ORACLE

APPLICATION EXPRESS



Oracle Application Express: Developing Database Web Applications

Hands-On-Labs Guide

Unit 9: Creating Application Page Controls

This exercise includes four hands-on-labs. The labs cover creating and updating page items, adjusting button properties, and making the form pages visually appealing. You also create and use Dynamic and Static List of Values.

HOL 9-1 Updating the Team Members Pages: In this hands-on lab, you update the page items on the form, and create a new collapsible sub-region to include the audit details.

HOL 9-2 Updating the Projects Pages: In this hands-on lab, you update the page items on the form, and create a new collapsible sub-region by copying it from another page in the application. You also create and use dynamic list of values.

HOL 9-3 Updating the Milestones Pages: This hands-on lab covers updating item properties, creating and using dynamic and static list of values.

HOL 9-4 Updating the Tasks Pages: In this hands-on lab, you create a new page item, update existing items on the form, and create a collapsible sub-region. You also use the list of values created as shared components.

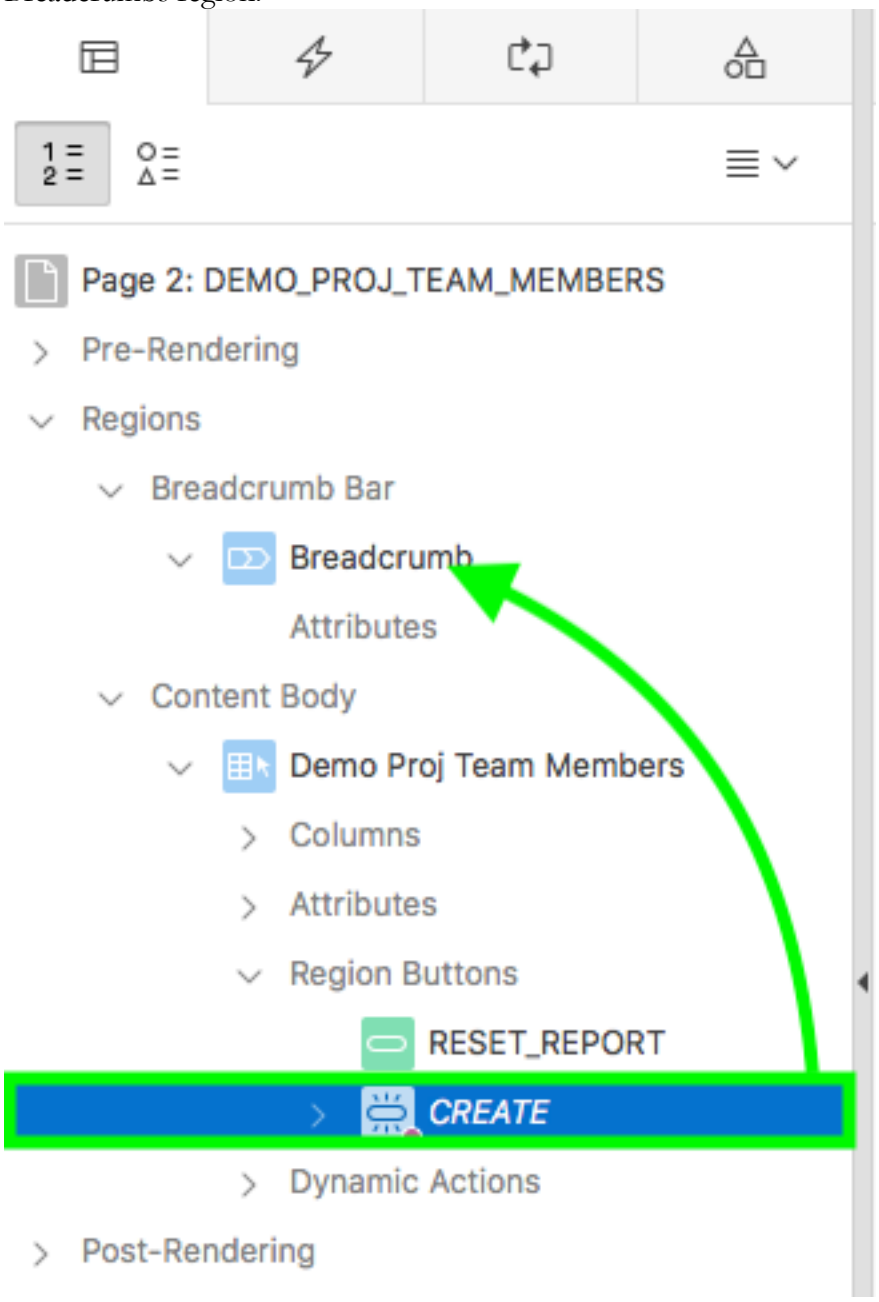
HOL 9-1 Updating the Team Members Pages

In this lab, you update the page items on the form page. You create an Audit Details collapsible sub-region on the form page. You make the form page visually appealing. This lab also covers updating the button properties and adjusting the button display on the interactive report.

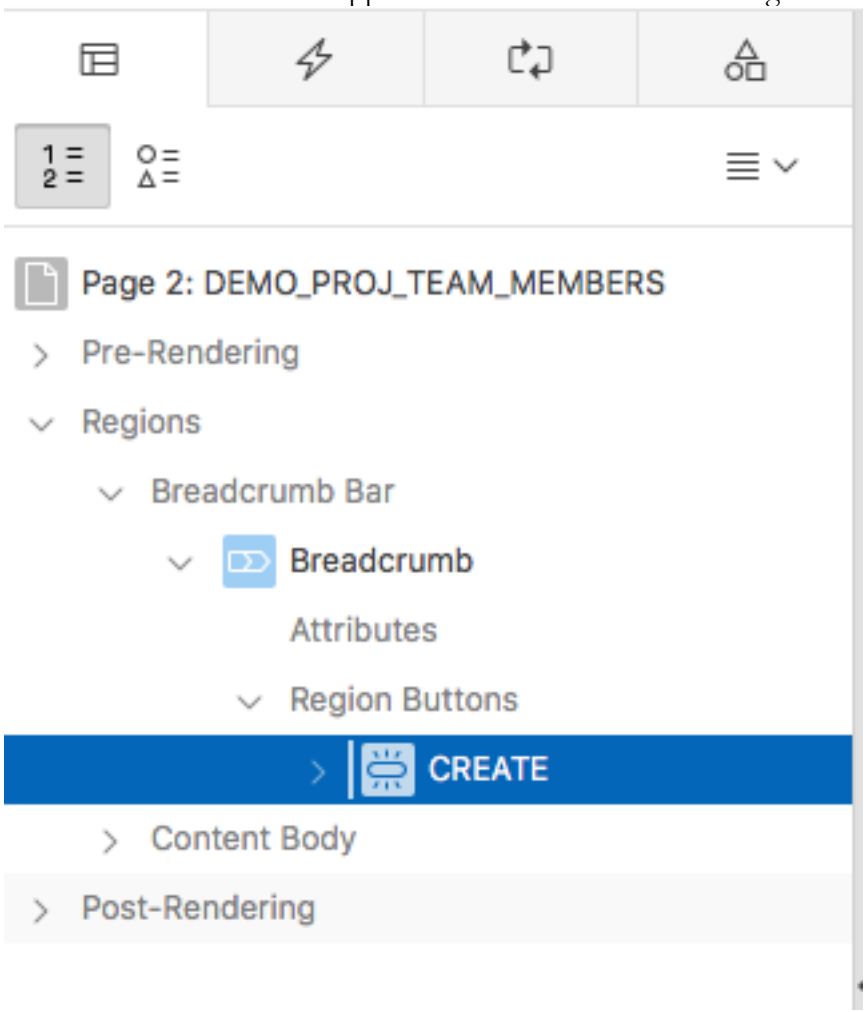
1. Navigate to **App Builder** and run the **Demo Projects** application.
   In the navigation menu, click **Demo_ Proj_ Team_ Members**.
   In the Developer Toolbar, click **Edit Page 2**.

2. By default, buttons are positioned in the region they are associated with. Move the Create button at the top of the page to the Breadcrumbs region. In the Rendering tree, locate the CREATE button under Content Body. Click and hold the **CREATE** button and drag it up into the

Breadcrumbs region.

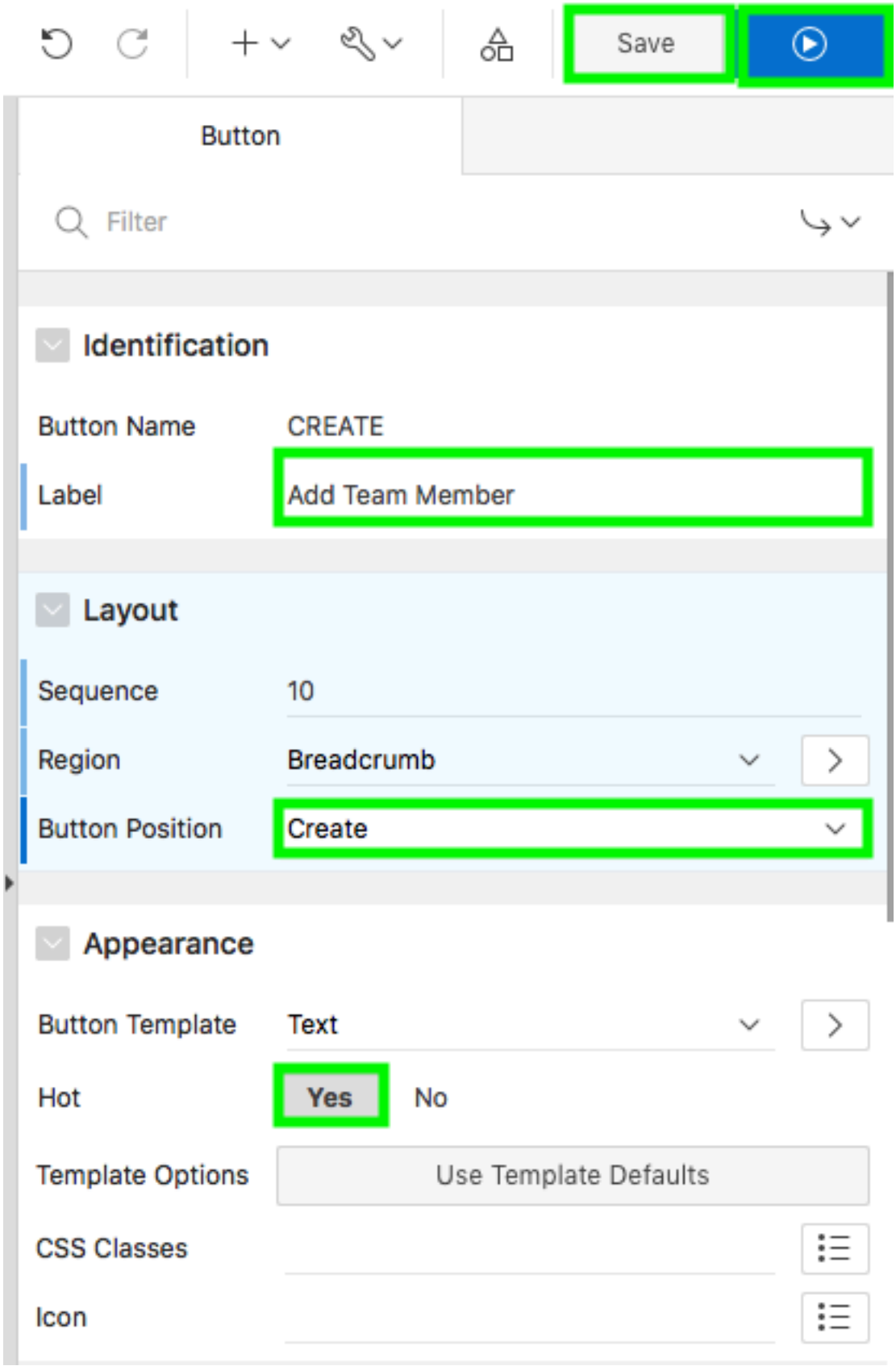


3. The CREATE button will appear as a child within its own Region Buttons folder.

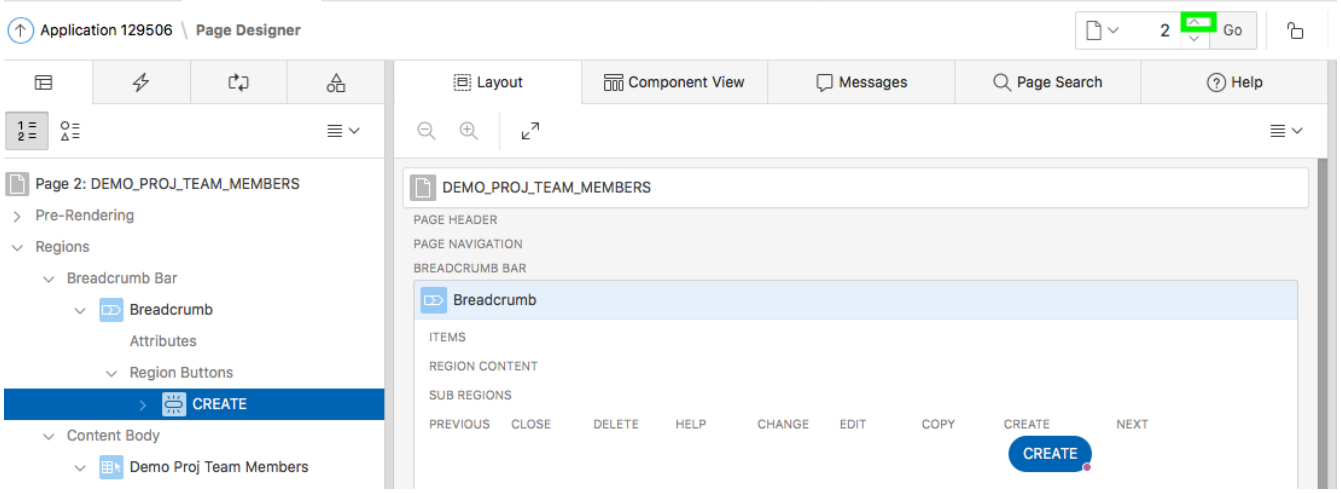


4. In the Property Editor:
   - Identification: Label - enter **Add Team Member**
   - Layout: Button Position - select **Create**
   - Appearance: Hot - select **Yes**

Click **Save**. Then, click **Save and Run Page**.


Save
Button
Filter
Identification
Button Name
CREATE
Label
Add Team Member
Layout
Sequence
10
Region
Breadcrumb
Button Position
Create
Appearance
Button Template
Text
Hot
Yes
No
Template Options
Use Template Defaults
CSS Classes
Icon

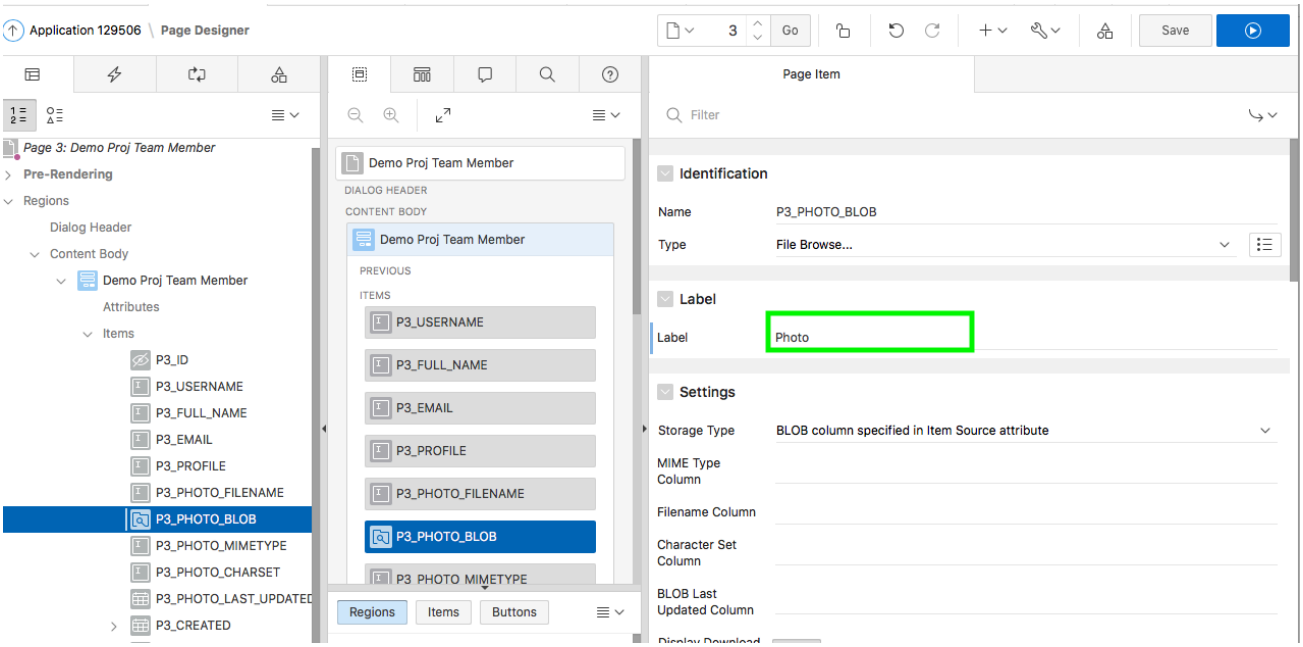
5. Navigate back to page designer. You want to view Page 3 now. In the toolbar, click the **Navigate to next page** arrow.



6. The generated page includes a page item for every column in the Demo_Proj_Team_Members tables. You need to make the following changes:
   - Alter the Photo Blob field to support file upload to a table
   - Since the other photo fields are populated when a file is uploaded, these items must be hidden from users

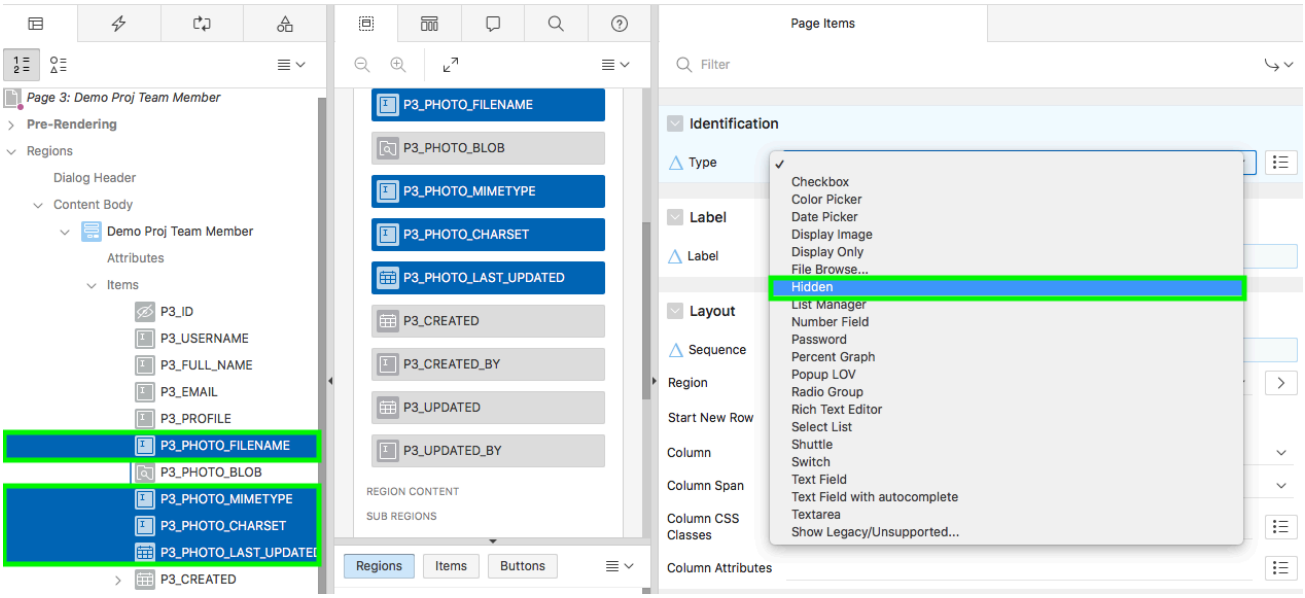
   Perform the following steps:

   a) In the Rendering tree, click the P3_PHOTO_BLOB item. For Label, enter **Photo**.

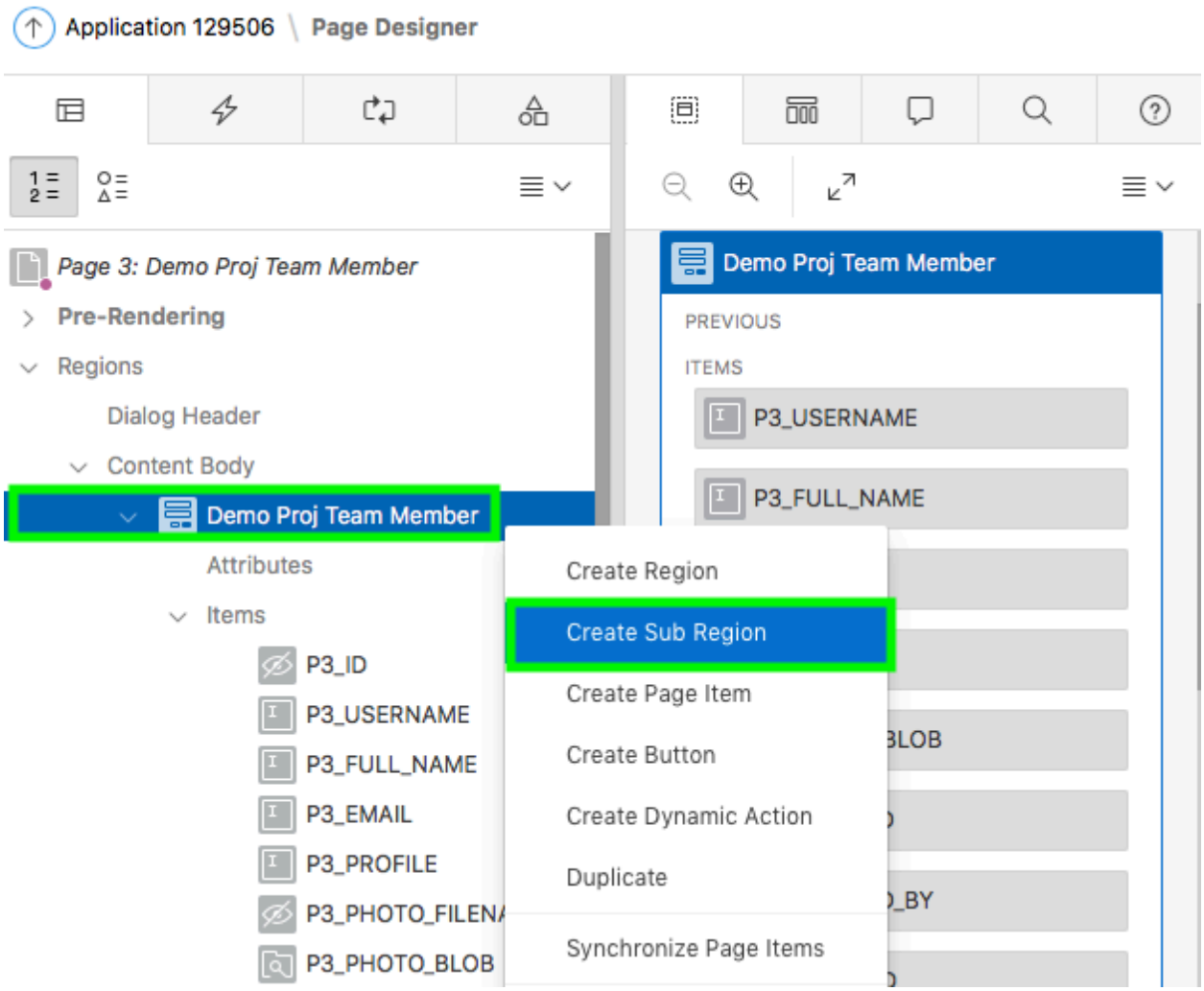


   b) In the Layout, hold the Ctrl key and click these items to select more than one: **P3_PHOTO_FILENAME**, **P3_PHOTO_MIMETYPE**, **P3_PHOTO_CHARSET**,

and **P3_PHOTO_LAST_UPDATED**.
In the Property Editor under Identification, click the Type Quick Pick button and select **Hidden**.
Then, click **Save**.

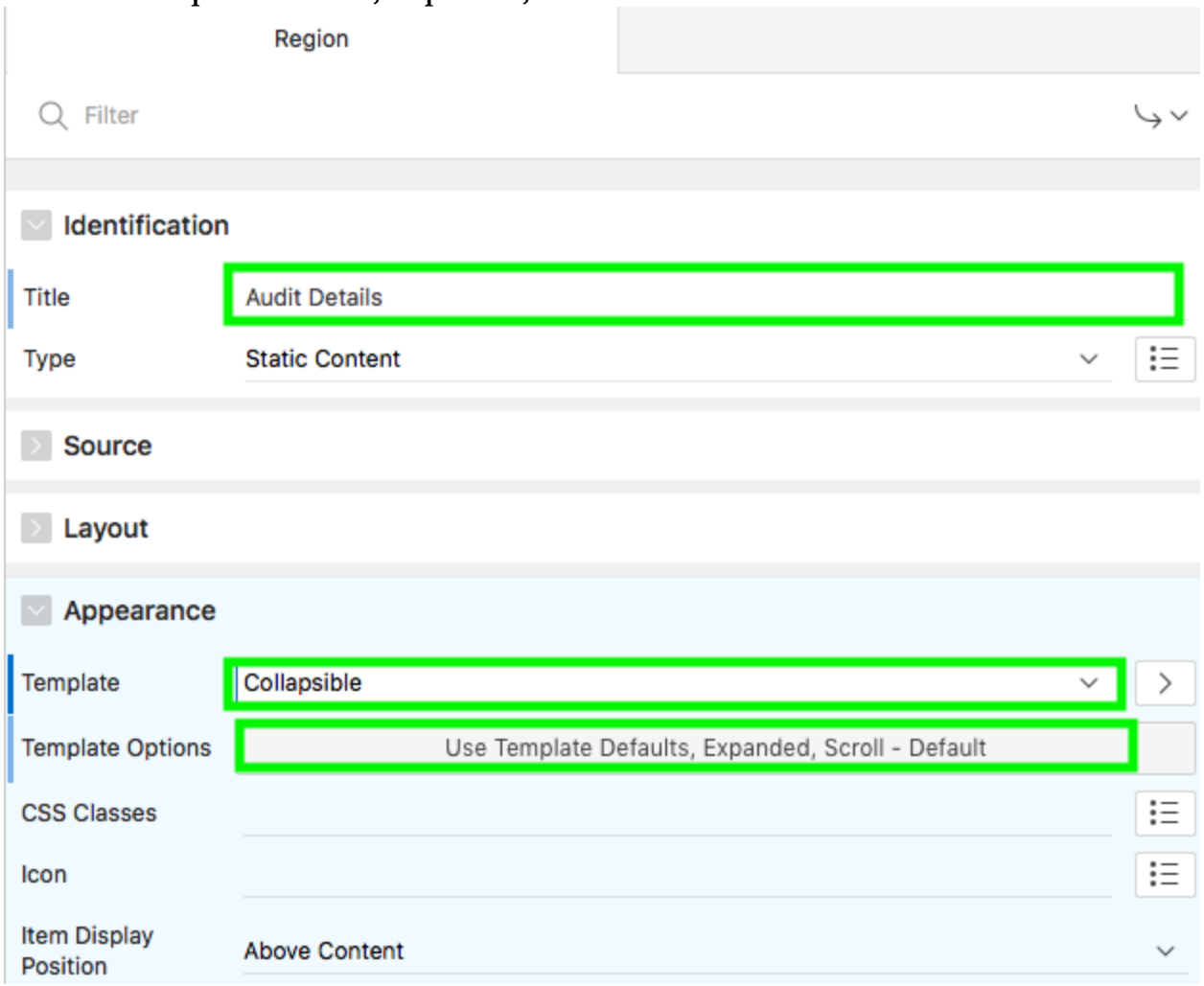


7. The tables you created earlier include audit columns for storing when and who created and last updated each record. End users should never be allowed to enter data into these columns. Furthermore, these columns should not display when the user creates a new record.
Given that audit information is only reviewed occasionally, it is preferable to add these columns into a separate, collapsible region, so they can be reviewed when necessary, but do not take up excessive screen real estate the majority of time.
Reconfigure the audit columns to be *Display Only* and place them in a conditional sub-region.
In the Rendering tree, right-click **DEMO_PROJ_TEAM_MEMBER** and select **Create Sub Region**.

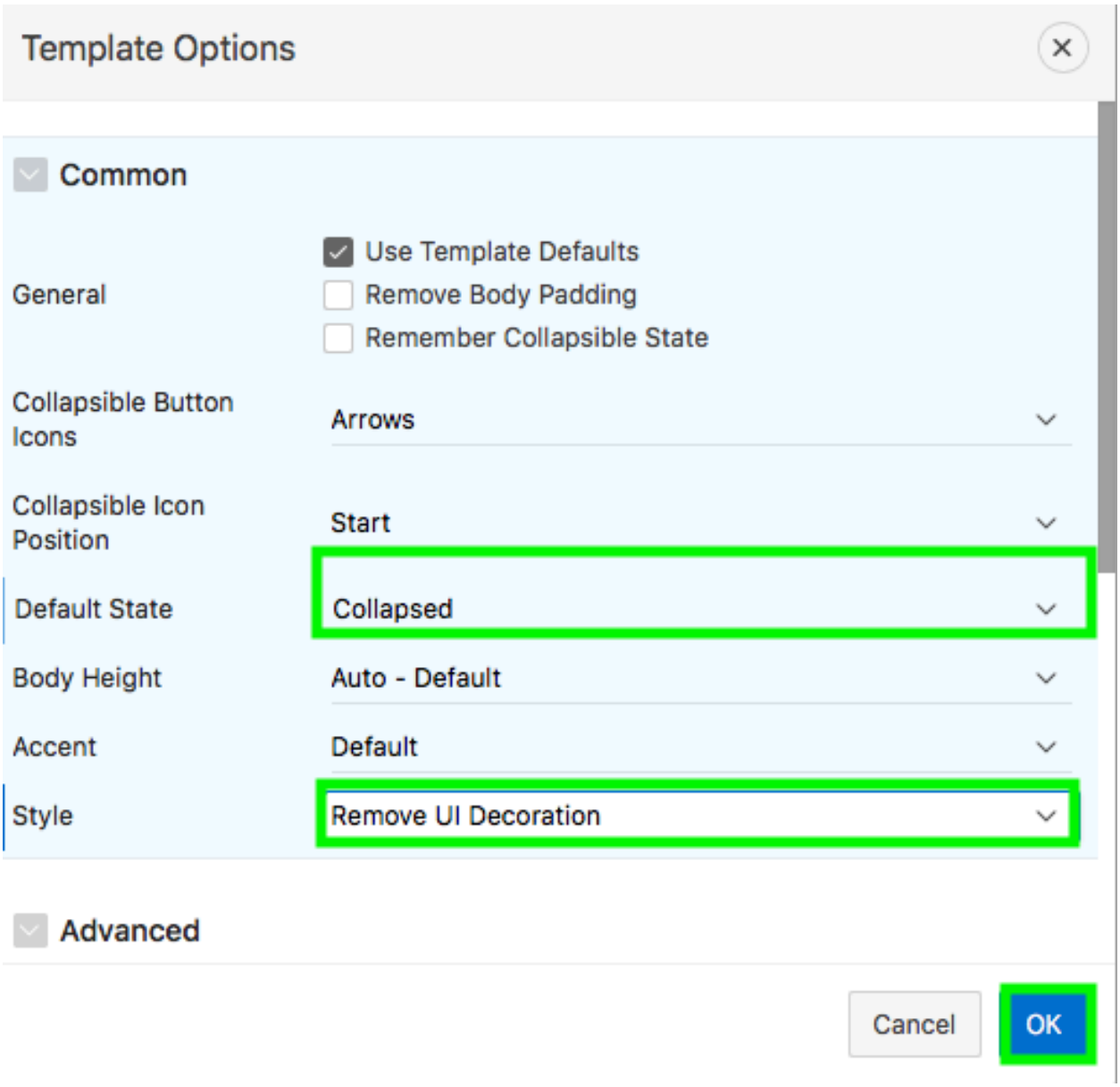


8. In the Property Editor, for the New region: Identification: Title - enter **Audit Details**. For Appearance>Template, select **Collapsible**.

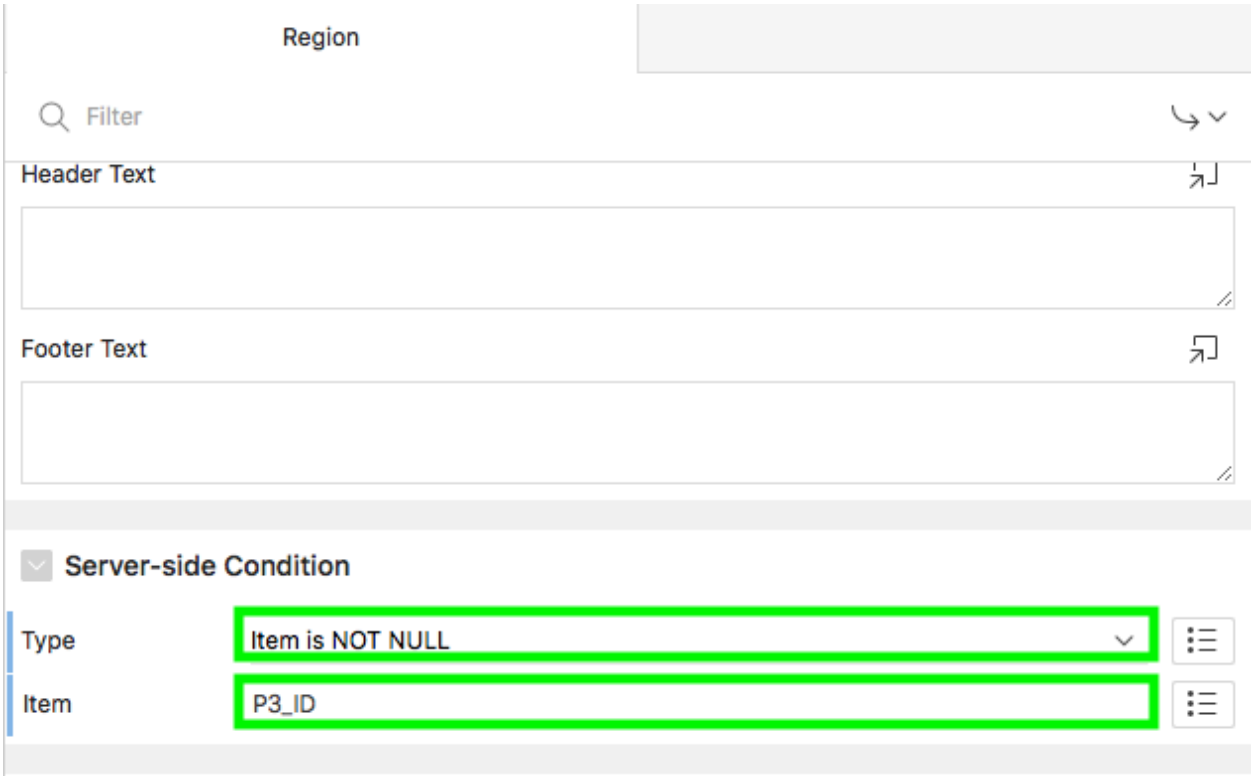
Click **Use Template Defaults, Expanded, Scroll-Default**.



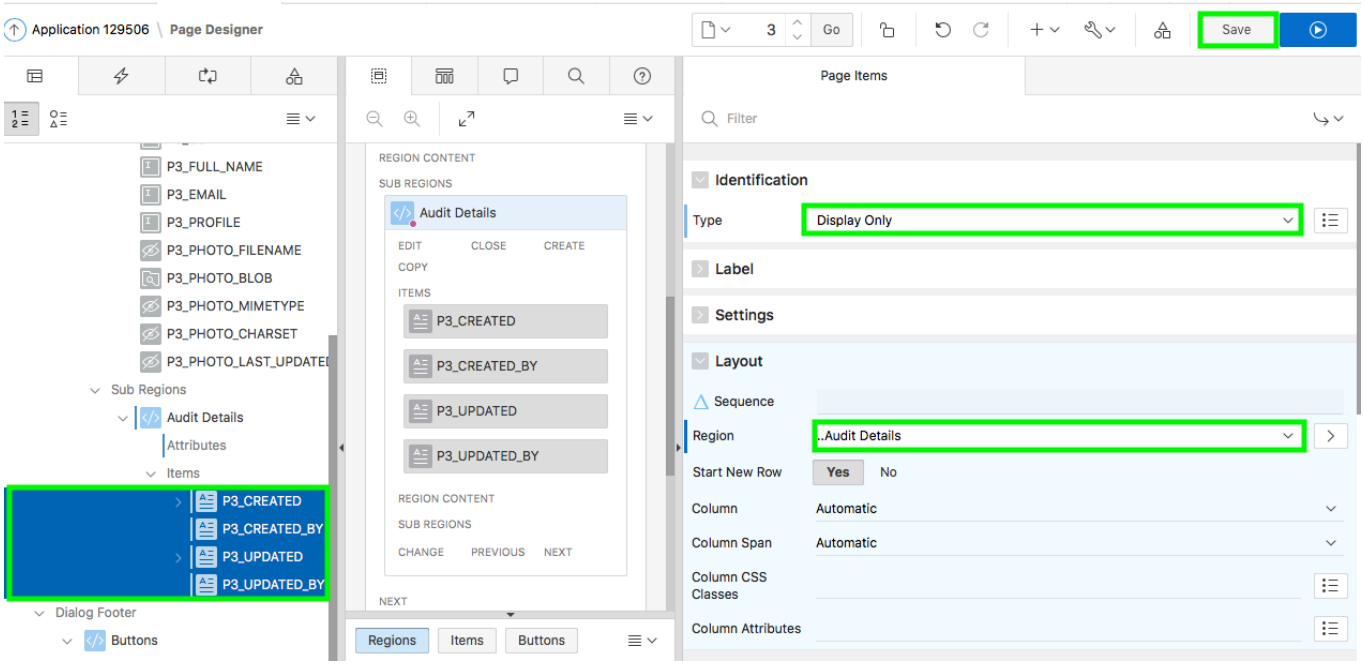
9. In the Template Options dialog, select **Collapsed** for Default State.
Select **Remove UI Decoration** for Style, and click **OK**.



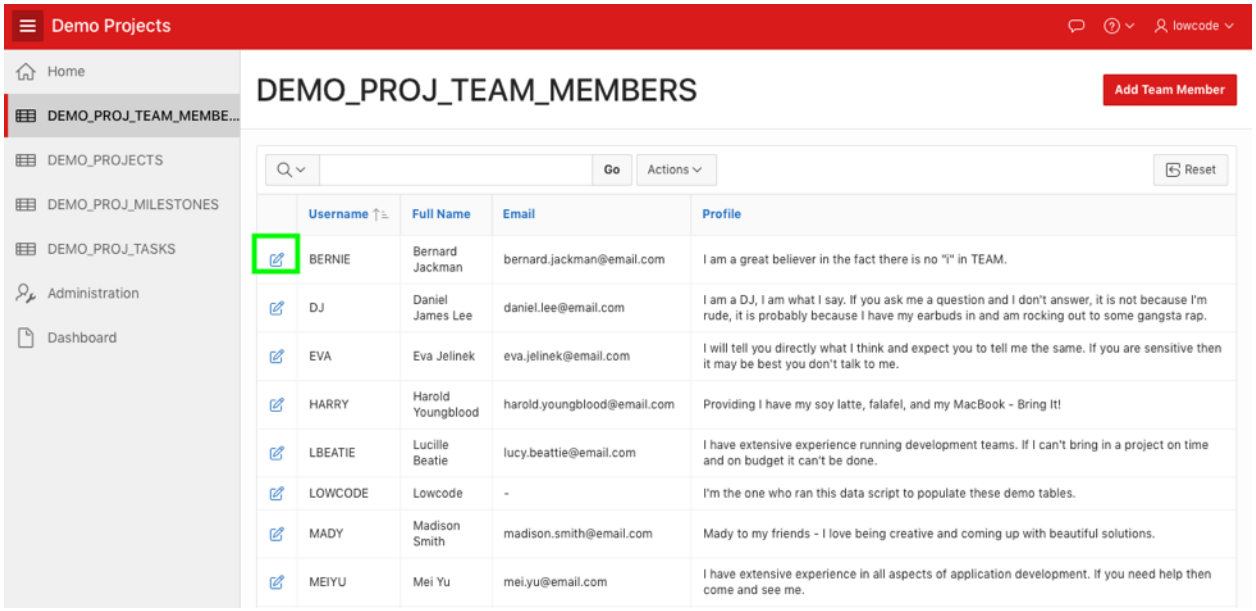
10. In the property editor, navigate to Server-side Condition. For Type, select **Item is NOT NULL**. Select **P3_ID** from the Item list.

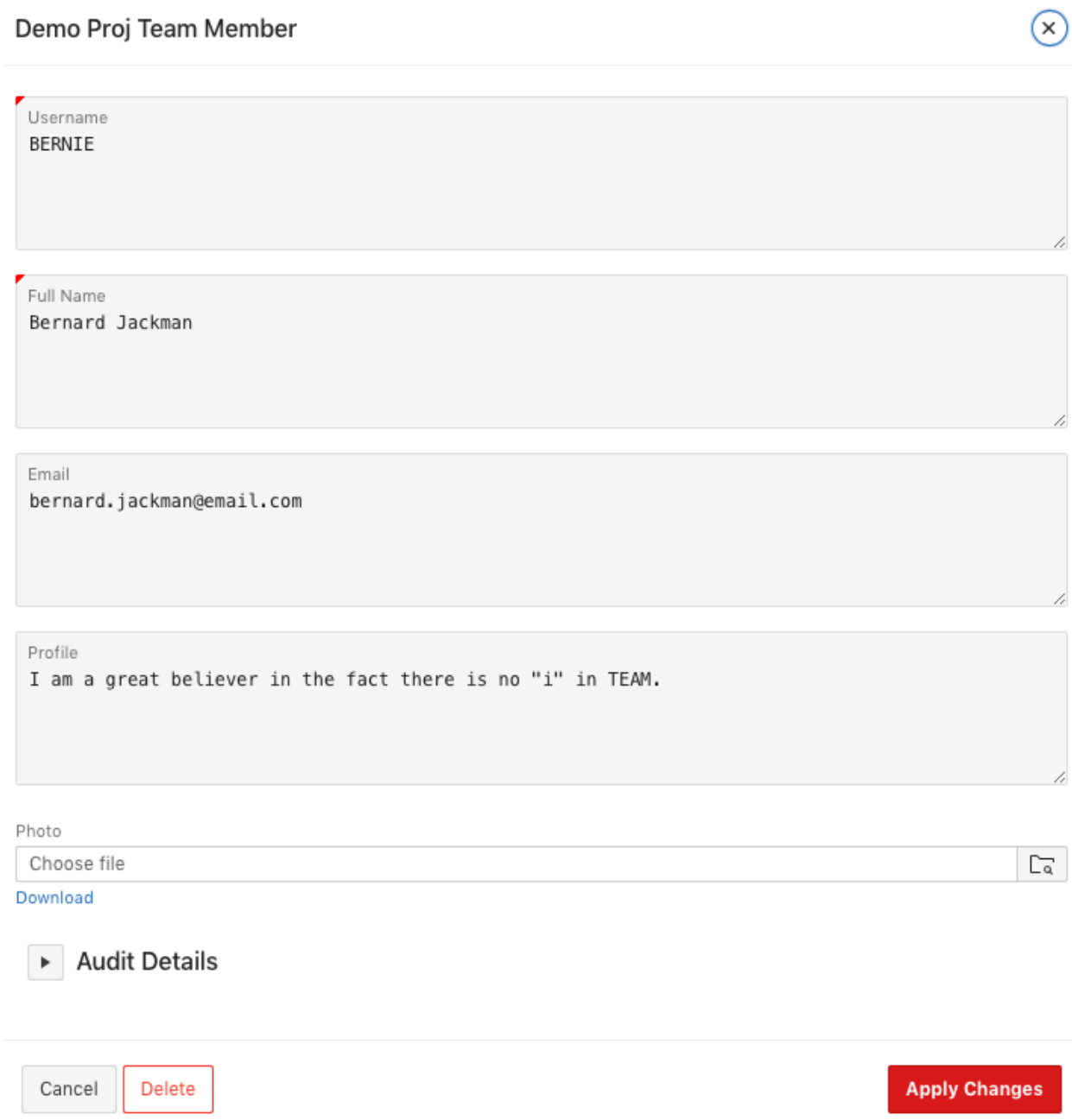


11. Move the audit columns into the new region. From the Rendering tree or Grid Layout, hold the Ctrl key and click these items to select them: **P3_CREATED**, **P3_CREATED_BY**, **P3_UPDATED**, and **P3_UPDATED_BY**.
In the property editor, for Identification > Type, select **Display Only**.
For Layout > Region, select **..Audit Details**.
Click **Save**.



12. Page 3 is a dialog and so you cannot run it directly. Navigate to the application runtime environment. In the navigation menu, click **Demo_Proj_Team_Members**.
    Notice the **Add Team Member** button.
    In the report, select a team member's record to view the improved modal dialog.


Demo Projects
lowcode
Home
DEMO_PROJ_TEAM_MEMBE...
DEMO_PROJECTS
DEMO_PROJ_MILESTONES
DEMO_PROJ_TASKS
Administration
Dashboard
DEMO_PROJ_TEAM_MEMBERS
Add Team Member
Go
Actions
Reset
Username
Full Name
Email
Profile
BERNIE
Bernard Jackman
bernard.jackman@email.com
I am a great believer in the fact there is no "i" in TEAM.
DJ
Daniel James Lee
daniel.lee@email.com
I am a DJ, I am what I say. If you ask me a question and I don't answer, it is not because I'm rude, it is probably because I have my earbuds in and am rocking out to some gangsta rap.
EVA
Eva Jelinek
eva.jelinek@email.com
I will tell you directly what I think and expect you to tell me the same. If you are sensitive then it may be best you don't talk to me.
HARRY
Harold Youngblood
harold.youngblood@email.com
Providing I have my soy latte, falafel, and my MacBook - Bring It!
LBEATIE
Lucille Beatie
lucy.beattie@email.com
I have extensive experience running development teams. If I can't bring in a project on time and on budget it can't be done.
LOWCODE
Lowcode
-
I'm the one who ran this data script to populate these demo tables.
MADY
Madison Smith
madison.smith@email.com
Mady to my friends - I love being creative and coming up with beautiful solutions.
MEIYU
Mei Yu
mei.yu@email.com
I have extensive experience in all aspects of application development. If you need help then come and see me.

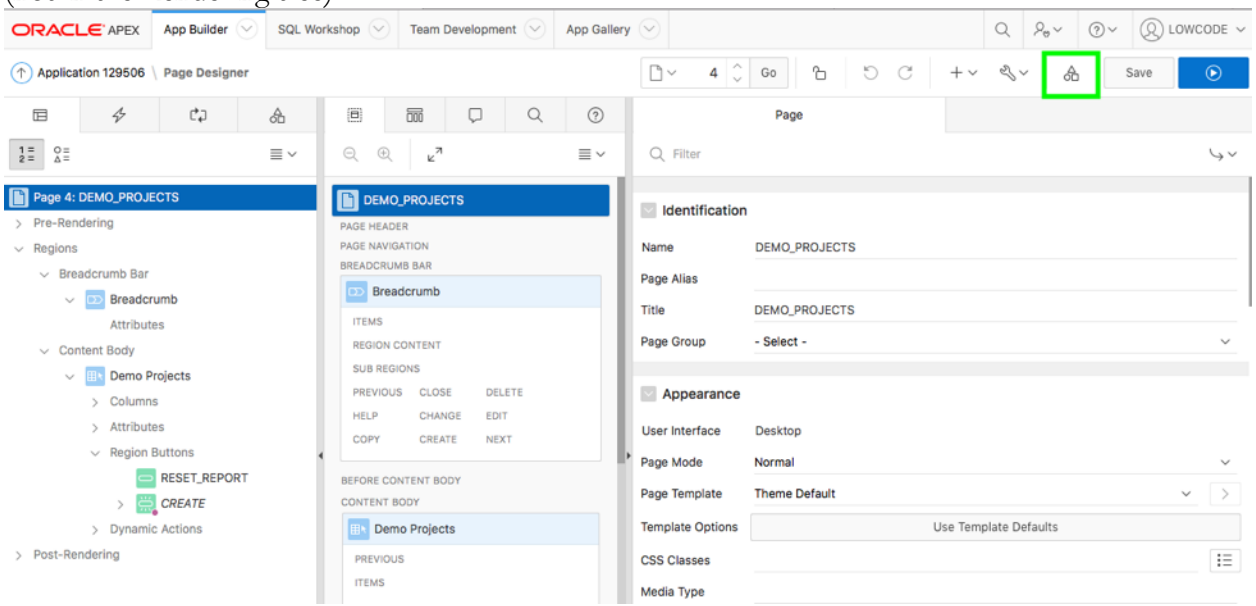

Demo Proj Team Member
Username
BERNIE
Full Name
Bernard Jackman
Email
bernard.jackman@email.com
Profile
I am a great believer in the fact there is no "i" in TEAM.
Photo
Choose file
Download
Audit Details
Cancel
Delete
Apply Changes

HOL 9-2 Updating the Projects Pages

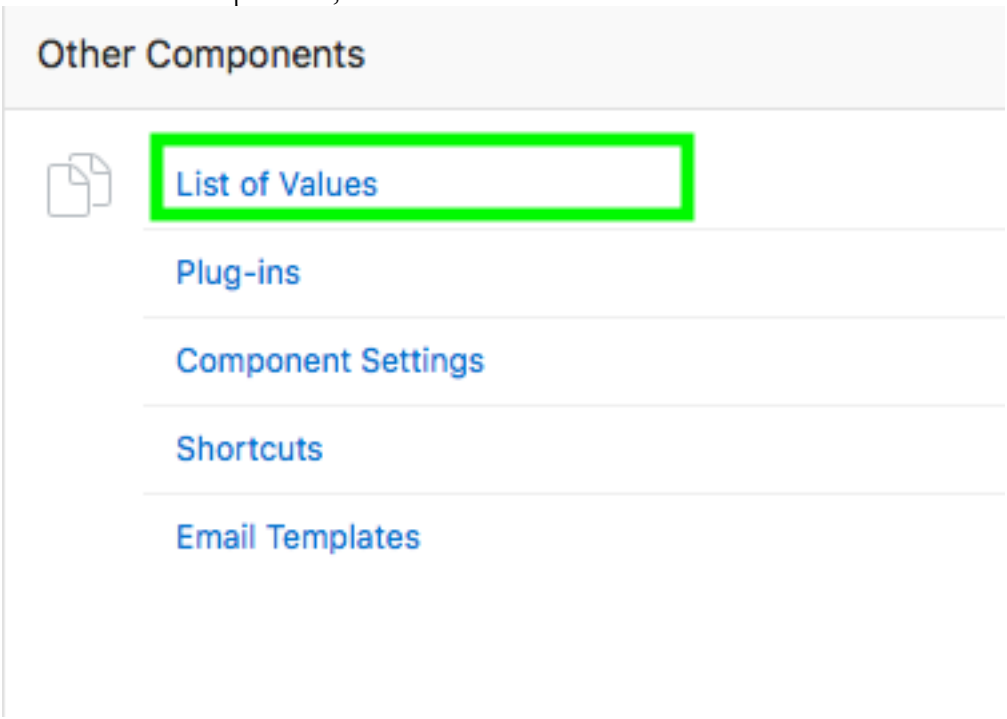
In this lab, you update the page items on the form page. This lab covers creating and using List of Values. You create both static and dynamic list of values. You create an Audit Details collapsible sub-region on the form page.

1. In the application runtime environment, click **Demo_Projects**.
   Then, in the Developer toolbar, click **Edit Page 4**.

2. The Project Lead column is currently displaying an identifier instead of the team member's name. Defining a List of Values within Shared Components enables the same control to be used on this page and also the form page for projects.
   In Page Designer, click the **Shared Components** button, found on the right side of the toolbar (not in the Rendering tree).



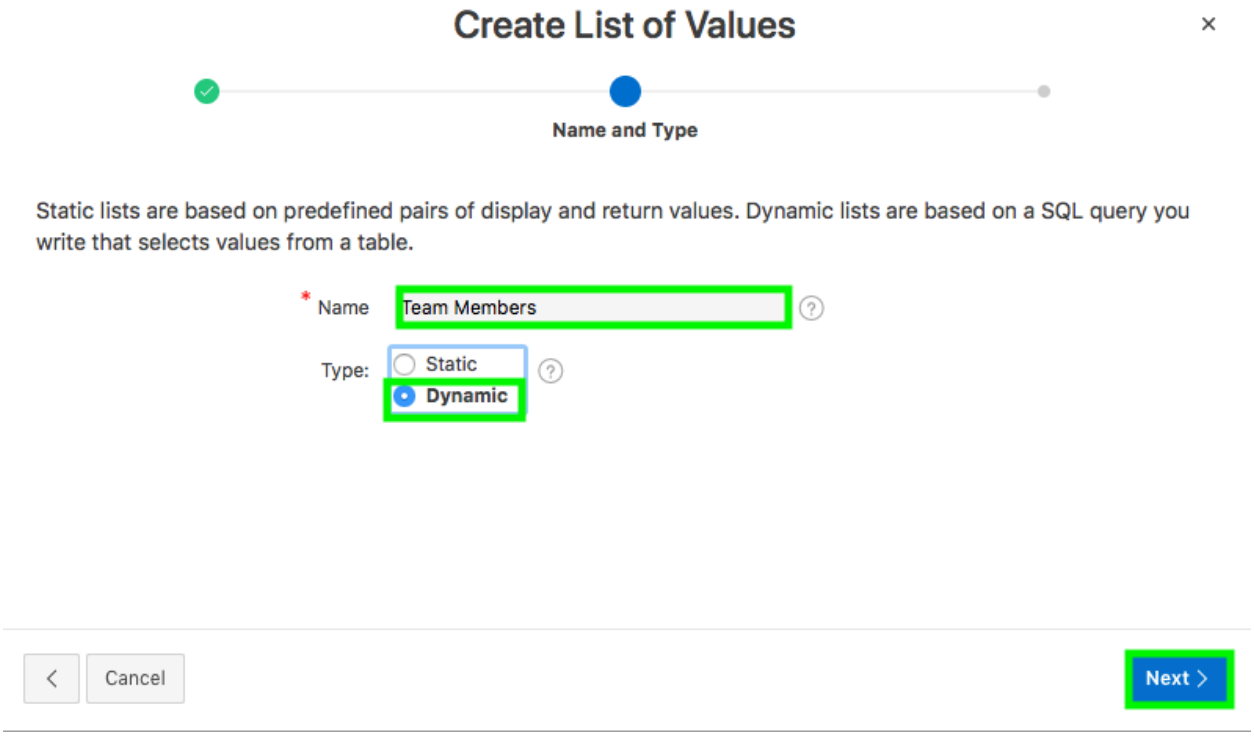
3. Under Other Components, click **List of Values**.



4. Then, click **Create**.

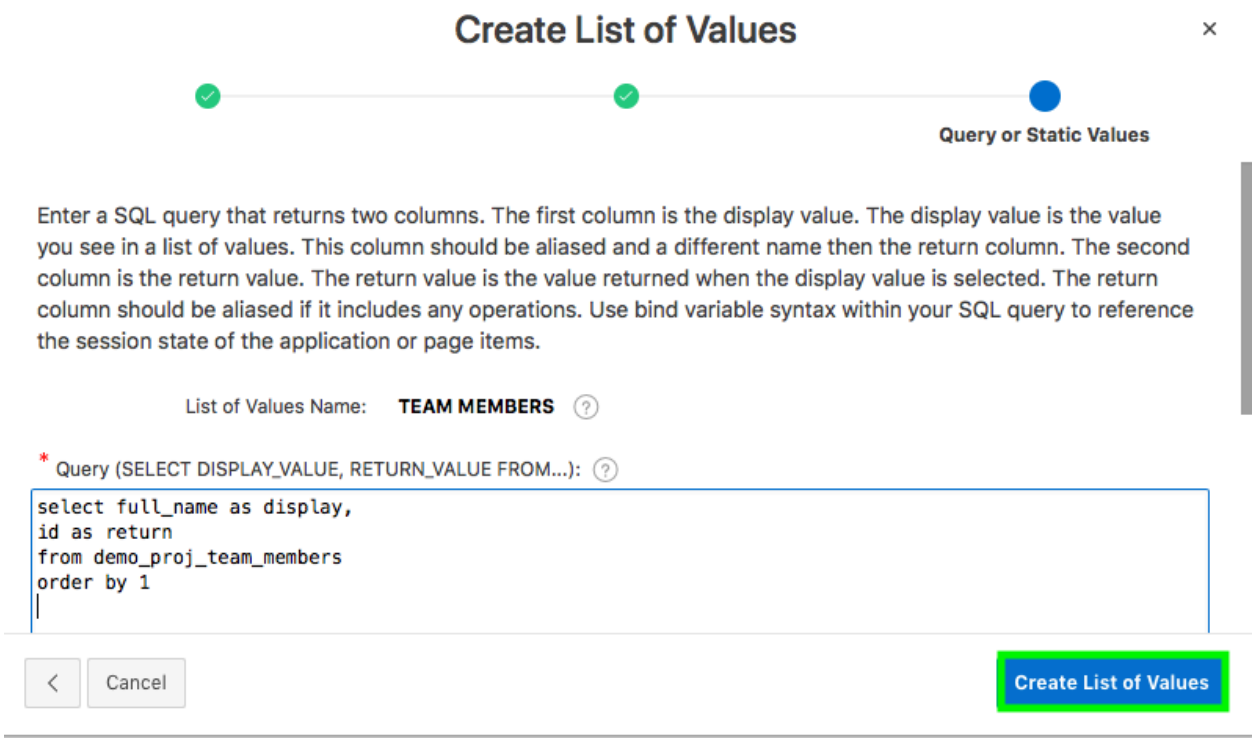
5. For Create List of Values, select **From Scratch** and click **Next**.

6. Enter **Team Members** for Name, select **Dynamic** for Type, and click **Next**.

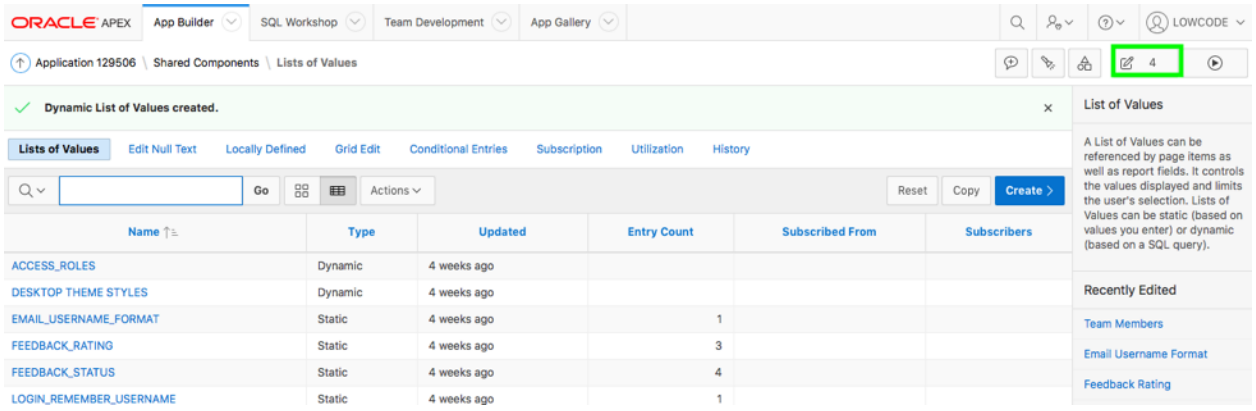


7. For Query, replace the existing SQL with the following and click **Create List of Values**.

```
select full_name as display,
id as return
from demo_proj_team_members
order by 1
```



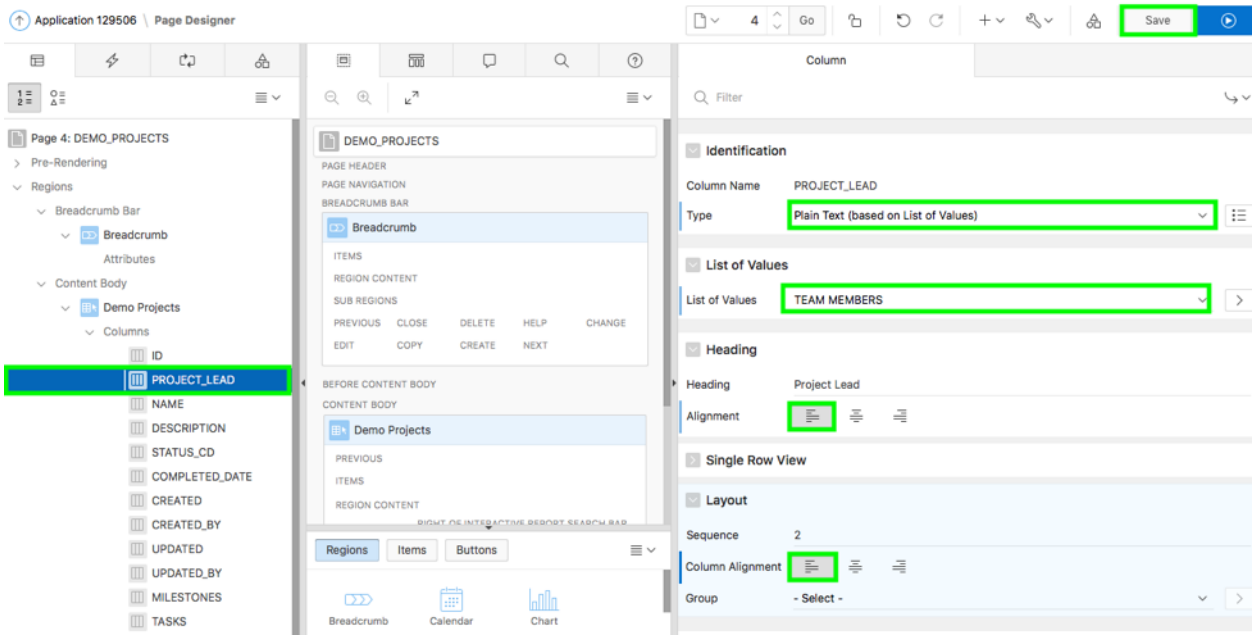
8. Click **Edit Page 4** on the toolbar, to return to Page Designer.



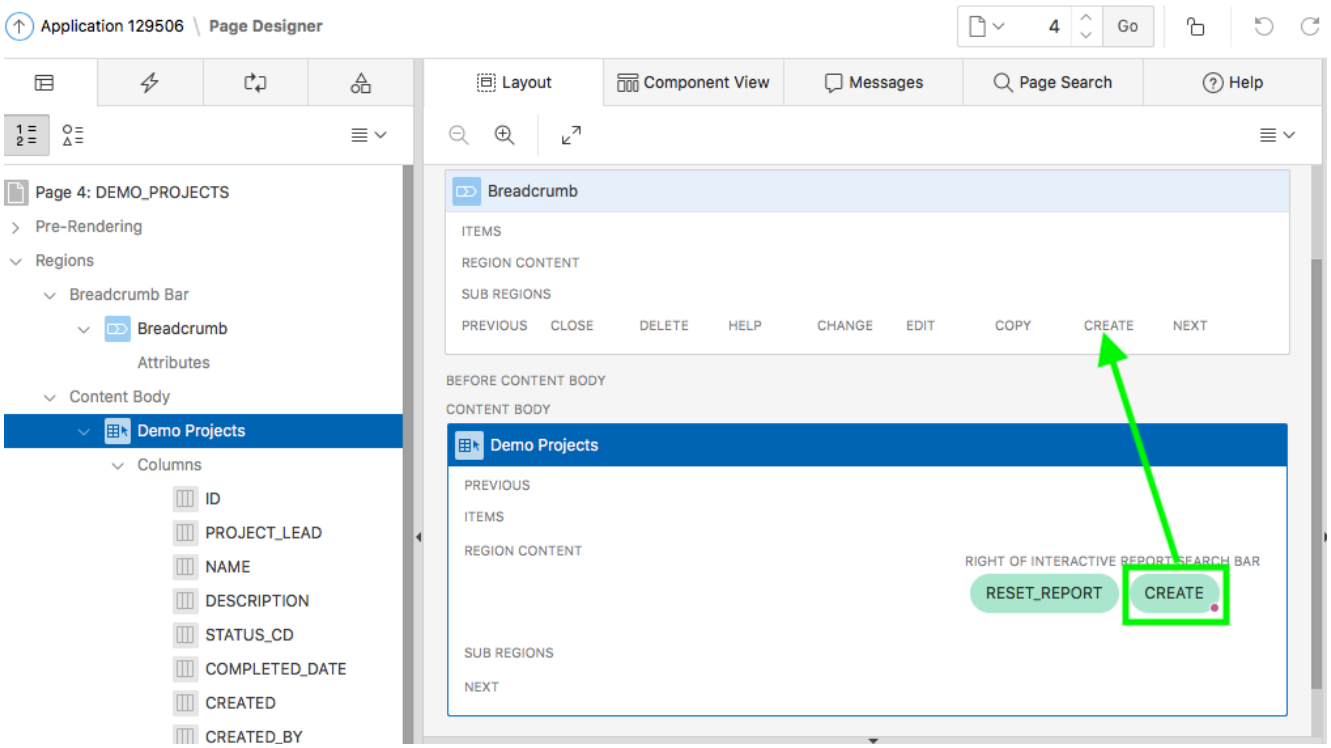
9. In the Rendering tree, expand the **Columns** node under the DEMO_PROJECTS region. Click the **PROJECT_LEAD** column.

10. In the property editor:
    - Identification > Type: select **Plain Text (based on List of Values)**
    - List of Values: select **Team Members**
    - Heading > Alignment: select **Start**
    - Layout > Column Alignment: select **Start**

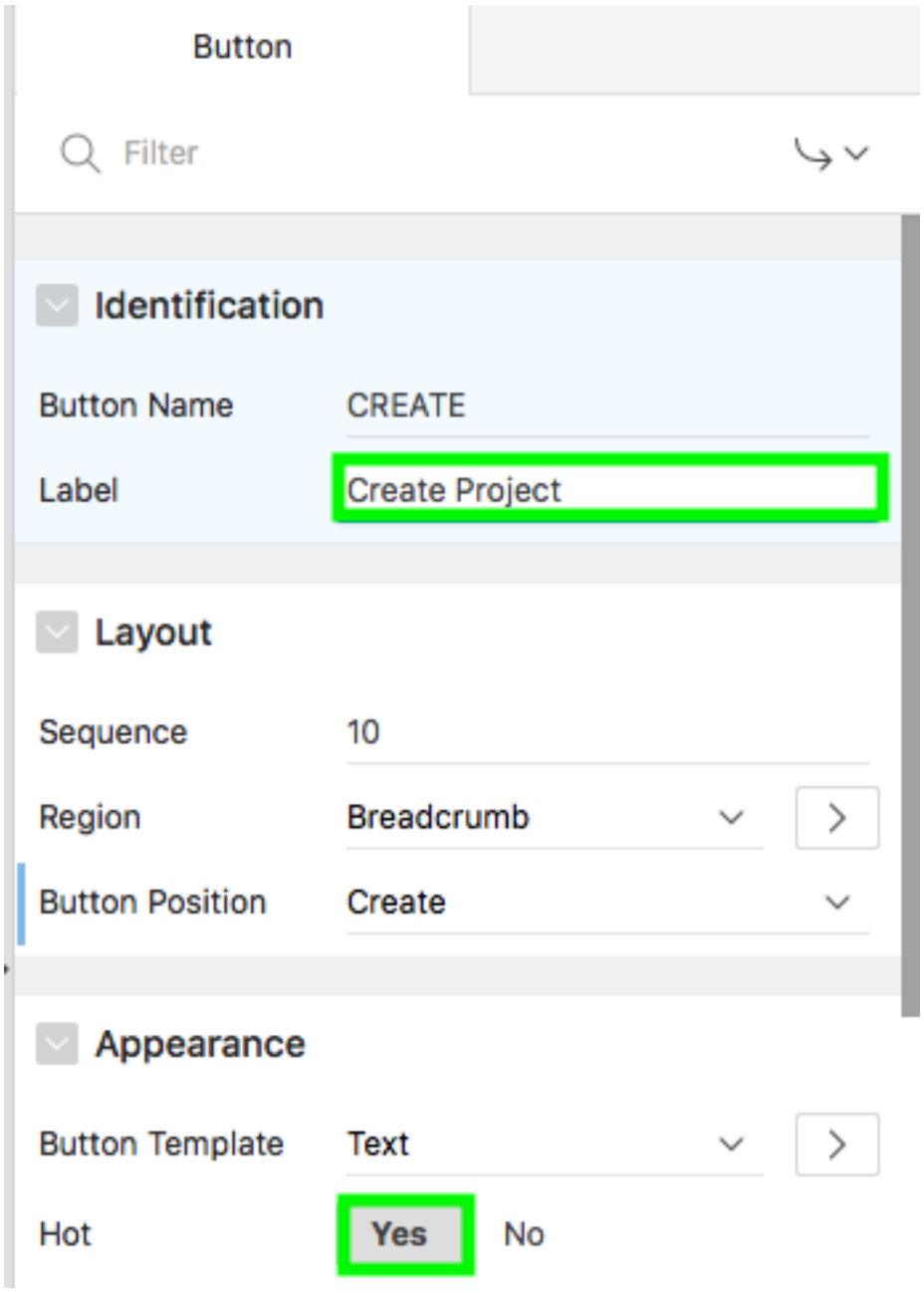
    Click **Save**.



11. It would look more aesthetically pleasing to place the Create button at the top of the page.
    In the Layout, locate the Breadcrumbs region. Note that there are several elements surrounded by dotted lines. These are placeholders for buttons.
    Locate the **DEMO_PROJECTS** region. Click and hold the **Create** button and drag it up to the Breadcrumbs region and into the Create placeholder.

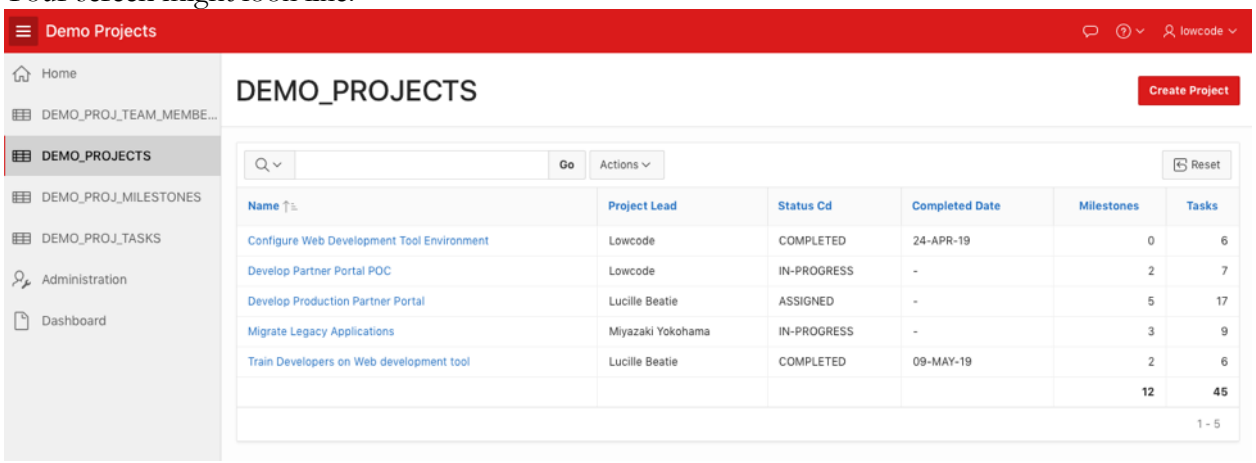


12. In the property editor, enter **Create Project** for label.
Under Appearance, select **Yes** for Hot.



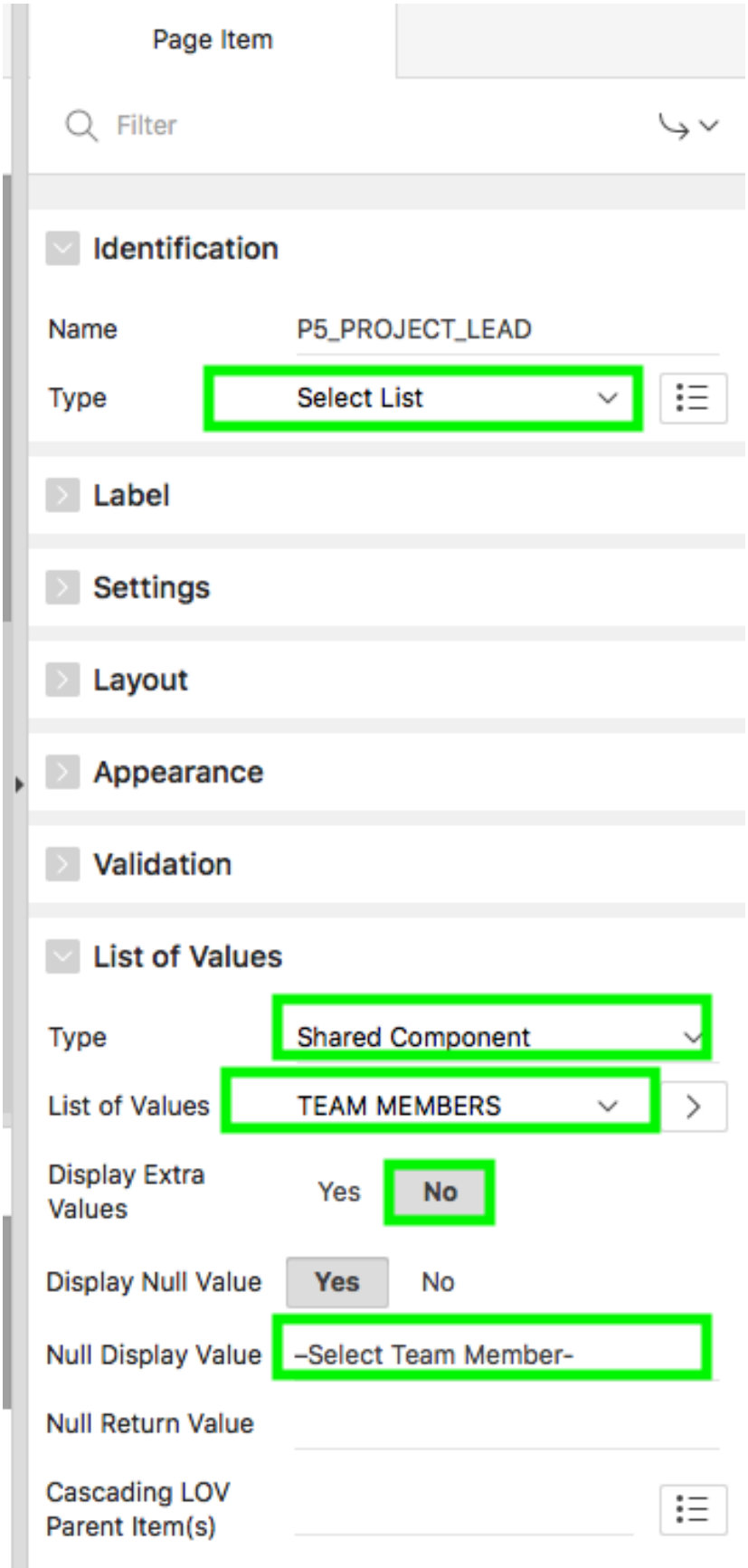
13. Click **Save**. Then, click **Save and Run Page**.

14. Your screen might look like:



15. You need to update page items on the Maintain Project form page. Click a project name and then in the Developer Toolbar, click **Edit Page 5**.

16. In the Layout, under Content Body, click the **P5_PROJECT_LEAD** item. In the Property Editor:
    - Identification: Type– select **Select List**
    - List of Values: Type – select **Shared Component**
    - List of Values: List of Values – select **Team Members**
    - List of Values: Display Extra Values – select **No**
    - List of Values: Display Null Value – select **Yes**
    - List of Values: Null Display Value – enter **–Select Team Member-**

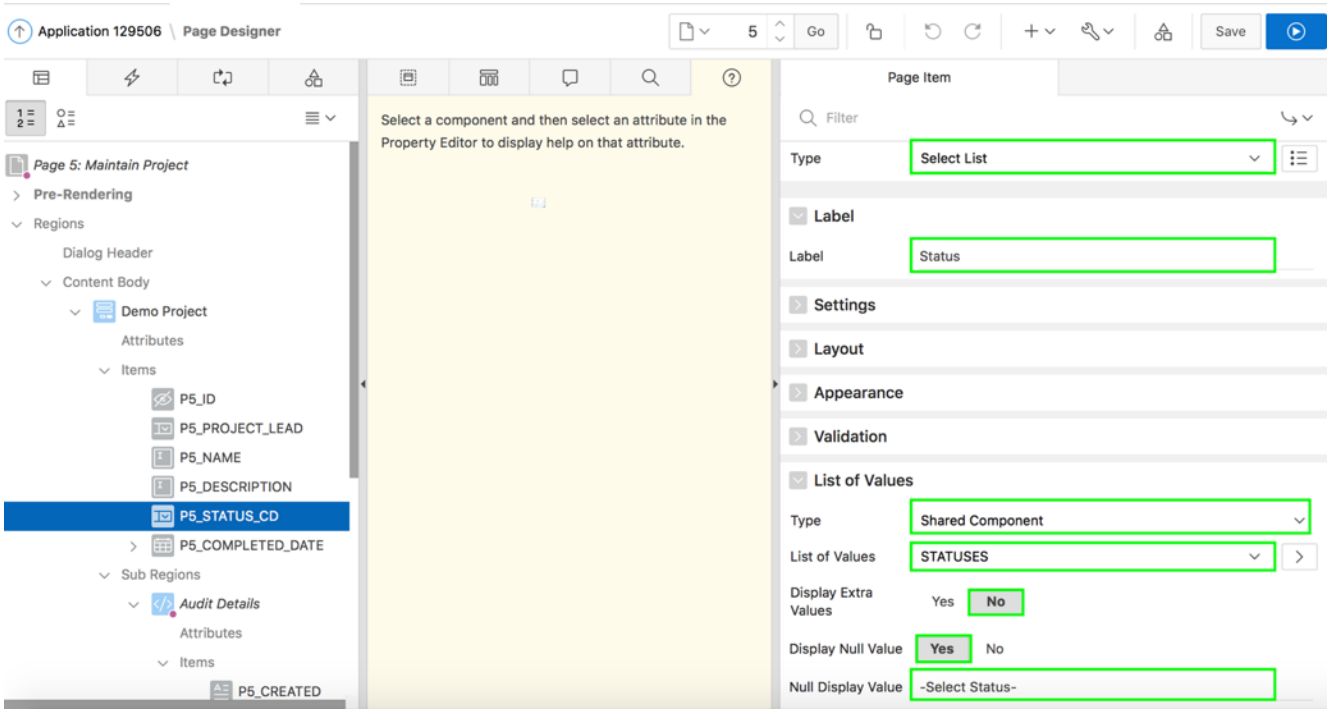

Page Item
Filter
Identification
Name
P5_PROJECT_LEAD
Type
Select List
Label
Settings
Layout
Appearance
Validation
List of Values
Type
Shared Component
List of Values
TEAM MEMBERS
Display Extra Values
Yes
No
Display Null Value
Yes
No
Null Display Value
-Select Team Member-
Null Return Value
Cascading LOV Parent Item(s)

17. Next define a list of statuses. In Page Designer, click the **Shared Components** button, found on the right side of the toolbar. Perform the following steps:
    a) Under Other Components, click **List of Values**.
    b) For Create List of Values, select **From Scratch** and click **Next**.
    c) Enter **Statuses** for Name, select **Dynamic** for Type, and click **Next**.
    d) For Query, replace the existing SQL with the following and click **Create List of Values**.

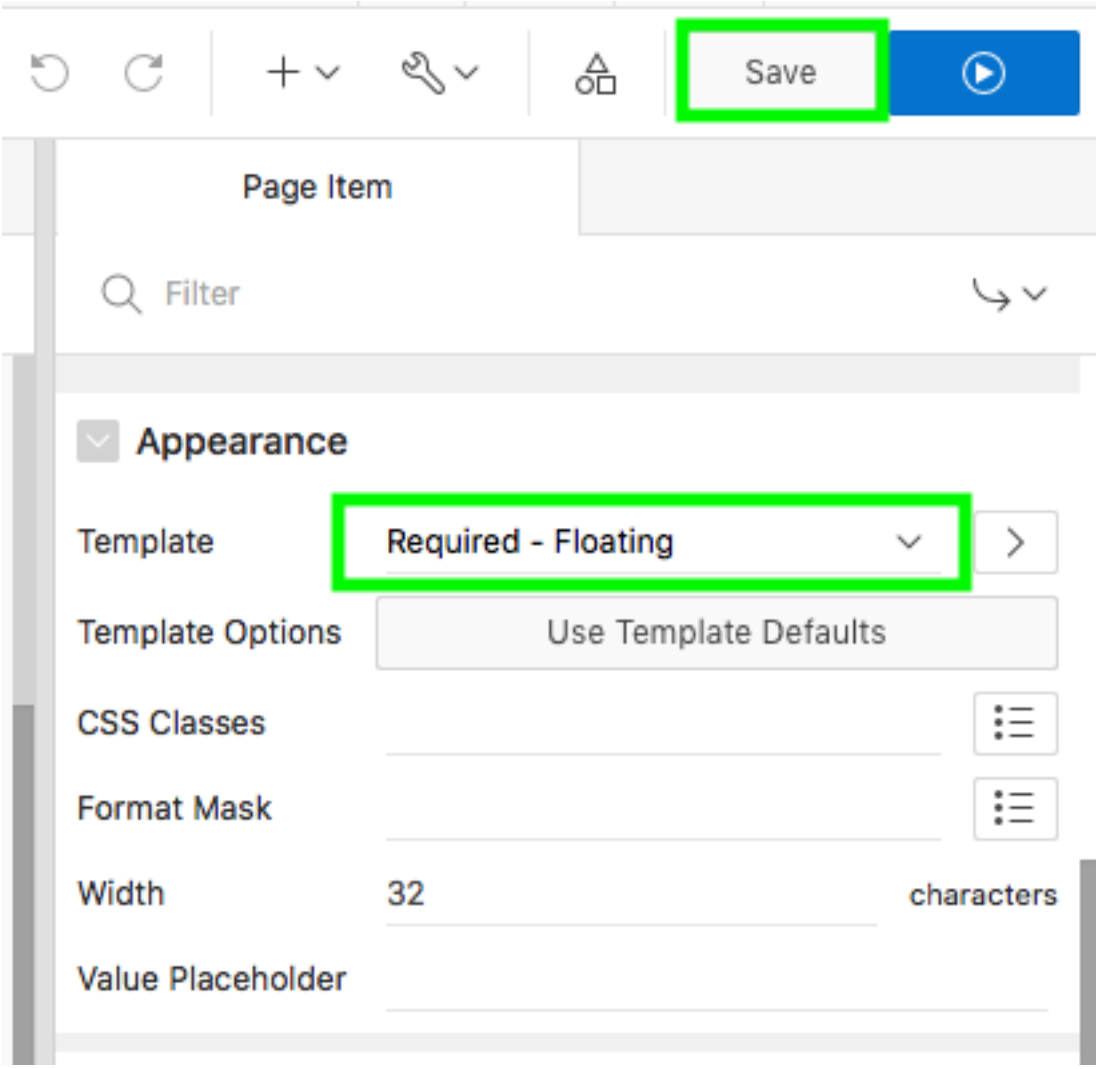
```
select description as display,
cd as return
from demo_proj_status
order by 1
```

    e) Click **Edit Page 4** on the toolbar, to return to Page Designer.

18. Navigate to the Demo Projects application runtime environment.
    In the navigation menu, click **Demo Projects**.
    Click a project name. Click a project name and then in the Developer Toolbar, click **Edit Page 5**.
    In the Layout, under Content Body, click the **P5_STATUS_CD** item. In the Property Editor:
    - Identification: Type– select **Select List**
    - List of Values: Type – select **Shared Component**
    - List of Values: List of Values – select **Statuses**
    - List of Values: Display Extra Values – select **No**
    - List of Values: Display Null Value – select **Yes**
    - List of Values: Null Display Value – enter **–Select Status-**

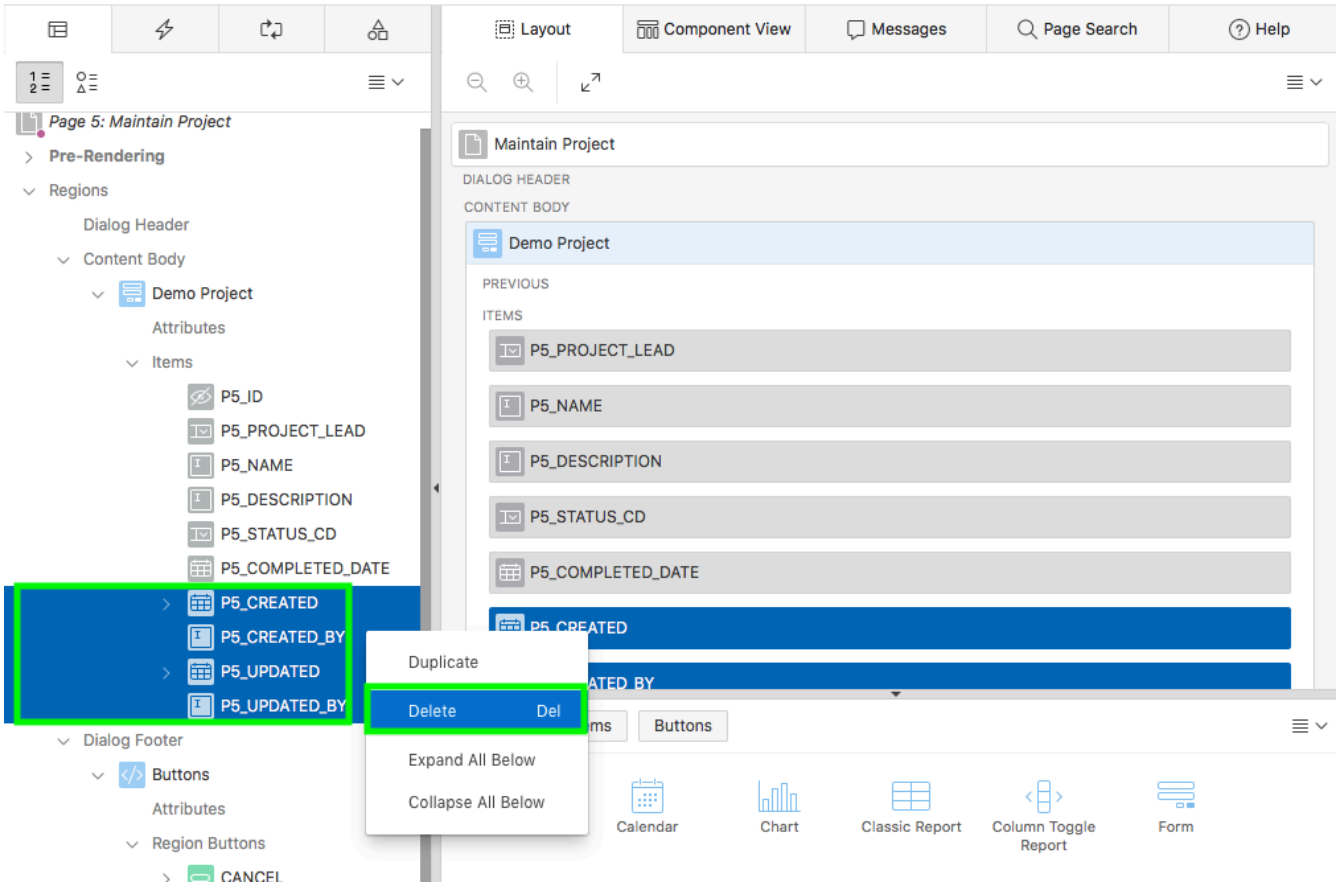


19. Click the **P5_COMPLETED_DATE** item.
    In the property editor, under Appearance, select **Required - Floating** for Template.
    Then, click **Save**.



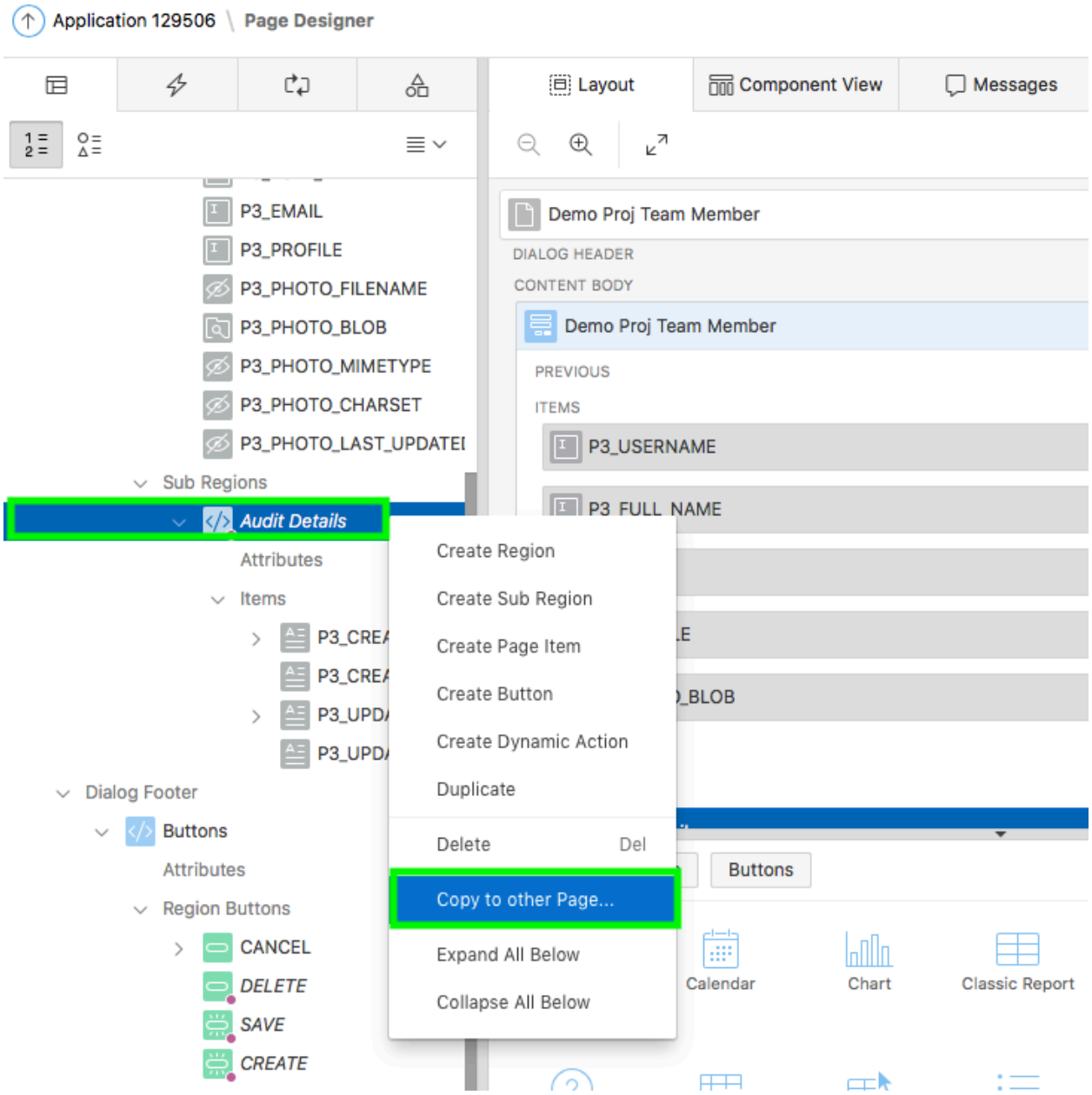
20. In the lab HOL 9-1, you created a sub-region called Audit Details for the Maintain Team Member page (Page 3). Since the four items included in that region are the same as those on the Maintain Project page and are associated with the exact same database columns, you can copy them to the Maintain Project page. This approach is easier than creating a new region and updating the items. Copying the region will also copy the previously defined template and template options.
    Delete the four audit items before copying the Audit Details region to this page. If you do not delete them, the item names in the copied Audit Details region will be renamed with a unique name (for example, P5_CREATED will be renamed to P5_CREATED_1) to ensure all page items have unique names. Although this renaming will not break the page processing, Oracle does not recommend this approach.
    In the Layout, hold the Ctrl key and select the items: **P5_CREATED**, **P5_CREATED_BY**, **P5_UPDATED**, and **P5_UPDATED_BY**.
    Then, right-click and select **Delete**.

Click **Save**.

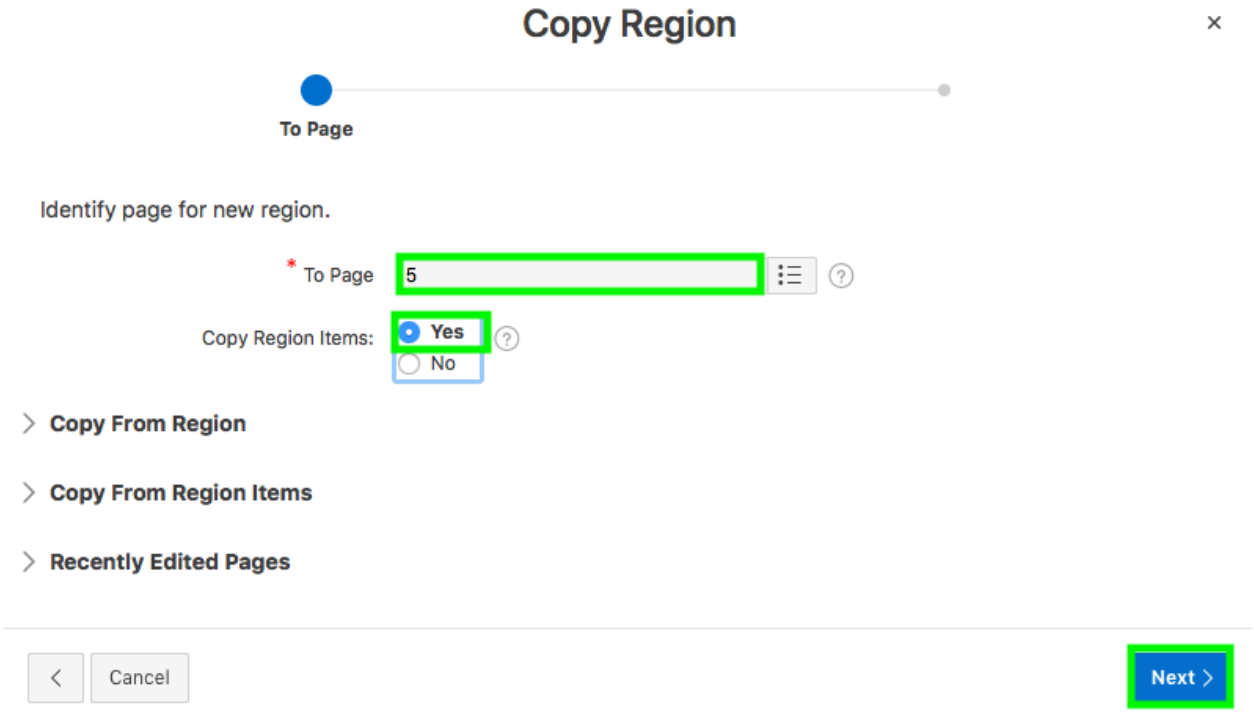


21. In page designer, navigate to **Page 3**.

22. In the Rendering tree, right-click the **Audit Details** sub region and select **Copy to other Page....**



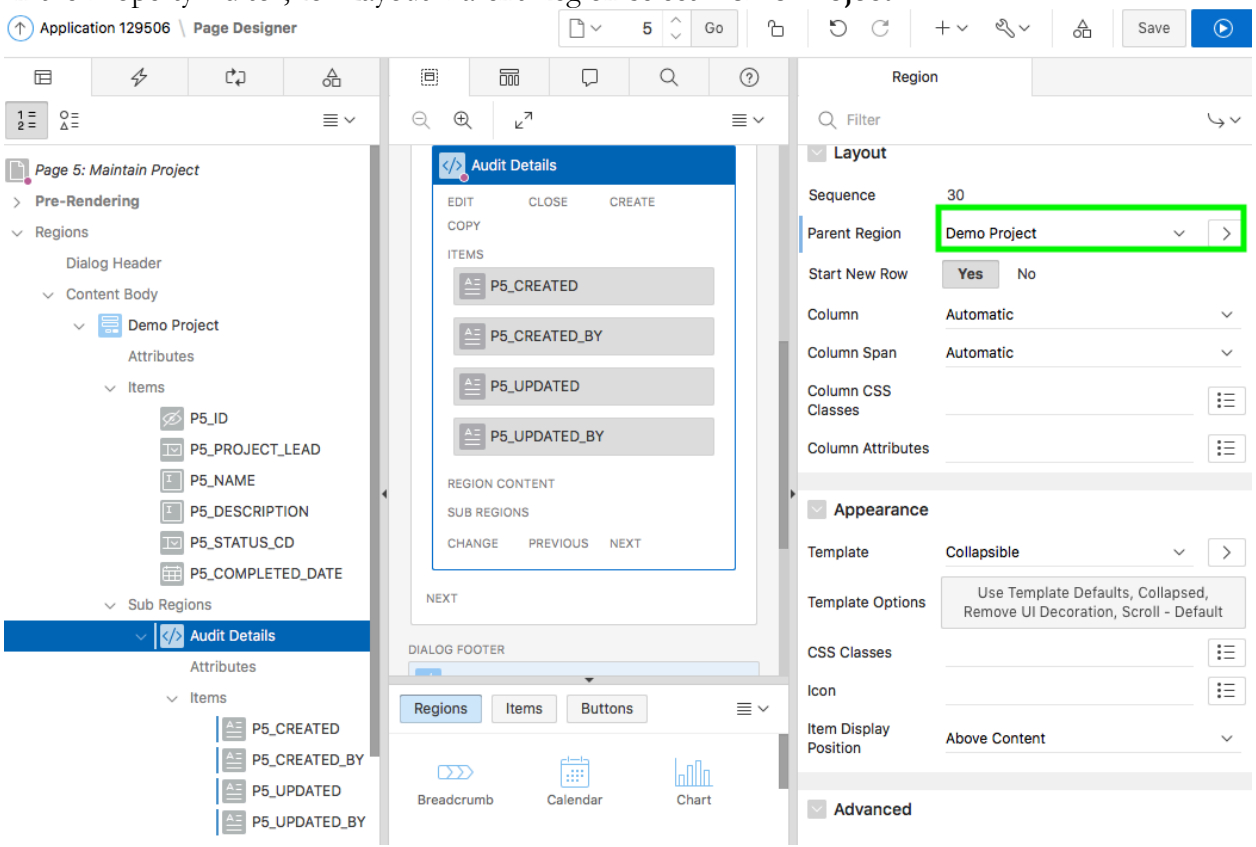
23. Enter **5** for To Page and select **Yes** for Copy Region Items. Click **Next**.



24. Click **Copy**.

25. In Page Designer, navigate back to **Page 5**.

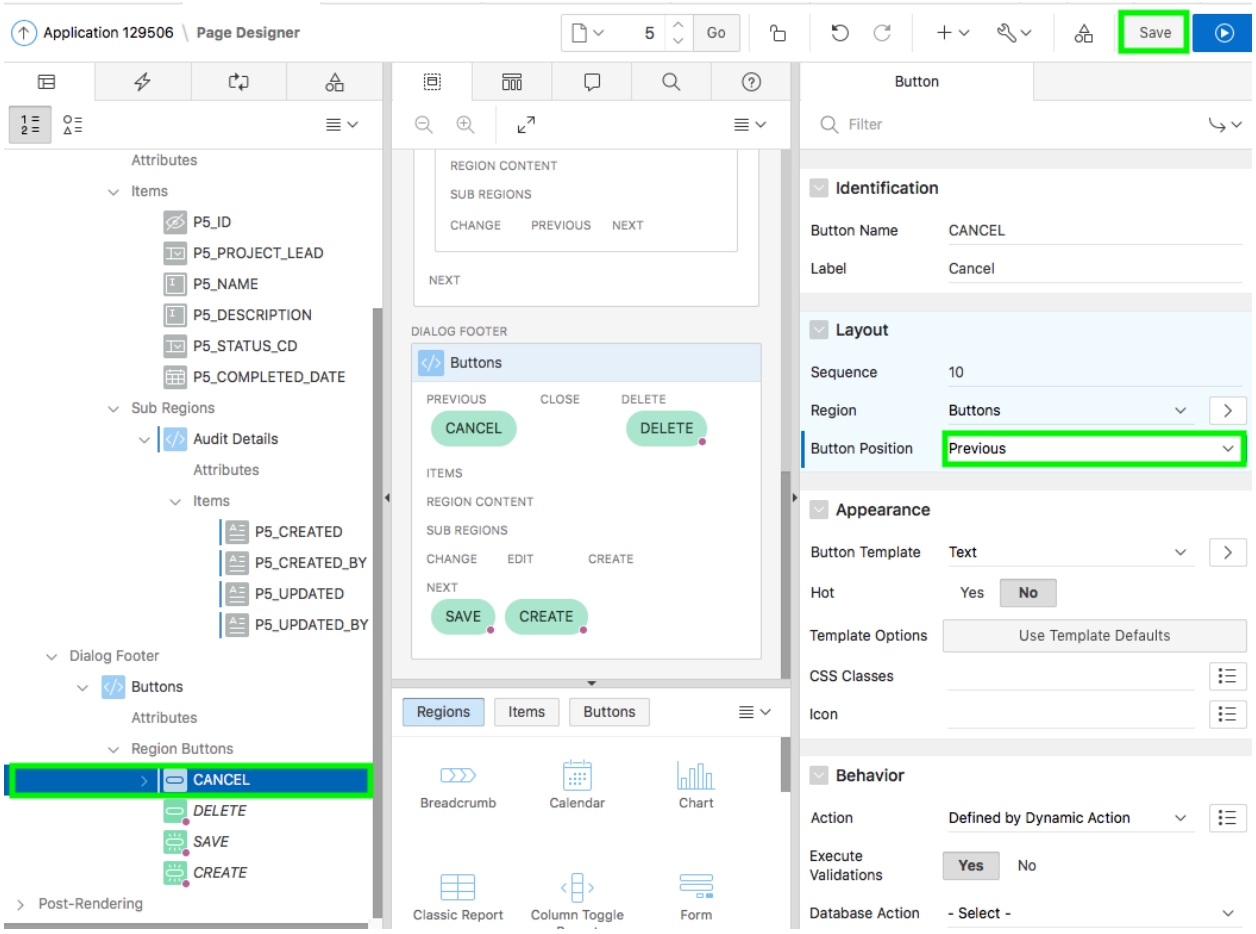
26. In the Rendering tree, select the **Audit Details** sub region.
In the Property Editor, for Layout: Parent Region select **Demo Project**.



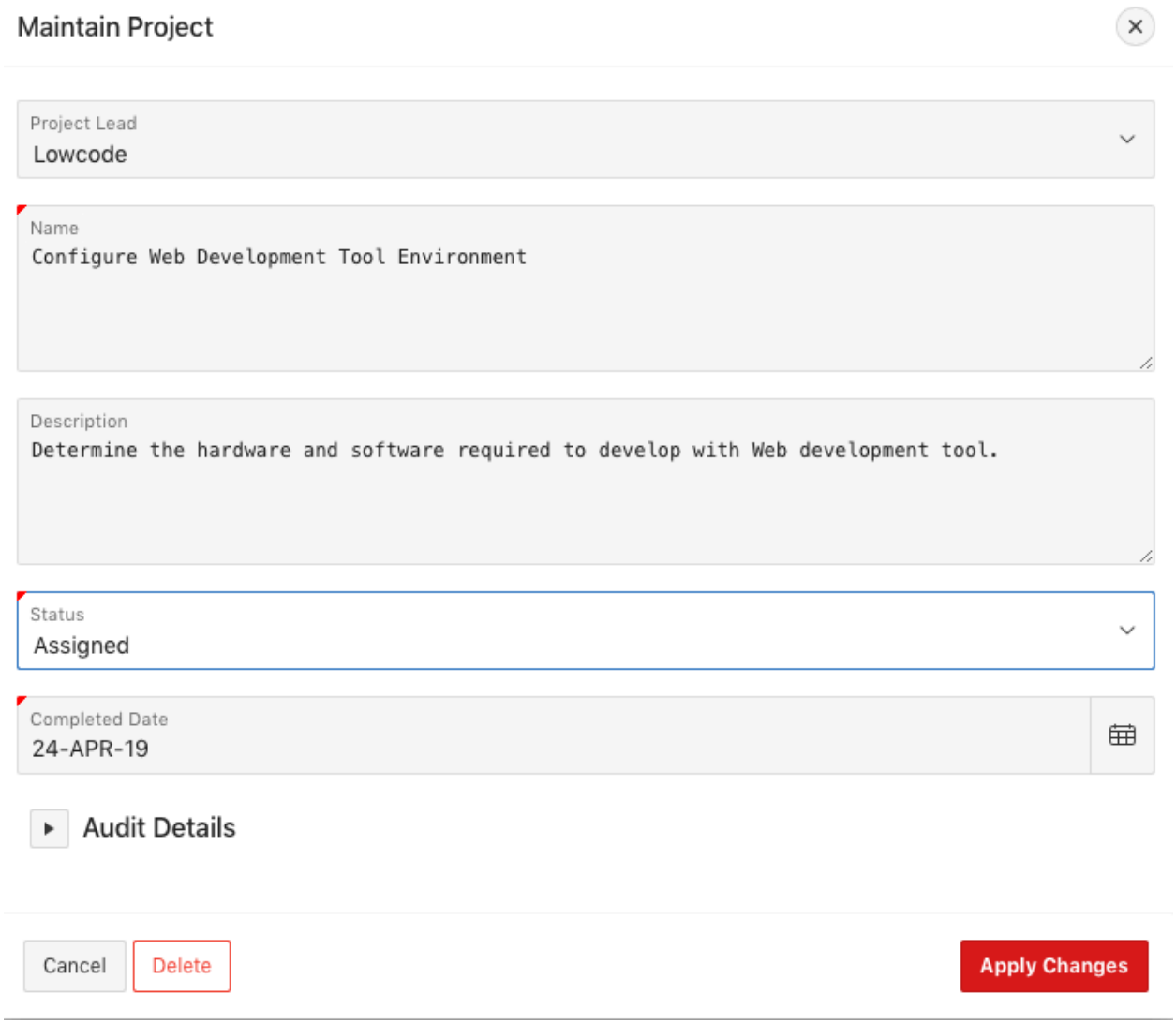
27. In the Layout, hold the Ctrl key and select the items: **P5_CREATED**, **P5_CREATED_BY**, **P5_UPDATED**, and **P5_UPDATED_BY**.
In the property editor, under Source, for Form Region, select **Demo Project**.
Click **Save**.

28. Now, reposition the buttons. Under Rendering > Buttons > Region Buttons, select **CANCEL**.
In the property editor, for Layout: Button Position select **Previous**.

Click **Save**.



29. Navigate to the Demo Projects application runtime environment.
In the navigation menu, click **Demo Projects**.
Click a project name. Notice the modified dialog. Expand the Audit Details node.


Maintain Project
Project Lead
Lowcode
Name
Configure Web Development Tool Environment
Description
Determine the hardware and software required to develop with Web development tool.
Status
Assigned
Completed Date
24-APR-19
Audit Details
Cancel
Delete
Apply Changes

HOL 9-3 Updating the Milestones Pages

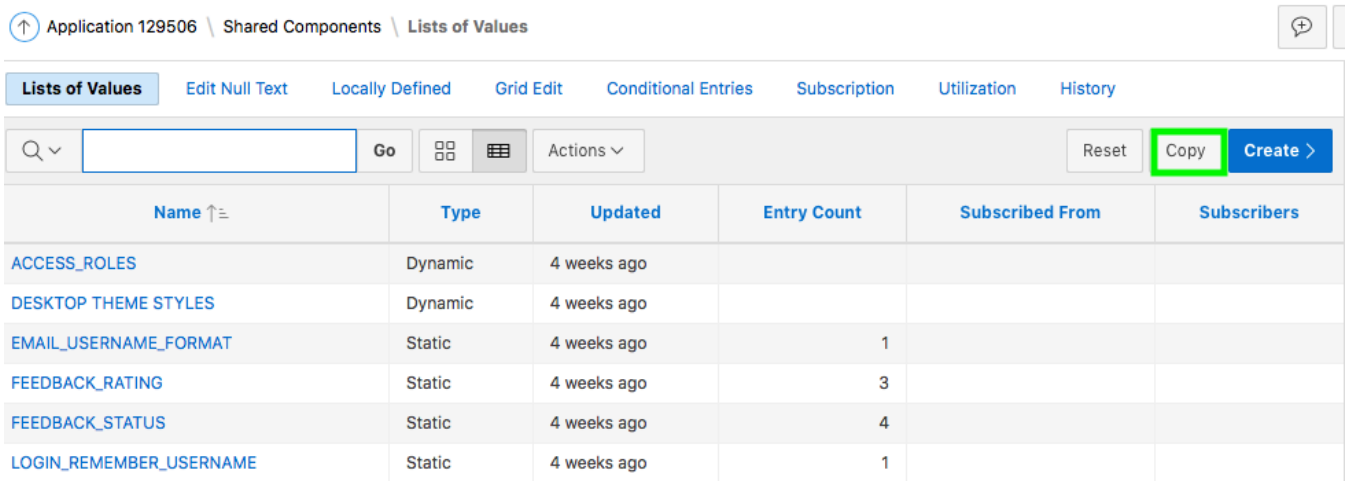
In this lab, you update the page items on the form page. You create the Audit Details collapsible sub-region by copying it from another page in the application. You make the form page visually appealing. This lab also covers creating and using list of values.

1. In the Demo Projects application runtime environment, click **Demo_Proj_Milestones** in the navigation menu.
   In the Developer Toolbar, click **Edit Page 6**.

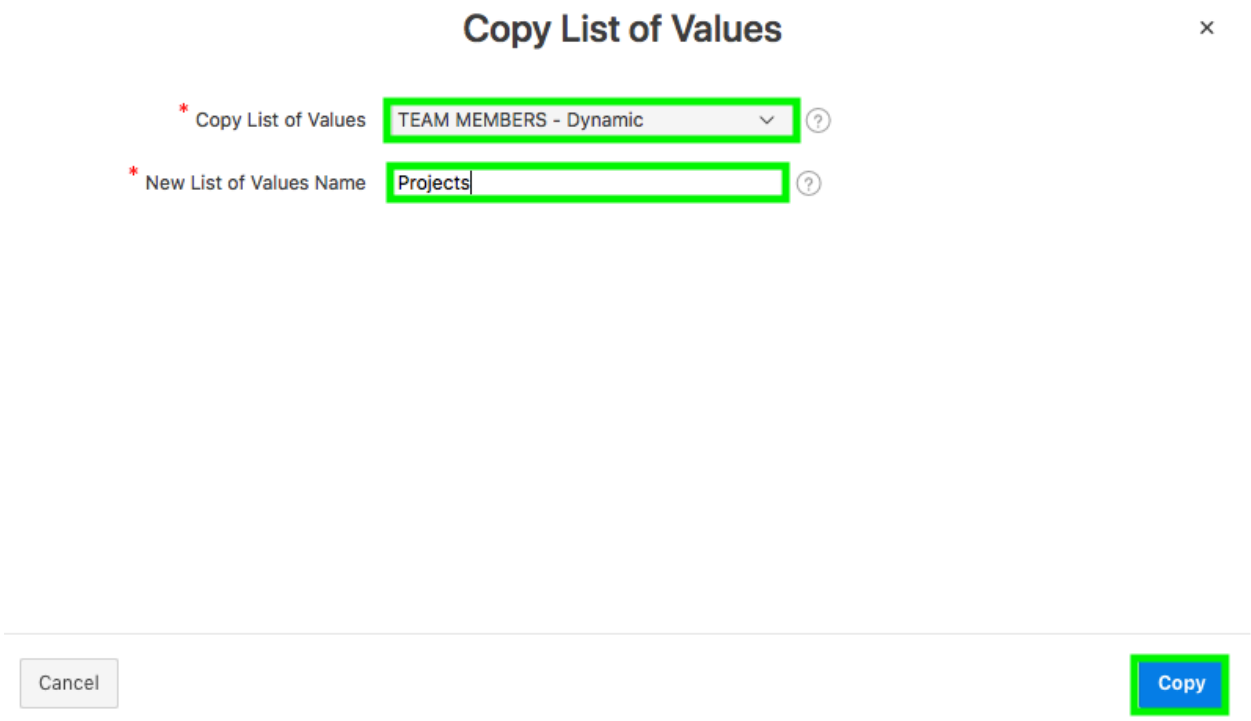
2. The Project Id column is currently displaying an identifier instead of the project name. Defining a List of Values within Shared Components enables the same control to be used on this page, the form page for milestones, and the task pages.
   In Page Designer, click **Shared Components** found on the right on the toolbar.

3. Under Other Components, click **List of Values**.

4. Click **Copy**.



5. Select **Team Members-Dynamic** from Copy List of Values.
   Enter **Projects** for New List of Values Name.
   Click **Copy**.



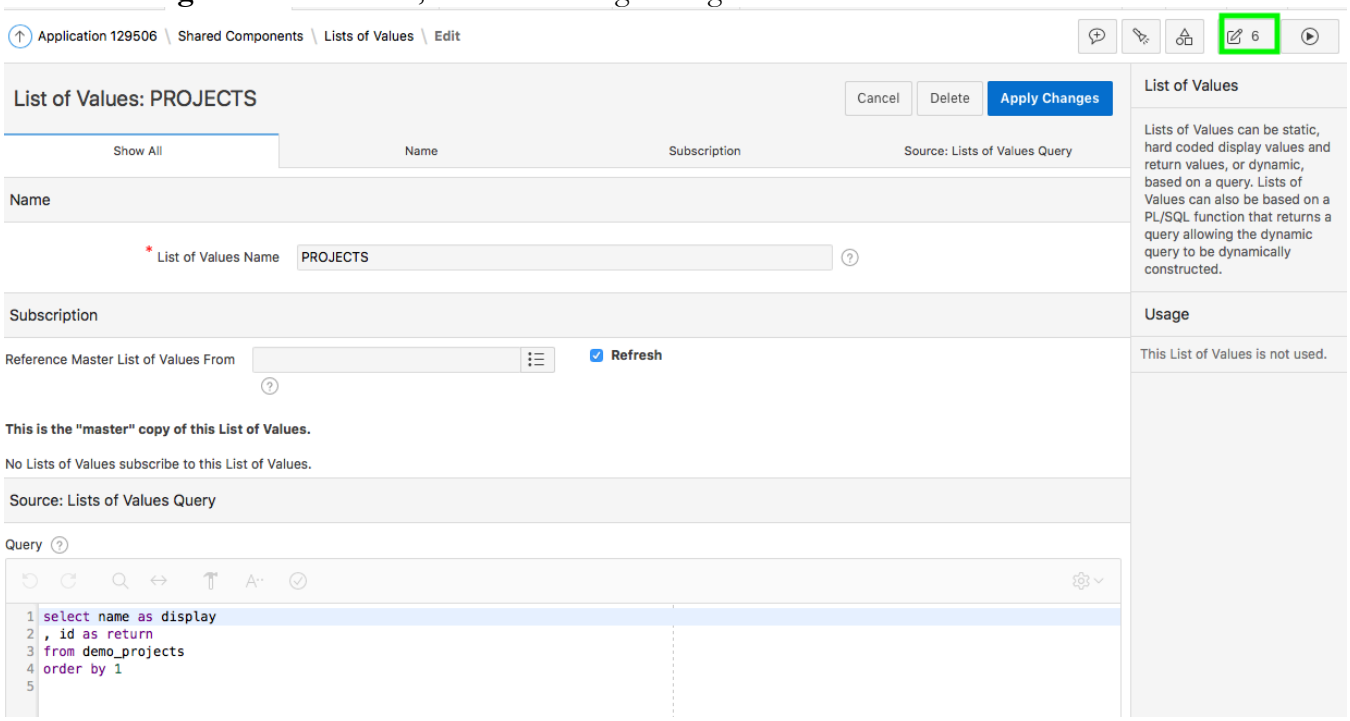
6. Click the **Projects** List of Values entry.

7. For Query, replace the existing SQL with the following.

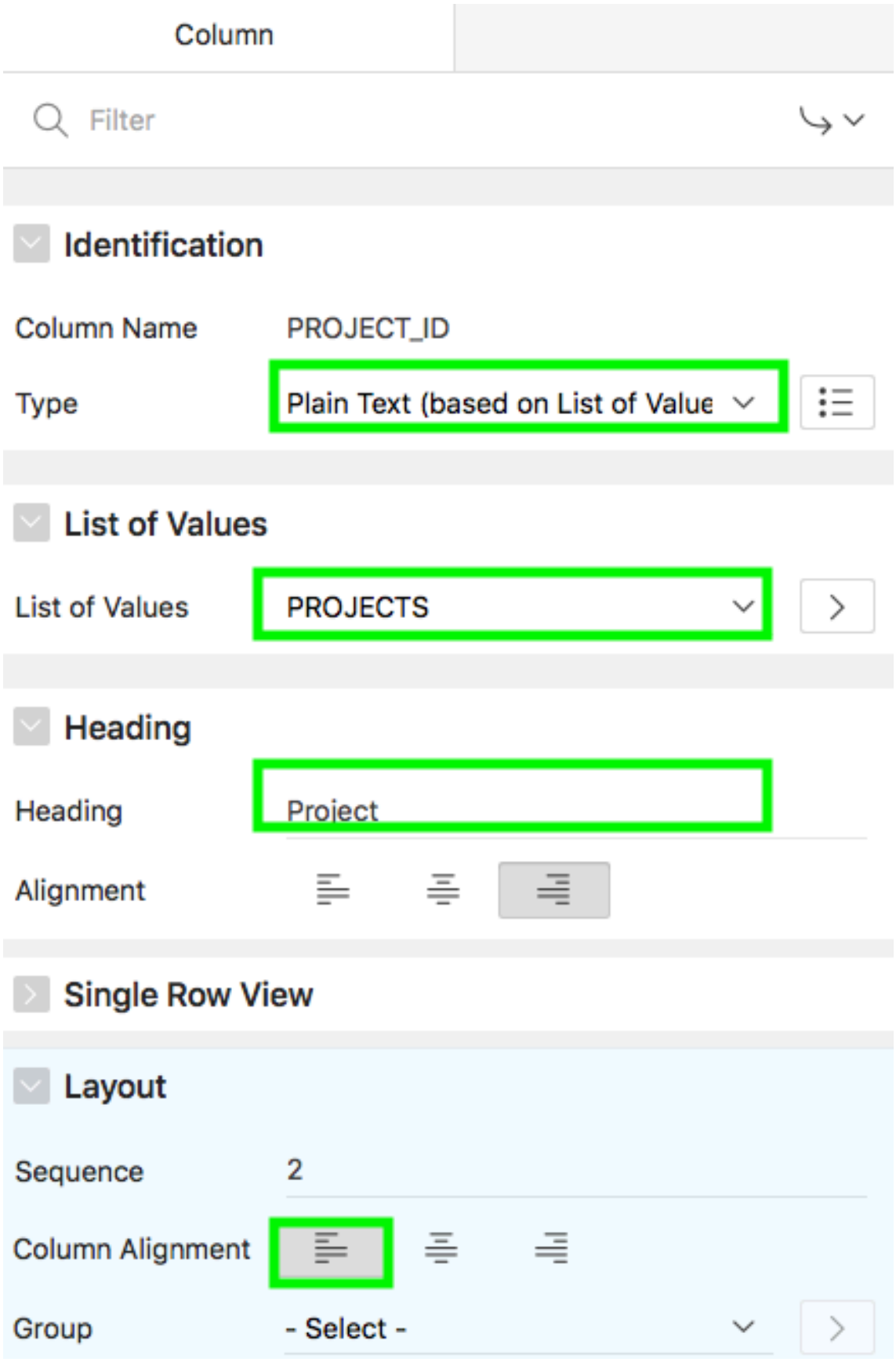
```
select name as display
, id as return
from demo_projects
order by 1
```

Click **Apply Changes**.

8. Click **Edit Page 6** on the toolbar, to return to Page Designer.



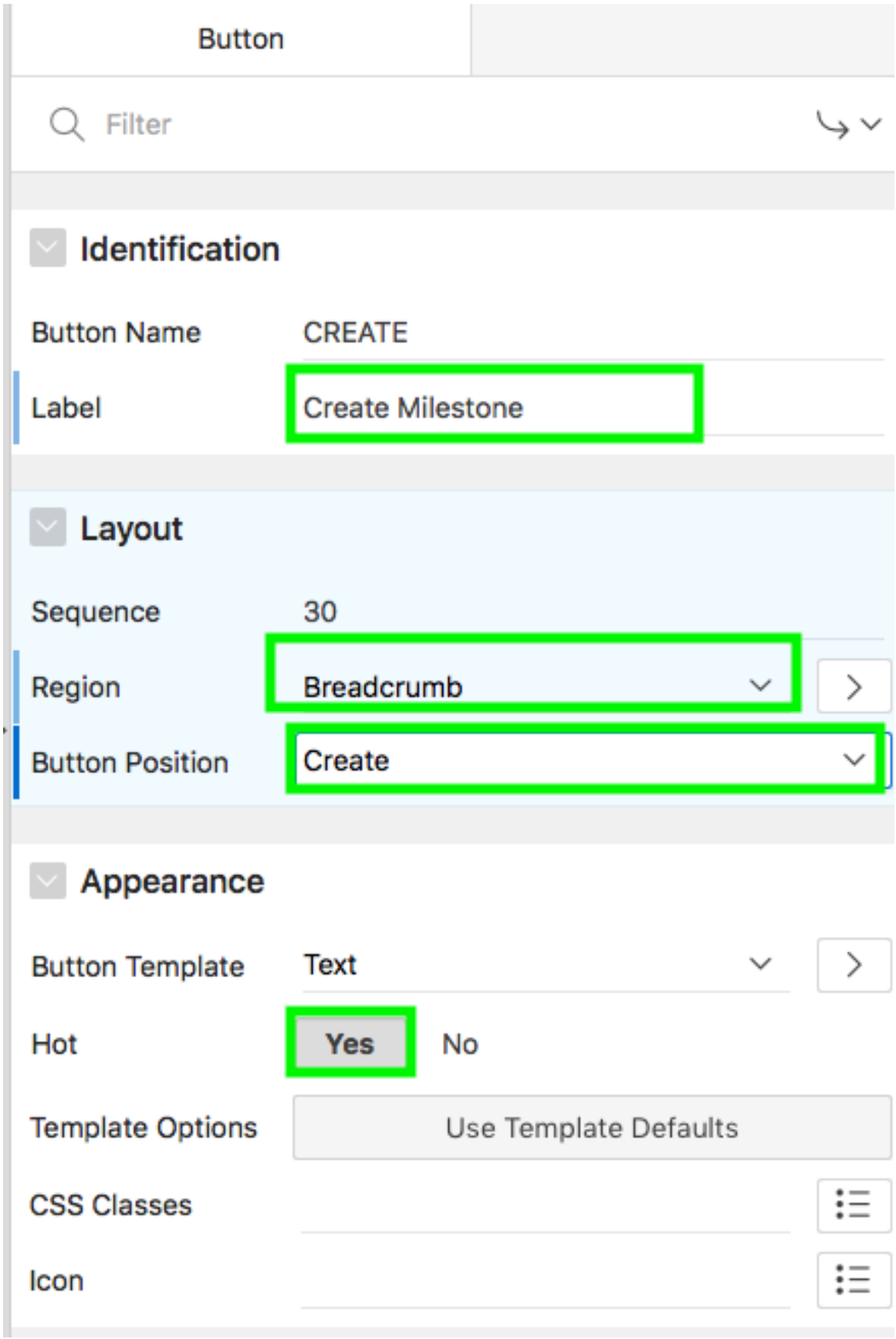
9. In the Rendering tree, expand the Columns node under the DEMO_PROJ_MILESTONES region.
   Select the **PROJECT_ID** column.
   In the Property Editor:
   - Identification: Type - select **Plain Text (based on List of Values)**
   - List of Values: List of Values - select **PROJECTS**
   - Heading: Heading - enter **Project**
   - Layout: Column Alignment - select **start**


Column
Filter
Identification
Column Name
PROJECT_ID
Type
Plain Text (based on List of Value
List of Values
List of Values
PROJECTS
Heading
Heading
Project
Alignment
Single Row View
Layout
Sequence
2
Column Alignment
Group
- Select -

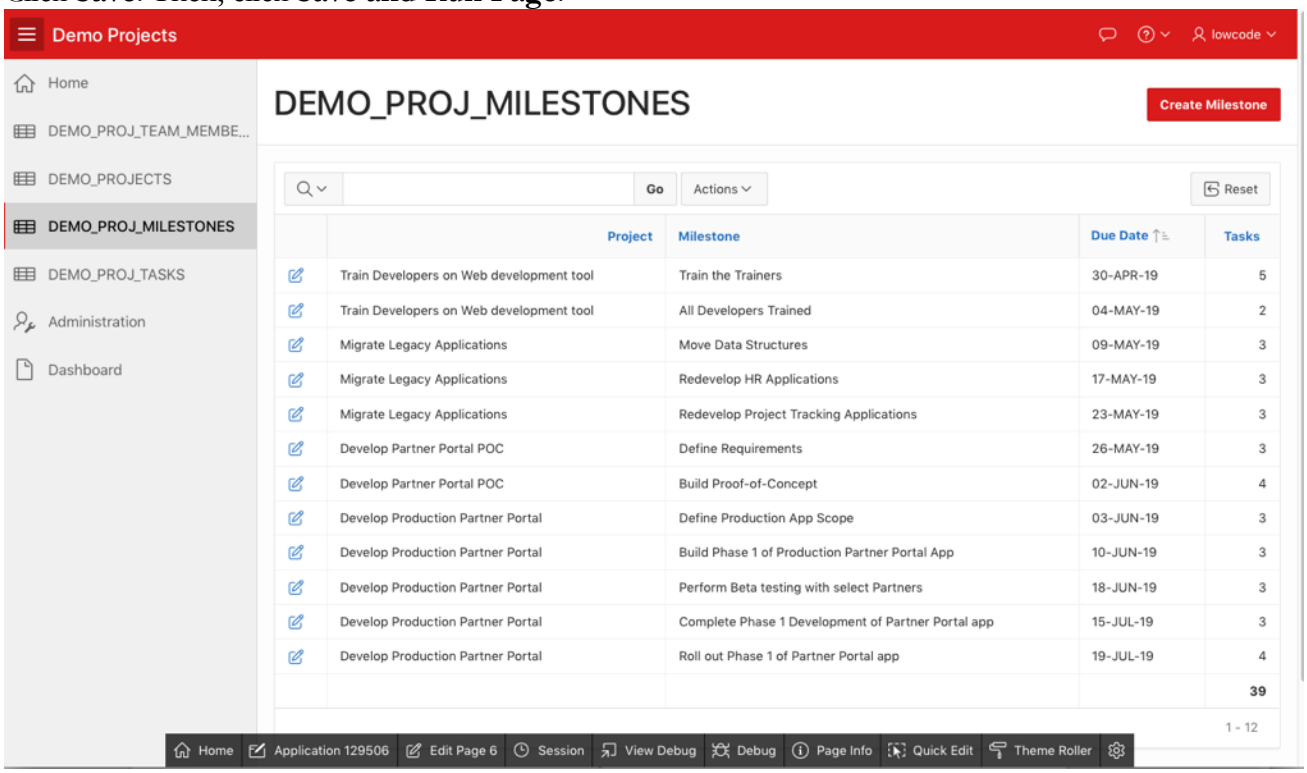
10. The Name column is ambiguous and should be relabeled.
    In the Rendering tree, click the Name column.
    In the Property Editor, for Heading enter **Milestone**.

11. Reposition the CREATE button to the top of the page.
    Locate the **DEMO_PROJ_MILESTONES** region and select the **Create** button.

12. In the Property Editor:
    - Identification: Label - enter **Create Milestone**
    - Layout: Region - select **Breadcrumb**
    - Layout: Button Position - select **Create**
    - Appearance: Hot - select **Yes**

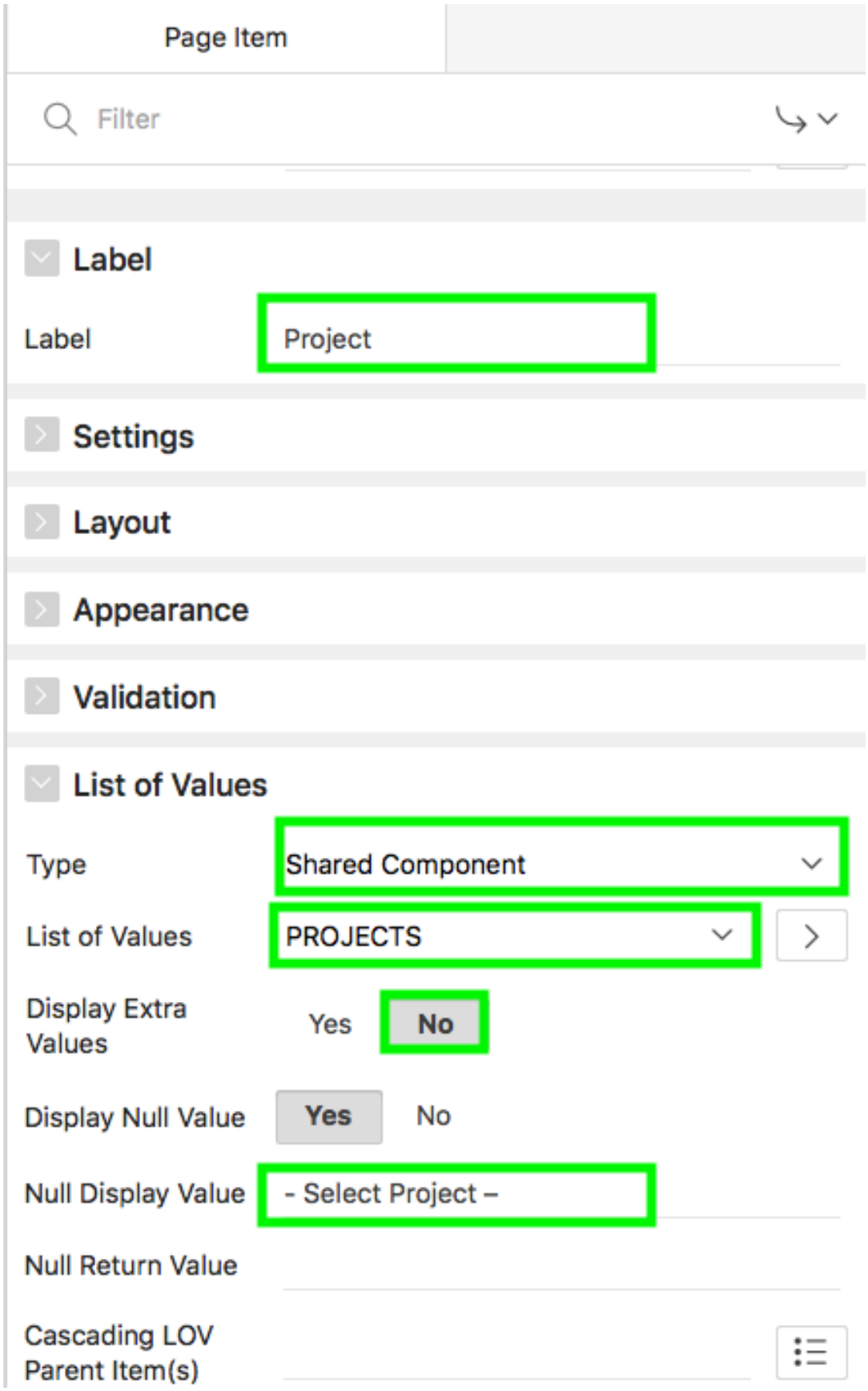

Button
Filter
Identification
Button Name
CREATE
Label
Create Milestone
Layout
Sequence
30
Region
Breadcrumb
Button Position
Create
Appearance
Button Template
Text
Hot
Yes
No
Template Options
Use Template Defaults
CSS Classes
Icon

13. Click **Save**. Then, click **Save and Run Page**.



14. Click a project name. In the Developer Toolbar, click **Edit Page 7**.

15. Update the page items. Under Rendering, expand Items, select the **P7_PROJECT_ID** item. In the Property Editor:
    - Identification: Type - select **Select List**
    - Label: Label - enter **Project**
    - List of Values: Type - select **Shared Component**
    - List of Values: List of Values - select **PROJECTS**
    - List of Values: Display Extra Values - select **No**
    - List of Values: Null Display Value - enter **- Select Project –**

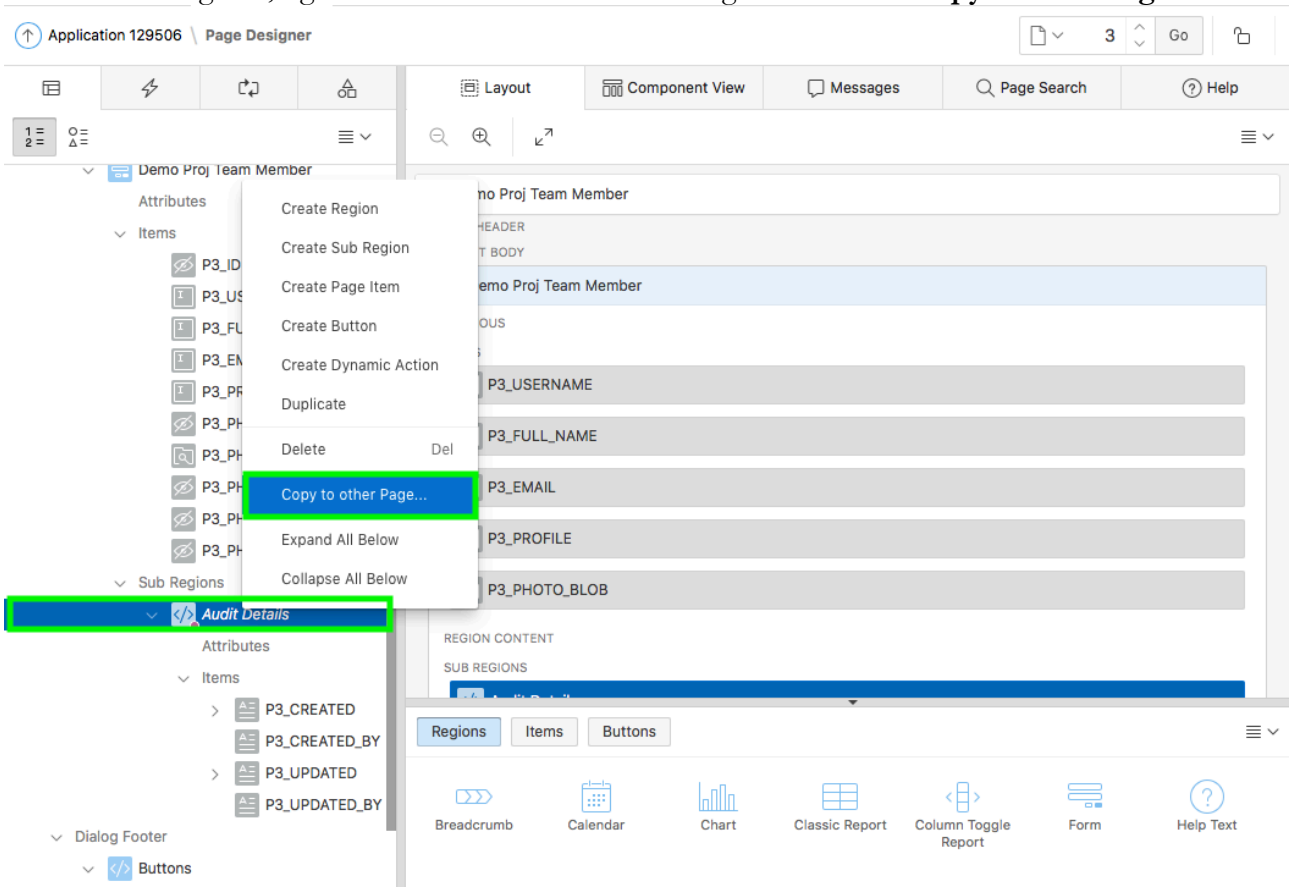

Page Item
Filter
Label
Label
Project
Settings
Layout
Appearance
Validation
List of Values
Type
Shared Component
List of Values
PROJECTS
Display Extra Values
Yes
No
Display Null Value
Yes
No
Null Display Value
- Select Project –
Null Return Value
Cascading LOV Parent Item(s)

16. In the Rendering tree, select the **P7_NAME** item. In the Property Editor:
    - Label: Label - enter **Milestone**

17. Delete the four audit items from the Maintain Milestone page. Under Rendering, hold the Ctrl key and select the items: **P7_CREATED**, **P7_CREATED_BY**, **P7_UPDATED**, and **P7_UPDATED_BY**.
    Then, right-click and select **Delete**.
    Click **Save**.

18. Copy the Audit Details region from Page 3 to Page 7. In page designer, navigate to **Page 3**.

19. In the Rendering tree, right-click the **Audit Details** sub region and select **Copy to other Page....**

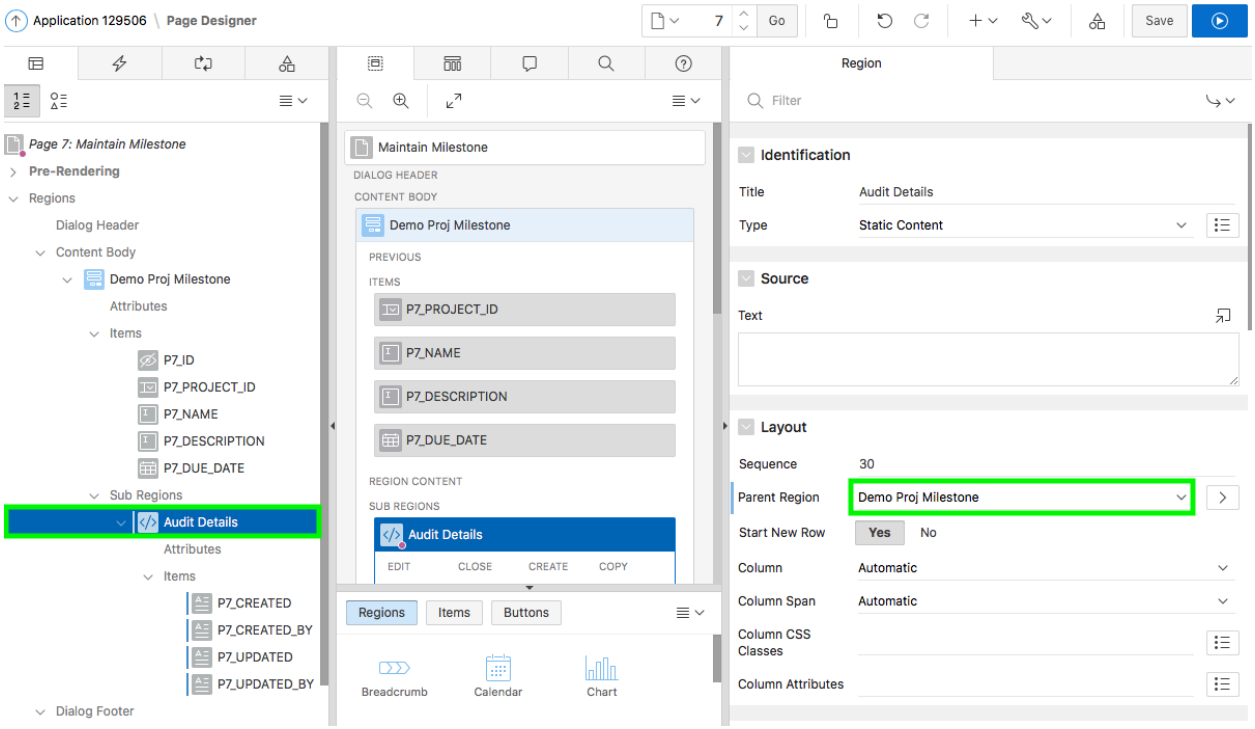


20. Enter **7** for To Page and select **Yes** for Copy Region Items. Click **Next**.

21. Click **Copy**.

22. In Page Designer, navigate back to **Page 7**.

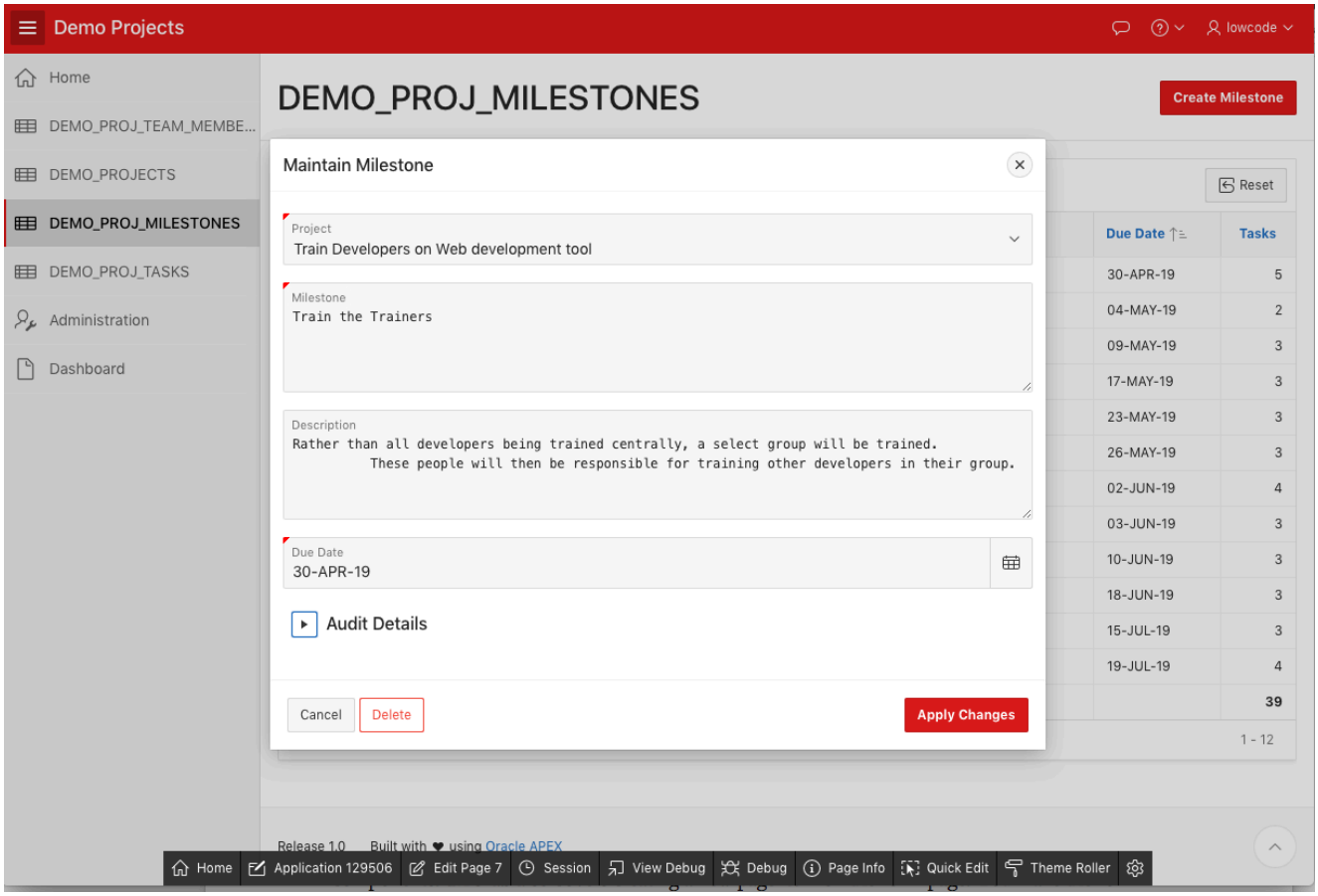
23. In the Rendering tree, select the **Audit Details** sub region. In the Property Editor, for Layout: Parent Region select **Demo Proj Milestone**.



24. In the Layout, hold the Ctrl key and select the items: **P5_CREATED**, **P5_CREATED_BY**, **P5_UPDATED**, and **P5_UPDATED_BY**.
In the property editor, under Source, for Form Region, select **Demo Proj Milestone**.
Click **Save**.

25. Now, reposition the buttons. Under Rendering > Buttons > Region Buttons, select **CANCEL**.
In the property editor, for Layout: Button Position select **Previous**.

26. Click **Save**.
Navigate to the application runtime environment and click **Demo_Proj_Milestones**.
Click any milestone to see the modified dialog.


Demo Projects
lowcode
Home
DEMO_PROJ_TEAM_MEMBE...
DEMO_PROJECTS
DEMO_PROJ_MILESTONES
DEMO_PROJ_TASKS
Administration
Dashboard
DEMO_PROJ_MILESTONES
Create Milestone
Maintain Milestone
Project
Train Developers on Web development tool
Milestone
Train the Trainers
Description
Rather than all developers being trained centrally, a select group will be trained.
These people will then be responsible for training other developers in their group.
Due Date
30-APR-19
Audit Details
Cancel
Delete
Apply Changes
Reset
Due Date
Tasks
30-APR-19 5
04-MAY-19 2
09-MAY-19 3
17-MAY-19 3
23-MAY-19 3
26-MAY-19 3
02-JUN-19 4
03-JUN-19 3
10-JUN-19 3
18-JUN-19 3
15-JUL-19 3
19-JUL-19 4
39
1 - 12
Release 1.0
Built with ❤ using Oracle APEX
Home
Application 129506
Edit Page 7
Session
View Debug
Debug
Page Info
Quick Edit
Theme Roller

HOL 9-4 Updating the Tasks Pages

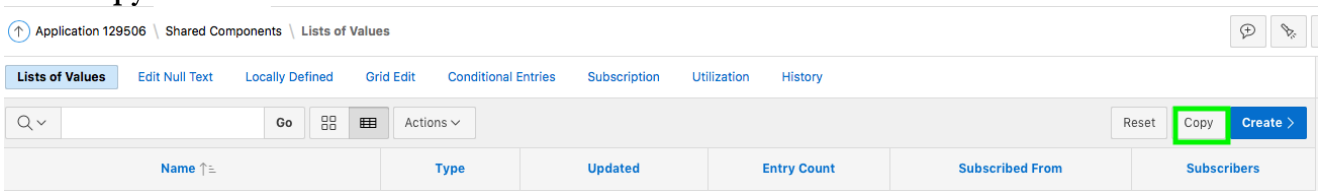
In this lab, you update the page items on the form page. You use list of values created as shared components. This lab also covers creating a new page item on the form page. You make the form page visually appealing.

1. In the Demo Projects application runtime environment, click **Demo_Proj_Tasks** in the navigation menu.
   In the Developer Toolbar, click **Edit Page 8**.

2. The Project Id, Milestone Id, and Assignee columns are currently displaying identifiers instead of the names. You already created a List of Values for projects and assignees (Team Members). Therefore, you only need to create a List of Values for milestones.
   In Page Designer, click **Shared Components** found on the right on the toolbar.

3. Under Other Components, click **List of Values**.

4. Click **Copy**.



5. Select **Projects-Dynamic** from Copy List of Values.
   Enter **Milestones** for New List of Values Name.
   Click **Copy**.

6. Click the **Milestones** List of Values entry.

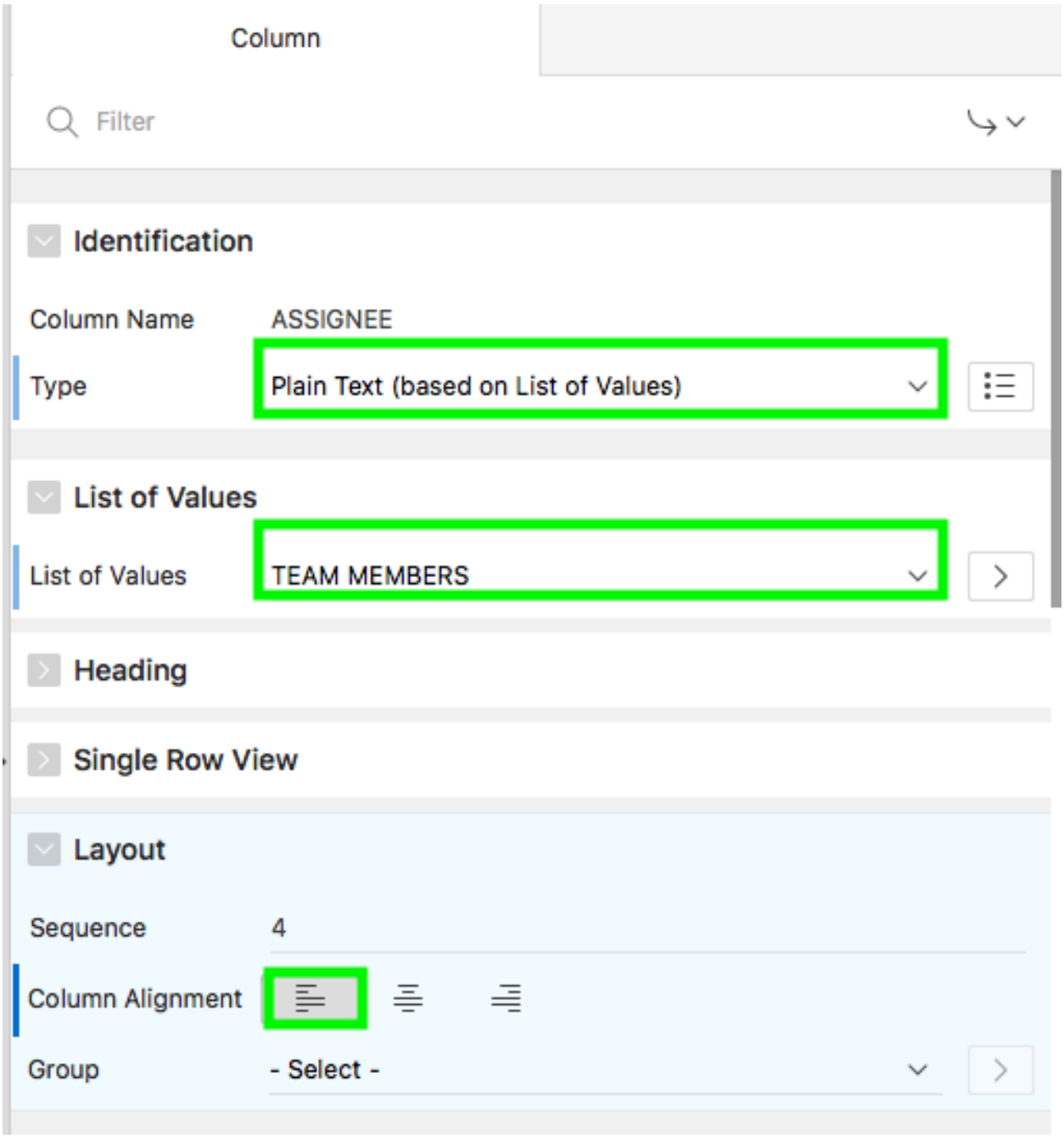
7. For Query, replace the existing SQL with the following.

```
select name as display
, id as return
from demo_proj_milestones
order by 1
```

   Click **Apply Changes**.

8. Click **Edit Page 8** on the toolbar, to return to Page Designer.

9. In the Rendering tree, locate the DEMO_PROJ_TASKS region. Expand the **Columns** node, and click the **ASSIGNEE** column. In the Property Editor:
   - Identification: Type - select **Plain Text (based on List of Values)**
   - List of Values: List of Values - select **TEAM MEMBERS**
   - Layout: Column Alignment - select **start**



10. In the Rendering tree, click the **PROJECT_ID** column. In the Property Editor:
    - Identification: Type - select **Plain Text (based on List of Values)**
    - List of Values: List of Values - select **PROJECTS**
    - Heading: Heading - enter **Project**
    - Layout: Column Alignment - select **start**

11. In the Rendering tree, click the **MILESTONE_ID** column. In the Property Editor:
    - Identification: Type - select **Plain Text (based on List of Values)**
    - List of Values: List of Values - select **MILESTONES**

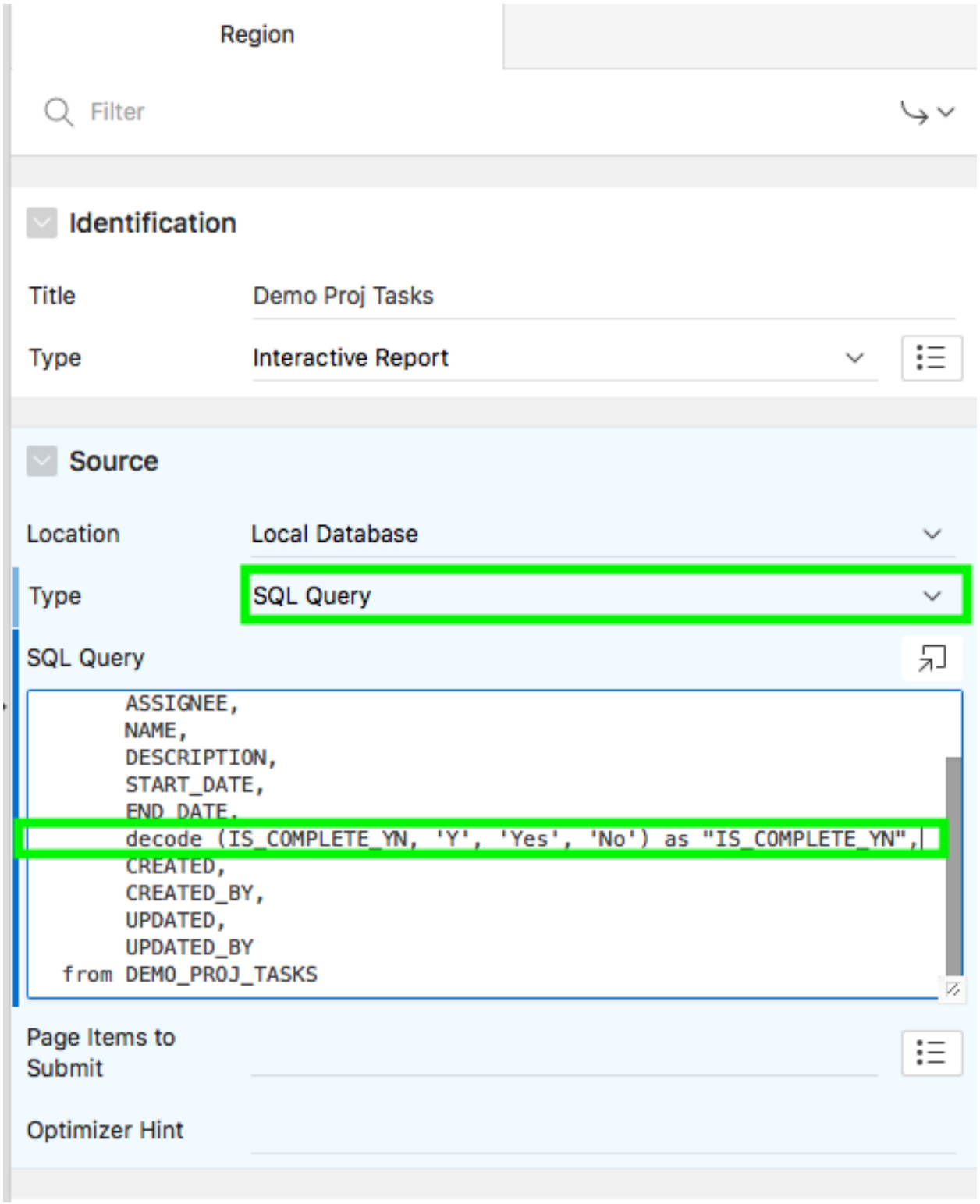
- Heading: Heading - enter **Milestone**
- Layout: Column Alignment - select **start**

12. The Name column is ambiguous and should be relabeled. In the Rendering tree, click the **NAME** column.
    In the Property Editor, for Heading enter **Task.**

13. The IS_COMPLETE_YN column should be relabeled and the values should be Yes / No, rather than Y / N. To change the displayed value, you can either modify the SQL Source for the report, or define a List of Values.
    In the Rendering tree, select the **Demo Proj Tasks** region.
    In the Property Editor, for Source > Type, select **SQL Query**.

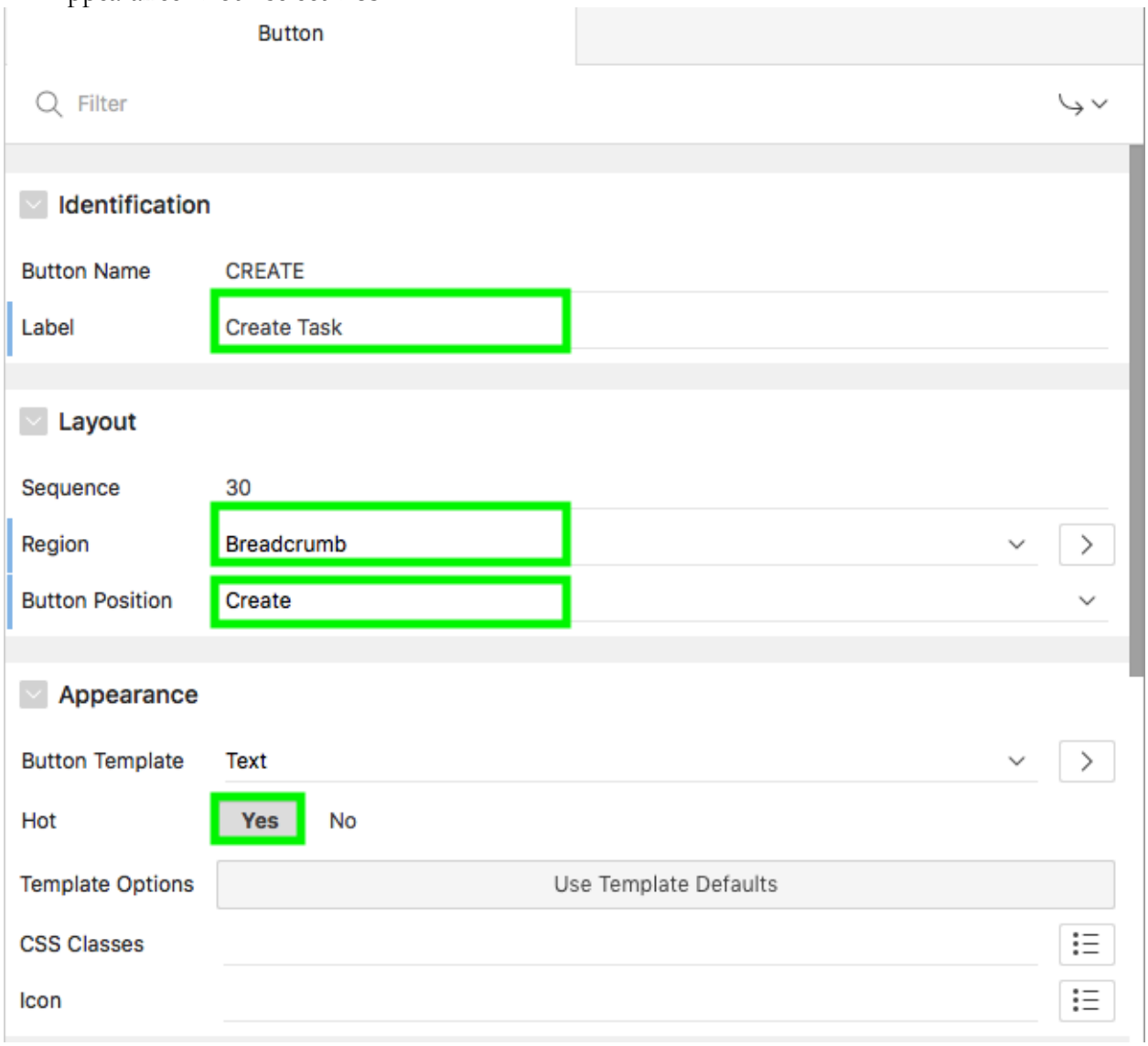
14. For the SQL Query, replace "IS_COMPLETE_YN", with the following:

```
decode (IS_COMPLETE_YN, 'Y', 'Yes', 'No') as "IS_COMPLETE_YN",
```



15. In the Rendering tree, click the **IS_COMPLETE_YN** column.
    In the Property Editor, for Heading enter **Completed?**

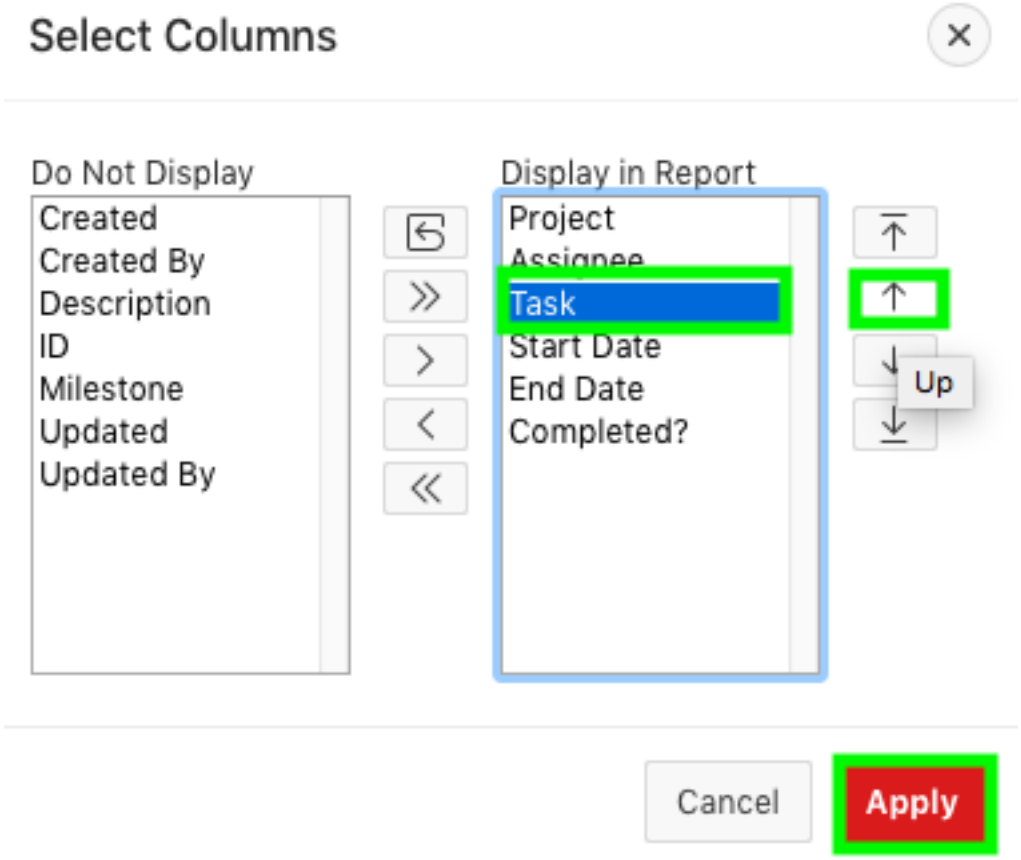
16. Reposition the CREATE button to the top of the page. Locate the **Demo Proj Tasks** region. Select the **Create** button.
    In the Property Editor:
    - Identification: Label - enter **Create Task**
    - Layout: Region - select **Breadcrumb**
    - Layout: Button Position - select **Create**
    - Appearance: Hot - select **Yes**



17. Click **Save**. Then, click **Save and Run Page**.

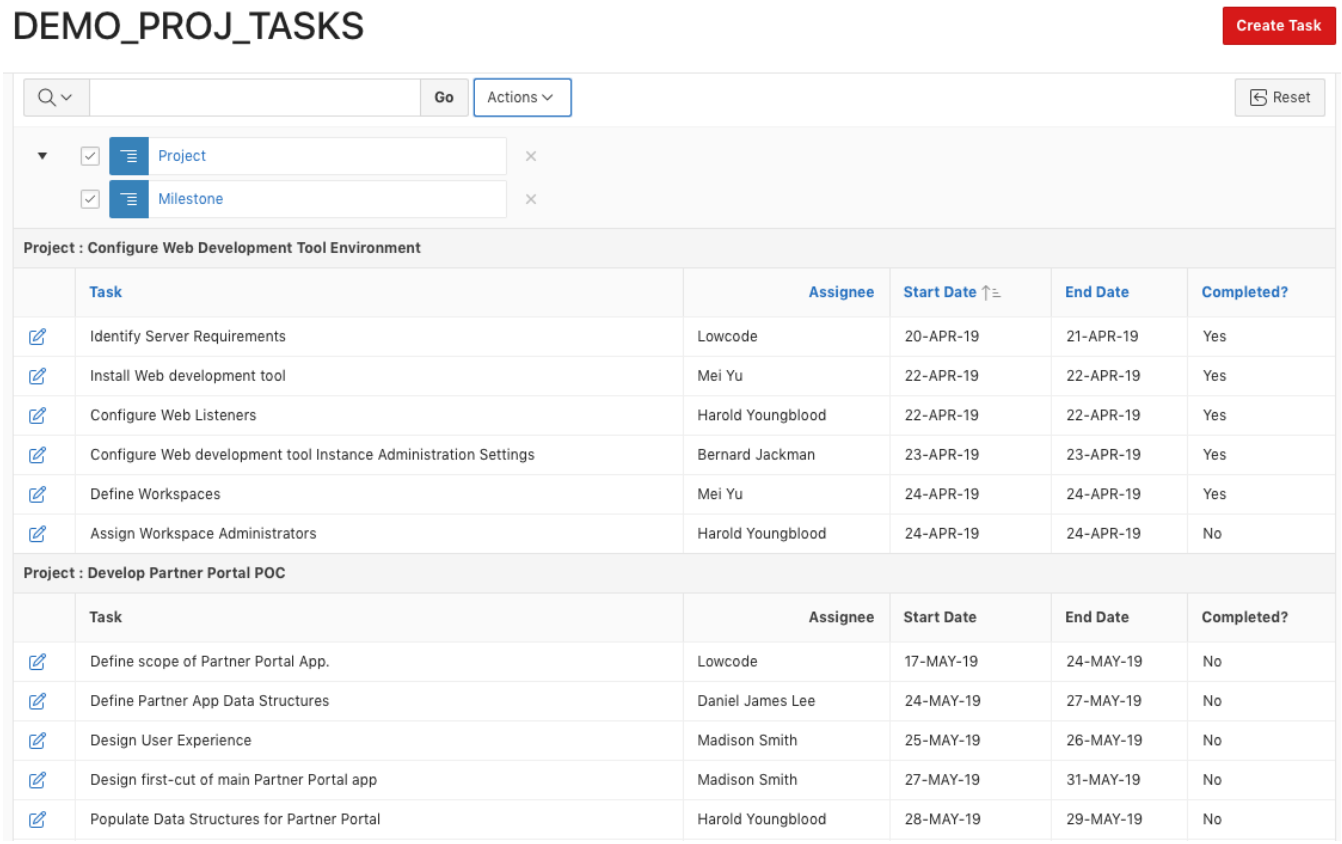
18. In the interactive report, rearrange the Task and Assignee columns so that Task is displayed first followed by Assignee.
    Click **Actions > Columns**.

In the Select Columns dialog, select **Task**, click the **Up** button once and then click **Apply**.



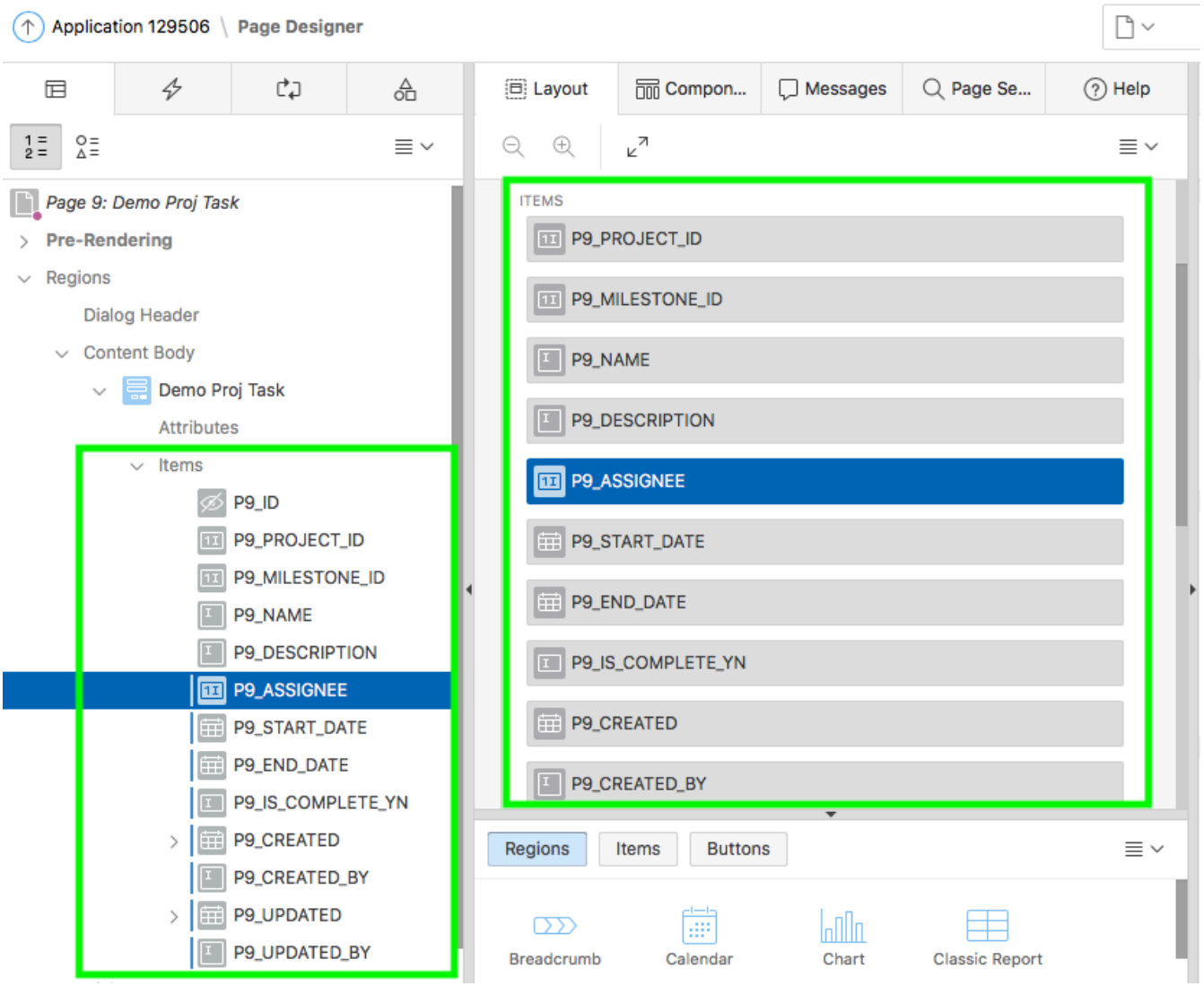
19. Then, click **Actions > Report > Save Report**.
    For Save, select **As Default Report Settings**.
    For Default Report Type, select **Primary** and click **Apply**.
    The default report is saved for all users.

Your screen should look like:



20. In the interactive report, click a task. Then, in the Developer Toolbar, click **Edit Page 9**.

21. Update the page items. The first requirement is to shuffle the page items, using drag and drop in either the Rendering tree or the Layout, such that the items are in the following order:
    - P9_PROJECT_ID
    - P9_MILESTONE_ID
    - P9_NAME
    - P9_DESCRIPTION
    - P9_ASSIGNEE
    - P9_START_DATE
    - P9_END_DATE
    - P9_IS_COMPLETE_YN



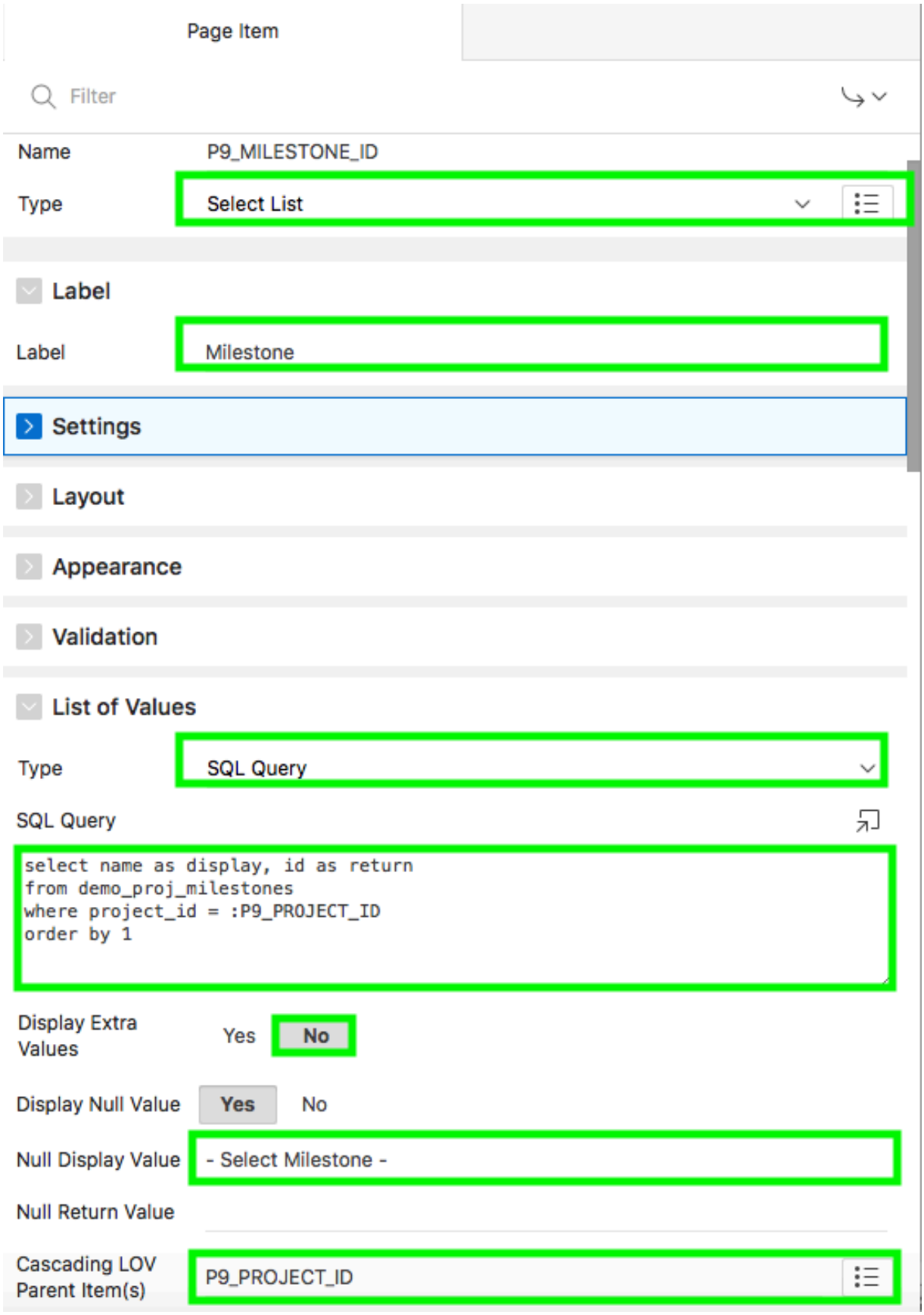
22. Under Rendering, select the **P9_PROJECT_ID** item. In the Property Editor:
    - Identification: Type - select **Select List**
    - Label: Label - enter **Project**
    - List of Values: Type - select **Shared Component**
    - List of Values: List of Values - select **PROJECTS**
    - List of Values: Display Extra Values - select **No**
    - List of Values: Null Display Value - enter **- Select Project –**

23. The Milestones item should be defined as a Cascading List of Values, whereby only the milestones for the currently selected Project item are displayed. In the Layout, under Content Body, click the **P9_MILESTONE_ID** item. In the Property Editor:
    - Identification: Type - select **Select List**
    - Label: Label - enter **Milestone**
    - List of Values: Type - select **SQL Query**
    - List of Values: SQL Query - copy and paste the following:

```
select name as display, id as return
from demo_proj_milestones
where project_id = :P9_PROJECT_ID
order by 1
```

- List of Values: Display Extra Values - select **No**
- List of Values: Null Display Value - enter **- Select Milestone -**
- List of Values: Cascading LOV Parent Item(s) - select **P9_PROJECT_ID**

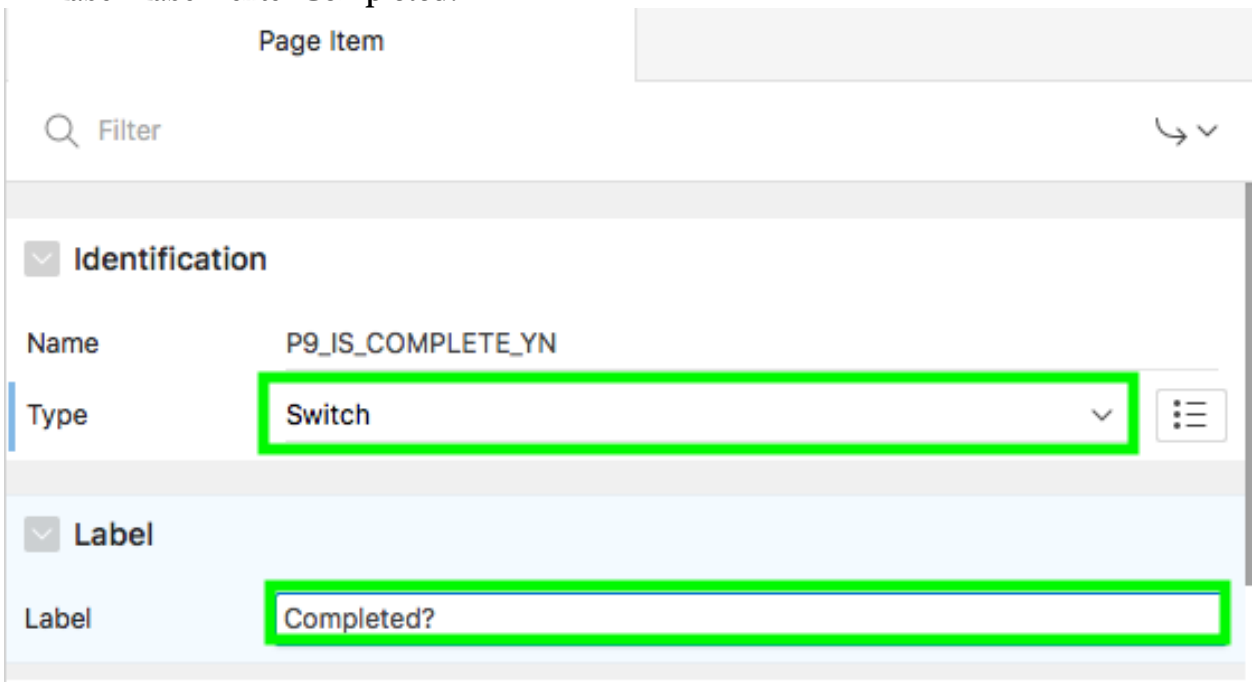
Note: You cannot use the MILESTONES List of Values for this item, as this query needs to limit the milestone records returned to those for the selected project, using P9_PROJECT_ID.


Page Item
Filter
Name
P9_MILESTONE_ID
Type
Select List
Label
Label
Milestone
Settings
Layout
Appearance
Validation
List of Values
Type
SQL Query
SQL Query
select name as display, id as return
from demo_proj_milestones
where project_id = :P9_PROJECT_ID
order by 1
Display Extra Values
Yes
No
Display Null Value
Yes
No
Null Display Value
- Select Milestone -
Null Return Value
Cascading LOV Parent Item(s)
P9_PROJECT_ID

24. In the Rendering tree, click the **P9_NAME** item. In the Property Editor:
    - Label: Label - enter **Task**

25. In the Grid Layout, under Content Body, click the **P9_ASSIGNEE** item. In the Property Editor:
    - Identification: Type - select **Select List**
    - List of Values: Type - select **Shared Component**
    - List of Values: List of Values - select **TEAM_MEMBERS**
    - List of Values: Display Extra Values - select **No**
    - List of Values: Null Display Value - enter **- Select Assignee –**

26. In the Rendering tree, click the **P9_IS_COMPLETE_YN** item. In the Property Editor:
    - Identification: Type - select **Switch**
    - Label: Label - enter **Completed?**



27. Delete the four audit items from the Maintain Milestone page. In the Rendering tree, hold the Ctrl key and click these to select them all: **P9_CREATED**, **P9_CREATED_BY**, **P9_UPDATED**, and **P9_UPDATED_BY**.
    Then, right-click and select **Delete**.

28. Click **Save**.

27. Copy the Audit Details region from Page 3 to Page 9. In page designer, navigate to **Page 3**.

28. In the Rendering tree, right-click the **Audit Details** sub region and select **Copy to other Page....**

29. Enter **9** for To Page and select **Yes** for Copy Region Items. Click **Next**.

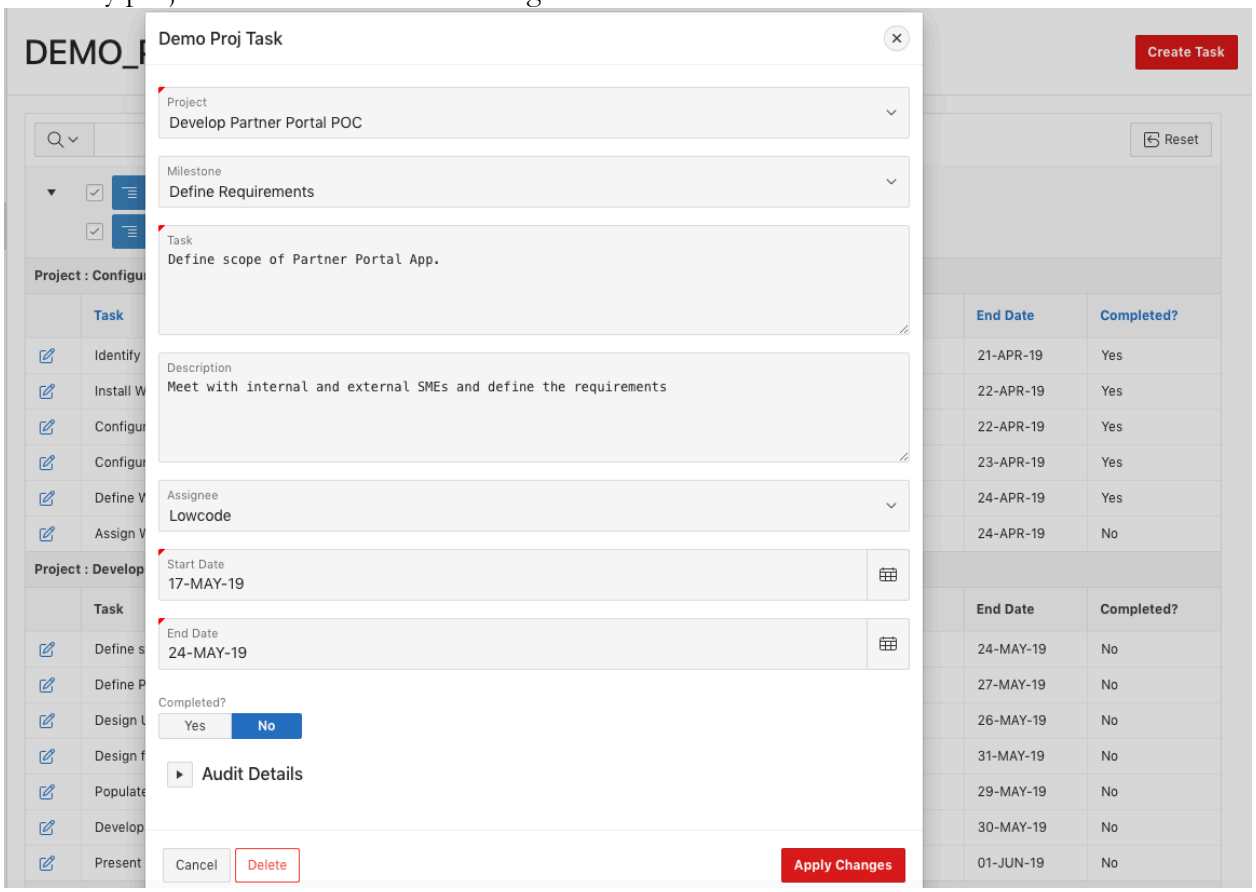
30. Click **Copy**.

31. In Page Designer, navigate back to **Page 9**.

32. In the Rendering tree, select the **Audit Details** sub region.
    In the Property Editor, for Parent Region select **Demo Proj Task**.
    Click **Save**.

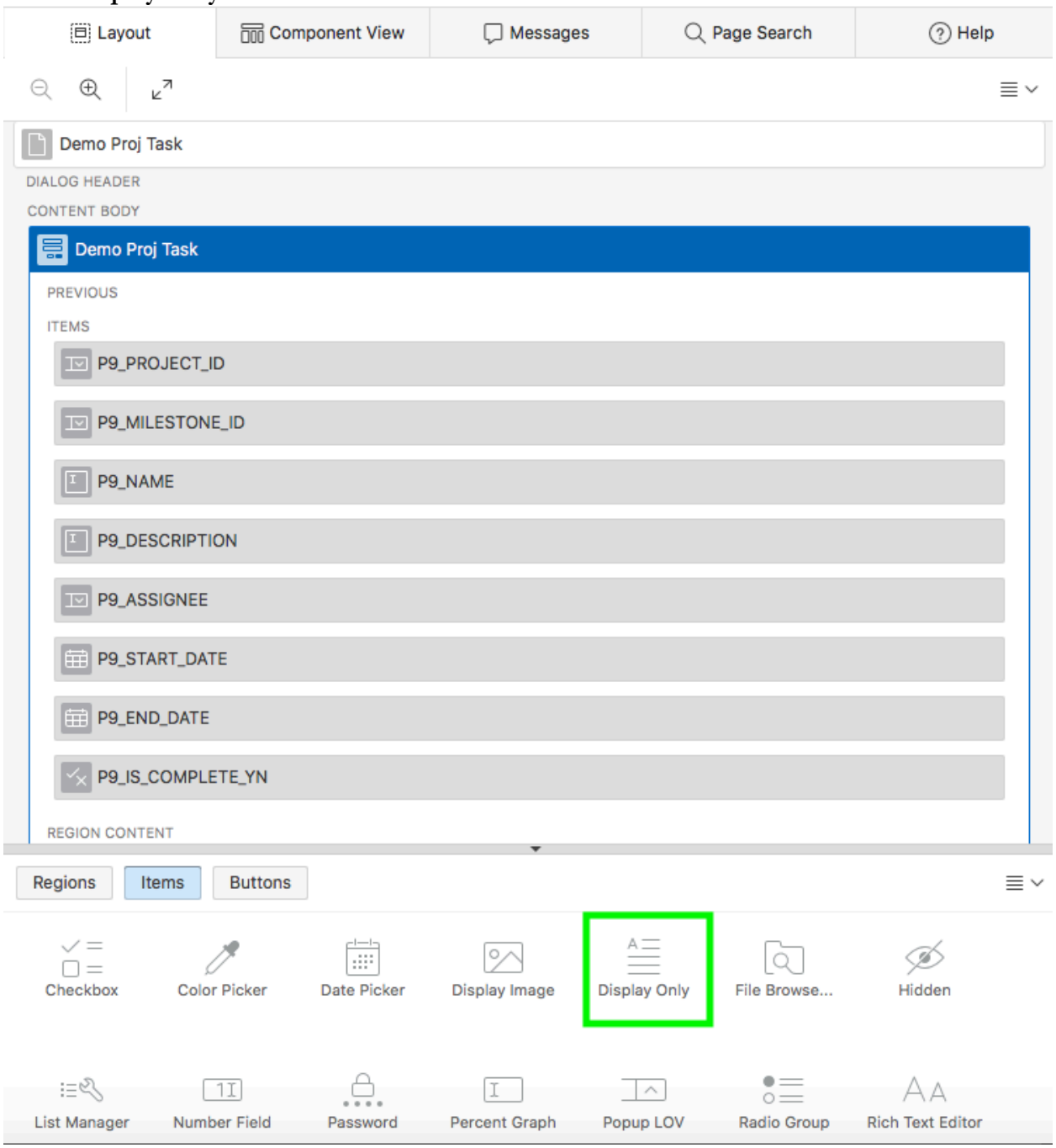
33. In the Layout, hold the Ctrl key and select the items: **P5_CREATED**, **P5_CREATED_BY**, **P5_UPDATED**, and **P5_UPDATED_BY**.
    In the property editor, under Source, for Form Region, select **Demo Proj Task**.
    Click **Save**.

34. Navigate to the application runtime environment and click **Demo_Proj_Tasks**.
    Click any project to see the modified dialog.



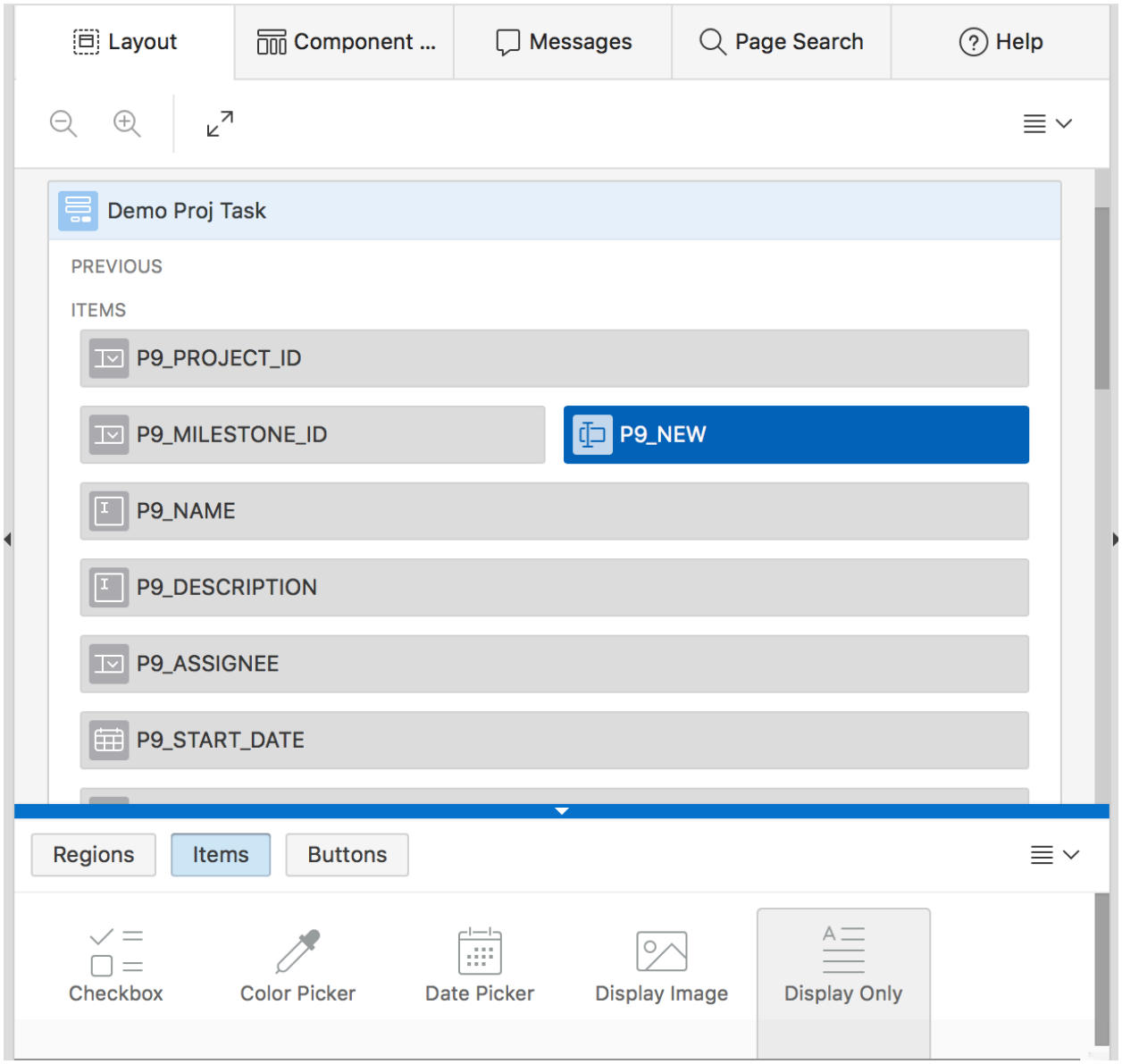
35. Click **Edit Page 9** in the Develop Toolbar, to return to Page Designer.

36. It would also be beneficial to include the Milestone Due Date on the page so it can be compared to the Task End Date. To facilitate this add a display only item and then populate the item based on the selected Milestone.
In the Layout, click the bottom divider to display the Gallery. In the Gallery, click **Items** and locate **Display Only**.



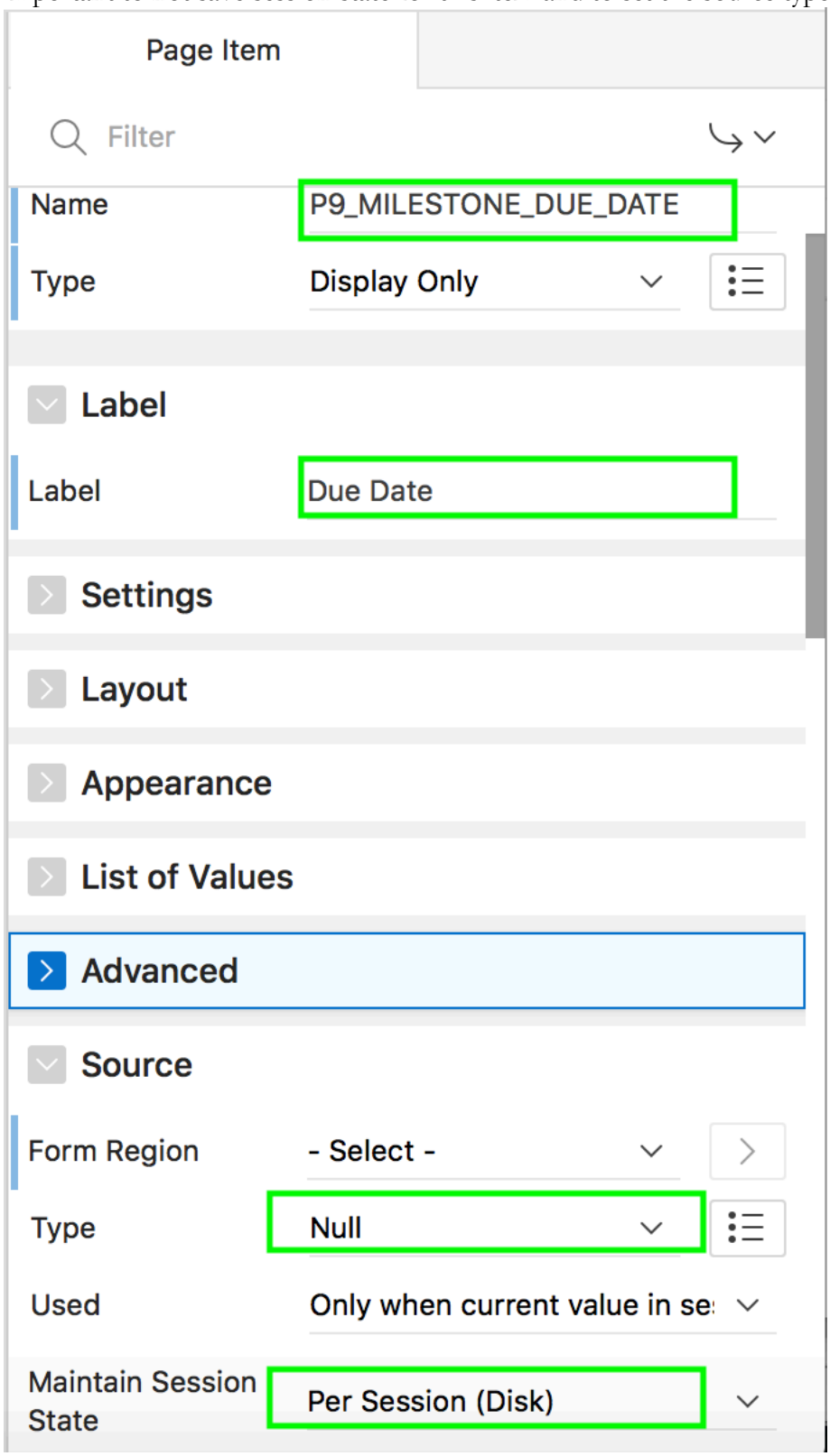
37. Click and hold **Display Only** and drag it to the left of the **P9_MILESTONE_ID** in the Layout.

You will need to hover to the left of the existing item before the dark yellow box displays next to the existing item.



38. Set the attributes for the new item. In the Property Editor:
    - Identification: Name - enter **P9_MILESTONE_DUE_DATE**
    - Label: Label - enter **Due Date**
    - Source: Type - select **Null**
    - Source: Maintain Session State - select **Per Session**

Note: This item is display only and is not based on a Database Column. As such it is very important to not save session state for this item and to set the source type appropriately.







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