

Practice 2: Create Business Objects and Welcome Page

Overview

In these practices, you will:

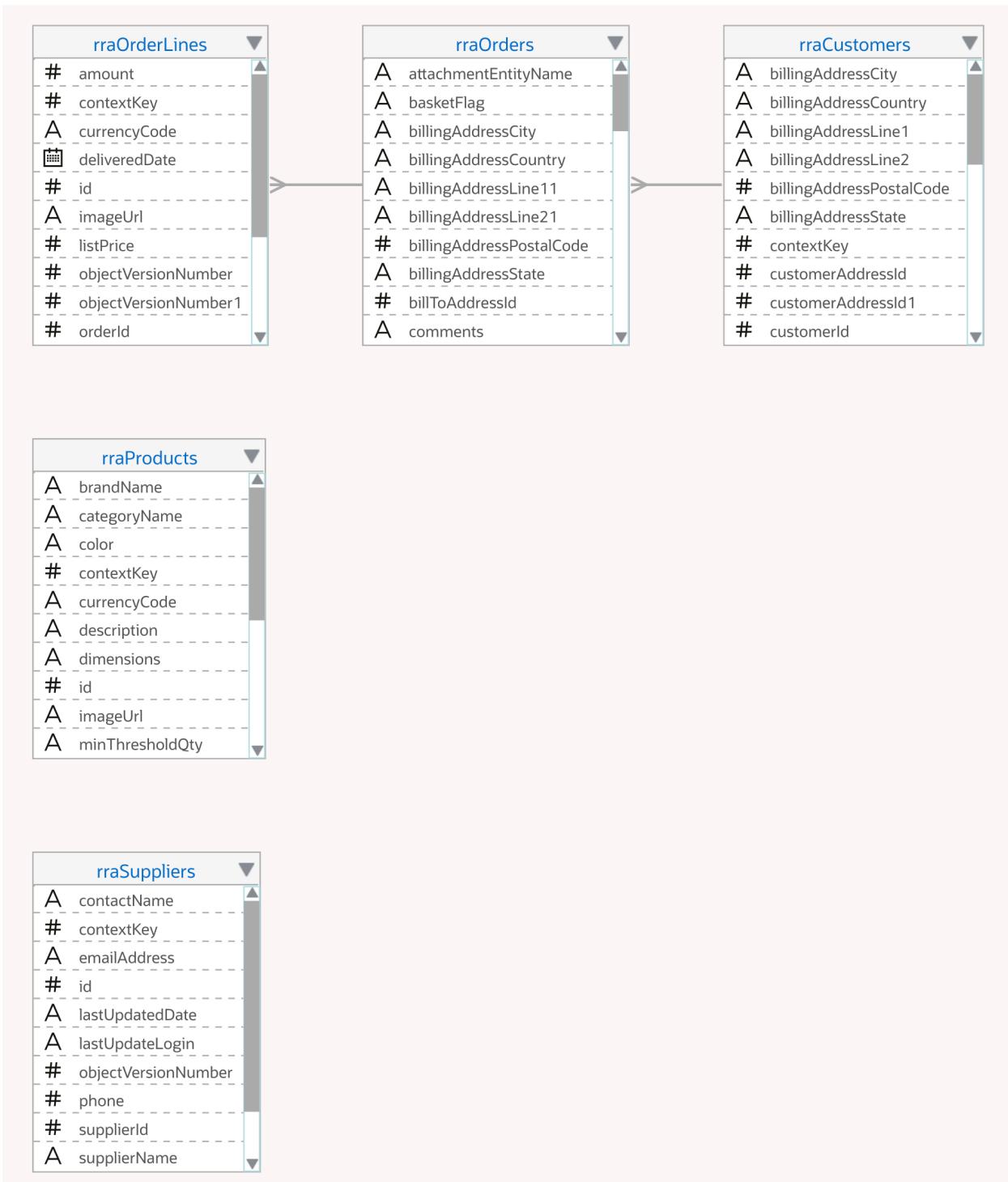
- Create and test the Business Objects for the RRA data: Customers, Orders, Suppliers and Products.
- Configure the Welcome page to display Draft orders.

Practice 2-1: Create Business Objects

Overview

In this practice, you create the necessary Business Objects to load the Redwood Reference App data (RRA) from CSV files to supply data for the application.

Take a moment to review the data model below. Note the relationship between rraCustomers and rraOrders, and rraOrders and rraOrderLines. These relationships are used in queries later in the practices. There is no relationship between rraProduct and rraOrderLines because the product information is duplicated in the order line for convenience.



Assumptions

You have successfully completed Practice 1-2.

Tasks

1. Log in to **Visual Builder Studio** and select your project name on the Projects tab. Your project name will be **OrderMgt_<your initials>**, where **<your initials>** corresponds to your initials.

The screenshot shows the Visual Builder Studio interface. On the left is a sidebar with icons for Organization, Project Home, Workspaces, Git, Merge Requests, Maven, NPM, and Docker. The main area is titled "Visual Builder Studio" and "Organization". The "Projects" tab is selected. Below it, there is a search bar and filters for Member, Favorites, Owner, Shared, and All. The results show "Projects: 3". A table lists the projects: OrderMgt_JDG (Current), Order Management Applic..., Status: Active. The "OrderMgt_JDG" row is highlighted with a red box.

2. The Project Home page opens. Right-click the **OrderMgt_<your initials>** workspace and select **Open in New Tab**.

The screenshot shows the Visual Builder Studio interface with "OrderMgt_JDG" selected in the top navigation. The main area is titled "Project Home". Below it, there is a section titled "Workspaces" with a list of workspaces. One workspace, "OrderMgt_JDG", is highlighted with a red box. A context menu is open over this workspace, with the option "Open in New Tab" highlighted by a red box. Other options in the menu include Rename, Export Visual Application, Switch Environment, Change Ownership, and Delete. The "Environments" section below shows one service instance named "Development".

3. Close the **Welcome** tab if it's open.

4. Select the **Business Objects** icon in the Navigator. The Business Object tab opens. Click the ellipsis (...) and select Data Manager.



5. Click **Import Business Objects**.

Manage Application Data

- Import from File**
Replace all data in Development with the data from a zip file, CSV file or Excel spreadsheet.
- Export All Data**
Export all the data in your Development database.
- Edit Data in Excel**
Download an Excel add-in to edit business object data using Excel spreadsheets (for Windows OS only).
- Import Business Objects**
Create new Business Objects by importing from Excel, CSV, or zip files.

6. Upload the **rraCustomers.csv** file when prompted. Click **Upload** to start the upload.

Note: The **rraCustomers.csv** file is provided as part of the course lab files. You previously downloaded this as part of the ZIP file and unzipped it.

Import New Business Objects

1 2 3

Upload File Business Objects Fields

Provide the file containing data that you wish to import.

Drag and Drop
rraCustomers.csv

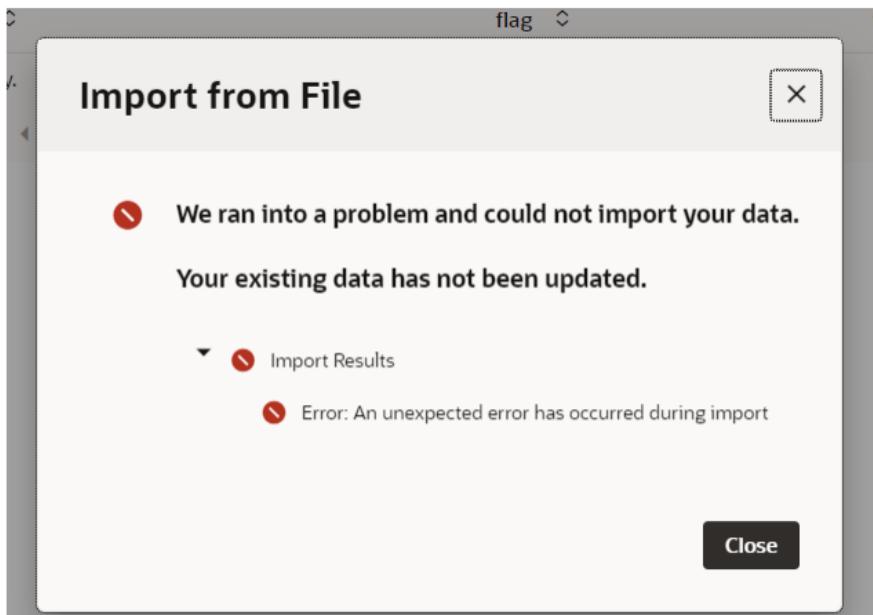
Character Encoding: ?

Upload

Important Note –

If you have trouble accessing / importing business object data, it might be because you need to add the service URL to the list of domains that are allowed to exchange data with your application.

If you encounter the below error while importing business object data, or the initial load hangs for more than a few seconds, perform the steps listed below:



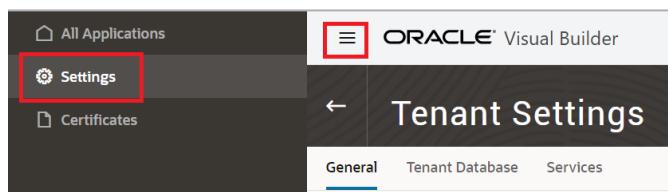
[Client UUID: 2e486bfa-ed40-4169-9fa8-dfddd0928c32] [ECID Headers: Not present] : error

- In the web browser, log in to Visual Builder Home Page URL. The URL and credentials are provided in the Lab Details section or from your instructor.

Example URL - <https://appvbc99283452-ocuocictrng19.builder.ocp.oraclecloud.com/ic/builder>

To add a domain to the list of allowed origins:

- Open the instance's **Settings** page.



- In the **Allowed Origins** panel (under **General** tab), click **New Origin** and type the URL of the domain that you want to allow. Click **Submit**.

The URL of domain (in your case) is that of your **Visual Builder Studio instance**.

Example URL - <https://appdevcs99286531-ocuocictrng19.developer.ocp.oraclecloud.com/appdevcs99286531-ocuocictrng19/>

General Tenant Database Services

Security

Allow only secure applications to be created
 Only Visual Builder users can access secure applications

No Visual Builder Access
Enter redirect URL

Access Denied Message

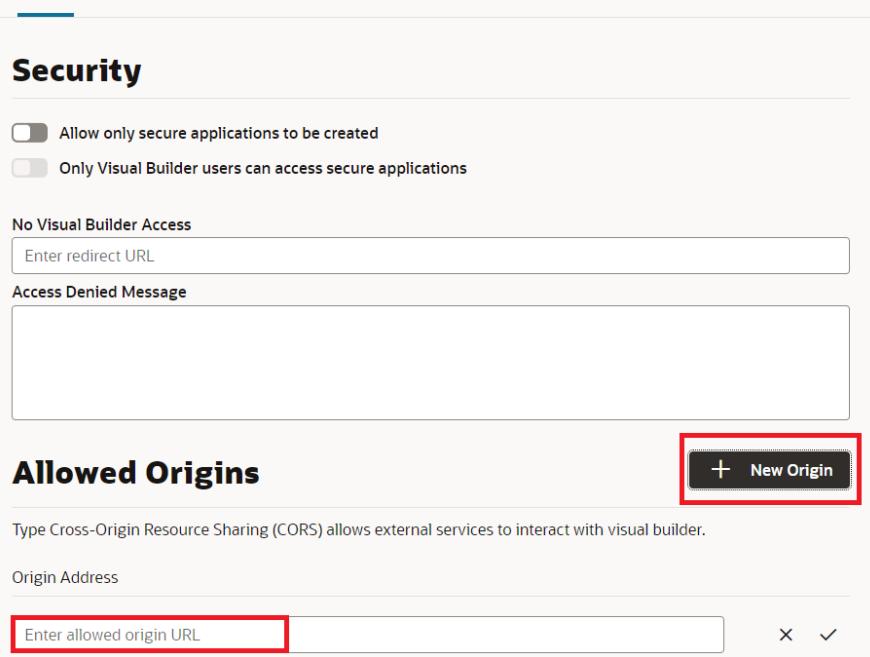
Allowed Origins

Type Cross-Origin Resource Sharing (CORS) allows external services to interact with visual builder.

Origin Address

Enter allowed origin URL

+ New Origin



The Allowed Origins panel now lists the origin that is permitted.

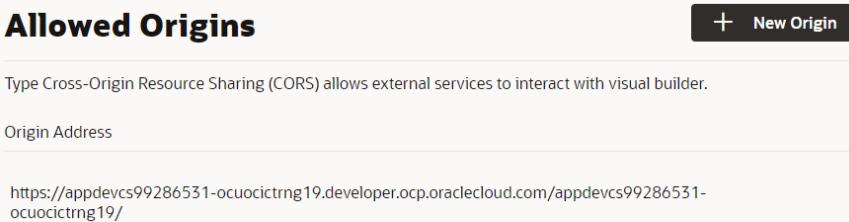
Allowed Origins

Type Cross-Origin Resource Sharing (CORS) allows external services to interact with visual builder.

Origin Address

https://appdevcs99286531-ocuocictrng19.developer.ocp.oraclecloud.com/appdevcs99286531-ocuocictrng19/

+ New Origin



You may need to refresh the browser to see the effect.

- Click **Next** after the file has been uploaded.

Import New Business Objects

① Upload File ② Business Objects ③ Fields

Provide the file containing data that you wish to import.

Drag and Drop
rraCustomers.csv

Character Encoding: ⓘ **Upload**

Uploading rraCustomers.csv
rraCustomers Business Object...
rraCustomers records...
Upload succeeded.

found
400 exist

- Change the **Display Label After Import** to **Customers** and the **New Object Name** to **rraCustomers** and click **Next**.

Import New Business Objects

① Back ② Business Objects ③ Fields

Business Objects

We've found these candidate Business Objects in the import file which can be imported as new Business Objects. You can also change the display label and Name of the Business Objects.

File Name	Display Label After Import	New Object Name
rraCustomers.csv	Customers	rraCustomers

- Select the **customerId** checkbox under **Key** and click **Finish**.

billingAddressState	BillingAddressState	A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	CA
contextKey	@context/key	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124
customerAddressId	CustomerAddressId	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124
customerAddressId1	CustomerAddressId1	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124
customerId	CustomerId	#	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	124
customerName	CustomerName	A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pete Chevis
customerNumber	CustomerNumber	A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	C00000124

- The new business object is created and the CSV data is loaded. Click **Close**.

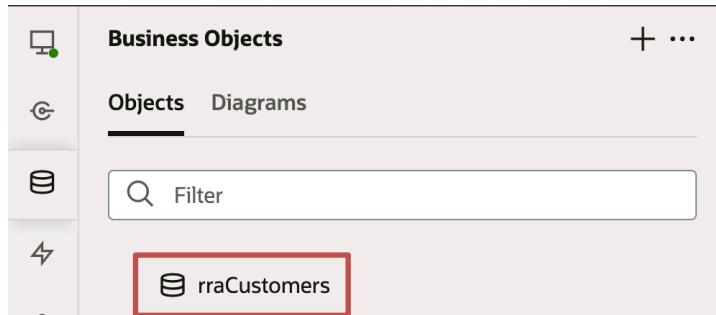
Applying Changes

Data import finished successfully.

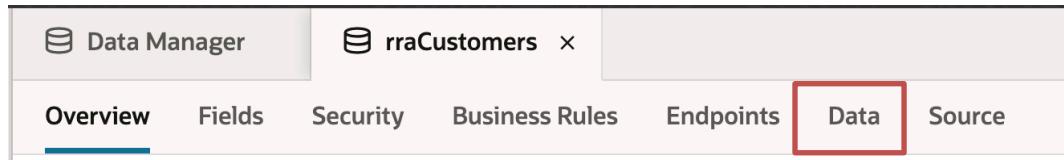
RraCustomers: 400 exist

Import complete for **Customers**

11. Confirm the data loaded successfully. Click the new rraCustomers icon in the Business Objects pane.



12. Click the **Data** tab.



The data displays.

13. Close the **rraCustomers** tab when you are done viewing the data.

This screenshot shows a detailed view of the "rraCustomers" data. The top navigation bar is identical to the previous one. Below it, the "Data" tab is active, showing a table with 16 columns and approximately 20 rows of data. The columns represent various customer attributes such as billing address details, context keys, and customer IDs. The data includes entries from cities like Pudding City, Fusion City, Chocolate City, and Vision City, with names like Tammy, Roy, Gary, Victor, Beverly, Evelyn, Carl, Douglas, Norma, Gregor, Judy, Jean, Michelle, Elizabeth, Walter, and Ralph.

billingAddressCity	billingAddressCountry	billingAddressLine1	billingAddressLine2	billingAddressPostalCode	billingAddressState	contextKey	customerAddressId	customerAddressId1	customerId	custom
Pudding City	US	426 Chocolate Way	10op866	95086	CA	1	1	1	1	Tammy
Pudding City	US	689 Panacota Street	1op453	92683	CA	2	2	2	2	Roy W
Fusion City	US	103 Pudding Street	15op475	93588	CA	3	3	3	3	Gary Je
Fusion City	US	130 Panacota Ave	17op490	91671	CA	4	4	4	4	Victor S
Pudding City	US	880 Fusion Way	12op120	91359	CA	5	5	5	5	Beverly
Chocolate City	US	538 Panacota Ave	18op633	93078	CA	6	6	6	6	Evelyn
Fusion City	US	813 Pudding Blvd	5op890	91944	CA	7	7	7	7	Carl Le
Chocolate City	US	596 Fusion Road	9op186	90297	CA	8	8	8	8	Dougl
Fusion City	US	909 Chocolate Ave	18op959	90747	CA	9	9	9	9	Norma
Vision City	US	941 Pudding Way	22op772	94496	CA	10	10	10	10	Gregor
Pudding City	US	364 Chocolate Blvd	6op998	91150	CA	11	11	11	11	Judy E
Pudding City	US	780 Fusion Blvd	25op423	91198	CA	12	12	12	12	Jean Pe
Pudding City	US	370 Panacota Road	23op360	91279	CA	13	13	13	13	Michell
Pudding City	US	847 Pudding Ave	14op404	94148	CA	14	14	14	14	Elizabe
Chocolate City	US	630 Fusion Street	5op888	94698	CA	15	15	15	15	Walter I
Vision City	US	219 Fusion Road	21op765	95466	CA	16	16	16	16	Ralph F

You will load the remaining data files in the same way.

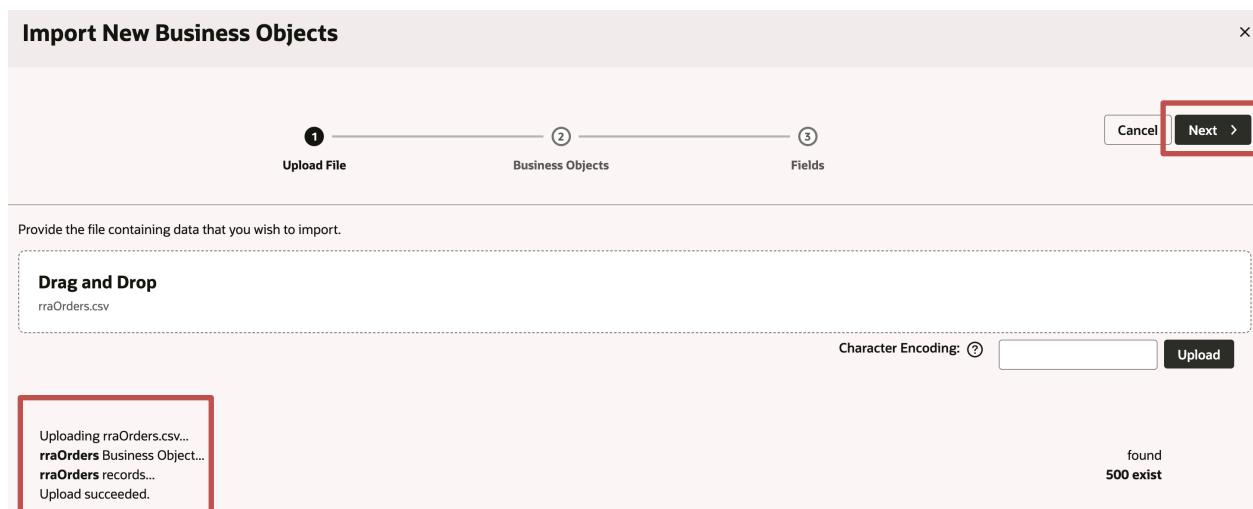
14. Return to the Data Manager tab. Click **Import Business Objects**.

15. Upload the **rraOrders.csv** file when prompted. Click **Upload** to start the upload.

Note: The `rraOrders.csv` file is provided as part of the course lab files. You previously downloaded this as part of the ZIP file and unzipped it.



16. Click **Next** after the file has been uploaded.



17. Change the **Display Label After Import** to `Orders` and the **New Object Name** to `rraOrders` and click **Next**.

Import New Business Objects

1 Back 2 Business Objects 3 Fields Next >

Business Objects

We've found these candidate Business Objects in the import file which can be imported as new Business Objects. You can also change the display label and Name of the Business Objects.

File Name	Display Label After Import	New Object Name
<input checked="" type="checkbox"/> rraOrders.csv	Orders	rraOrders

18. Select the **orderId** checkbox under **Key**.

orderId	OrderId	A <input type="checkbox"/> <input checked="" type="checkbox"/> 2022-08-13T15:43:33+00:00
orderId	OrderId	# <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> 146
orderNumber	OrderNumber	A <input type="checkbox"/> <input checked="" type="checkbox"/> F000000146
orderStatus	OrderStatus	A <input type="checkbox"/> <input checked="" type="checkbox"/> DRAFT

19. Click the **#** sign for **customerId** and select the reference symbol  to create an association between Orders and Customers.

customerFirstName	CustomerFirstName	A
customerId	CustomerId	#

Type	Number
A #     	A
<input type="button" value="Reference"/>	<input type="button" value="X"/> <input checked="" type="button" value="✓"/>

20. For the **Referenced Business Object** select **rraCustomers** and for **Display Field** select **LastName** and click the check mark. Click **Finish** to load the data.

Type Reference

A # 📅 🗂️ 📅 ⏳ ↗ Referenced Business Object *

rraCustomers

Display Field (?)

Last Name

X ✓

21. The new business object is created and the CSV data is loaded. Click **Close**.



22. Return to the Data Manager tab. Click **Import Business Objects**.
 23. Upload the **rraProducts.csv** file when prompted. Click **Upload** to start the upload.
Note: The `rraProducts.csv` file is provided as part of the course lab files. You previously downloaded this as part of the ZIP file and unzipped it.

Import New Business Objects

1 ————— 2 ————— 3

Cancel **Next >**

Upload File Business Objects Fields

Provide the file containing data that you wish to import.

Drag and Drop
rraProducts.csv

Character Encoding: ②

Upload

24. Click **Next** after the file has been uploaded.

Import New Business Objects

Provide the file containing data that you wish to import.

Drag and Drop
rraProducts.csv

Character Encoding: **Upload**

Uploading rraProducts.csv...
rraProducts Business Object...
rraProducts records...
Upload succeeded.

found
38 exist

25. Change the **Display Label After Import** to **Products** and the **New Object Name** to **rraProducts** and click **Next**.

Import New Business Objects

Business Objects
We've found these candidate Business Objects in the import file which can be imported as new Business Objects. You can also change the display label and Name of the Business Objects.

File Name	Display Label After Import	New Object Name
rraProducts.csv	Products	rraProducts

26. Select the **productId** checkbox under **Key** and click **Finish**.

productCategoryId	ProductCategoryId	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>
productCategoryId1	ProductCategoryId1	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>
productId	ProductId	#	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
productName	ProductName	A	<input type="checkbox"/>	<input checked="" type="checkbox"/>
productNumber	ProductNumber	A	<input type="checkbox"/>	<input checked="" type="checkbox"/>

27. The new business object is created and the CSV data is loaded. Click **Close**.

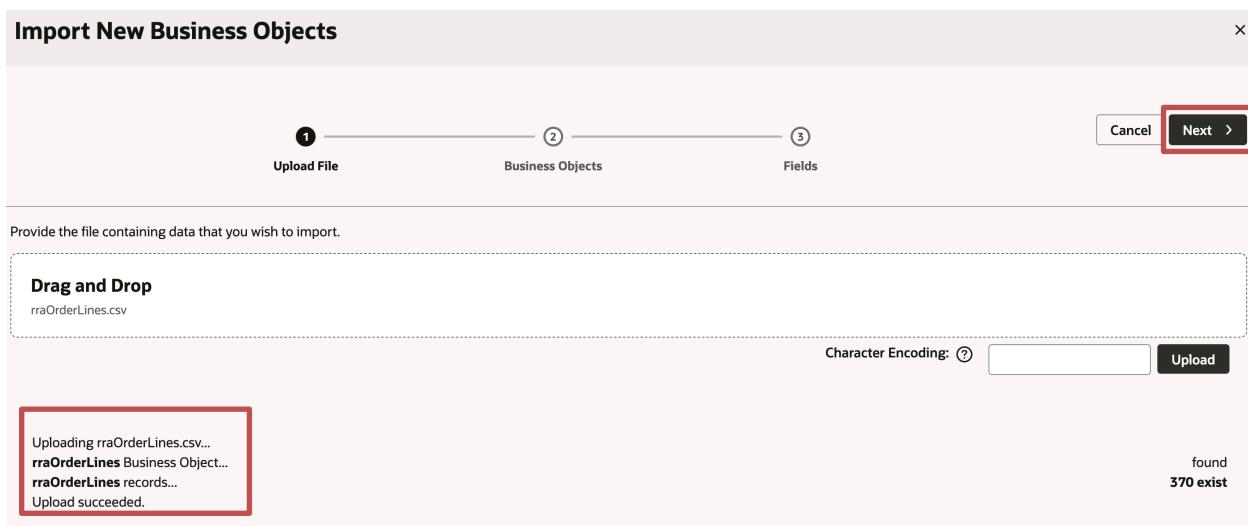


28. Return to the Data Manager tab. Click **Import Business Objects**.
29. Click the Data Manager tab. Click **Import Business Objects**.
30. Upload the **rraOrderLines.csv** file when prompted. Click **Upload** to start the upload.

Note: The **rraOrderLines.csv** file is provided as part of the course lab files. You previously downloaded this as part of the ZIP file and unzipped it.



31. Click **Next** after the file has been uploaded.



32. Change the **Display Label After Import** to OrderLines and the **New Object Name** to rraOrderLines and click **Next**.

Import New Business Objects

< Back ① Upload File ② Business Objects ③ Fields Next >

Business Objects

We've found these candidate Business Objects in the import file which can be imported as new Business Objects. You can also change the display label and Name of the Business Objects.

File Name	Display Label After Import	New Object Name
rraOrderLines.csv	OrderLines	rraOrderLines

33. Select the **orderLineId** checkbox under **Key**.

objectVersionNumber1	ObjectVersionNumber1	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>
orderId	OrderId	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>
orderLineId	OrderLineId	#	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

34. Click the # sign for **orderId** then select the reference symbol  to create an association between OrderLines and Orders. Select **rraOrders** for the Referenced Business Object. Select **OrderNumber** for the Display Field and click the check mark.

objectVersionNumber1	ObjectVersionNumber1	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>
orderId	OrderId	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Reference
A # 🗓️ 🗂️ 🗑️ ⏳ ↴	
Referenced Business Object *	
rraOrders	
Display Field ?	
OrderNumber	
<input type="button" value="X"/> <input checked="" type="button" value="✓"/>	

35. Click **Finish** to load the data.



36. The new business object is created and the CSV data is loaded. Click **Close**.

37. Return to the Data Manager tab. Click **Import Business Objects**.

38. Upload the **rraSuppliers.csv** file when prompted. Click **Upload** to start the upload.

Note: The `rraSuppliers.csv` file is provided as part of the course lab files. You previously downloaded this as part of the ZIP file and unzipped it.

Import New Business Objects

1 _____ 2 _____ 3

Upload File Business Objects Fields

Cancel Next >

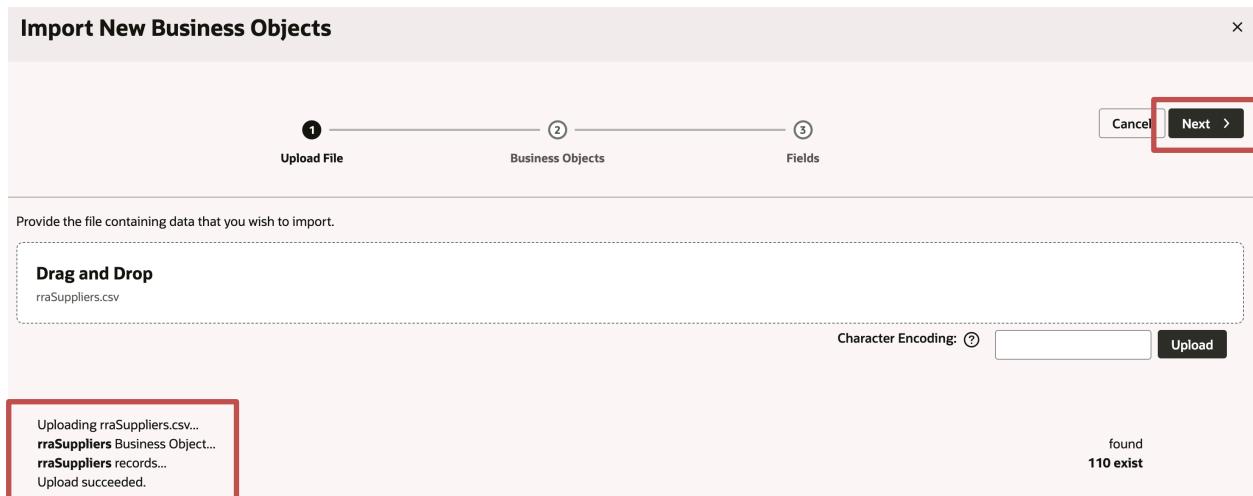
Provide the file containing data that you wish to import.

Drag and Drop
rraSuppliers.csv

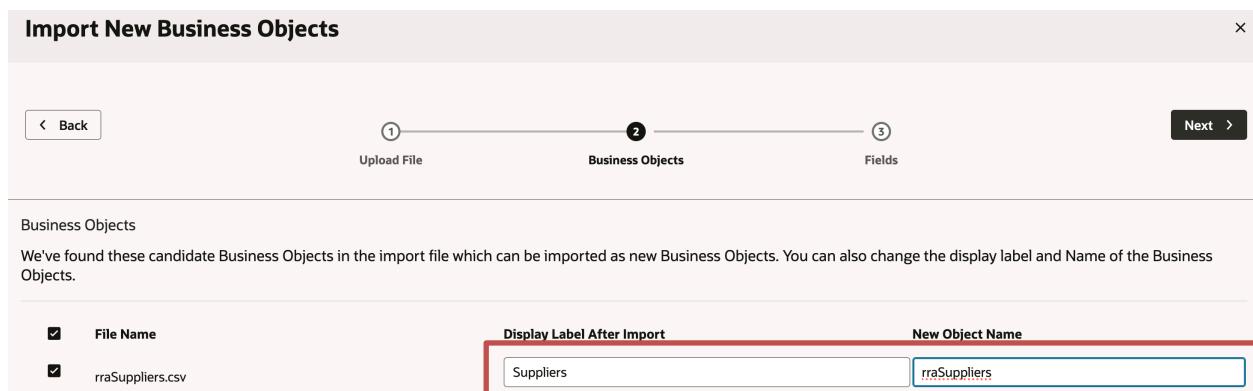
Character Encoding: ⓘ

Upload

39. Click **Next** after the file has been uploaded.



40. Change the **Display Label After Import** to **Suppliers** and the **New Object Name** to **rraSuppliers** and click **Next**.



41. Select the **supplierId** checkbox under **Key** and click **Finish**.

phone	Phone	#	<input type="checkbox"/>	<input checked="" type="checkbox"/>
supplierId	SupplierId	#	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
supplierName	SupplierName	A	<input type="checkbox"/>	<input checked="" type="checkbox"/>

42. The new business object is created and the CSV data is loaded. Click **Close**.

Applying Changes

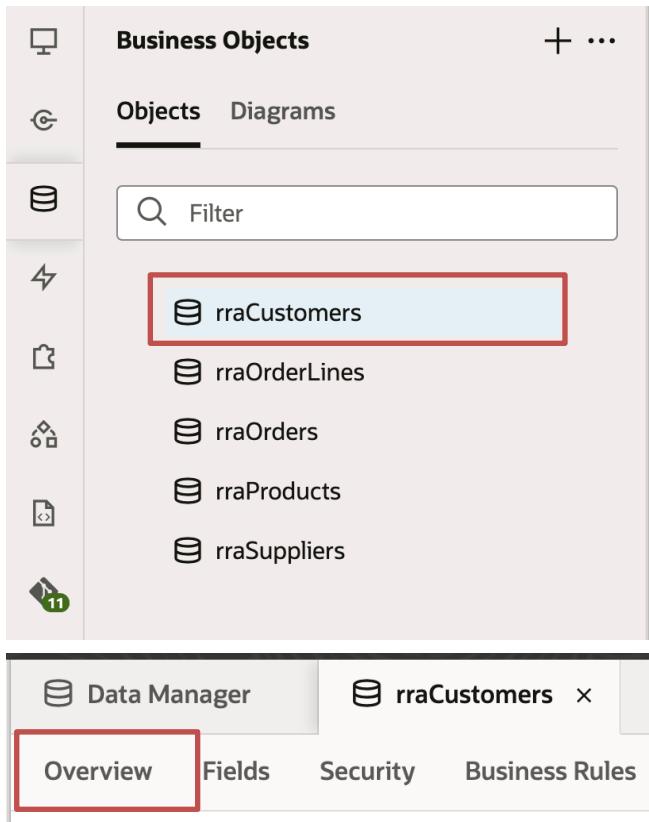
Data import finished successfully.

RraSuppliers: 110 exist

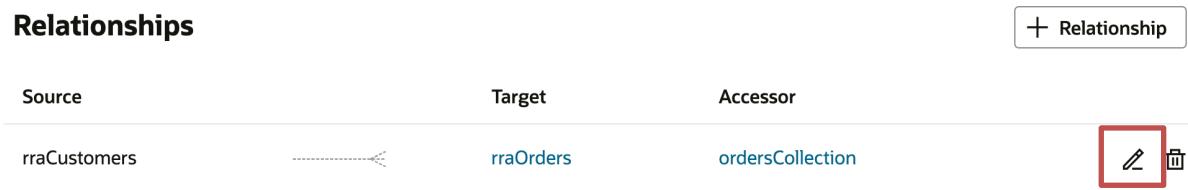
Import complete for **Suppliers**

Complete loading the data model by enabling the accessors for Customer-Orders and Orders-OrderLines.

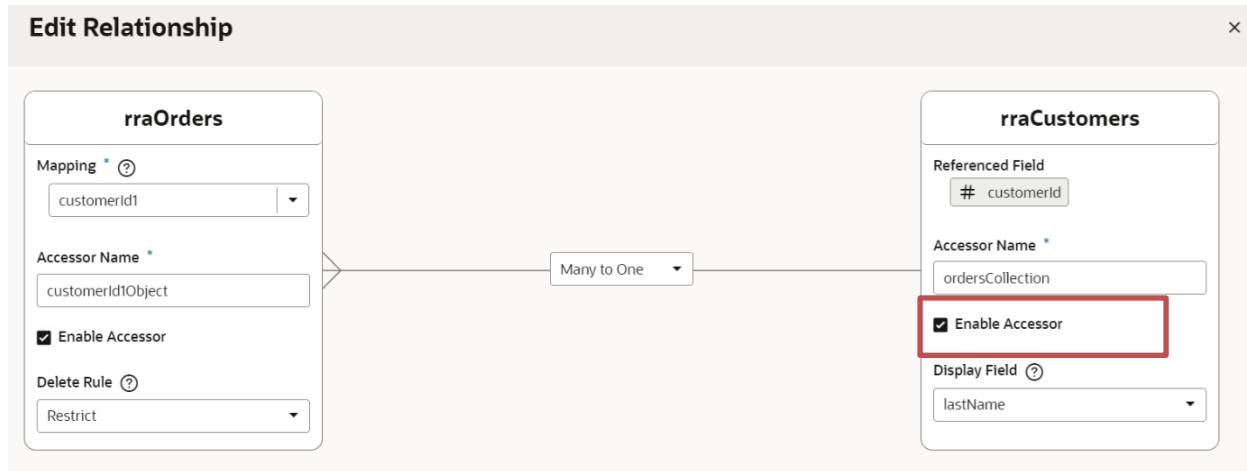
43. Click the **rraCustomers** Business Object icon. Click the Overview tab.



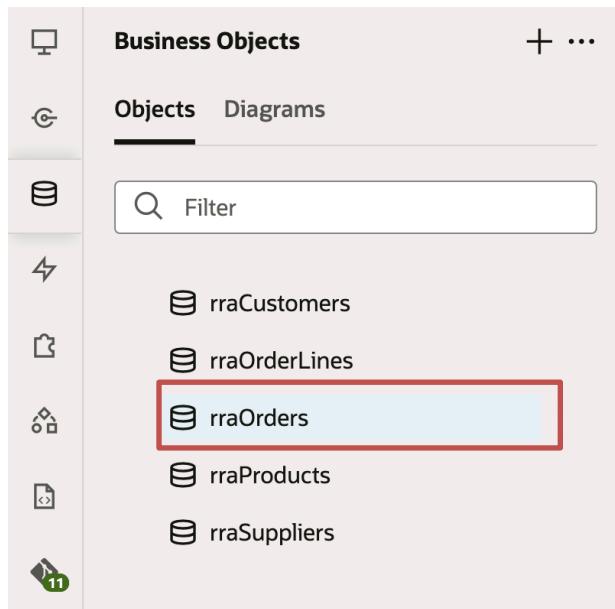
44. On the right side, click the pencil icon to edit the relationship.



45. Click the checkbox to **Enable Accessor** for rraCustomers. This will provide access to a list of orders for a given customer. You will use this later when displaying all the orders for a selected customer. Click **Save**.



46. Click the **rraOrders** Business Object icon.

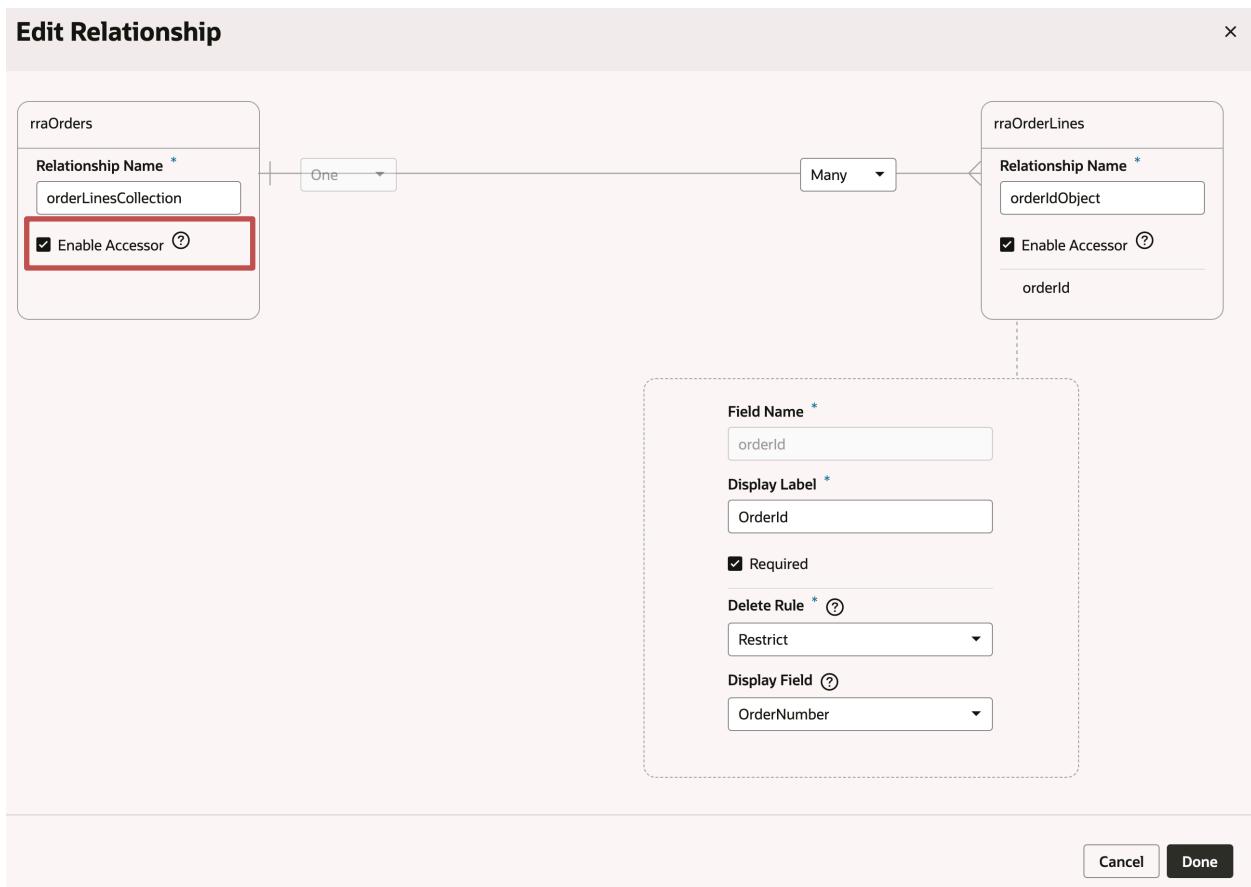


47. On the Overview tab, on the right side, click the pencil icon to edit the relationship for **rraOrders** and **rraOrderLines**.

Relationships			
Source	Target	Accessor	
rraOrders	rraCustomers	customerIdObject	
rraOrders	rraOrderLines	orderLinesCollection	

48. Click the checkbox to **Enable Accessor** for rraOrders.

This will provide list of order lines for a given order. You will use this later when displaying all the order lines for a selected order. Click **Save**.



49. Confirm your work. Click the rraOrders **Data** tab. If you scroll over, you should see the customerId column showing the customer last name and the **customerId** in parentheses.

ressState	billToAddressid	comments	contextKey	currencyCode	customerAddressid	customerAddressid1	customerFirstName	customerId	customerid1	customerLastName	displayStatus	id
1	1	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	215	
1	2	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	216	
1	3	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	217	
1	4	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	218	
1	5	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	219	
1	6	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	220	
1	7	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	221	
1	8	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	222	
1	9	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	223	
1	10	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	224	
1	11	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	225	
1	12	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	226	
1	13	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	227	
1	14	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	228	
1	15	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	229	
1	16	USD	1	1	1	Tammy	Bryant (1)	1	Bryant	Processing	230	

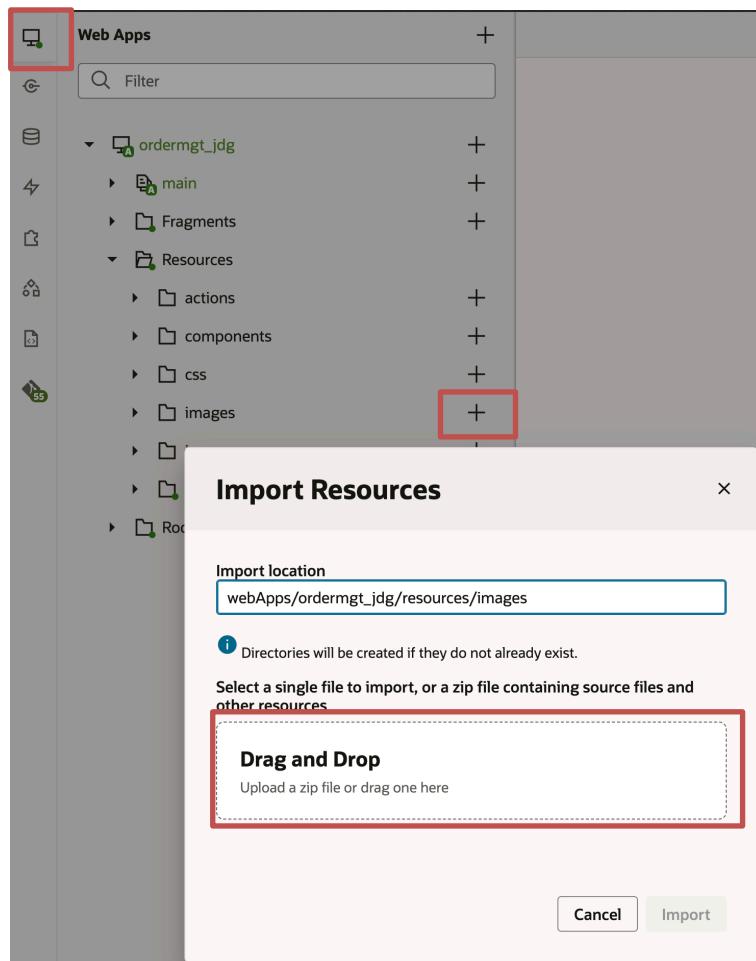
50. Click the **rraOrderLines** Business Object icon and then click the **Data** tab. The orderId column includes the Order Number displayed in parentheses.

amount	contextKey	currencyCode	deliveredDate	id	imageUrl	listPrice	objectVersionNumber	objectVersionNumber1	orderId	orderLineid	productId	productId'
1420	146001	USD		4	images/GreenGatePrinter01.jpg	355	1	1	F000000146 (146)	46001	38	38
745	146002	USD		5	images/OroWhiteAngle.png	149	1	1	F000000146 (146)	46002	7	7
995	146003	USD		3	images/HeadphoneRDA800.jpg	199	1	1	F000000146 (146)	46003	19	19
1494	146004	USD		1	images/SmartPink05.png	249	1	1	F000000146 (146)	46004	14	14
2241	146005	USD		2	images/SmartPink05.png	249	1	1	F000000146 (146)	46005	14	14
5391	147001	USD		6	images/QuantumLaptop01.jpg	599	1	1	F000000147 (147)	47001	25	25
623	147002	USD		7	images/AlphaLogicKeyboard01.jpg	89	1	1	F000000147 (147)	47002	28	28
1992	147003	USD		8	images/HeadphoneRDA850.jpg	249	1	1	F000000147 (147)	47003	20	20
149	148001	USD		9	images/OroPinkAngle.png	149	1	1	F000000148 (148)	48001	6	6
375	148002	USD		10	images/SmartWatch05.jpg	125	1	1	F000000148 (148)	48002	16	16
232	148003	USD		13	images/AlphaLogicMouse01.jpg	29	1	1	F000000148 (148)	48003	30	30
699	148004	USD		11	images/GreenGateTable01.jpg	699	1	1	F000000148 (148)	48004	24	24
498	148005	USD		12	images/HeadphoneRDA850.jpg	249	1	1	F000000148 (148)	48005	20	20
1494	149001	USD	May 25, 2022	17	images/HeadphoneRDA850.jpg	249	1	1	F000000149 (149)	49001	20	20
498	14900	USD	May 29, 2022	18	images/HeadphoneRDA850.jpg	249	1	1	F000000149 (149)	49002	20	20
747	149003	USD	May 26, 2022	16	images/SmartBlue05.png	249	1	1	F000000149 (149)	49003	13	13

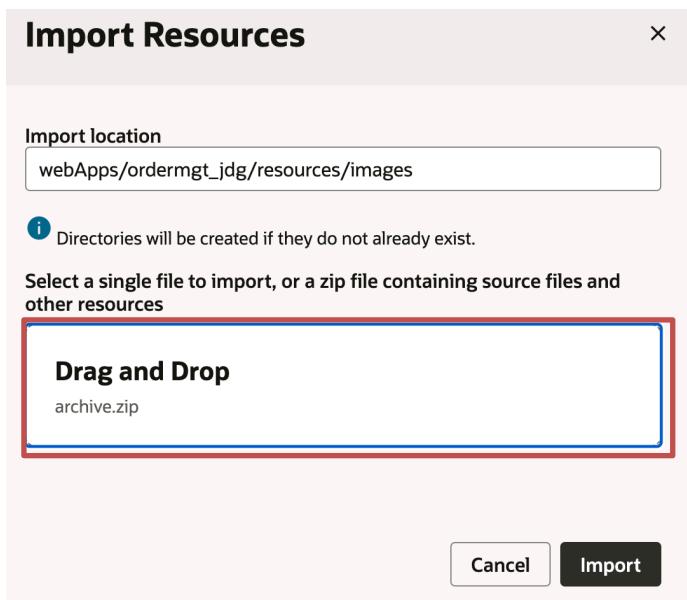
51. Close all open tabs.

Tip: Right-click any tab and select **Close All Tabs**.

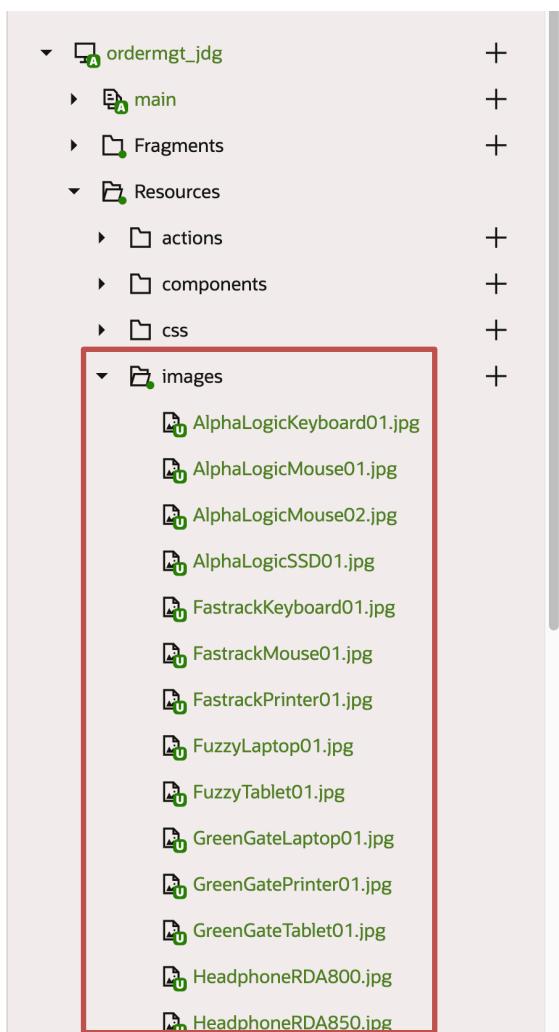
52. Load the zip file with product images. The `archive.zip` file is provided as part of the course lab files. You previously downloaded this as part of the ZIP file and unzipped it. Click the **Web Apps** tab and expand `ordermgt_<your initials>`. Expand the **Resources** folder under `ordermgt_<your initials>` and click the **+** for **images**.



53. Drag the **archive.zip** file to the dialog box or click the **Drag and Drop** box and locate the file on your computer and click **Import**.



54. When the import is done, expand the **images** folder to confirm the images have been loaded.



This completes this practice.

Practice 2-2: Configure the Welcome Page – Orders to Be Saved (“DRAFT”)

Overview

In this practice, you configure the Welcome page, which lists draft orders that need to be saved.

The screenshot shows the 'Welcome to My Redwood Reference App' page. At the top left, there is 'Overline Text' and the app's name. Below it is a subtext: 'Create and submit orders and review information about inventory'. To the right is a decorative illustration of a person paragliding over a forest. The main section is titled 'Draft orders needing your attention' and displays eight draft order cards in a grid. Each card contains an order ID, a customer name, a product thumbnail, and a status message. The cards are arranged in two rows of four. The bottom row has two cards each.

Order ID	Customer Name	Product	Status
F000000313	Kathryn Rogers	Headphones	DRAFT \$5151....
F000000314	Kathryn Rogers	Smartwatch	DRAFT \$1664....
F000000315	Kathryn Rogers	Smartwatch	DRAFT \$4481....
F000000330	Dennis Lopez	Smartwatch	DRAFT \$4640....
F000000331	Dennis	Smartwatch	...
F000000333	Dennis	Smartwatch	...
F000000146	Norma	Smartwatch	...
F000000147	Norma	Smartwatch	...

Assumptions

You have successfully completed Practice 2-1.

Tasks

If Visual Builder Studio Designer is still open from the last lesson, skip to step 4.

1. Log in to **Visual Builder Studio** and select your project name on the **Projects** tab. Your project name will be **OrderMgt_<your initials>**, where **<your initials>** corresponds to your initials.

The screenshot shows the Visual Builder Studio interface. On the left is a sidebar with icons for Organization, Project Home, Workspaces, Git, Merge Requests, Maven, NPM, Docker, Builds, Releases, Environments, and Issues. The main area is titled "Visual Builder Studio" and "Organization". The "Projects" tab is selected. A search bar and filters for Member, Favorites, Owner, Shared, and All are at the top. Below is a table with a single row for "OrderMgt_JDG". The row is highlighted with a red box, and the word "Current" is in a blue box. The table has columns for Name, Template, Favorite, and Status. The status is "Active".

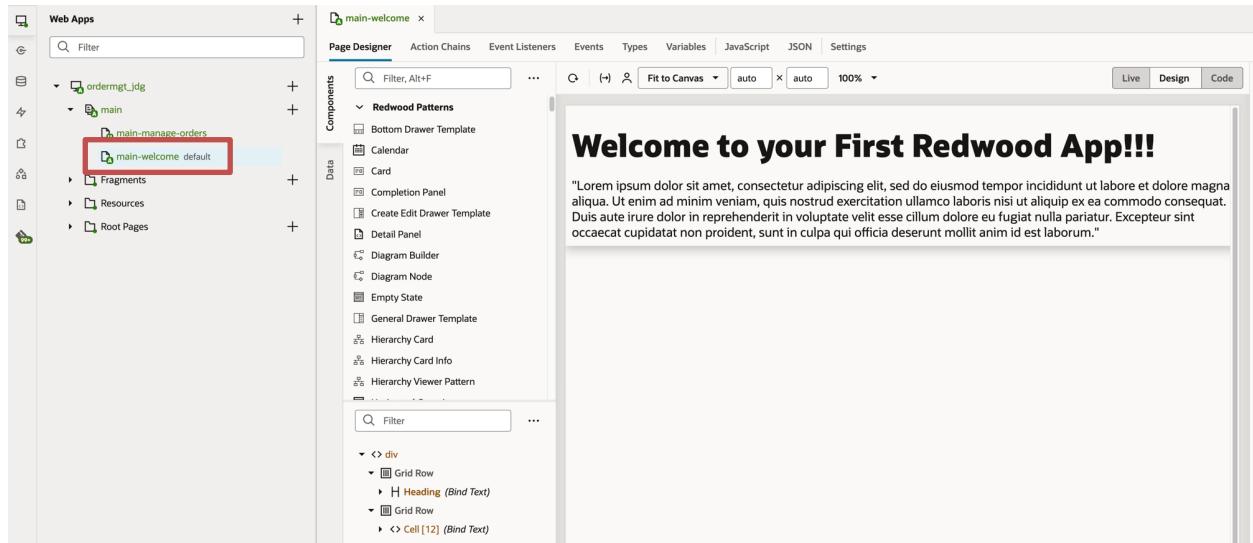
Name	Template	Favorite	Status
OrderMgt_JDG Current	Order Management Applic...	★	● Active

2. The Project Home page opens. Right-click the **OrderMgt_<your initials>** workspace and select **Open in New Tab**.

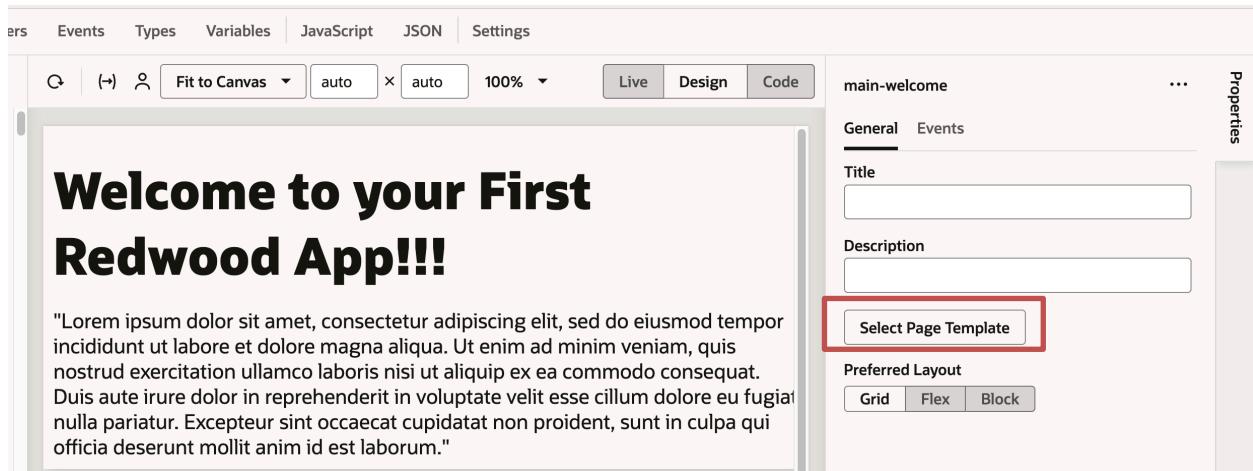
The screenshot shows the Visual Builder Studio interface with "OrderMgt_JDG" selected in the top navigation. The sidebar is identical to the previous screenshot. The main area shows a "Workspaces" section with a list. The first item, "OrderMgt_JDG" (Visual Application), has a context menu open. The menu items are: Open in New Tab (highlighted with a red box), Rename, Export Visual Application, Switch Environment, Change Ownership, and Delete. Below the menu is a "Develop" section showing "1 service instance".

3. Close the **Getting Started** tab if it's open.

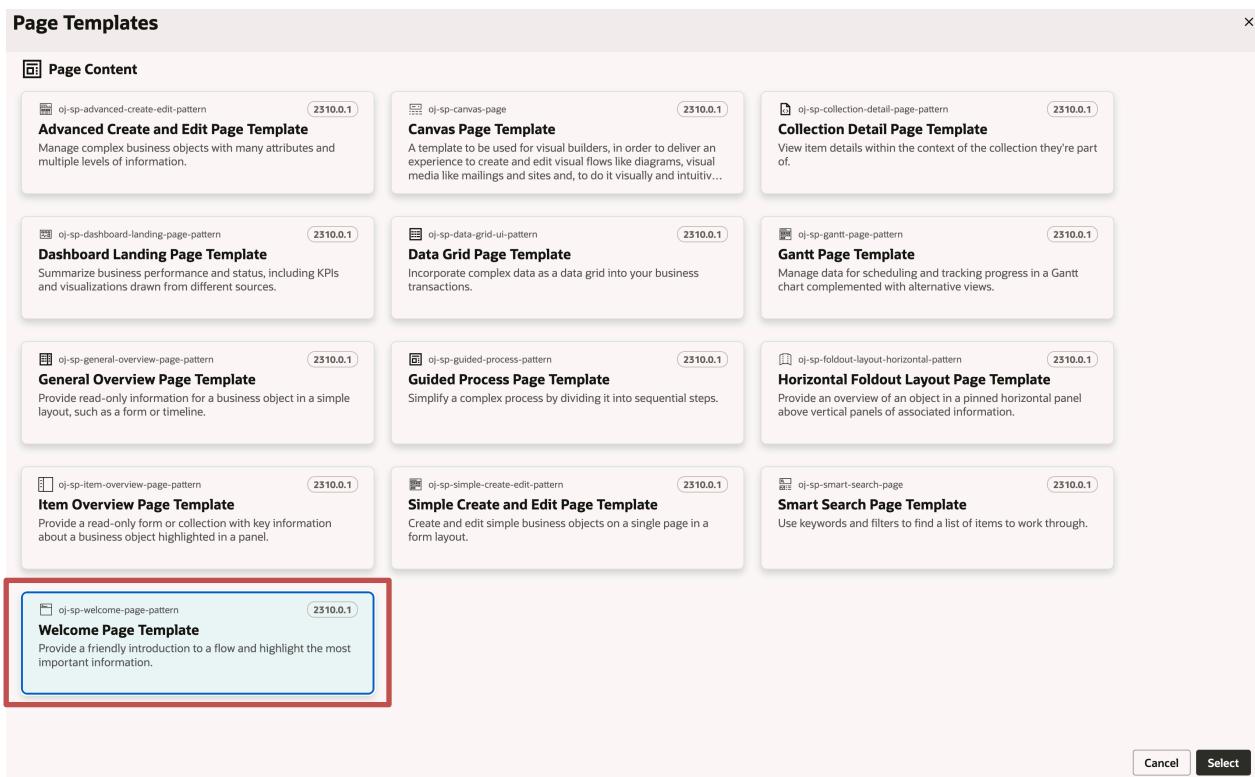
4. Select the **Web App** tab in the Navigator. Expand **ordermgmt_<your initials>**. Expand **main**. Select the **main-welcome** page. It opens in Page Designer.



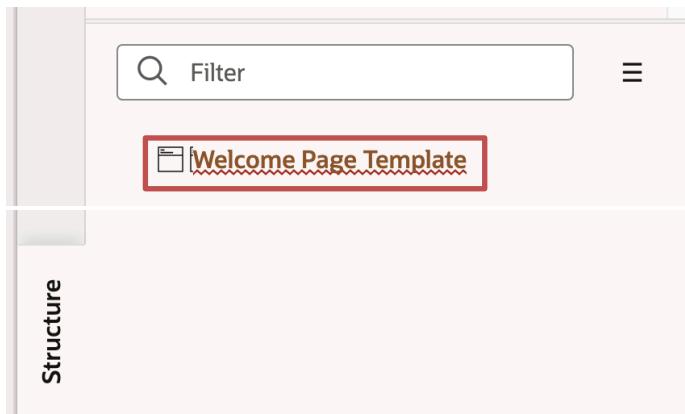
5. Click the **Select Page Template** button in the Property pane.



6. From the Page Templates dialog box, select the **Welcome Page Template** and click **Select**.

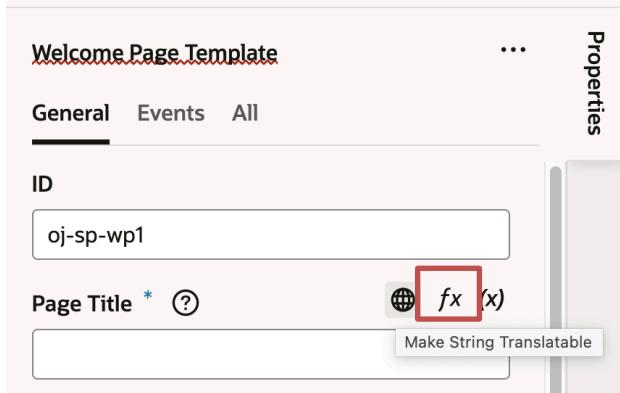


7. On the **main-welcome** page, select the **Welcome Page Template** element in the **Structure** pane.



8. In the **Property** pane for the **Welcome Page Template** on the right, click the globe icon for the **Page Title** to add the title as a translatable string.

Tip: Hover your mouse to the right of the property name to see the icons.



9. Click **Create New** and enter: Welcome to My Redwood Reference App. Click **Save**.

Translatable String

Create New Use Existing

Create a new string

String
Welcome to My Redwood Reference App

Description

Key
oj_sp_wp1_page_title

Bundle
application > AppBundle

Cancel **Save**

The reference to the translatable string is inserted and the page title is updated. Notice the referenced translatable string appears below the Page Title property.

10. Click the globe for the **Description** property. Create a new translatable string of: Create and submit orders and review information about inventory.

Translatable String

Create New Use Existing

Create a new string

String

Create and submit orders and review information about inventory

Description

Key

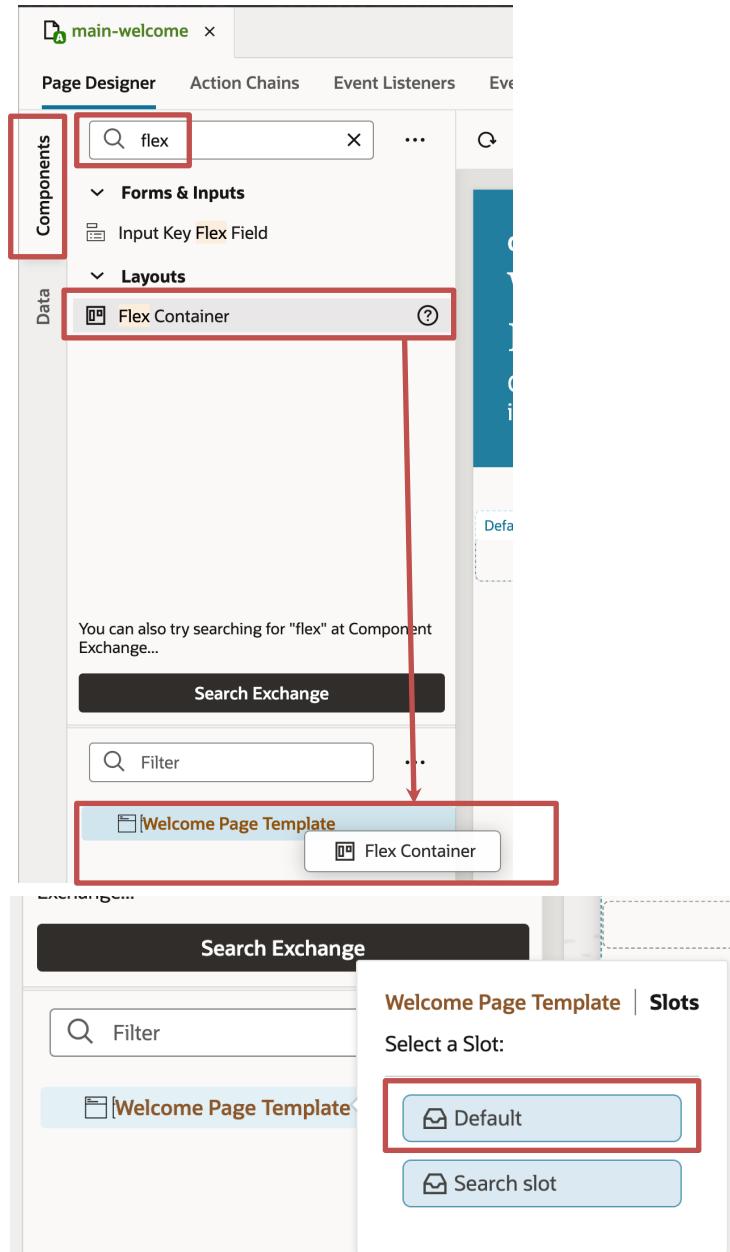
oj_sp_wp1_description_text

Bundle

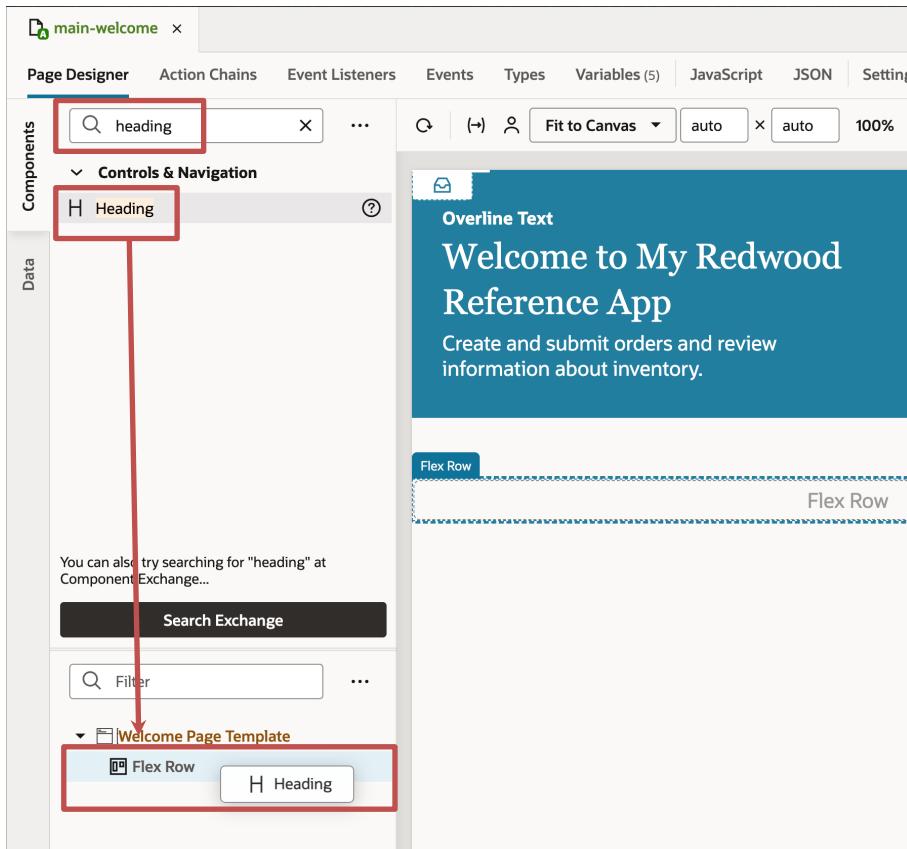
application > AppBundle

[Cancel](#) [Save](#)

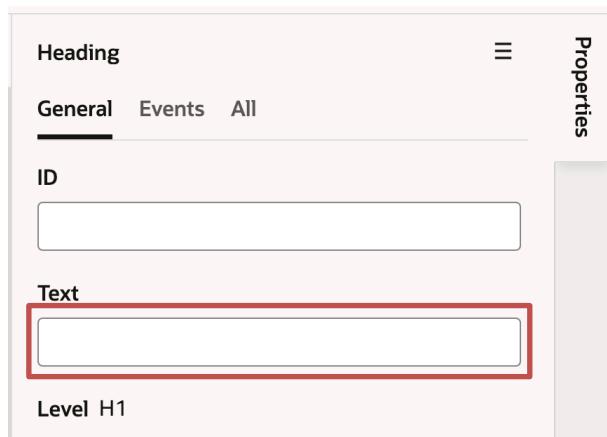
11. From the **Components** palette, find the **Flex Container** component and drag it onto the **Welcome Page Template** in the **Structure** pane to add header text to the main page. When prompted, choose the **Default** slot.



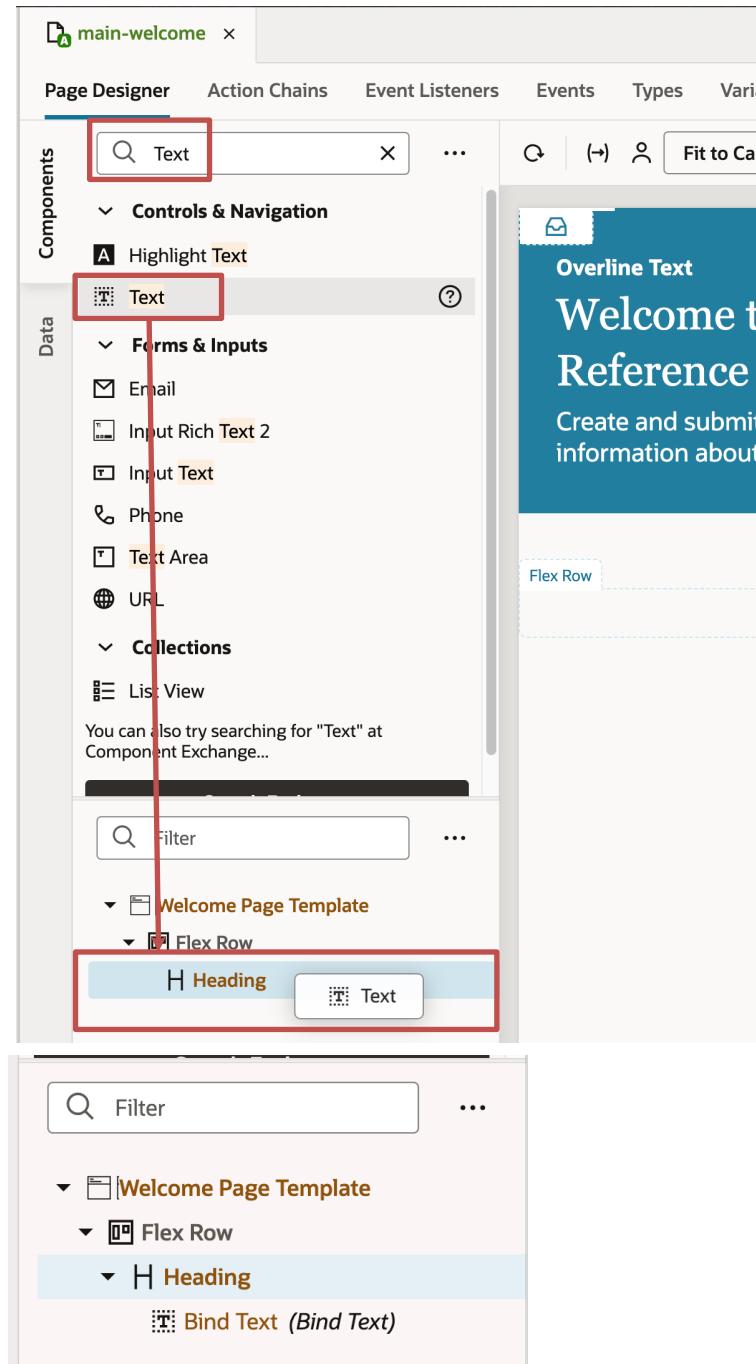
12. Add a **Heading** component to the new Flex Row.



13. Delete the text “Heading” from the Heading component’s **Text** property.



14. Add a **Text** component to the Heading. It displays as **Bind Text**.



15. Select the **Bind Text** component. In the **Value** property for the **Bind Text** component, click the globe and create a new translatable string: Draft orders needing your attention.

```

    ▼ ┌ Welcome Page Template
      └ ┌ Flex Row
        └ ┌ H Heading
          └ Bind Text (Bind Text)
  
```

Translatable String

Create New
 Use Existing

Create a new string

String

Draft orders needing your attention.

Description

Key

bind_text_value

Bundle

application > appBundle

Cancel
Save

16. Use **Styles** to format the text. Click the **Heading** element in the **Structure** pane and enter these class styles:

Hint: you can copy these from the code file you downloaded.

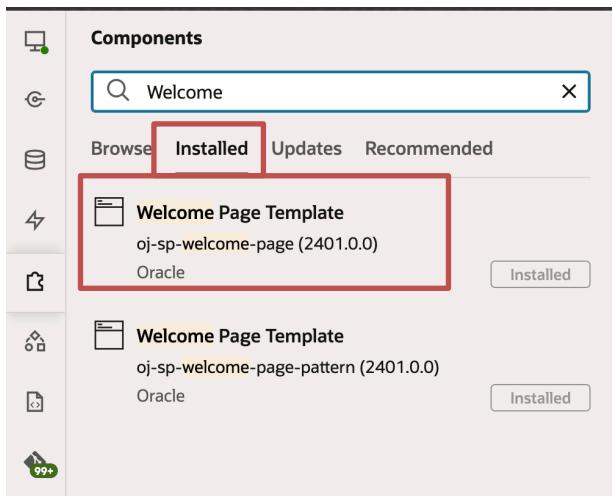
- oj-header
- oj-sm-12
- oj-sp-typography-display-6
- oj-helper-truncate
- oj-sm-padding-8x-horizontal

Notice the font is changed by the typography class and the padding has moved the text in from the left.

17. Change the **banner color** and **background illustration**. Possible values are provided in the documentation for the Welcome Page Template. Select the **Components** icon in the Navigator to view the documentation.



18. Select the **Installed** tab and enter **Welcome** in the **Search** field. Select the **Welcome Page Template**. Do not select the pattern. The documentation for the page template appears.



19. Scroll down and look for **Step 2 Configure the background color and illustrations**. Notice the list of colors. Below that is the list of available illustrations for the background.

The screenshot shows the Oracle Visual Builder interface. At the top, there's a navigation bar with tabs for 'main-welcome' and 'Component'. Below the navigation, the title 'Welcome Page Template 2401.0.0' is displayed, along with a small preview icon. Underneath the title, it says 'oj-sp>Welcome-page-pattern' and 'Oracle | 0 | Redwood Page Templates | License'. A 'Tags' section includes 'Redwood', 'visual-builder-only', and 'distribution:production'. Below these, there are links for 'Description' and 'Changelog'. The main content area contains several sections: a note about creating a new page, the heading 'Step 2 Configure the background color and illustrations.', a note about selecting a background color, a sub-section 'Step 2.1 When display-options.image-stretch property is set to default value none.', a list of background color options (dark-ocean, dark-pine, dark-lilac, dark-teal, dark-rose, dark-pebble, dark-slate, dark-plum, dark-sienna, auto), a note about setting up a background illustration, a note about background illustration size, a note about pointing to a URL for background illustration, and a note about foreground illustration size. At the bottom, there's a list of foreground stock images.

When creating a new page inside Visual Builder select Welcome Page. The banner area is filled with d

Step 2 Configure the background color and illustrations.

In this step, select the background color from one of the predefined values and specify the source UR

Step 2.1 When display-options.image-stretch property is set to default value none.

1. Select the background color from one of these values: In co-branding use cases with end-user user-select:background-color.
 - dark-ocean
 - dark-pine
 - dark-lilac
 - dark-teal
 - dark-rose
 - dark-pebble
 - dark-slate
 - dark-plum
 - dark-sienna
 - auto
2. Set up the background illustration. Either select from one of the predefined background illustr

Note: The background illustration size must be 640px x 352px.

3. Point the illustration-background property to the URL for background illustration.

Here are the available background stock images:

illust>Welcome-banner-bg-01.png
illust>Welcome-banner-bg-02.png
illust>Welcome-banner-bg-03.png
illust>Welcome-banner-bg-04.png
illust>Welcome-banner-bg-05.png

4. Set up the foreground illustration. Either select from one of the predefined foreground illustration

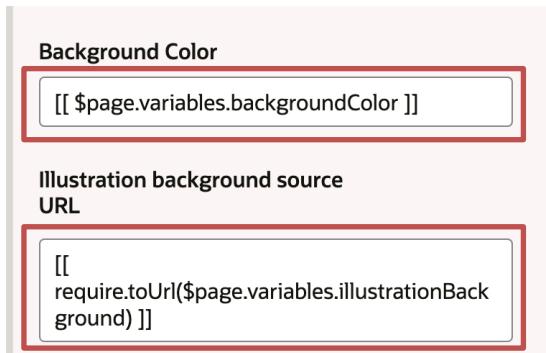
Note: The foreground illustration size must be 640px x 228px.

5. Point the illustration-foreground property to the URL for foreground illustration.

Here are the available foreground stock images:

illust>Welcome-banner-fg-01.png
illust>Welcome-banner-fg-02.png
illust>Welcome-banner-fg-03.png
illust>Welcome-banner-fg-04.png
illust>Welcome-banner-fg-05.png

20. Click the **main>Welcome** tab to return to the page. Select the **Welcome Page Template** in the **Structure** pane. Notice the **Background Color** and **Illustration background source URL** properties both use variables to provide their values. This is common practice in VBS and Redwood components. Click the **Variables** tab to change these values.

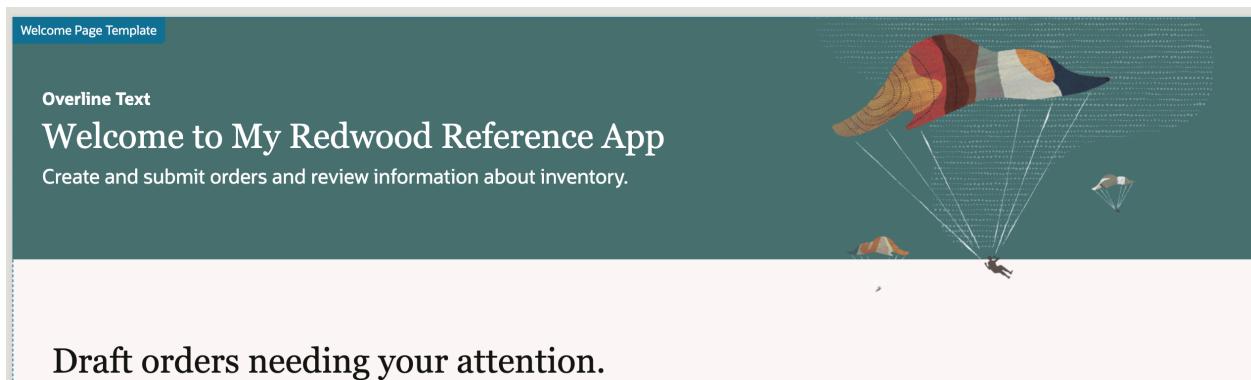


21. Select the **backgroundColor** variable. Change its **Default Value** to dark-teal.

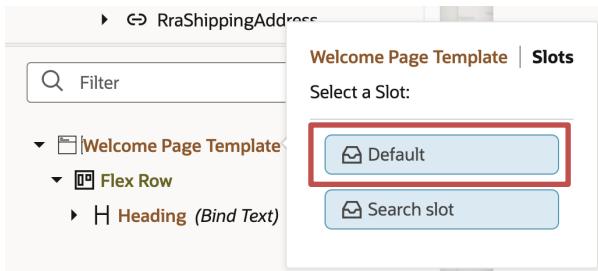
Variable	
General	Events
ID *	backgroundColor
Type *	String
Label	
Description	
Input Parameter	<input checked="" type="checkbox"/> Disabled <input type="checkbox"/> Enabled <input type="checkbox"/> Required <input type="checkbox"/> Pass On URL
Default Value	dark-teal

22. Select the **illustrationBackground** variable and change its **Default Value** to:
<https://static.oracle.com/cdn/fnd/gallery/2307.0.2/images/illust-welcome-banner-bg-02.png>
Hint: Just change the **bg-01** portion of the URL to **bg-02**. Position your cursor in the field and scroll all the way to the right.

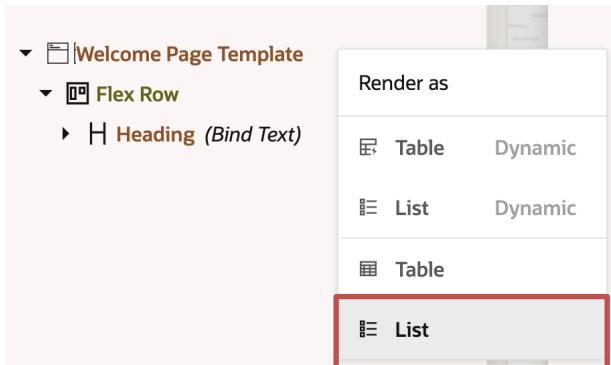
23. Click the **Page Designer** tab to view the results. The background color and illustration are changed.



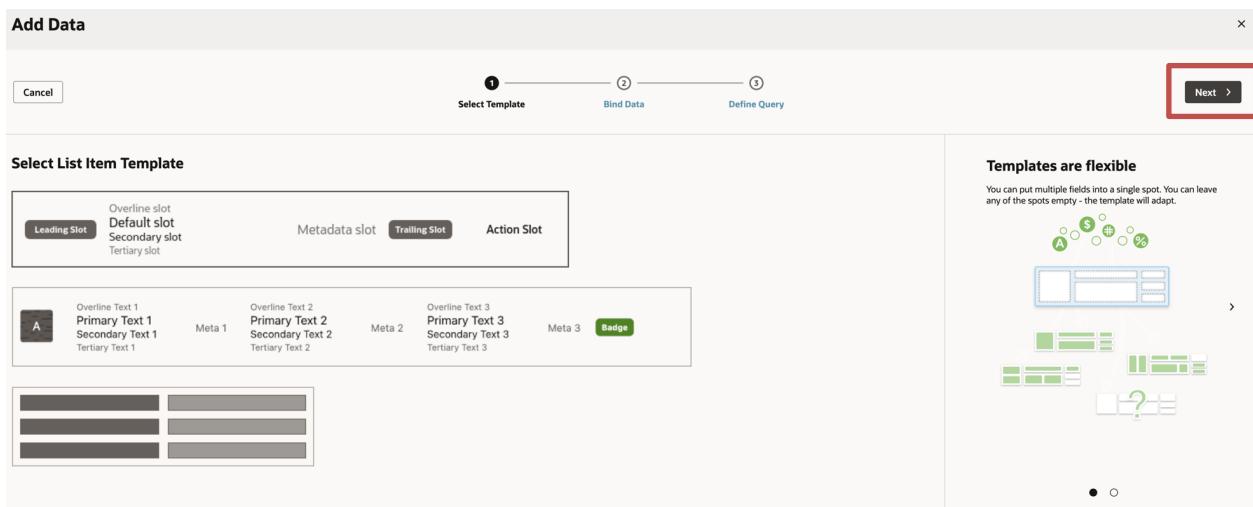
24. Add the data source from a Business Object. Click the **Data** tab and expand **Business Objects > rraOrders**. Drag **Get Many** from rraOrders onto the **Welcome Page Template** element in the **Structure** pane and select the **Default** slot when prompted.



25. Choose **Render as List** when prompted.



26. The Add Data dialog box appears. Click **Next** to accept the **List Item Template**.



27. Select the following fields. Do not worry about the order, you will override this shortly.
customerFirstName, customerLastName, orderId, orderNumber, orderStatus, totalAmount and **orderLinesCollection > items > > item[i] > imageURL**.

Endpoint Structure

Filter

- ▼ { } response
- ▼ [] items
- ▼ □ { } item[i]
 - A attachmentEntityName
 - A basketFlag
 - A billingAddressCity
 - A billingAddressCountry
 - A billingAddressLine11
 - A billingAddressLine21
 - # billingAddressPostalCode
 - A billingAddressState
 - # billToAddressId
 - A comments
 - # contextKey
 - A createdBy
 - { } creationDate
 - A currencyCode
 - # customerAddressId
 - # customerAddressId1
 - A customerFirstName
 - ↗ customerId
 - # customerId1
 - ▶ □ { } customerIdObject
 - A customerLastName

- A displayStatus
- # id
- { } lastUpdateDate
- A lastUpdatedBy
- ▶ [] links
 - # objectVersionNumber
 - # objectVersionNumber1
 - # objectVersionNumber2
 - # objectVersionNumber3
- A orderDate
- # orderId
- ▼ { } orderLinesCollection
 - # count
 - ☰ hasMore
 - ▼ [] items
 - ▼ { } item[i]
 - # amount
 - # contextKey
 - A createdBy
 - { } creationDate
 - A currencyCode
 - ☰ deliveredDate
 - # id
 - A imageUrl

- { } lastUpdateDate
 - A lastUpdatedBy
 - ▶ [] links
 - # listPrice
 - # objectVersionNumber
 - # objectVersionNumber1
 - ↗ orderId
 - # orderLineId
 - # productId
 - # productId1
 - A productName
 - A productNumber
 - # quantity
 - # limit
 - ▶ [] links
 - # offset
 - # totalResults
 - A orderNumber
 - A orderStatus
 - # primaryBillingAddressId
 - # primaryShippingAddressId
 - A shippingAddressCity
 - A shippingAddressCountry
 - A shippingAddressLine11
- ▾ Shipping Address
- A shippingAddressCountry
 - A shippingAddressLine11
 - A shippingAddressLine21
 - # shippingAddressPostalCode
 - A shippingAddressState
 - # shipToAddressId
 - # totalAmount

28. For the **imageUrl** field, change it from Text to Image.

The screenshot shows the Oracle Business Objects interface. At the top, there is a modal window titled "Text" which is currently selected. The modal lists several options: Text, Hyperlink, Heading, Paragraph, Image (which is highlighted with a red border), Input Text, and Text Area. Below this, the main template editor interface is visible. The template structure includes slots: Secondary slot, Tertiary slot, Metadata slot, and Trailing slot. In the Trailing slot, the field "A imageUrl X" is selected and highlighted with a red border. The dropdown menu at the bottom right of the template editor also shows "Image" as the current selection. The main template editor interface has three steps: "Select Template" (step 1, highlighted with a green circle), "Bind Data" (step 2), and "Define Query" (step 3). A "Next >" button is located at the top right of the main editor. The "Item Template Fields" section contains fields for Primary Key (selected "orderId"), Overline slot, Default slot, Secondary slot, Tertiary slot, Action slot, Leading slot, Overline slot, Default slot, Secondary slot, Tertiary slot, Metadata slot, and Trailing slot. The "Trailing slot" field "A imageUrl X" is set to "Image".

29. Click **Next.**

30. Click **filterCriterion** on the right, under **Target**.

- Target**
- ▼ **getall_rraOrders**
 - ▶ { } uriParameters
 - ▶ { } headers
 - ▶ { } filterCriterion

31. In the **Builder** at the bottom of the screen, click the **Click to add condition** link.

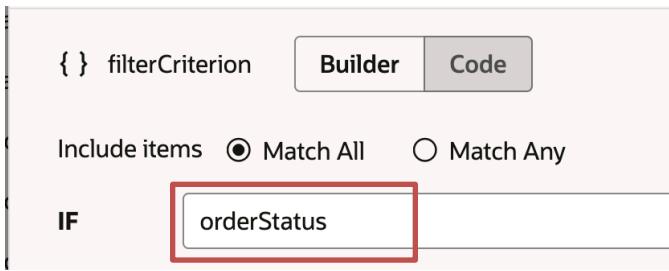
32. Select **orderStatus** for the first Attribute.

- Function listPrice
- System objectVersionNumber
- ▼ Flow (objectVersionNumber1
 - Function orderId
 - System orderLineId
- ▼ Application (productLineId
 - Function productId
 - Function productId1
 - System productName
 - System productNumber
 - System quantity
- System orderNumber
- orderStatus
- { } filterCriteria
- primaryBillingAddressId
- primaryShippingAddressId
- shippingAddressCity
- Include item
- IF
- Attribute

{ } filterCriterion [Builder](#) [Code](#)

Include items Match All Match Any

IF



33. Change the operator from contains (\$co) to **equals (\$eq)**.

Include items Match All Match Any

IF



34. Select the second Attribute and enter DRAFT.



equals (\$eq) | ▾

{ } filterCriterion [Builder](#) [Code](#)

Include items Match All Match Any

IF



35. Click **Done**. Then click **Finish**.

After a moment, you will see a list of orders displayed.

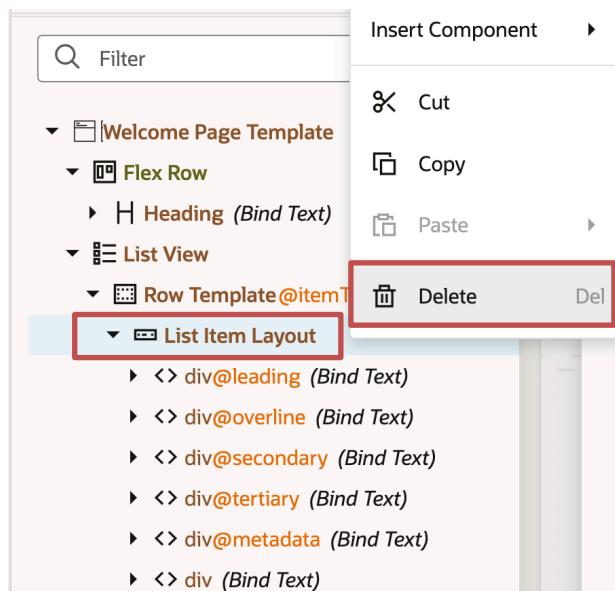
The screenshot shows a mobile application interface. At the top, there is a decorative header with a teal background featuring a stylized redwood tree graphic and the text "Overline Text Welcome to My Redwood Reference App Create and submit orders and review information about inventory". Below this, the main content area has a pink background and displays the heading "Draft orders needing your attention". A "List View" button is visible. The list contains three items, each representing a draft order:

Order ID	Customer Name	Order Number	Line Item Count	Action
5151	Kathryn	Rogers 313 F000000313	DRAFT	
1664	Kathryn	Rogers 314 F000000314	DRAFT	
4481	Kathryn	Rogers 315 F000000315	DRAFT	

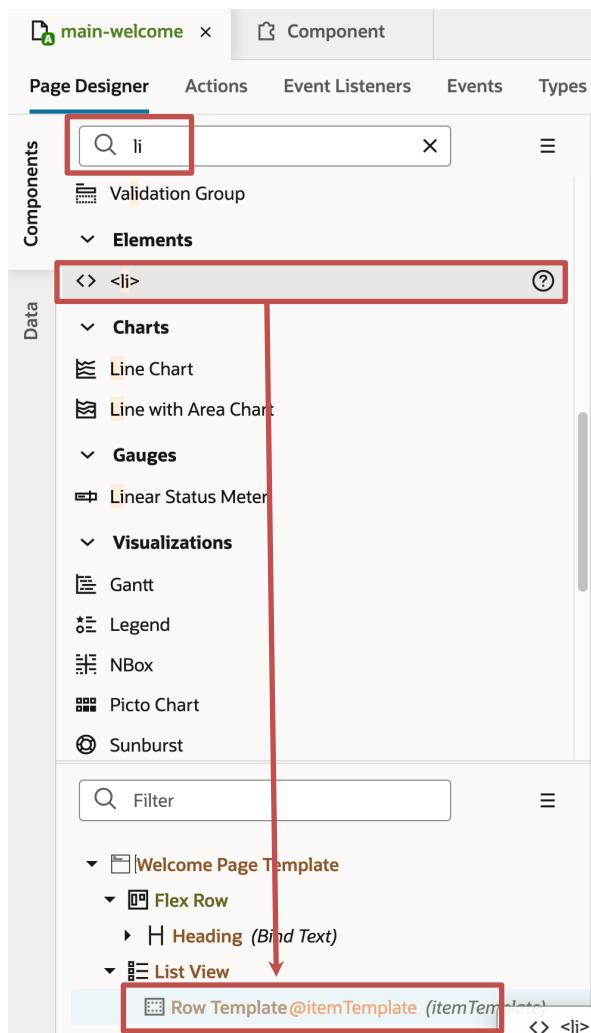
Note: Your list of orders may be different depending on how the data was retrieved from the backend. This is not an issue.

Notice the image does not display correctly You will fix that later.

36. Modify the list to present the orders as cards. Select the **List Item Layout** in the **Structure** pane and press the **Delete** key or right-click and select **Delete**.



37. Drag an **li** element from the **Components** palette onto the **Row Template**.



38. Select the new **li** element and, in its Property pane, delete the **Item** text.

The screenshot shows the Oracle APEX Structure pane. The tree view on the left shows the following hierarchy:

- Welcome Page Template
 - Flex Row
 - Heading (Bind Text)
 - List View
 - Row Template@itemTemplate (itemTemplate)

The 'li' element is highlighted with a red box. In the Properties pane on the right, the 'Text' field is also highlighted with a red box, indicating it is the selected item for modification.

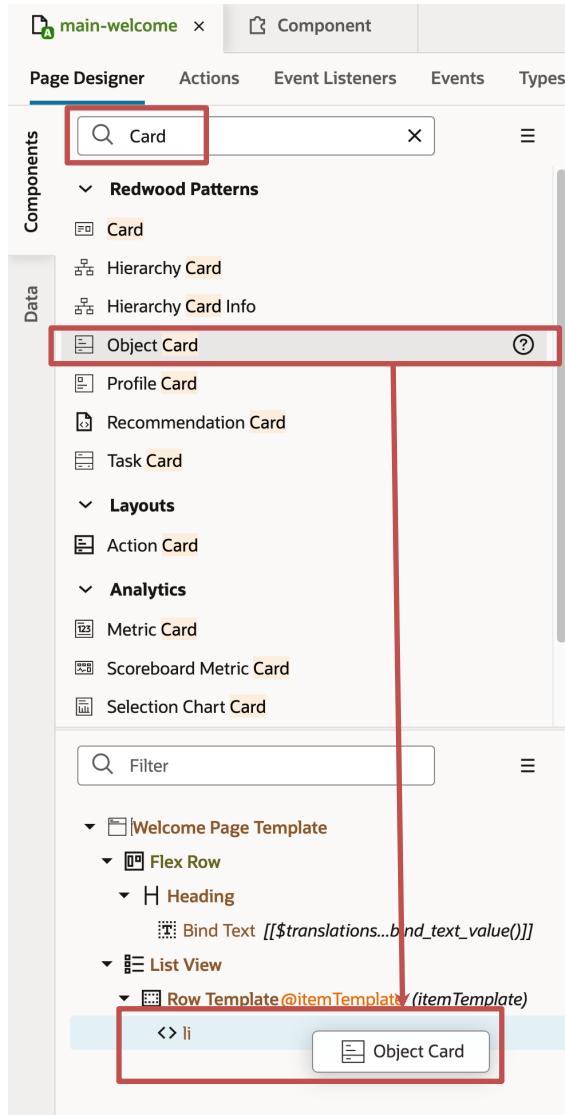
39. Select **List View** in the **Structure** pane and, on the **General** tab, select **Card Layout** under **Styling**.

The screenshot shows the Oracle APEX Structure pane. The tree view on the left shows the following hierarchy:

- Welcome Page Template
 - Flex Row
 - Heading
 - Bind Text [\$translations...bind_text_value()]
 - List View
 - Row Template@itemTemplate (itemTemplate)

The 'List View' node is highlighted with a red box. In the Properties pane on the right, the 'General' tab is selected. Under the 'Styling' section, the 'Card Layout' checkbox is checked, which is highlighted with a red box.

40. Drag an **Object Card** component onto the **li** element in the **Structure** pane.



41. Select the new **Object Card** and then click its **All** tab in its **Property** pane.



42. Set the following properties:

- **Emphasized Footer:** true
- **Image:** Click the **Show sub-properties** > to enter properties and enter the following code for the **Image Source**:

```
[ [ $application.path + 'resources/' +
  current.data.orderLinesCollection.items[0]?.imageUrl ] ]
```

image >

Object Card

General Events All

< image

Image Source (?) fx (x)

```
[[ $application.path + 'resources/' +
$current.data.orderLinesCollection.items[0].imageUrl ]]
```

Alternative Text

The screenshot shows the Oracle ADF Faces Object Card editor. At the top left, there's a 'General' tab, followed by 'Events' and 'All'. Below that, there's a section labeled 'Image Source' with a question mark icon and a 'fx' icon with an 'x' next to it. A red box highlights the expression language code: `[[\$application.path + 'resources/' + \$current.data.orderLinesCollection.items[0].imageUrl]]`. To the right of the code is another 'fx' icon with an 'x'. Below the code, there's a section for 'Alternative Text' with a large empty input field.

You will see the images appear on the cards.

Overline Text

Welcome to My Redwood Reference App

Create and submit orders and review information about inventory

The screenshot shows the welcome screen of the Redwood Reference App. It features a teal header with the title 'Welcome to My Redwood Reference App' and a subtitle 'Create and submit orders and review information about inventory'. To the right of the text is a decorative illustration of a person skydiving with a large, colorful umbrella-like canopy.

Draft orders needing your attention

The screenshot shows a section titled 'Draft orders needing your attention'. It displays three cards, each containing an icon representing a product: a purple bag with a floral pattern, a black fitness tracker, and a blue smartwatch.

43. Click the < image link to return to the properties.

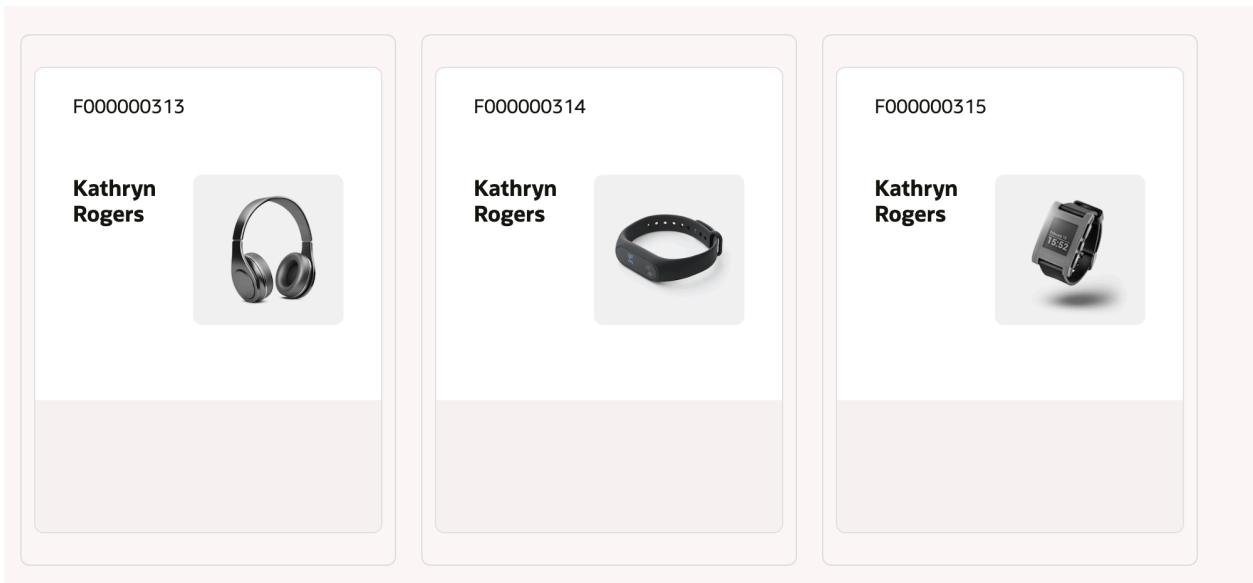
The screenshot shows the 'Object Card' properties panel. At the top, there are tabs: 'General', 'Events', and 'All'. The 'All' tab is selected. Below the tabs, there is a red-bordered button labeled '< image'. Underneath it, the 'Image Source' field contains the expression: `[[$application.path + 'resources/' +$current.data.orderLinesCollection.items[0]?.imageUrl]]`. To the right of the properties panel, there is a vertical 'Properties' sidebar.

- For **Header Label**, enter: `[[$current.data.orderNumber]]`

The screenshot shows two object cards. The first card has the header label 'F000000180' and displays an image of a purple smartwatch. The second card has the header label 'F000000181' and displays an image of a black fitness tracker. Both cards have a dashed blue border around their content area.

- For **Header Title**, enter: `[[$current.data.customerFirstName + ' ' + $current.data.customerLastName]]`

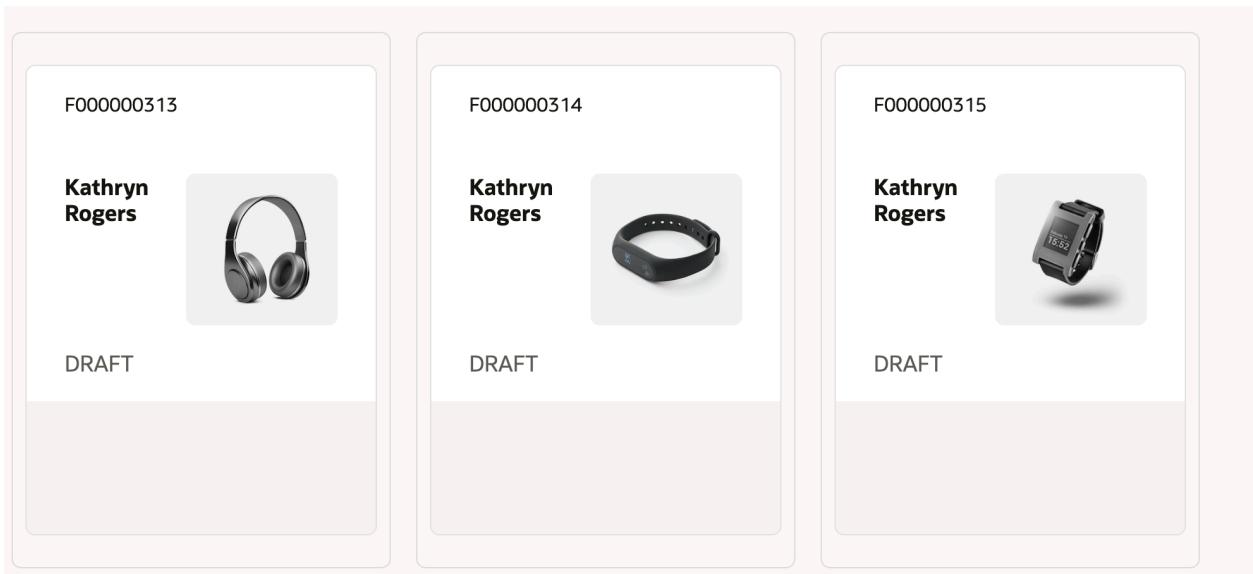
The screenshot shows the 'Header Title' input field. The value entered is `[[$current.data.customerFirstName + ' ' + $current.data.customerLastName]]`. This input field is highlighted with a red border.



- For **Secondary Text**, enter: `[[$current.data.orderStatus]]`

Secondary Text *

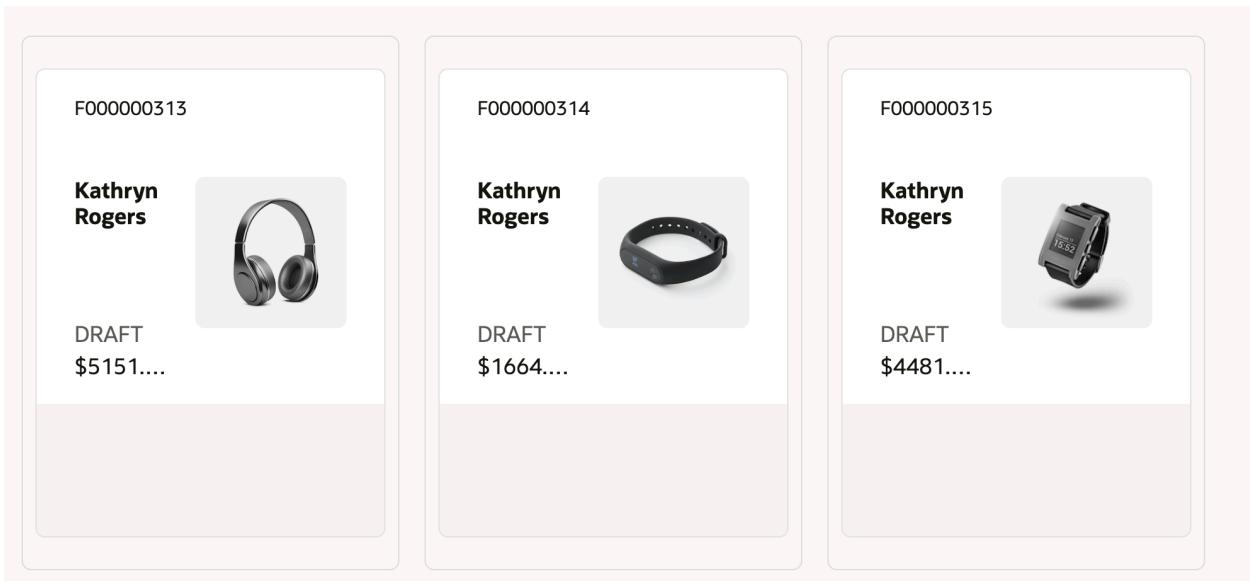
fx (x)



- For **Tertiary Text**, enter: `[['$' + $current.data.totalAmount + ".00"]]`

Note: Numbers must be converted to strings for some properties.

Tertiary Text



When you are done, the display should look like this:

Note: Your orders may be different, but the formatting should be the same.

Hint: Changing the width of the display canvas will cause the responsive components to redraw the page appropriately.

Events Types (1) Variables (6) JavaScript JSON Settings

... Q (Fit to Canvas auto X auto 100% Live Design Code Obj Ge E S A C I > > > >

Overline Text

Welcome to My Redwood Reference App

Create and submit orders and review information about inventory

Draft orders needing your attention

Object Card

Order ID	Customer	Product	Status
F000000313	Kathryn Rogers		DRAFT \$5151....
F000000314	Kathryn Rogers		DRAFT \$1664....
F000000315	Kathryn Rogers		DRAFT \$4481....
F000000330			
F000000331			
F000000333			

Page Welcome Page Template List View Row Template li Object Card 2 errors on this page

LIST VIEW

Order ID	Customer	Product	Status
F000000313	Kathryn Rogers		DRAFT \$5151.00
F000000314	Kathryn Rogers		DRAFT \$1664.00
F000000315	Kathryn Rogers		DRAFT \$4481.00

Q | (→) | Fit to Canvas ▾ | auto | X | auto | 100% ▾ | Live | Design | Code

Overline Text

Welcome to My Redwood Reference App

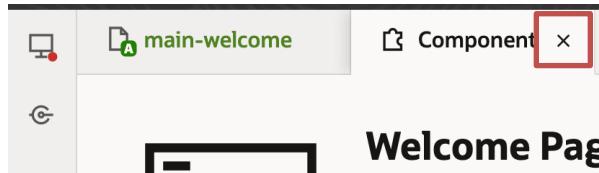
Create and submit orders and review information about inventory



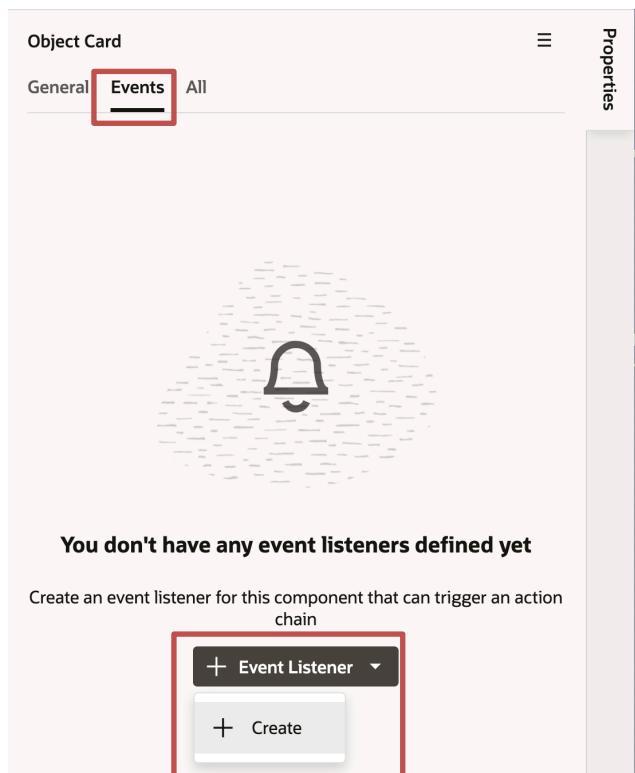
Draft orders needing your attention

Object Card	
F000000313	Kathryn Rogers  DRAFT \$5151.00
F000000314	Kathryn Rogers  DRAFT \$1664.00
F000000315	
F000000330	

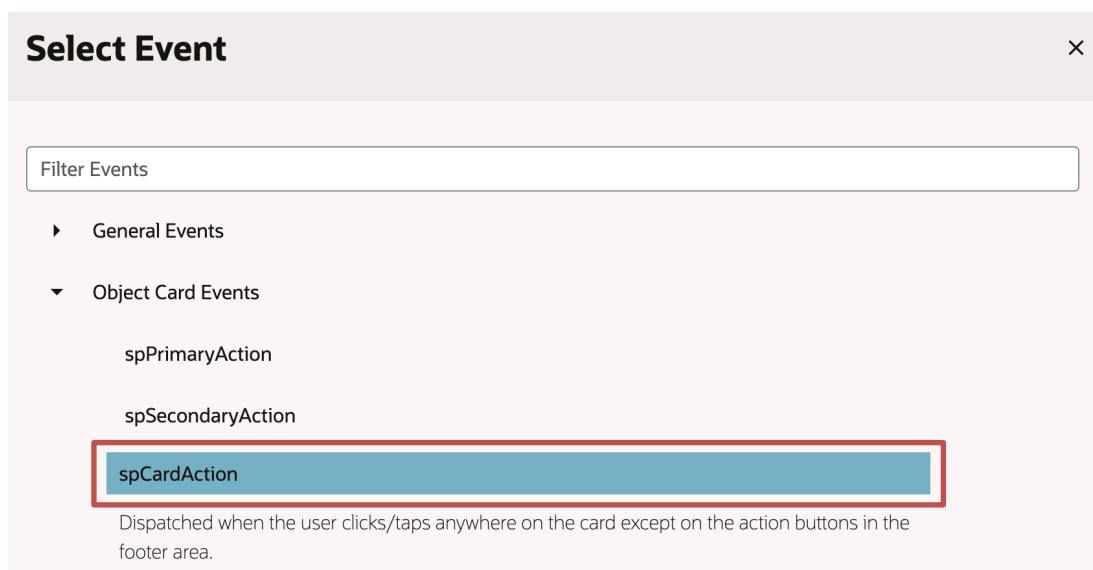
44. Close the Component tab.



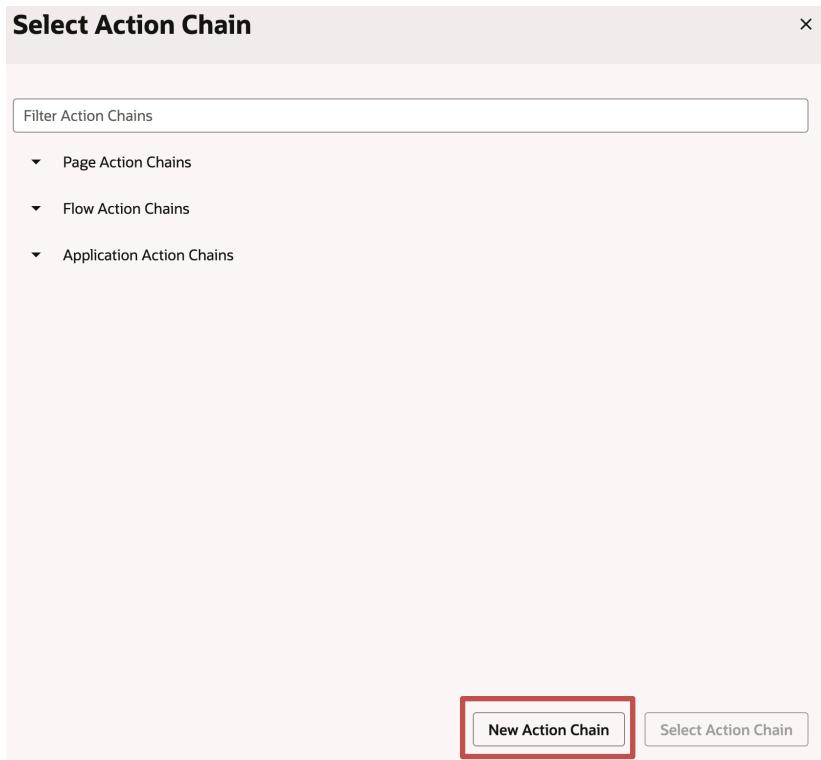
45. Select the **Object Card** in the **Structure** pane and click its **Events** tab in the **Property** pane. Click the **+ Event Listener** pull-down menu and select **+ Create**.



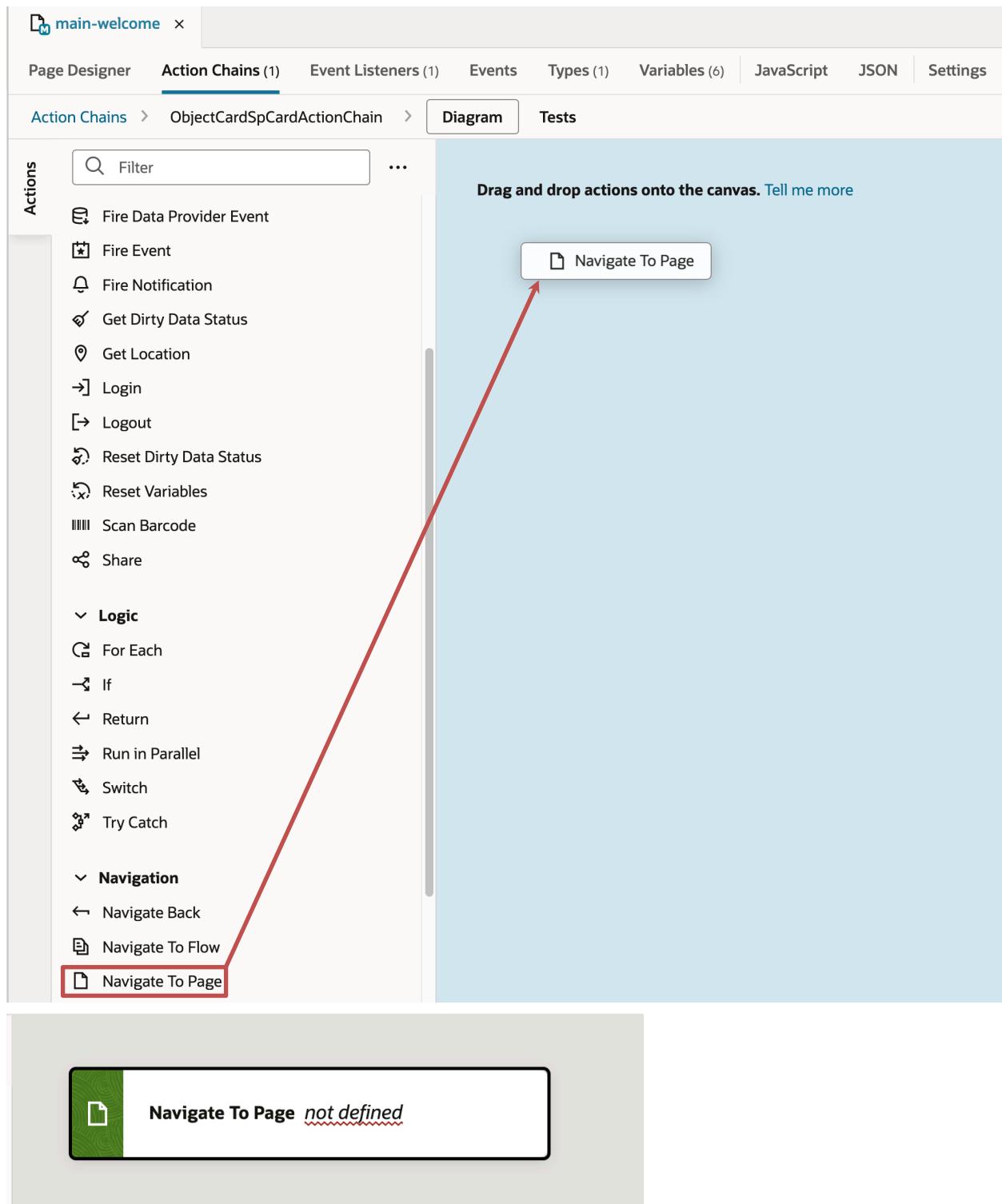
46. Expand **Object Card Events** and click **spCardAction**. Click **Select**.



47. Select **New Action Chain**. The new action chain appears.



48. Drag a **Navigate To Page** action to the canvas.



49. With the new action selected, click the **Create** link in the **Navigate To Page Property** pane.

Navigate To Page

ID	
Description	
Page *	<input type="button" value="Create"/>
<input type="button" value="▼"/>	

 must have required property 'page'

50. Name the new page `main-edit-orders` and select **Simple Create and Edit Page Template** and click **Create**.

Create Page

Page ID *

`main-edit-orders`

Choose Page Content

Filter



Create an Empty Page

The empty page can be customized from page designer.



Advanced Create and Edit Page Temp...

Manage complex business objects with many attributes and multiple levels of information.



Canvas Page Template

A template to be used for visual builders, in order to deliver an experience to create and edit visual flows like diagrams, visual medi...



Collection Detail Page Template

View item details within the context of the collection they're part of.



Dashboard Landing Page Template

Summarize business performance and status, including KPIs and visualizations drawn from different sources.



Data Grid Page Template

Incorporate complex data as a data grid into your business transactions.



Gantt Page Template

Manage data for scheduling and tracking progress in a Gantt chart complemented with alternative views.



General Overview Page Template

Provide read-only information for a business object in a simple layout, such as a form or timeline.



Guided Process Page Template

Simplify a complex process by dividing it into sequential steps.



Horizontal Foldout Layout Page Tem...

Provide an overview of an object in a pinned horizontal panel above vertical panels of associated information.



Item Overview Page Template

Provide a read-only form or collection with key information about a business object highlighted in a panel.



Simple Create and Edit Page Template

Create and edit simple business objects on a single page in a form layout.

51. Click the **Go to Page** link.

The screenshot shows a 'Navigate To Page' dialog box. It has fields for 'ID' (empty), 'Description' (empty), and 'Page *' (set to 'main-edit-orders'). A 'Create' button is next to the page field. A 'Properties' sidebar is visible on the right. At the bottom, there is a red-bordered 'Go to Page' button.

52. On the new **main-edit-orders** page, click the **Variables** tab to set up the **orderId** that will be passed to the page so it can be used to retrieve the selected record and edit it.

The screenshot shows the Oracle Page Designer interface. The top navigation bar includes tabs for 'Page Designer' (selected), 'Action Chains (7)', 'Event Listeners (8)', 'Events', 'Types', a red-bordered 'Variables (11)' tab, and 'JavaScript'. Below the tabs is a search bar and a toolbar with icons for filter, fit to canvas, and auto-fit. The left sidebar has 'Components' expanded, showing 'Redwood Patterns' with items like 'Bottom Drawer Template', 'Calendar', and 'Card'. The main canvas area displays the text 'New Page' and 'Page Subtitle'.

53. Select **objectId** and rename it to `orderId` and set its **Input Parameter** property to **Required**.

Tip: While it is not necessary to rename the objectId variable, doing so helps with readability and consistency.

▼ Variables

- ▼ { } avatar
 - A initials
 - A src
 - contextualInfoLabelVisible
 - contextualInfoSticky
 - dirtyDataFlag
 - A displayMode
 - A formState
 - goToParentOption
 - isSaved
 - A objectId**
 - primaryAlwaysOn
 - A saveOption

Variable

General Events Design Time ...

ID * orderId

Type * String Create

Label

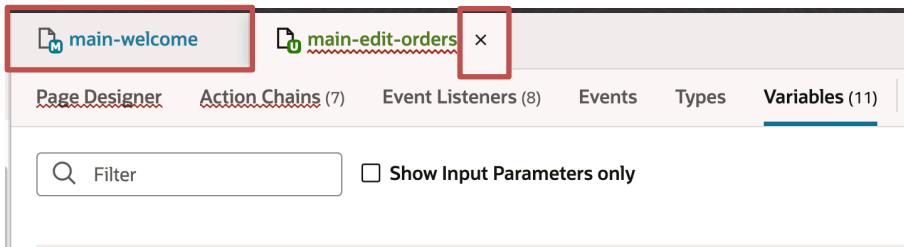
Description

Input Parameter

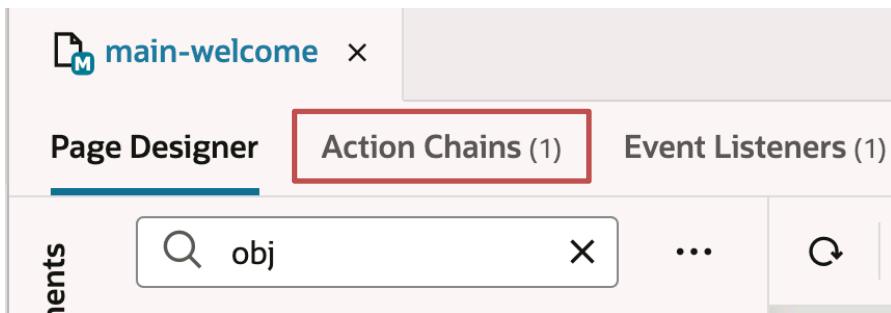
Disabled Enabled Required

Pass On URL

54. Close the **main-edit-orders** tab to return to the **main>Welcome** page.



55. Select the **Actions Chains** tab to return to the action chains.



56. Click the **ObjectCardSpCardActionChain** to open the action chain.

The screenshot shows a page titled "main-welcome". At the top, there are three tabs: "Page Designer", "Action Chains (1)", and "Event Listeners (1)". The "Action Chains (1)" tab is currently selected. Below the tabs is a search bar with a magnifying glass icon and the word "Filter". Underneath the search bar, the text "ObjectCardSpCardActionChain" is displayed.

57. Select the **Navigate To Page** action. For the **orderId** parameter, click the **Select Variable (x)** and select ***key**.

The screenshot shows the "Action Chains" editor. In the "Parameters" section, there is a field labeled "orderId *". To the right of the field is a "Select Variable" button, which has a red box drawn around it. Below the main editor, a smaller window also shows the "Parameters" section with the same "orderId *" field. At the bottom of the screen, there is a "Variables" panel. In this panel, there is a "Input Parameters" section. Within this section, the "key" variable is highlighted with a red box.

The screenshot shows the Oracle ADF Page Designer interface. At the top, there's a header bar with the title 'Navigate To Page' and a 'Properties' panel on the right. Below this, there are several input fields: 'ID' (empty), 'Description' (empty), and a 'Page' dropdown which is highlighted with a red border. The dropdown has a 'Create' button next to it and contains the value 'main-edit-orders'. Below the dropdown is a 'Go to Page' link. Underneath is a 'Parameters' section containing a parameter 'orderId' with a required asterisk (*). The value for this parameter is '[[key]]'. In the bottom left corner of the main area, there's a small icon of a document with a green pattern. To its right, the generated Java code is shown:

```
toMainEditOrders = Navigate To Page main-edit-orders
Parameters
A orderId: key
```

58. Click the **Page Designer** tab and click the **Live** button. Test the navigation works by selecting one of the orders. The app navigates to the new main-edit-orders page. You will complete the development of the edit page in a later practice.
59. Close all open tabs.

This completes this practice.