and Administration. The main content area has three sections:

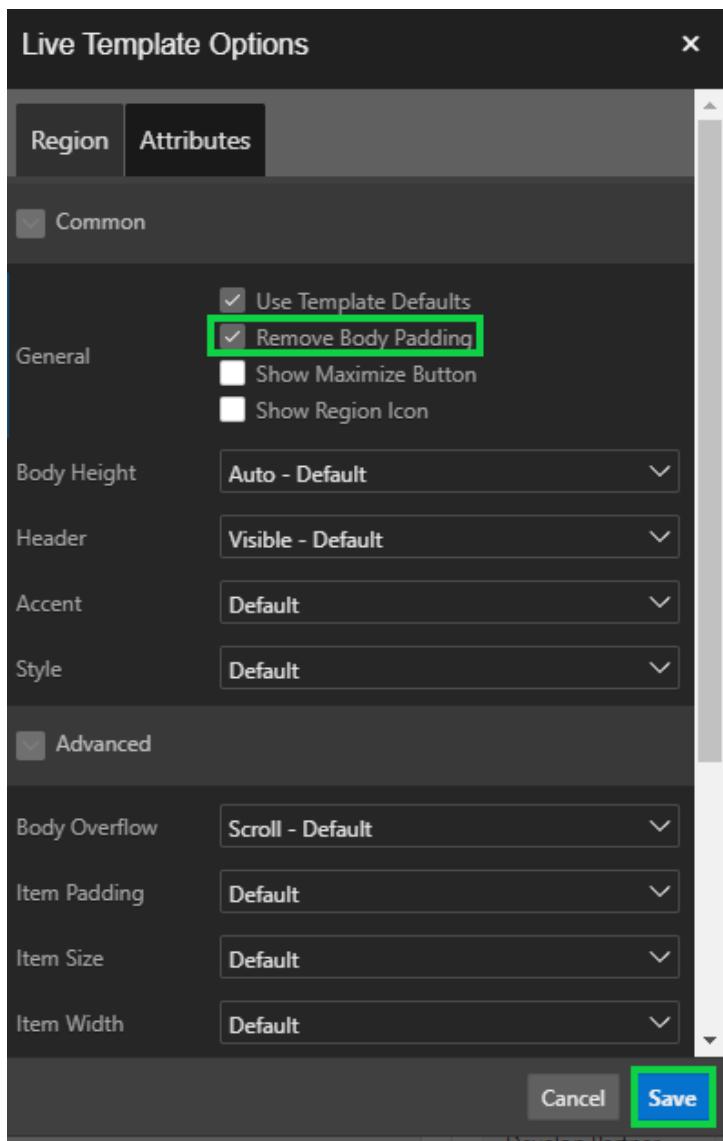
- Project Status:** A pie chart divided into three segments: Completed (red), In-Progress (green), and Assigned (yellow). The legend indicates: Completed (red), In-Progress (green), and Assigned (yellow).
- Upcoming Milestones:** A table listing three milestones with their due dates. The table has columns: Project ↑, Milestone, and Due Date.
- Incomplete Tasks:** A table listing several tasks with their details. The table has columns: Project ↑, Milestone, Due Date, Task, Start Date, and End Date.

A green arrow points from the 'Upcoming Milestones' section to the 'Incomplete Tasks' section. The bottom navigation bar includes links for Home, Application 94613, Edit Page 10, Session, View Debug, Debug, Page Info, Quick Edit, Theme Roller, and Help.

Project ↑	Milestone	Due Date
Develop Production Partner Portal	Perform Beta testing with select Partners	12/11/2019
Develop Production Partner Portal	Complete Phase 1 Development of Partner Portal app	1/7/2020
Develop Production Partner Portal	Roll out Phase 1 of Partner Portal app	1/11/2020

Project ↑	Milestone	Due Date	Task	Start Date	End Date
Develop Partner Portal POC	Build Proof-of-Concept	11/25/2019	Populate Data Structures for Partner Portal	11/20/2019	11/21/2019
Develop Partner Portal POC	Build Proof-of-Concept	11/25/2019	Develop Admin Screens for Partner Portal	11/20/2019	11/22/2019
Develop Partner Portal POC	Define Requirements	11/18/2019	Design User Experience	11/17/2019	11/18/2019
Develop Partner Portal POC	Define Requirements	11/18/2019	Define Partner App Data Structure	11/16/2019	11/19/2019

9. In the Live Template options dialog, for General, select **Remove Body Padding**. Click **Save**.



10. In the Runtime Environment, within the Developer Toolbar, click **Quick Edit**.
Hover over the **Incomplete Tasks** region until a blue box appears around the outside of the region.
Click the Wrench in the top right corner.

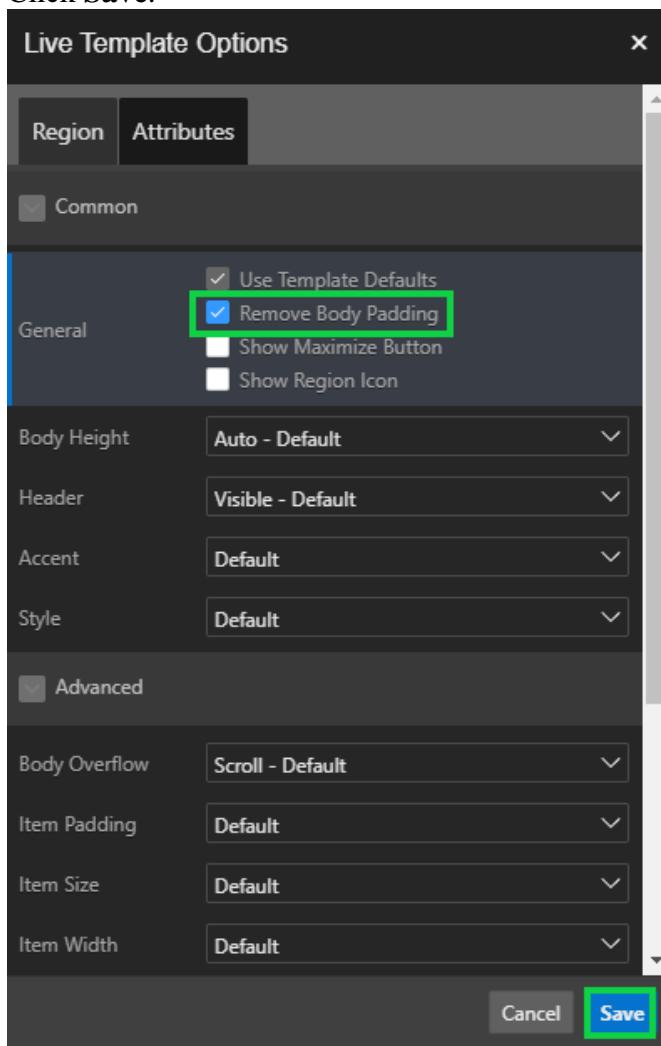
The screenshot shows the Oracle Application Express Demo Projects dashboard. On the left, there is a sidebar with the following menu items:

- Home
- Team Members
- Projects
- Milestones
- Tasks
- Dashboard** (highlighted)
- Calendar

The main content area displays a table of tasks:

Project ↑	Milestone	Due Date	Task	Start Date	End Date
Develop Partner Portal POC	Build Proof-of-Concept	11/25/2019	Populate Data Structures for Partner Portal	11/20/2019	11/21/2019
Develop Partner Portal POC	Build Proof-of-Concept	11/25/2019	Develop Admin Screens for Partner Portal	11/20/2019	11/22/2019
Develop Partner Portal POC	Define Requirements	11/18/2019	Design User Experience	11/17/2019	11/18/2019
Develop Partner Portal POC	Define Requirements	11/18/2019	Define Partner App Data Structures	11/16/2019	11/19/2019
Develop Partner Portal POC	Define Requirements	11/18/2019	Define scope of Partner Portal App.	11/9/2019	11/16/2019

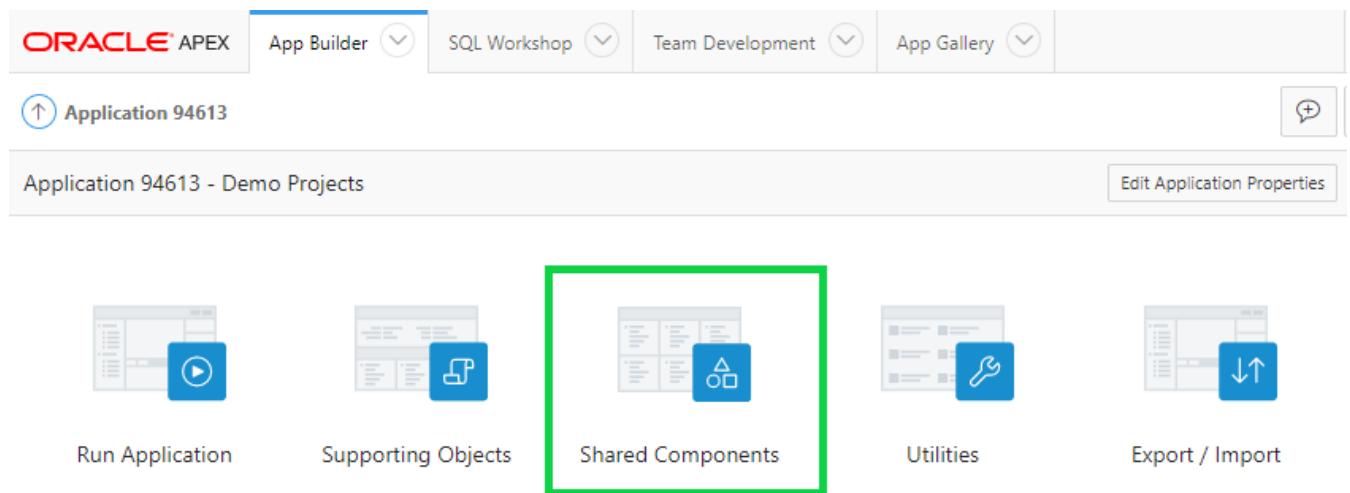
11. In the Live Template options dialog, for General, select **Remove Body Padding**. Click **Save**.



HOL 15-8: Updating the Home Page

In this lab, you update the navigation menu of the Demo Projects application. You also add/update entries on the Home page.

1. In the Developer Toolbar, click **Application < n >**.
Click **Shared Components**.



2. Under Navigation, click **Lists**.

The screenshot shows the Oracle Application Express Shared Components interface. The top navigation bar displays "Application 94613 \ Shared Components". The main content area is divided into three main sections: Application Logic, Security, and Other Components.

- Application Logic:** Contains links for Application Definition Attributes, Application Items, Application Processes, Application Computations, Application Settings, and Build Options.
- Security:** Contains links for Security Attributes, Authentication Schemes, Authorization Schemes, Application Access Control, Session State Protection, and Web Credentials.
- Other Components:** Contains links for List of Values, Plug-ins, Component Settings, Shortcuts, and Email Templates.

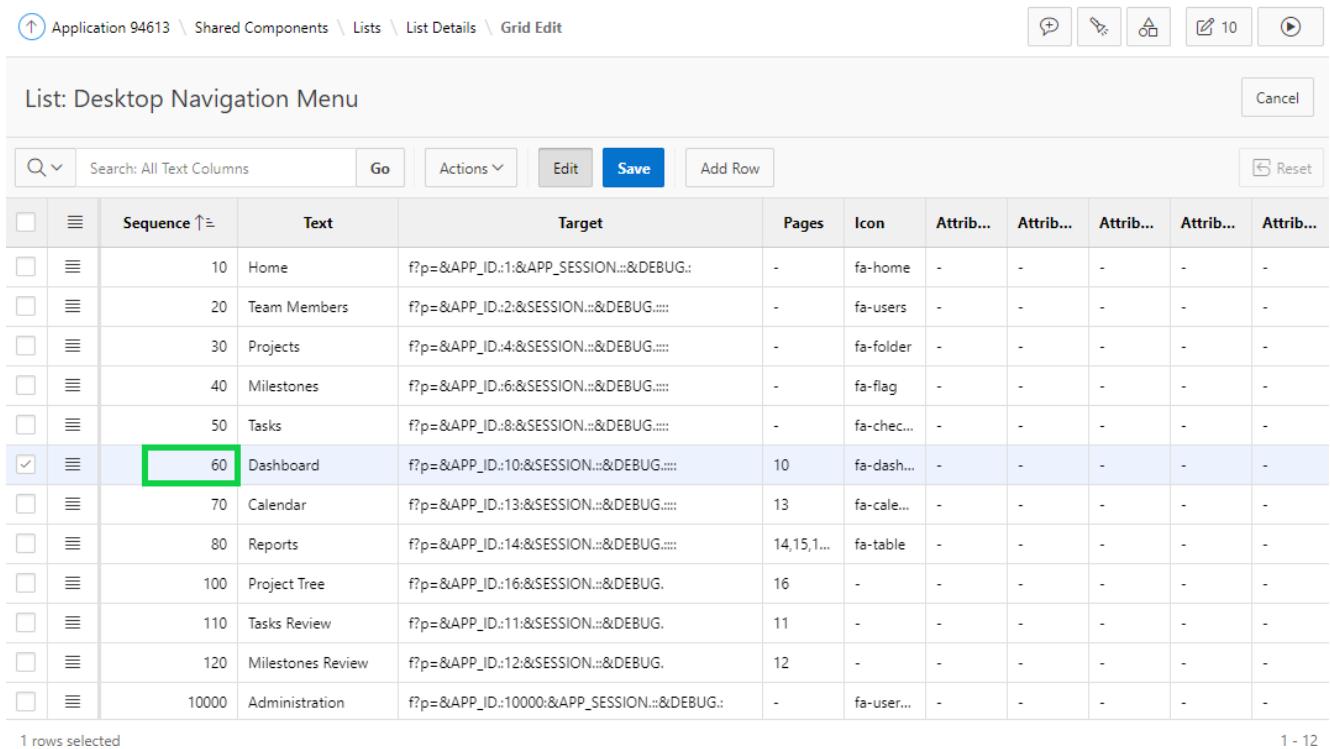
3. Click Desktop Navigation Menu.

The screenshot shows the Lists page in Oracle Application Express. The top navigation bar displays "Application 94613 \ Shared Components \ Lists". The main content area shows a table of lists, with the "Desktop Navigation Menu" row highlighted by a green border.

Name	Type	Entries	References	Updated	Navigation Bar	Navigation Menu
Access Control	Static	2	1	2 weeks ago	No	No
Activity Reports	Static	5	1	2 weeks ago	No	No
Application Configuration	Static	1	1	2 weeks ago	No	No
Desktop Navigation Bar	Static	8	0	2 weeks ago	Yes	No
Desktop Navigation Menu	Static	12	0	103 minutes ago	No	Yes
Feedback	Static	1	1	2 weeks ago	No	No
Page Navigation	Static	4	1	6 days ago	No	No
User Interface	Static	1	1	2 weeks ago	No	No

4. Click **Grid Edit**. You now see an editable interactive grid.

Click in the Sequence field for each of the entries and adjust the sequence so that the order is: Home, Dashboard, Projects, Milestones, Tasks, Team Members, Calendar, and Reports. For example, the Sequence number for Home is 10, and for Dashboard is 20.



		Sequence	Text	Target	Pages	Icon	Attrib...	Attrib...	Attrib...	Attrib...	Attrib...	Attrib...
		10	Home	f?p=&APP_ID.:1:&APP_SESSION.::&DEBUG.::	-	fa-home	-	-	-	-	-	-
		20	Team Members	f?p=&APP_ID.:2:&SESSION.::&DEBUG.::	-	fa-users	-	-	-	-	-	-
		30	Projects	f?p=&APP_ID.:4:&SESSION.::&DEBUG.::	-	fa-folder	-	-	-	-	-	-
		40	Milestones	f?p=&APP_ID.:6:&SESSION.::&DEBUG.::	-	fa-flag	-	-	-	-	-	-
		50	Tasks	f?p=&APP_ID.:8:&SESSION.::&DEBUG.::	-	fa-check	-	-	-	-	-	-
<input checked="" type="checkbox"/>		60	Dashboard	f?p=&APP_ID.:10:&SESSION.::&DEBUG.::	10	fa-dash	-	-	-	-	-	-
		70	Calendar	f?p=&APP_ID.:13:&SESSION.::&DEBUG.::	13	fa-cale	-	-	-	-	-	-
		80	Reports	f?p=&APP_ID.:14:&SESSION.::&DEBUG.::	14,15,1...	fa-table	-	-	-	-	-	-
		100	Project Tree	f?p=&APP_ID.:16:&SESSION.::&DEBUG.::	16	-	-	-	-	-	-	-
		110	Tasks Review	f?p=&APP_ID.:11:&SESSION.::&DEBUG.::	11	-	-	-	-	-	-	-
		120	Milestones Review	f?p=&APP_ID.:12:&SESSION.::&DEBUG.::	12	-	-	-	-	-	-	-
		10000	Administration	f?p=&APP_ID.:10000:&APP_SESSION.::&DEBUG.::	-	fa-user	-	-	-	-	-	-

1 rows selected

1 - 12

5. Adjust the sequence numbers for all of the pages and the screen should look like this:
Then, click **Save**.

Application 94613 \ Shared Components \ Lists \ List Details \ Grid Edit

List: Desktop Navigation Menu

Cancel

Save

Reset

	Sequence ↑=	Text	Target	Pages	Icon	Attrib...	Attrib...	Attrib...	Attrib...	Attrib...
	10	Home	f?p=&APP_ID.:1:&APP_SESSION.::&DEBUG.;	-	fa-home	-	-	-	-	-
	60	Team Members	f?p=&APP_ID.:2:&SESSION.::&DEBUG.:::	-	fa-users	-	-	-	-	-
	30	Projects	f?p=&APP_ID.:4:&SESSION.::&DEBUG.:::	-	fa-folder	-	-	-	-	-
	40	Milestones	f?p=&APP_ID.:6:&SESSION.::&DEBUG.:::	-	fa-flag	-	-	-	-	-
	50	Tasks	f?p=&APP_ID.:8:&SESSION.::&DEBUG.:::	-	fa-check	-	-	-	-	-
	20	Dashboard	f?p=&APP_ID.:10:&SESSION.::&DEBUG.:::	10	fa-dash	-	-	-	-	-
	70	Calendar	f?p=&APP_ID.:13:&SESSION.::&DEBUG.:::	13	fa-cal	-	-	-	-	-
	80	Reports	f?p=&APP_ID.:14:&SESSION.::&DEBUG.:::	14,15,1...	fa-table	-	-	-	-	-
	100	Project Tree	f?p=&APP_ID.:16:&SESSION.::&DEBUG.:::	16	-	-	-	-	-	-
	110	Tasks Review	f?p=&APP_ID.:11:&SESSION.::&DEBUG.:::	11	-	-	-	-	-	-
	120	Milestones Review	f?p=&APP_ID.:12:&SESSION.::&DEBUG.:::	12	-	-	-	-	-	-
	90	Administration	f?p=&APP_ID.:10000:&APP_SESSION.::&DEBUG.:::	-	fa-user	-	-	-	-	-

1 - 12

6. Now, run the page.

You see the updated navigation menu. In the Developer Toolbar, click **Edit Page < n >**.

Demo Projects

Home

Dashboard

Projects

Milestones

Tasks

Team Members

Calendar

Reports

Administration

Project Status

Completed	In-Progress	Assigned
-----------	-------------	----------

Upcoming Milestones

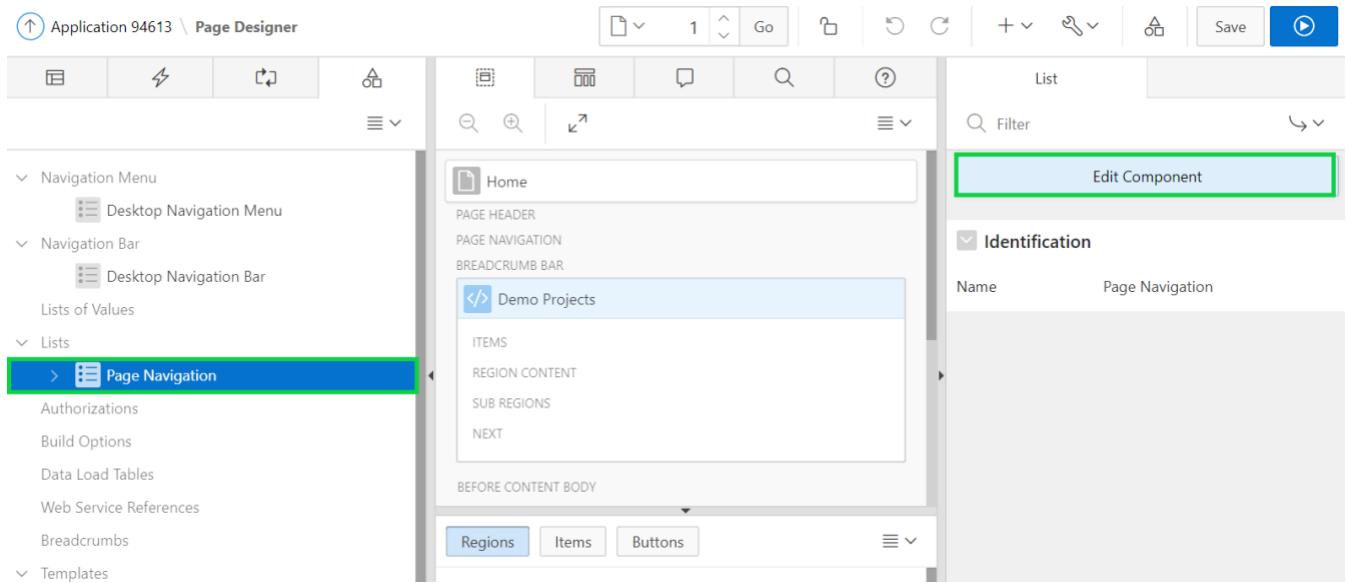
Project ↑=	Milestone	Due Date
Develop Production Partner Portal	Perform Beta testing with select Partners	12/11/2019
Develop Production Partner Portal	Complete Phase 1 Development of Partner Portal app	1/7/2020
Develop Production Partner Portal	Roll out Phase 1 of Partner Portal app	1/11/2020

Incomplete Tasks

Project ↑=	Milestone	Due Date	Task	Start Date	End Date
Develop Partner Portal POC	Build Proof-of-Concept	11/25/2019	Populate Data Structures for Partner Portal	11/20/2019	11/21/2019

Home Application 94613 Edit Page 10 Session View Debug Debug Page Info Quick Edit Theme Roller 1/22/2019

7. You want to adjust the entries on the Home page. In the Page Designer, navigate to **Page 1**. Under Rendering, click **Page Shared Components**. Expand **Lists** and select **Page Navigation**. In the property editor, click **Edit Component**.



8. Click **Create Entry**. Under Entry, for Image/Class, enter **fa-dashboard** and for List Entry Label, enter **Dashboard**. Under Target, for Page, select the Dashboard page number. For example, Page 10 in the screenshot below.

List Entry

Cancel Create and Create Another **Create List Entry**

Show All Entry Target Current List ... Conditions Authorization Configuration Click Count... User Define... Developer R...

Entry

List: **Page Navigation** [?](#)

Parent List Entry: - No Parent List Item - [?](#)

Sequence: 60 [?](#)

Image/Class: fa-dashboard [?](#)

Attributes: [?](#)

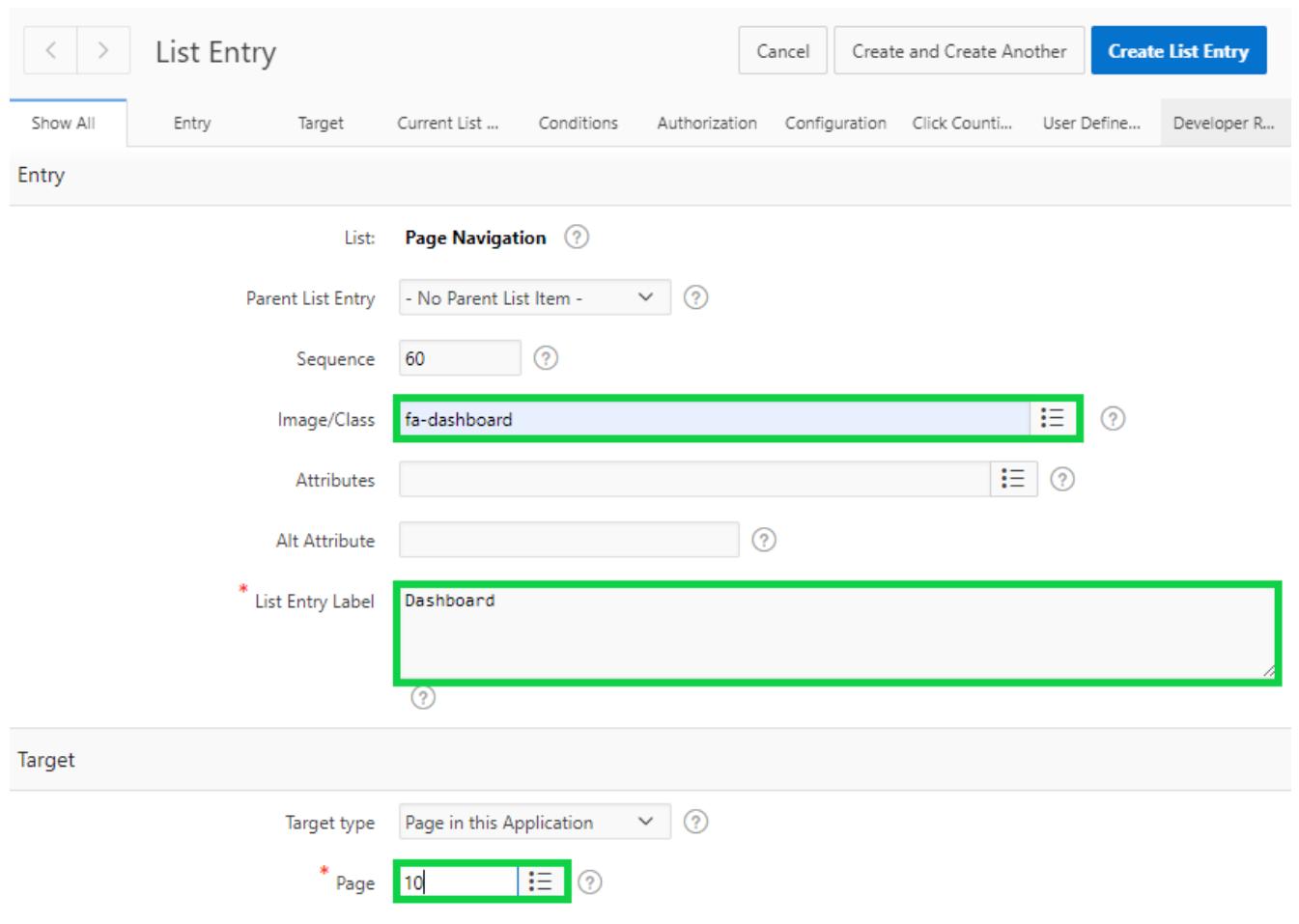
Alt Attribute: [?](#)

* List Entry Label: Dashboard [?](#)

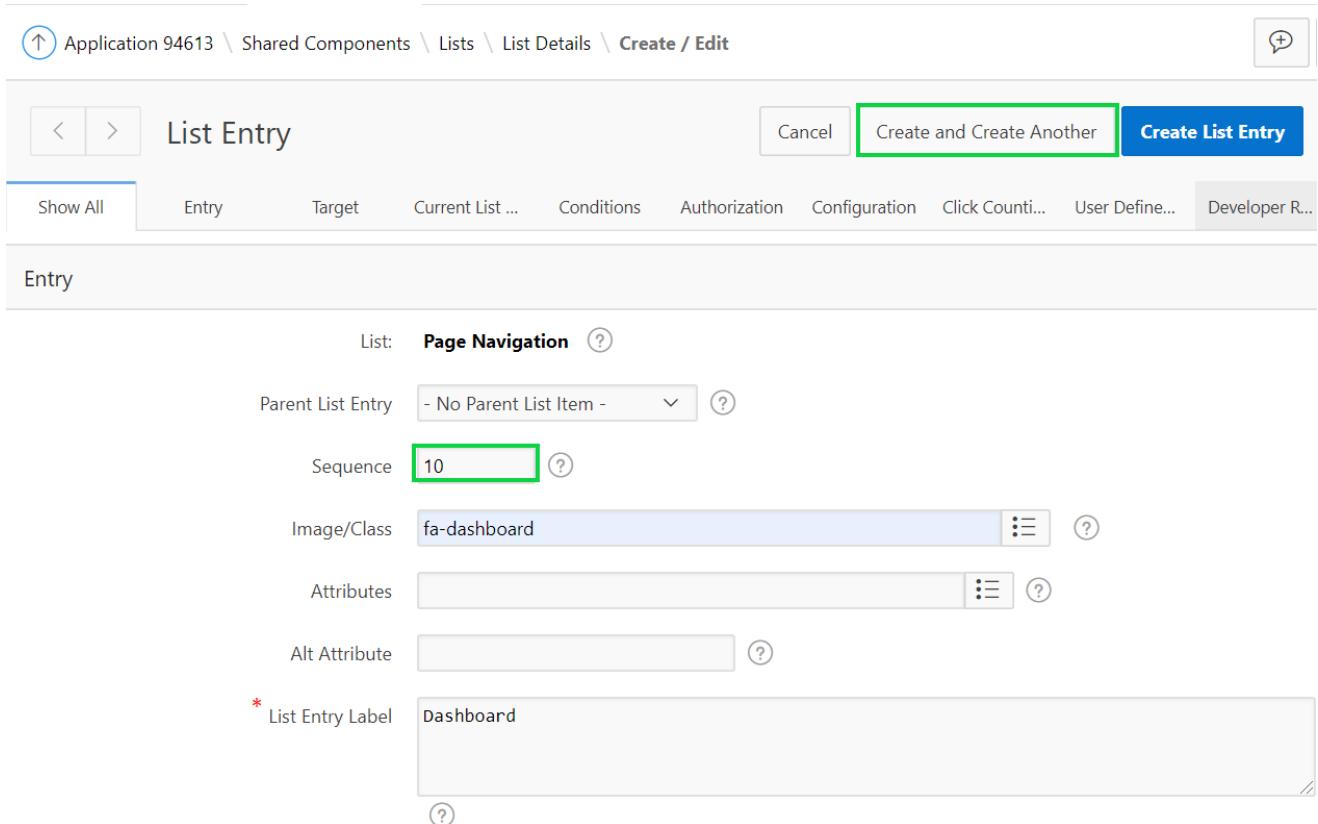
Target

Target type: Page in this Application [?](#)

* Page: 10 [?](#)



9. For Sequence, enter **10** and click **Create List Entry**.



The screenshot shows the 'List Entry' creation page in Oracle Application Express. The top navigation bar includes 'Application 94613 \ Shared Components \ Lists \ List Details \ Create / Edit'. Below the navigation is a toolbar with 'List Entry' and 'Cancel' buttons, and a prominent 'Create and Create Another' button which is highlighted with a green box. A secondary toolbar below includes 'Show All', 'Entry', 'Target', 'Current List ...', 'Conditions', 'Authorization', 'Configuration', 'Click Counti...', 'User Define...', and 'Developer R...'. The main area is titled 'Entry' and contains a form for creating a list entry. The fields are as follows:

- List:** Page Navigation (with a question mark icon)
- Parent List Entry:** - No Parent List Item - (with a dropdown arrow and a question mark icon)
- Sequence:** 10 (highlighted with a green box)
- Image/Class:** fa-dashboard (with a grid icon and a question mark icon)
- Attributes:** (empty field with a grid icon and a question mark icon)
- Alt Attribute:** (empty field with a question mark icon)
- * List Entry Label:** Dashboard (with a question mark icon)

10. Under Entry, for Image/Class, enter **fa-calendar** and for List Entry Label, enter **Calendar**.
Under Target, for Page, select the Calendar page number.
Click **Create List Entry**.

11. Similarly create/update list entries for other pages that you want to display on the Home page. You want to have the Dashboard, Projects, Milestones, Tasks, Team Members, and Calendar page in sequence. Select the image/class as appropriate for each of these pages. Once done, click **Grid Edit**.

The screenshot shows the Oracle APEX 'List Details' page for a list of page navigation entries. The grid has columns for Sequence, Name, Parent Entry, Target, Conditional, Updated, Level, Authorization Scheme, and Copy. The 'Grid Edit' button at the top right of the grid is highlighted with a green box.

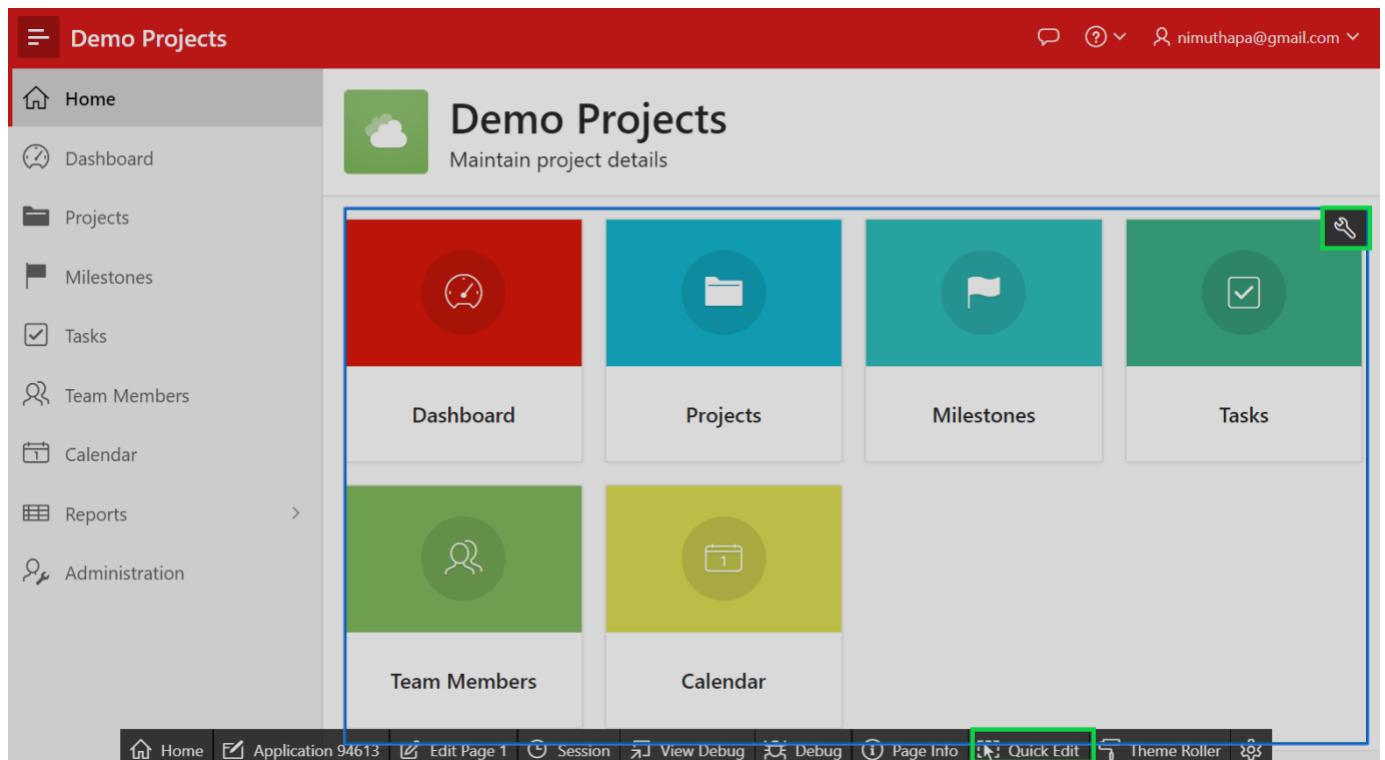
Sequence	Name	Parent Entry	Target	Conditional	Updated	Level	Authorization Scheme	Copy
10	Dashboard	-	f?p=&APP_ID.:10:&SESSION.::&DEBUG.:::	-	3 minutes ago	1	-	
20	Team Members	-	f?p=&APP_ID.:2:&SESSION.::&DEBUG.:::	-	7 days ago	1	-	
30	Projects	-	f?p=&APP_ID.:4:&SESSION.::&DEBUG.:::	-	7 days ago	1	-	
40	Milestones	-	f?p=&APP_ID.:6:&SESSION.::&DEBUG.:::	-	7 days ago	1	-	
50	Tasks	-	f?p=&APP_ID.:8:&SESSION.::&DEBUG.:::	-	7 days ago	1	-	
60	Calendar	-	f?p=&APP_ID.:13:&SESSION.::&DEBUG.:::	-	24 seconds ago	1	-	

12. In this editable interactive grid, verify the sequence of the pages and also the image/class. If you have any adjustments, click the corresponding field and then click **Save**.
Click **Run Page 1**.

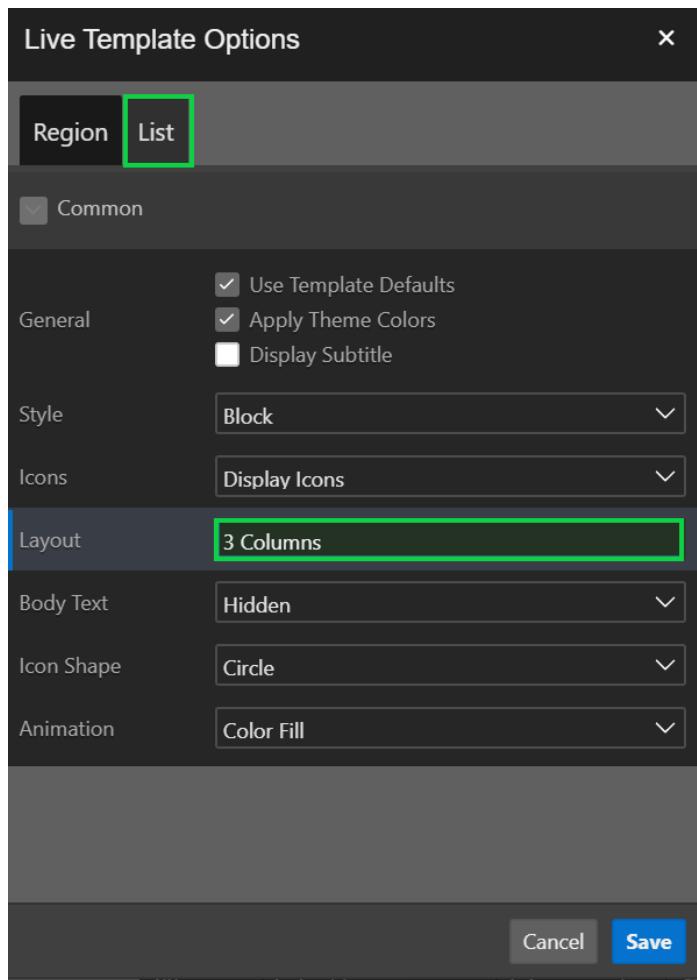
The screenshot shows the 'Grid Edit' dialog for the 'List: Page Navigation' page. A specific row for 'Tasks' (Sequence 40) is selected and highlighted with a purple box. The 'Save' button at the top right of the grid is highlighted with a green box.

	Sequence	Text	Target	Pa...	Icon	At...	At...	At...	At...	Attrib...
<input type="checkbox"/>	10	Dashboard	f?p=&APP_ID.:10:&SESSION.::&DEBUG.:::	-	fa-dashboard	-	-	-	-	-
<input type="checkbox"/>	50	Team Members	f?p=&APP_ID.:2:&SESSION.::&DEBUG.:::	-	fa-users	-	-	-	-	-
<input type="checkbox"/>	20	Projects	f?p=&APP_ID.:4:&SESSION.::&DEBUG.:::	-	fa-folder	-	-	-	-	-
<input type="checkbox"/>	30	Milestones	f?p=&APP_ID.:6:&SESSION.::&DEBUG.:::	-	fa-flag	-	-	-	-	-
<input checked="" type="checkbox"/>	40	Tasks	f?p=&APP_ID.:8:&SESSION.::&DEBUG.:::	-	fa-check-square-o	-	-	-	-	-
<input type="checkbox"/>	60	Calendar	f?p=&APP_ID.:13:&SESSION.::&DEBUG.:::	-	fa-calendar	-	-	-	-	-

13. In the Developer Toolbar, click **Quick Edit**. Hover over the **List** region (under the Demo Projects breadcrumb region) until a blue box appears around the outside of the region. Click the Wrench in the top right corner.



14. In the Live Templates dialog, click **List**. For Layout, select **3 Columns**. Click **Save**.



15. Now you see the updated Home page.

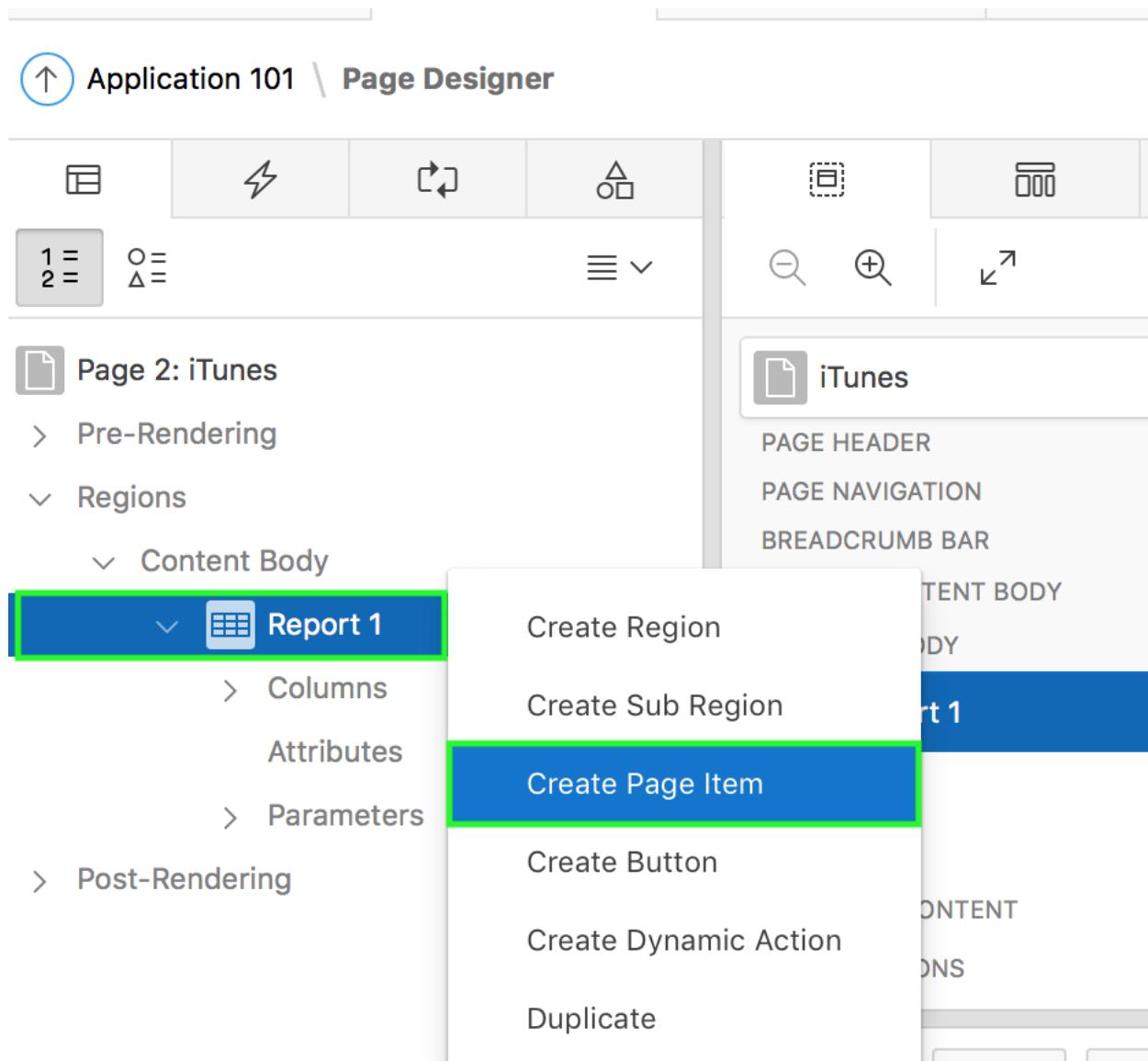
The screenshot shows the 'Demo Projects' Home page. The sidebar shows navigation links: Home, Dashboard, Projects, Milestones, Tasks (selected), Team Members, Calendar, Reports, and Administration. The main content area displays six cards:

- Dashboard (red background, clock icon)
- Projects (blue background, folder icon)
- Milestones (teal background, flag icon)
- Tasks (green background, checkmark icon)
- Team Members (light blue background, magnifying glass icon)
- Calendar (yellow background, calendar icon)

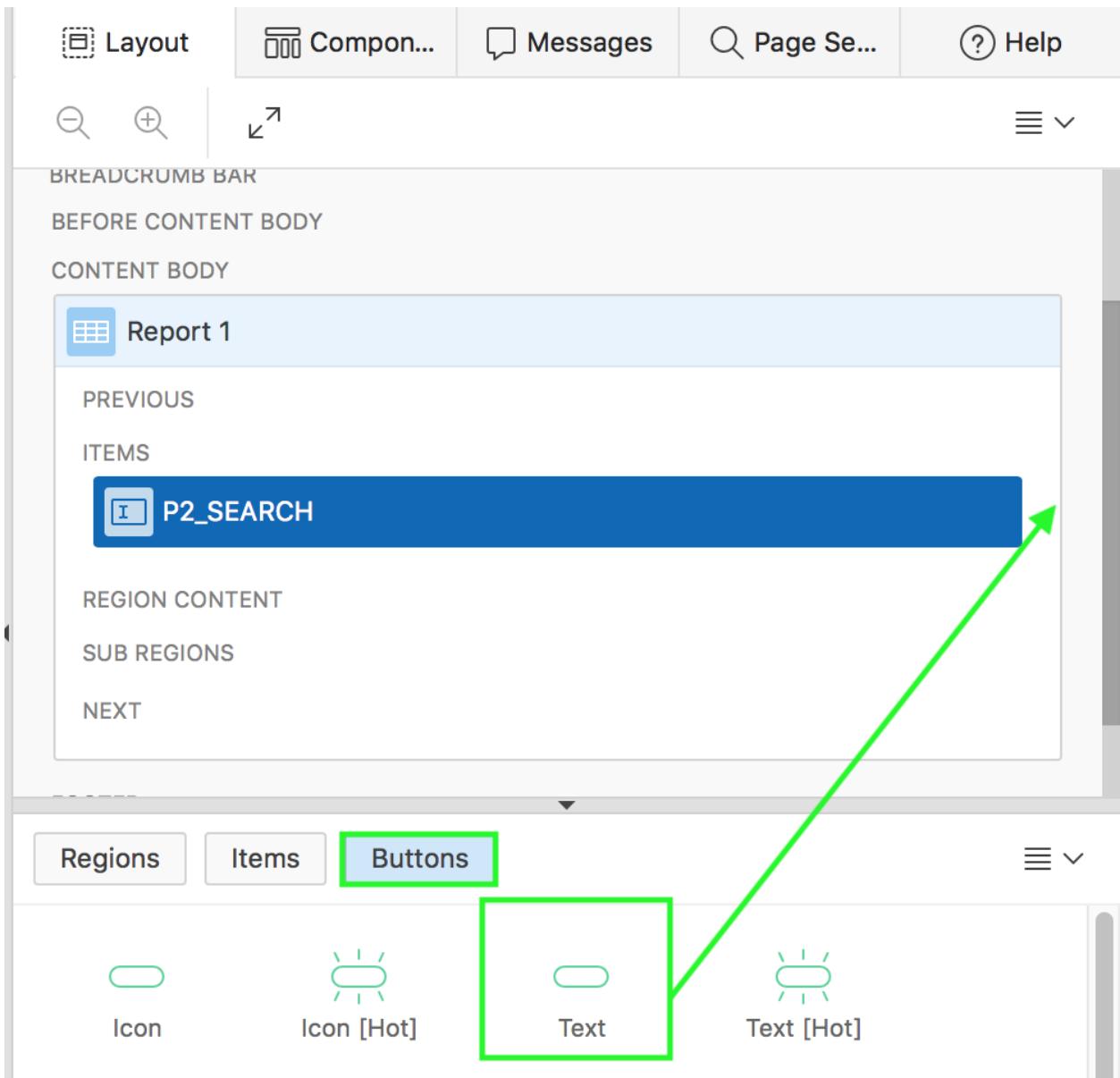
HOL 15-9: Making the Music Video Report Searchable

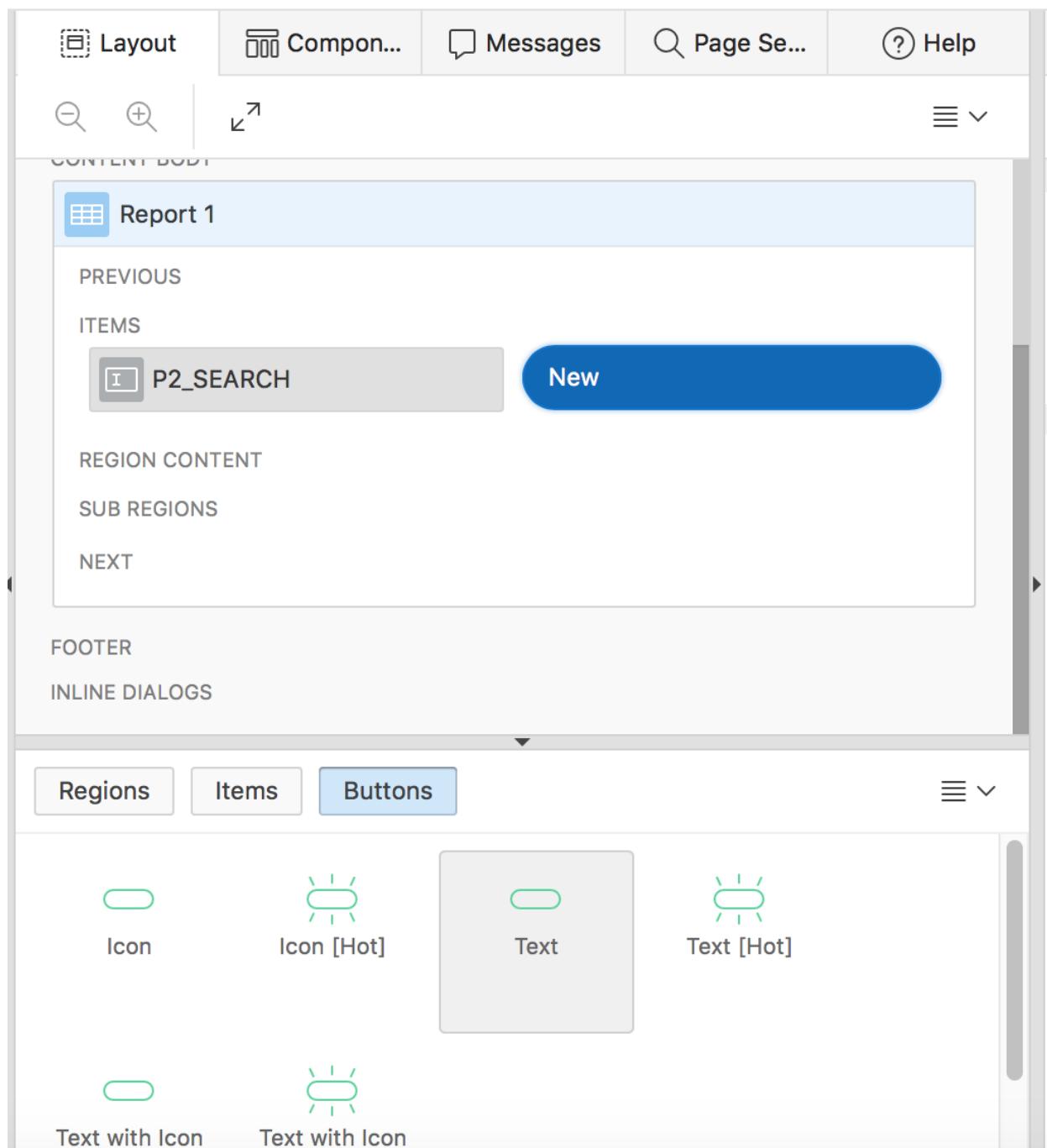
In the HOL 11-2, you have produced a nice report that shows all of Beyoncé's videos on iTunes, and it fetches these results dynamically via the iTunes Search API on the internet. The last remaining step is to make this report searchable, so that the end user can search for any video, not just Beyoncé's.

1. Navigate to **App Builder** and run the **APEX and REST** application.
2. Navigate to the **iTunes** report and in the Developer Toolbar, click **Edit Page <n>**.
3. In the Page Designer, under Rendering, right-click **Reports1** and select **Create Page Item**.

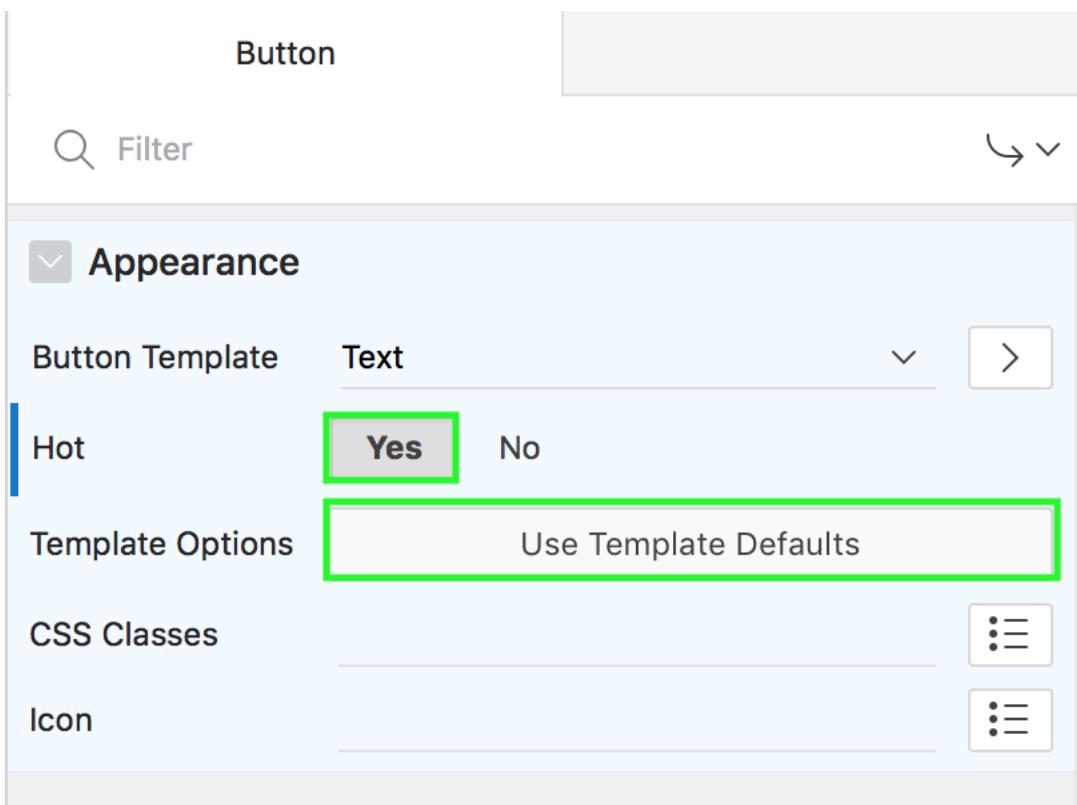


4. In the Property Editor, under Identification > Name, enter **P<n>_SEARCH**.
5. In the Property Editor, under Label > Label, enter **Search**.
6. Under Layout > Gallery, click **Buttons**. Select the **Text** icon, drag it to the right of P2_SEARCH in the Report 1 region in the Page Layout area, and drop it.

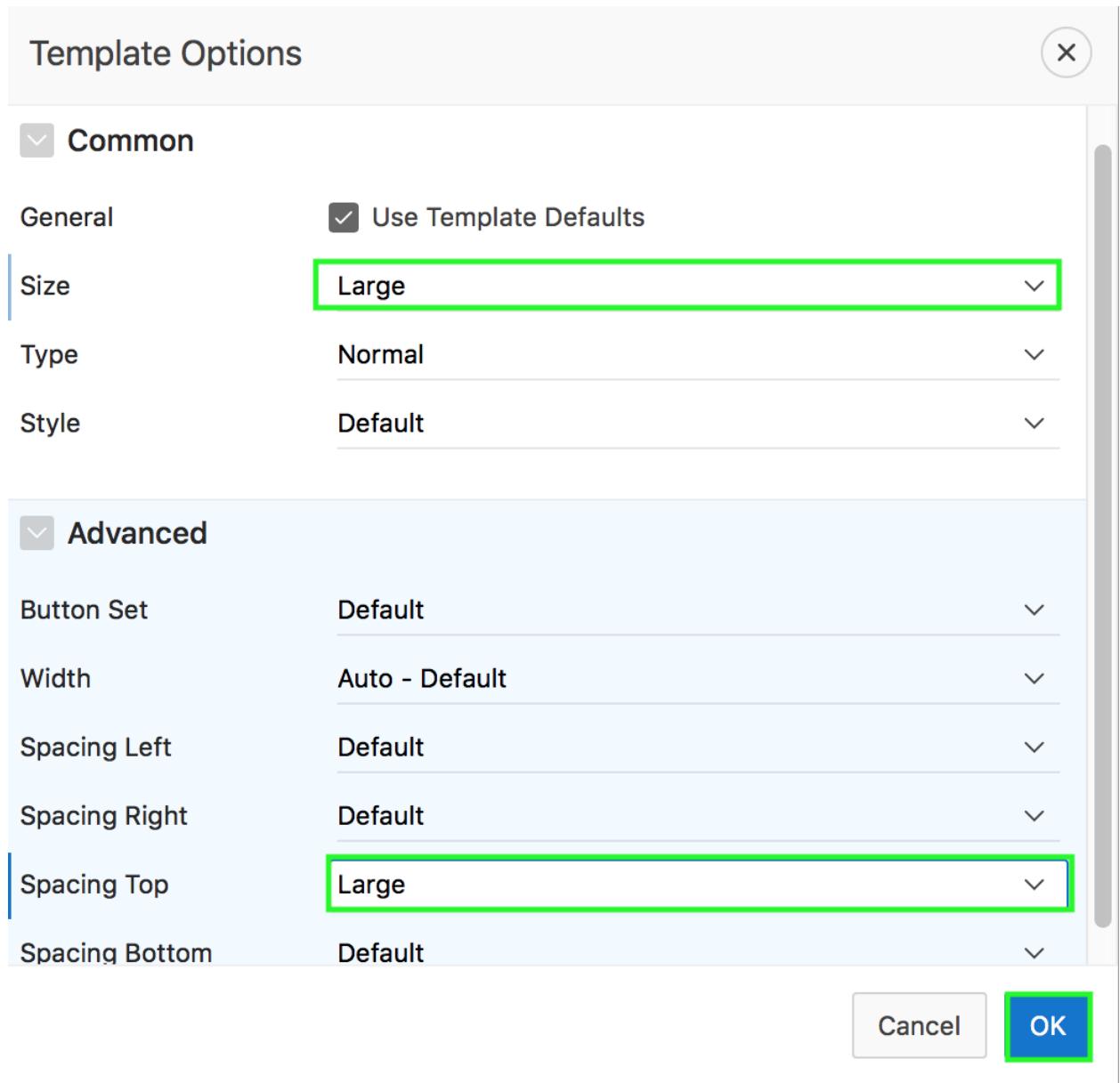




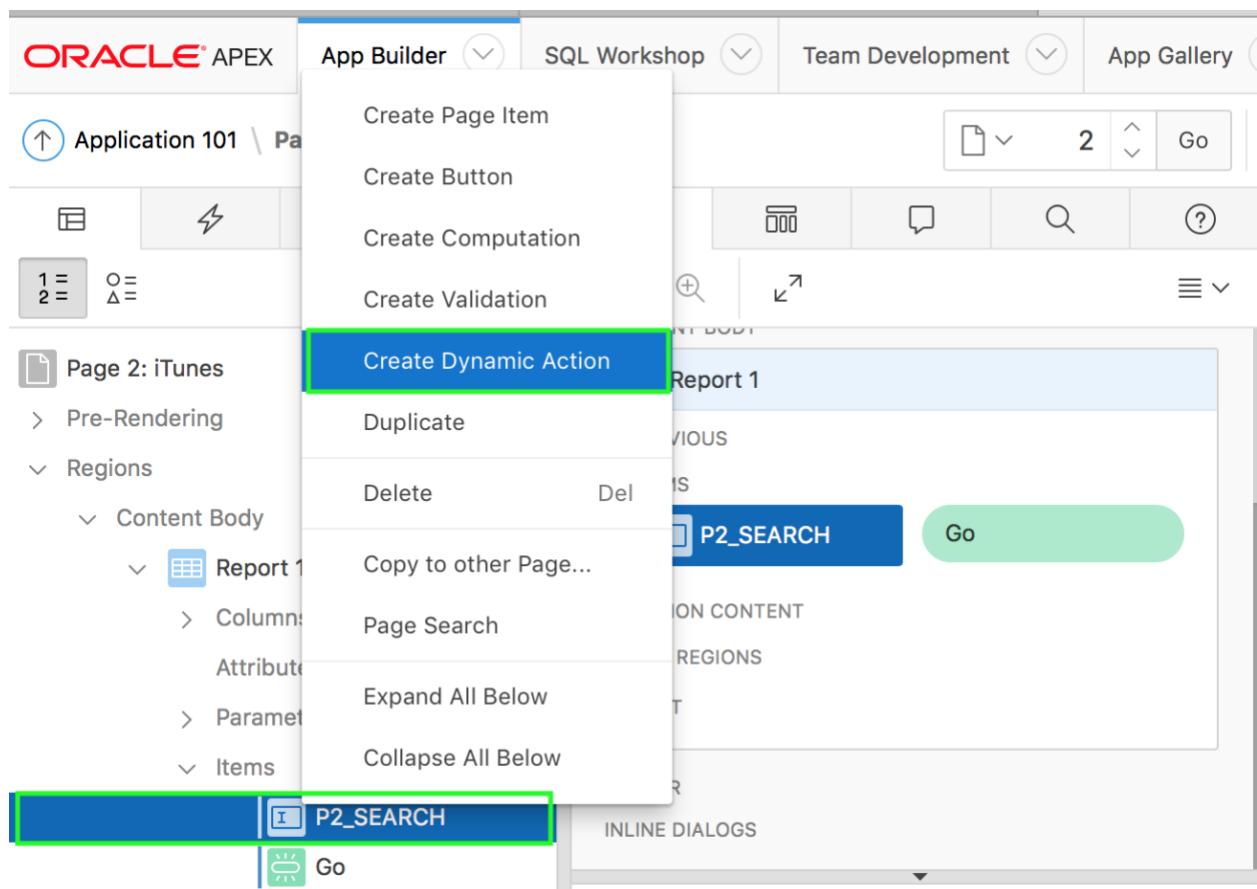
7. In the Property Editor, under Identification, enter **Go** for Button Name and Label.
8. Under Appearance, select **Yes** for Hot. Click **Template Options**.



9. In the Template Options dialog, select the following and click OK.
 - Size: Large
 - Spacing Top: Large



10. Under Rendering, right-click **P<n>_SEARCH** and select **Create Dynamic Action**.



11. In the Property Editor, for Identification > Name, enter **Refresh Report with Search Term**.
12. In the Property Editor, for When, select the following:
 - Event: **Click**
 - Selection Type: **Button**
 - Button: **Go**

Dynamic Action

Filter

Identification

Name Refresh Report with Search Term

Execution Options

Sequence 10

When

Event Click

Selection Type Button

Button Go

The screenshot shows the Oracle Application Express Dynamic Action configuration page. At the top, there's a search bar labeled 'Filter' and a back/forward navigation icon. Below that, the 'Identification' section is expanded, showing the dynamic action's name as 'Refresh Report with Search Term'. The 'Execution Options' section is also expanded, showing a sequence of 10. The 'When' section is expanded and highlighted with a green box, showing three options: 'Event' set to 'Click', 'Selection Type' set to 'Button', and 'Button' set to 'Go'. To the right of each selection dropdown are small edit icons.

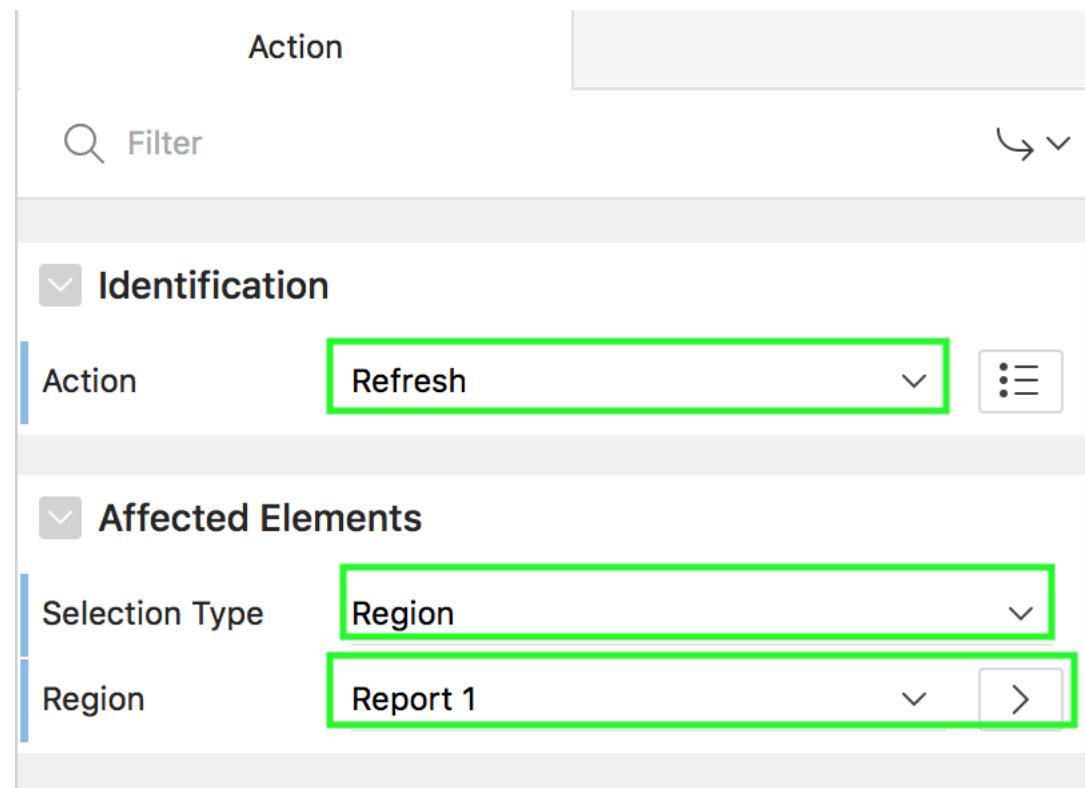
13. Under Rendering, navigate to **Dynamic Actions > Refresh Report with Search Term > True** and select **Show**.

The screenshot shows the Oracle Application Express Page Designer interface for Application 101. The left sidebar lists the page structure:

- Page 2: iTunes
 - > Pre-Rendering
 - ▽ Regions
 - ▽ Content Body
 - ▽ Report 1
 - > Columns
 - Attributes
 - > Parameters
 - ▽ Items
 - P2_SEARCH
 - ▽ Go
 - ▽ Dynamic Actions
 - ▽ Refresh Report with Search
 - ▽ True
 - Show

14. In the property editor, select the following:

- Identification > Action: Refresh
- Affection Elements > Selection Type: **Region**
- Affected Elements > Region: **Report1**



15. Under Rendering, expand **Parameters** and select **term**.

The screenshot shows the Oracle Application Express Page Designer interface. The page title is "Page 2: iTunes". The navigation bar includes icons for Home, Refresh, Undo, Redo, and a search field. Below the navigation is a toolbar with operators (1=, 2=, Δ=) and a collapse/expansion icon.

The page structure is as follows:

- > Pre-Rendering
- Regions
 - Content Body
 - Report 1
 - Columns
 - Attributes
 - Parameters
 - term

16. In the property editor, under Value, for Type select **Item**.

For Item select **P<n>_SEARCH**.

17. Under Rendering, select **Report1** region.

In the property editor, navigate to **Source**. Select **P<n>_SEARCH** for Page Items to Submit.

The screenshot shows the Oracle Application Express Page Designer interface with the "Report 1" region selected. The left sidebar shows the page structure. The main area displays the "Report 1" region's properties. The "Source" tab is selected in the properties panel, where the "Page Items to Submit" field is set to "P2_SEARCH".

18. Click Save and Run Page.

You might have to log in using your Workspace username and password.

19. Enter any search term you wish, such as tupac or your favorite music artist, and click Go.



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