



# Power Platform

## App in a Day

Module 1: PowerApps Canvas App

Hands-on Lab Step-by-Step

September 2018

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# PowerApps Canvas App

## Lab Prerequisites

Follow the pre-requisite steps described in the document: **00-AppInADay Lab Overview.pdf**, that is included in the lab package. Before beginning this lab, confirm that you have provisioned an environment where you still save your apps, flows and database entities.

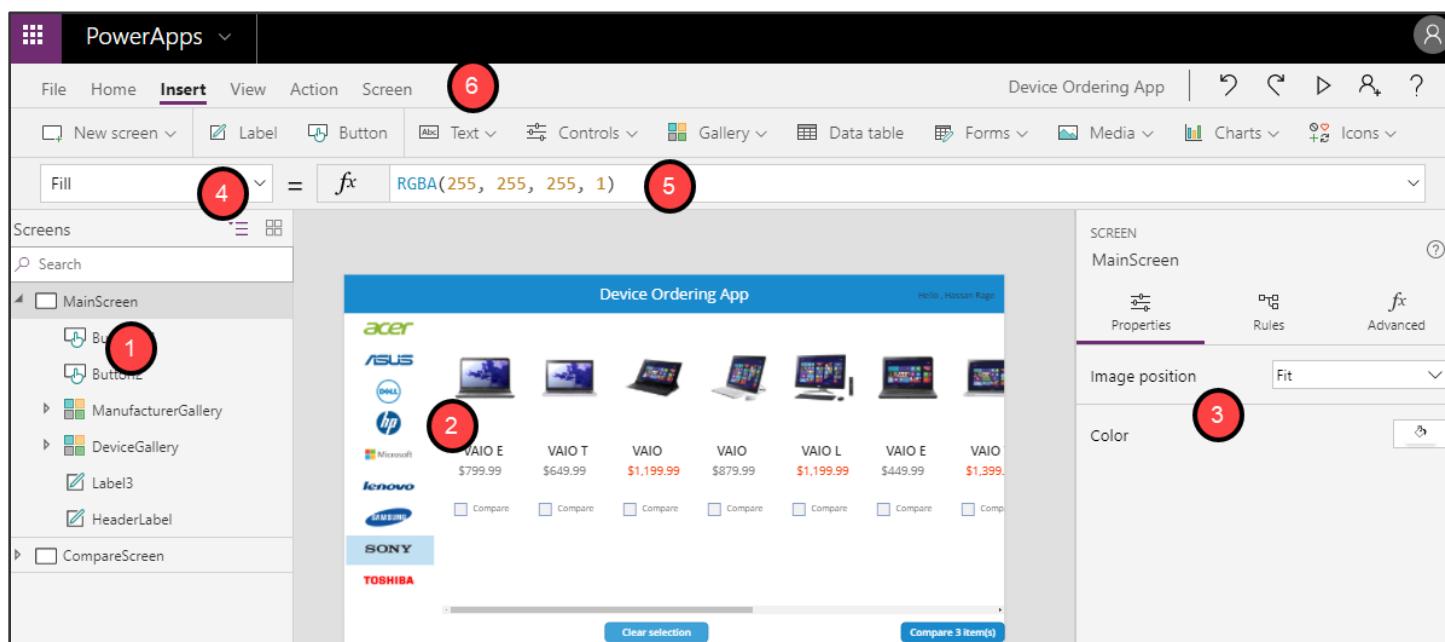
**IMPORTANT:** Do not proceed ahead, before going through the Lab pre-requisite steps

## PowerApps Canvas Studio Layout

**PowerApps Canvas Studio** is available as a web application (<http://web.powerapps.com>) that you can use in any modern browser.

PowerApps Studio is designed to have a user interface familiar to users of the Office suite. It has three panes and a ribbon that make app creation feel **like building a slide deck in PowerPoint**. Formulas are entered within a function  $\text{fx}$  bar that is like Excel. Studio components:

1. **Left navigation bar**, which shows all the screens and controls in your app
2. **Middle pane**, which contains the app screen you are working on
3. **Right-hand pane**, where you configure properties for controls, bind to data, create rules, and set additional advanced settings
4. **Property drop-down list**, where you select the property for the selected control that you want to configure
5. **Formula bar**, where you add formulas (like in Excel) that define the behavior of a selected control
6. **Ribbon**, where you perform common actions including customizing design elements



## Introduction: Device Ordering Scenario

Imagine an organization where every three years the employees go through a hardware refresh cycle. The organization would like to build a customized app that runs on the web and mobile devices, which will help streamline the device order and approval process. Moreover, they do not have traditional development resources available, such as a .NET, Xamarin or custom website developer, to create this application.

### Solution overview

The Microsoft business application platform technologies enable tech-savvy business users (aka “citizen developers”) to build a customized device ordering solution. The application user interface and interaction logic are built in PowerApps, the approval workflow is automated using Microsoft Flow, and the device order data is stored in the Common Data Service.

Key features of the solution:

- a. Ability to browse through a selection of devices and filter the list by manufacturer
- b. Select devices to compare
- c. View detailed specs for the selected devices on a second comparison screen
- d. Select a device to order
- e. Enter order details into a customized form, including an optional coupon image
- f. By default, have the approver set to the logged in user’s manager
- g. Capture additional default properties, such as the date of the request
- h. Store device orders in a secure and scalable database
- i. Enable an admin to view all device orders
- j. Follow a customized procurement process to place purchase orders for devices
- k. Send an automated approval request email when the order is placed
- l. Allow the approver to approve or reject an order and add comments without leaving their email inbox
- m. View all sent and received approval requests on the web and mobile
- n. Notify the user via email when their order is approved or rejected

This document will walk through creating a PowerApps Canvas Studio basics to enable features (a) thru (d).

When you are done with this first portion of the lab, your app will look like this:

**Device Ordering App - Device Selection Screen**

Manufacturer	Device	Price	Action
Microsoft	Surface RT	\$499.00	<input type="checkbox"/> Compare
ASUS	Surface RT	\$599.00	<input type="checkbox"/> Compare
DELL	Surface Pro	\$899.99	<input type="checkbox"/> Compare
HP	Surface Pro	\$999.00	<input checked="" type="checkbox"/> Compare
Lenovo			
Samsung			
Sony			
TOSHIBA			

**Device Ordering App - Device Comparison Screen**

Device	Price	Processor	RAM	Storage	Display
Aspire M	\$699.99	Acer	6GB DDR3	500GB	128GB
Surface Pro	\$999.00	Microsoft	4GB RAM	1TB	128GB
Series 7	\$1,099.00	Samsung	6GB DDR3	1TB	128GB
IdeaPad Z	\$899.00	Lenovo	4GB DDR3	1TB	128GB

## Locale-specific difference in formulas



Before you begin, please note that if your computer has its regional settings set to use the comma ',' for its decimal separator (like in much of Europe) your formulas will need to use a semicolon ';' instead of a comma in your formulas. For example:

En-US      `Filter(Machines, OEMsGallery.Selected.MFR=MFR)`

de-DE      `Filter(Machines; OEMsGallery.Selected.MFR=MFR)`

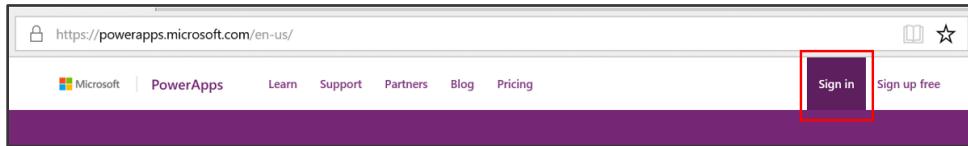
These localized formats are indicated with the symbol throughout the document. If you are in the en-us locale, you can ignore any of the formulas indicated by the locale symbol.

## Exercise 1: Create the app in PowerApps

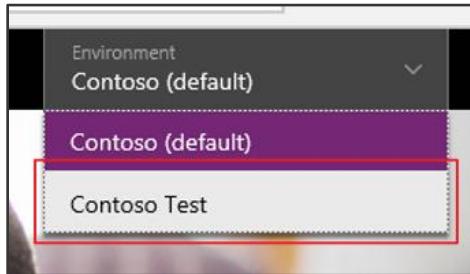
**IMPORTANT:** Do not proceed ahead, before going through the Lab pre-requisite steps

### Task 1: Sign-in to PowerApps web studio

1. Go to <http://powerapps.microsoft.com> and click Sign-in. You may also directly navigate to <http://web.powerapps.com>.

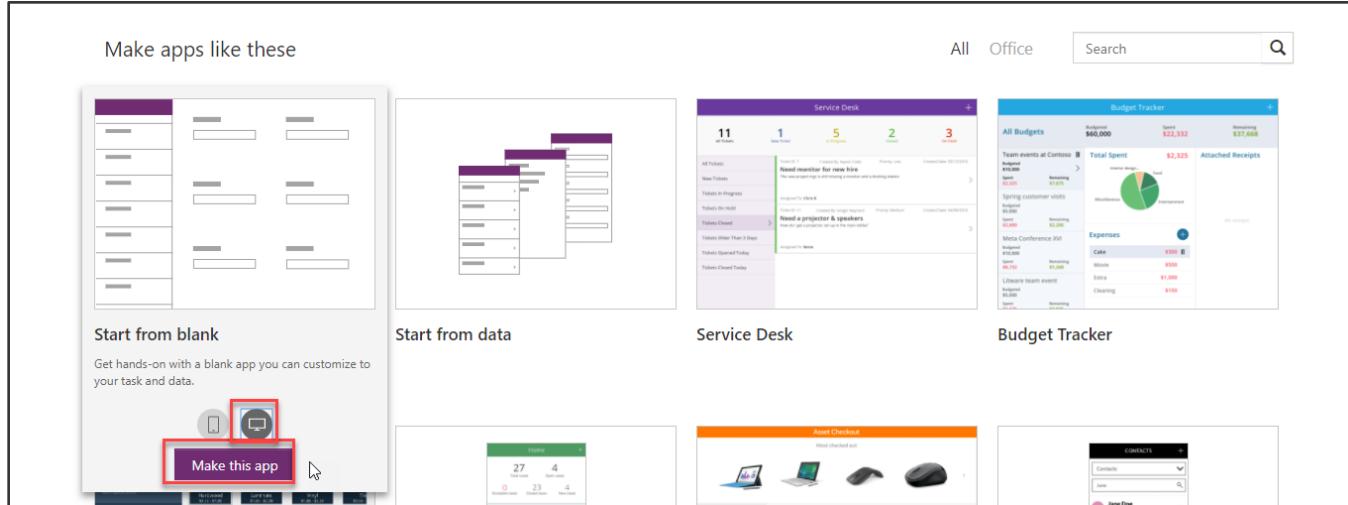


2. Sign in with your business or school account if you have not already done so.
3. Before creating an app, let's switch to the new environment that you created. Click the Environment drop-down in the top right of the screen to switch to the new environment. (If your environment doesn't show up, try logging out and logging in again)

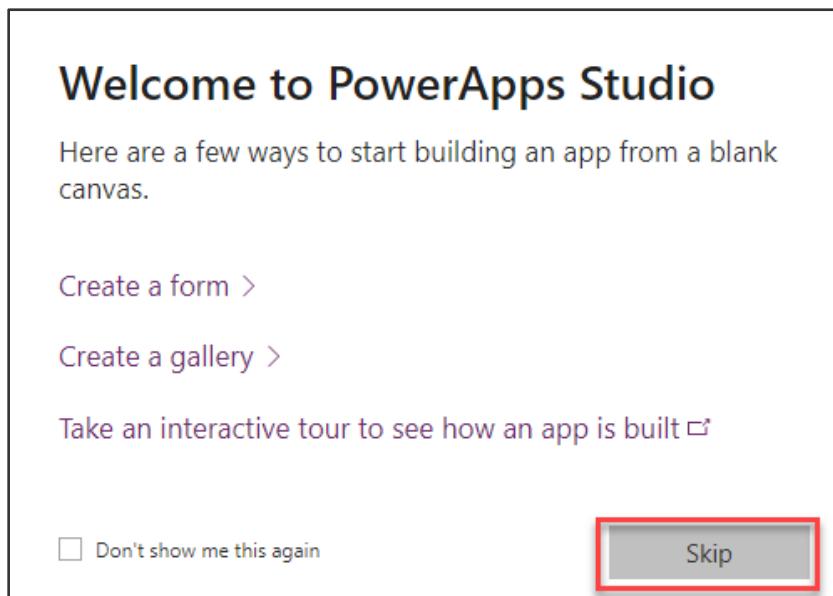


## Task 2: Create a new application

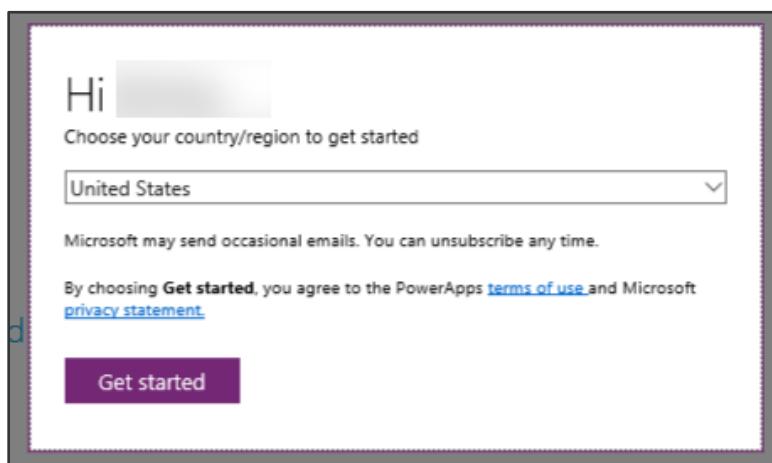
- In the **Home** tab see the “**Make apps like these**” section. Click the **Start from blank** option, click the **tablet/desktop icon**, and select **Make this app**.  
This will open the studio with a new app ready to be built.



- Click **Skip** on the welcome prompt.



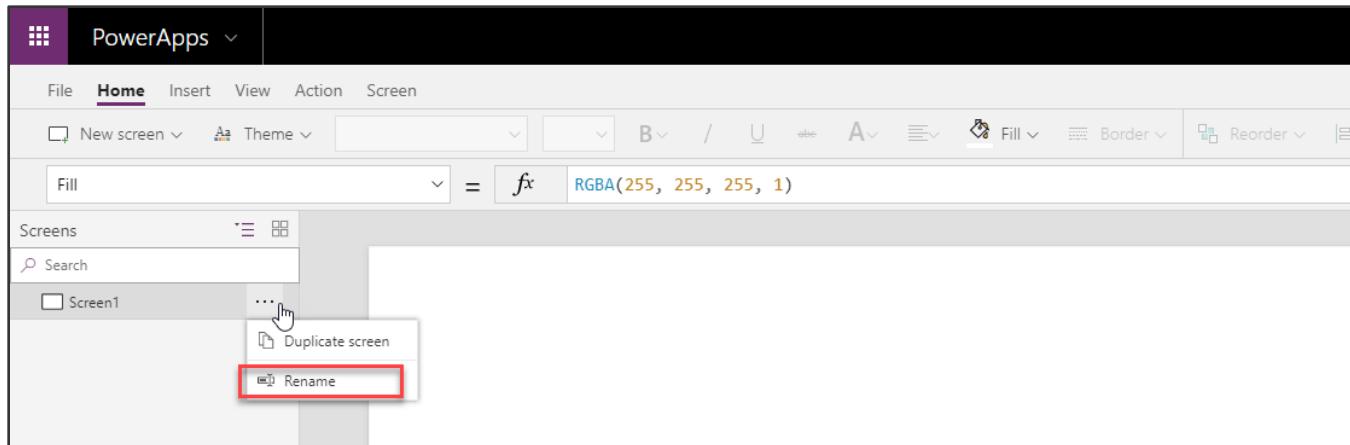
3. If prompted, select your region, then click **Get started**.



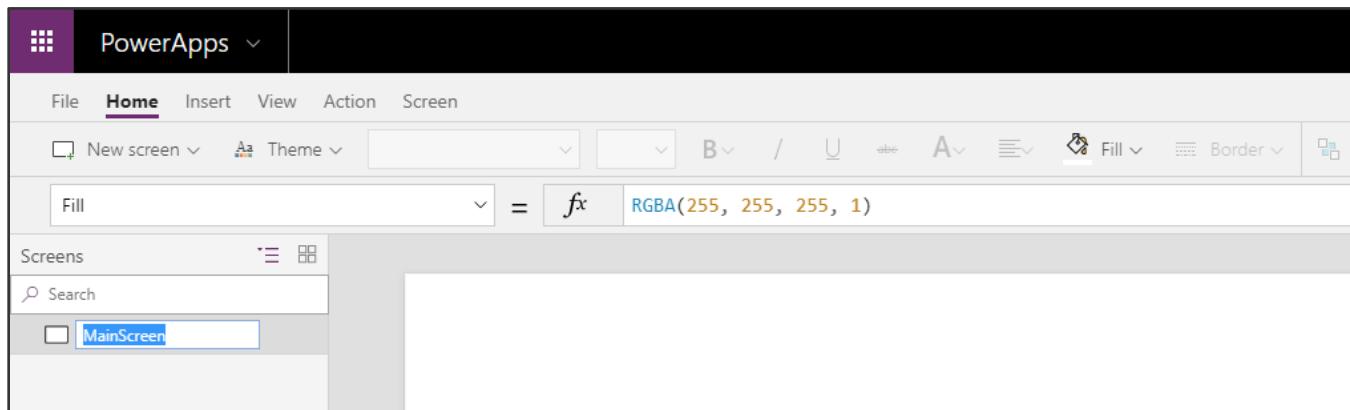
## Task 3: Rename the screen and add a header

In this task, you will rename Screen1 to MainScreen

1. Select the screen by clicking the Screen1 tile in the left navigation bar.
2. Click "..." next to Screen 1 (or right click Screen1) and select the **Rename** option.



3. Change the name to **MainScreen**

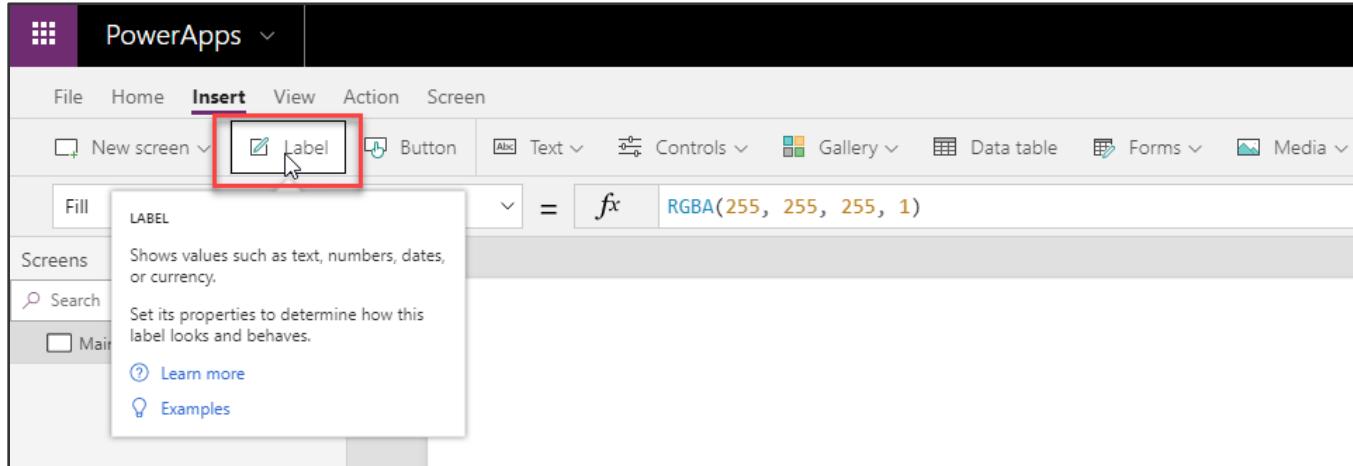


**Note:** You can also rename the screen by clicking on the screen name in the right pane and selected the edit icon.

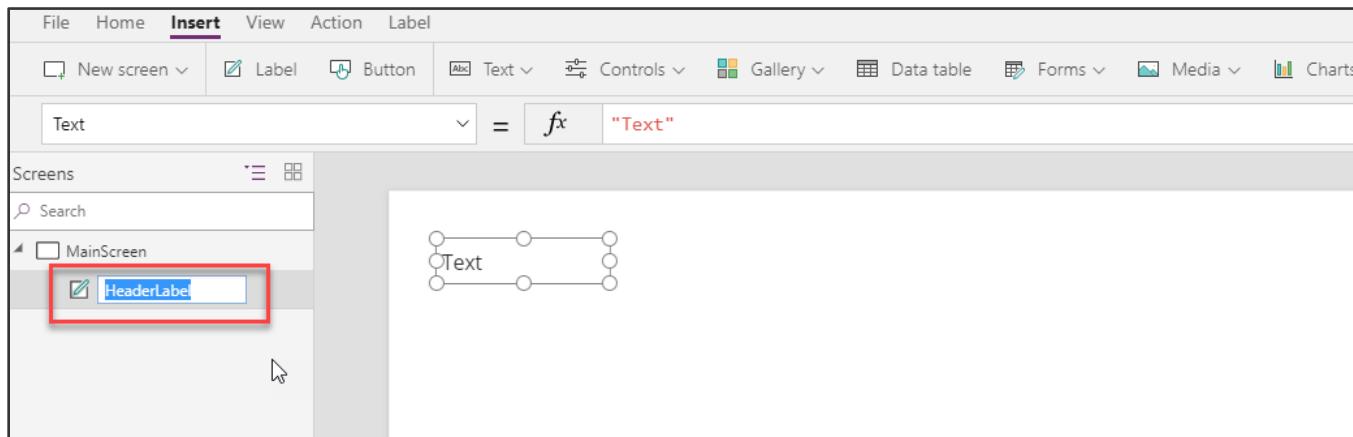
**Tip:** It is a good practice to rename screens and controls as you create them, so they are easier to locate as you work with formulas that reference different controls. In this lab, you will be prompted to rename screens and some of the controls. For the others, you may rename them as you please on your own.

## Task 4: Add a header containing the app name and logged in user's name

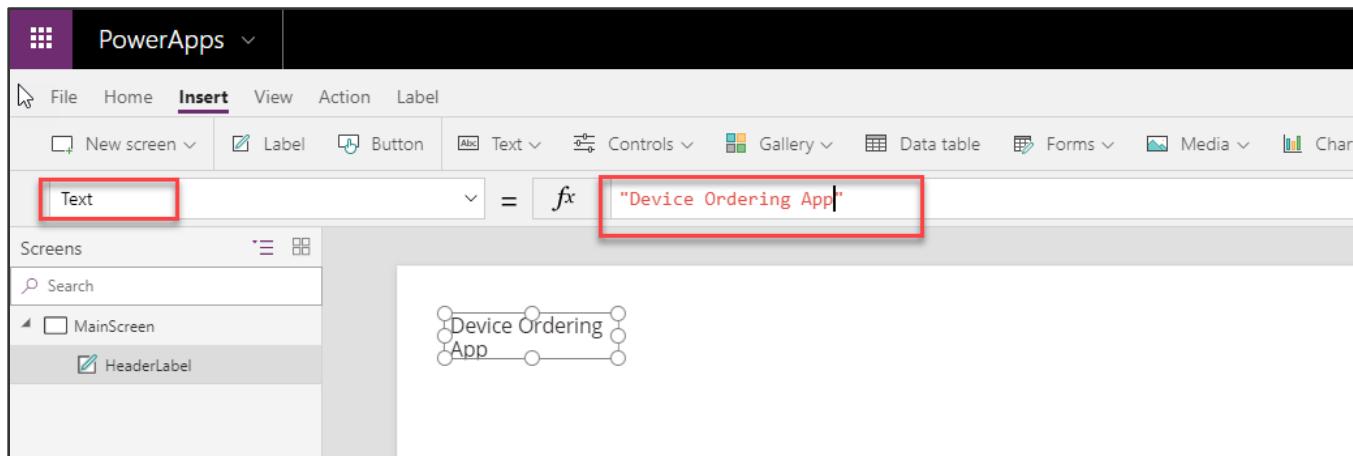
1. Select the **Insert** tab in the ribbon, and select **Label** to add a text label.



2. Rename the label from Label1 to **HeaderLabel**, see the previous task on renaming controls.



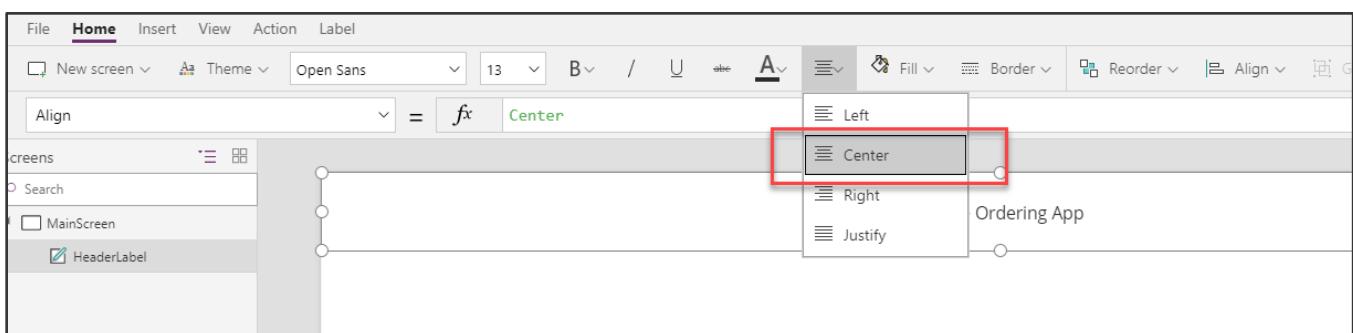
3. Select **Text** from the property drop-down list and enter "**Device Ordering App**" in the formula bar. You can also type directly in the label.



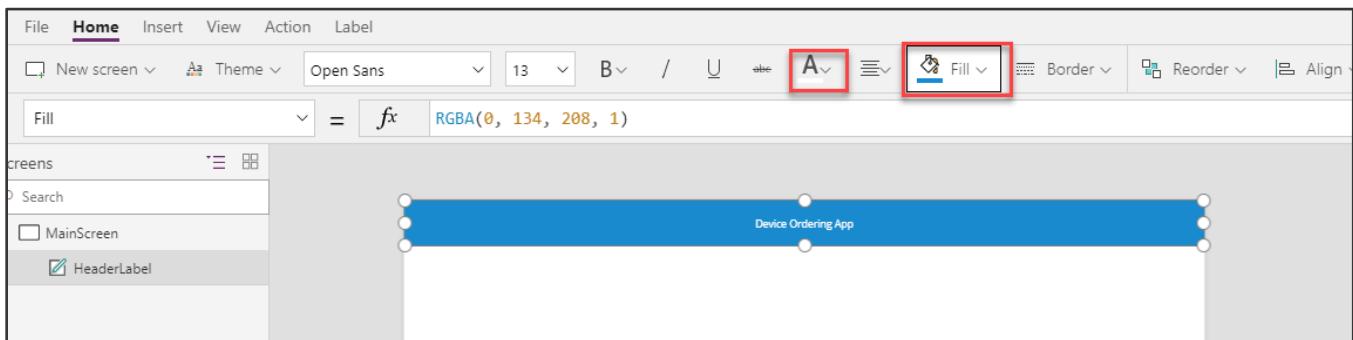
4. Resize the label such that the width is the width of the screen and the height is a reasonable size for a header. You can resize the label by either dragging the corners of the label or adjusting the size in the Right Pane.



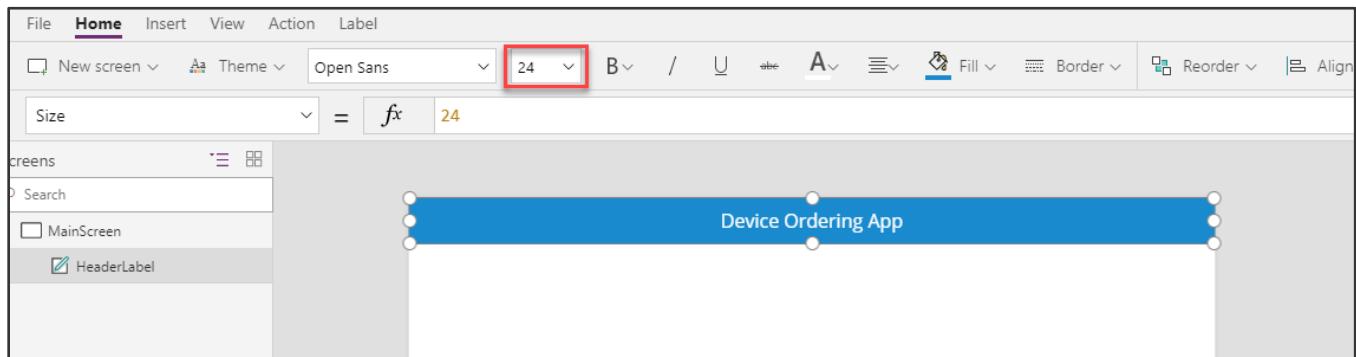
5. Select the **Home** tab and set the **Align** option in the ribbon to **Center**.



6. Change the **Fill** to blue and the font **Color** to white.

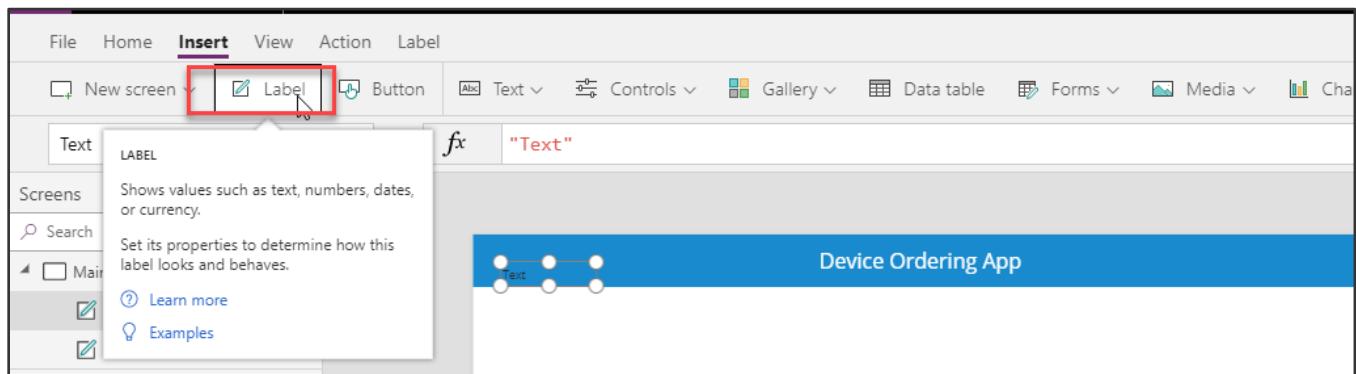


7. Change the **Font Size** to 24.

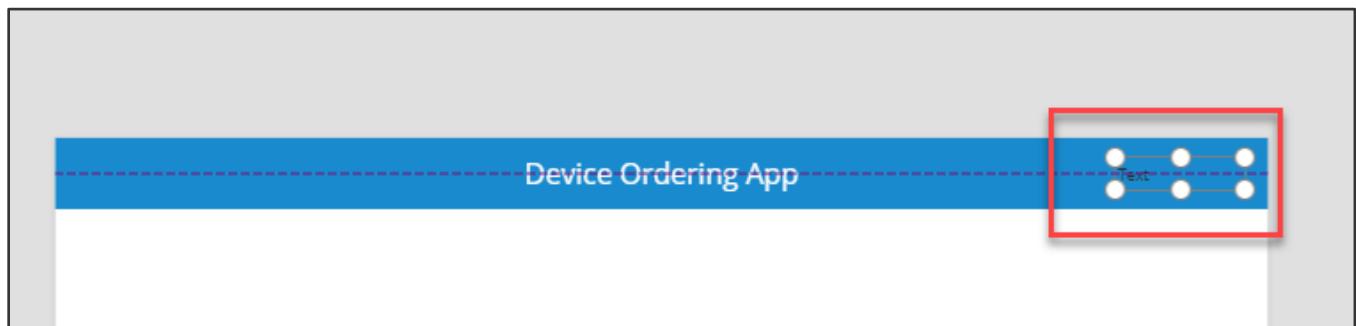


**Tip:** You can also use the formula bar above or the Advanced tab on the far right of the screen to enter specific values or formulas for any property on a control.

8. From the Insert tab, select **Label**. We are going to use this label to display the logged in user's name.



9. Drag the label to the far-right side of the screen as shown, and center the label vertically to be in line with the header text. You can use the purple alignment markers as shown below.



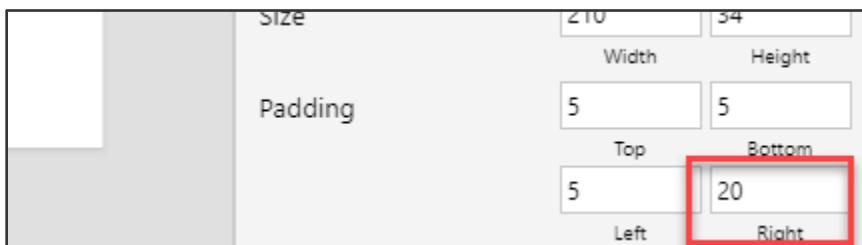
10. Rename the label to UserLabel.

11. Change the value of the Text field to: "Hello, " & User().FullName



**Note:** All functions in PowerApps are case sensitive. As you start typing "User" you will see a drop-down of available choices. It is a good idea to pick from the autocomplete options. You will also notice help text at the top showing the required parameters, in this case, it requires no input parameters.

12. Right-justify the text in the label by selecting the **Align** option in the **Home** tab on the ribbon.
13. If necessary, widen the label, so the text doesn't wrap.
14. Change the **PaddingRight** property from 5 to 20. You can do this quickly using the Properties pane on the right side.

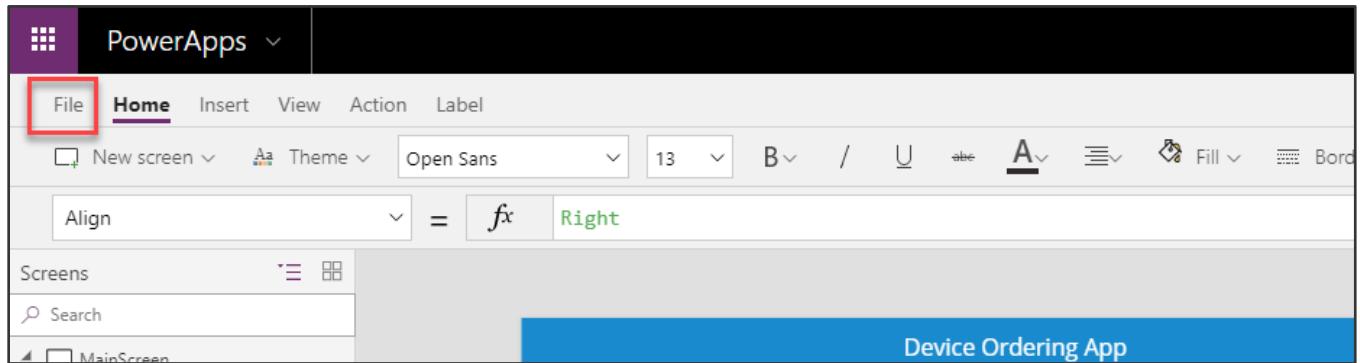


**Note:** The **User()** function in PowerApps allows you to retrieve the Email, Full Name, and Picture for the currently logged in user. App users will always be logged in with their business or school account (Azure Active Directory (AAD) credentials), so this information will always be available for any PowerApps app.

## Task 5: Save the Application

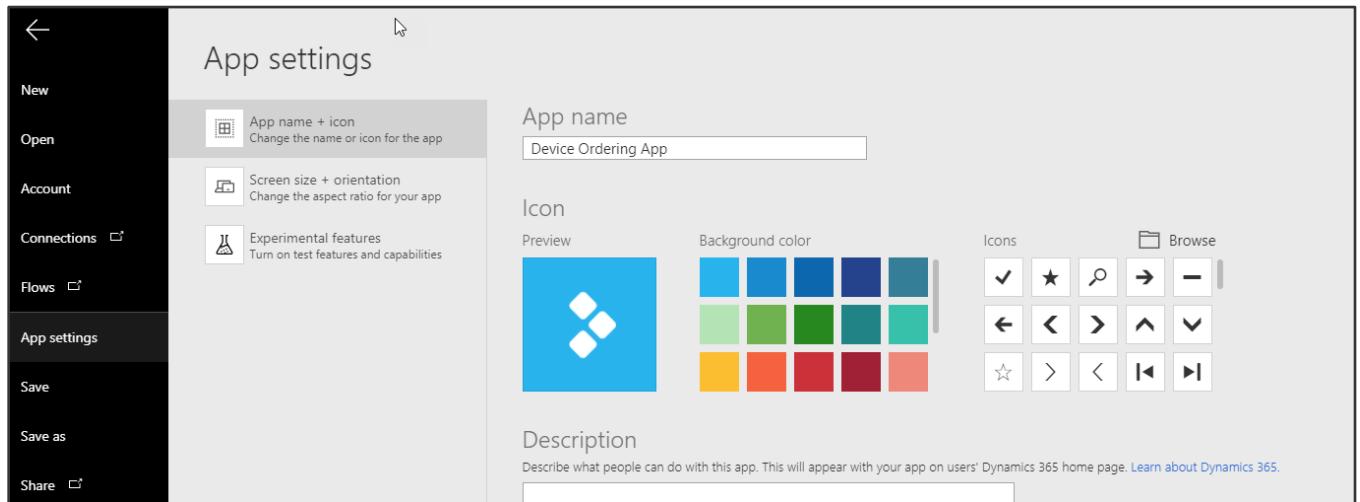
In this task, you will save an initial version of the app. It is a good practice to keep saving app updates at regular intervals.

1. Click File.



In the application settings page, you can:

- Give your app a name, such as "Device Ordering App"
- Customize the app icon – choose a background color and symbol



2. Select the Screen Size + Orientation tab to view the available screen orientation and aspect ratio settings. For this app, we will leave it at the default setting of Landscape with 16:9 aspect ratio.

**App settings**

**Screen size + orientation**  
Choose the screen size and orientation that your users will most likely be using.

1366 x 768

**Orientation**  
 Landscape  
 Portrait

**Size**  
 16:9 (Default)  
 3:2 (Surface Pro 3)  
 16:10 (Widescreen)  
 4:3 (iPad)

3. Select the App Name + Icon tab, name your application Device Ordering App and click Save in the left navigation.

**App settings**

**App name**  
Device Ordering App

**ICON**

Preview:

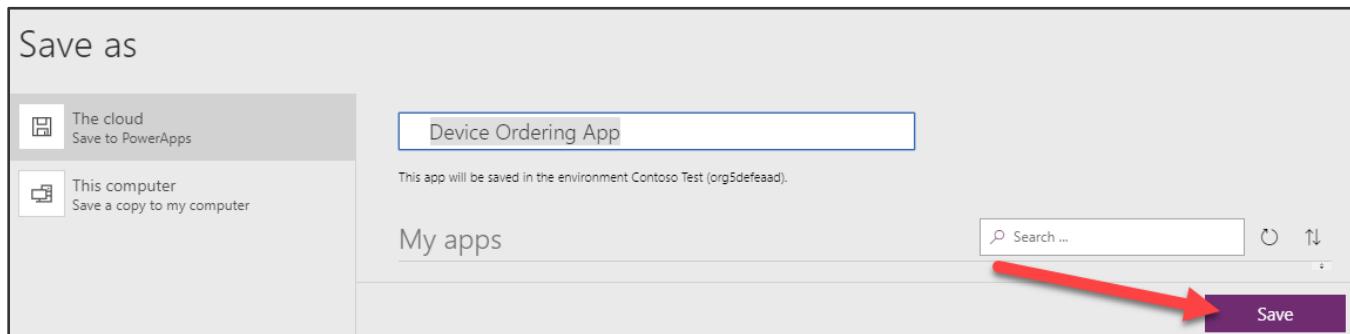
Background color:

Icons:

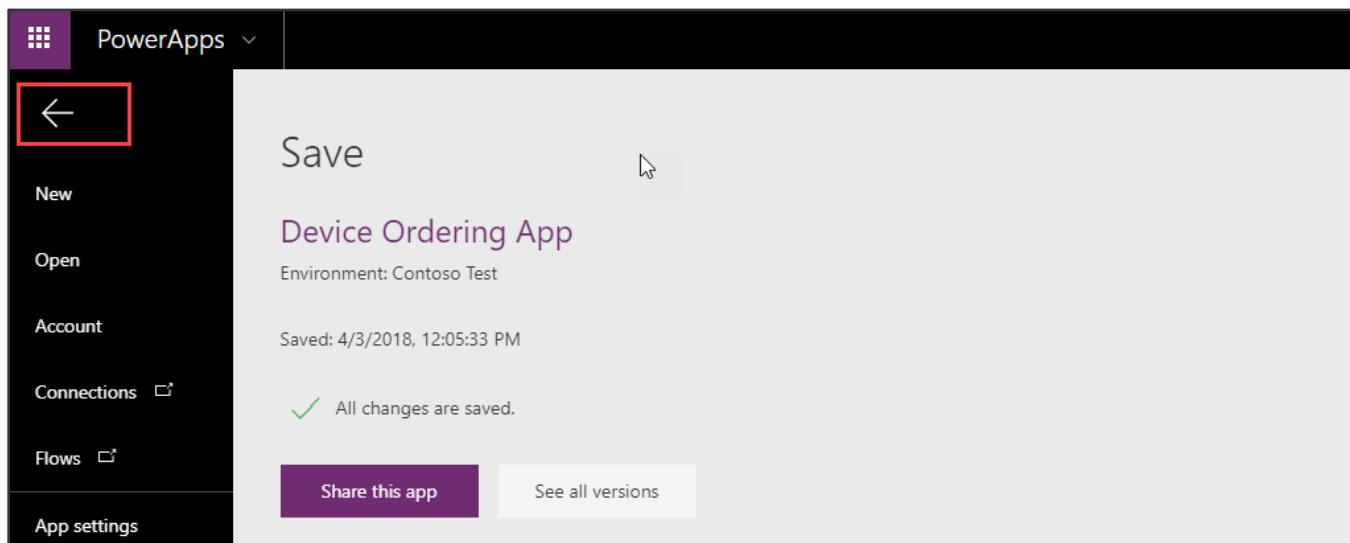
**Description**  
Describe what people can do with this app. This will appear with your app on users' Dynamics 365 home page. [Learn about Dynamics 365](#).

**Save**

4. Select **The cloud** and click **Save**.



5. After the app is saved, click the back arrow in the top left to get back to the studio.



**Tip:** In PowerApps when you save a version of your app the first version is published by default and available to everyone you share the app with. Subsequent saves are only visible to the app maker in the studio. You must explicitly publish it for all app users to get the update. For more details on saving, publishing and sharing apps, see:

<https://powerapps.microsoft.com/tutorials/save-publish-app/>

<https://powerapps.microsoft.com/tutorials/share-app/>

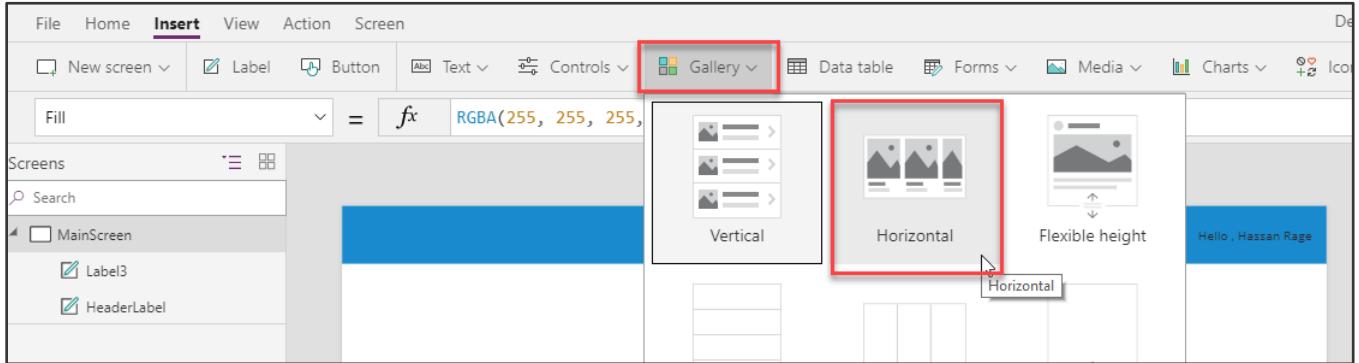
<https://powerapps.microsoft.com/blog/saveandpublish/>

## Exercise 2: Add Device Gallery and Connect to Data Source

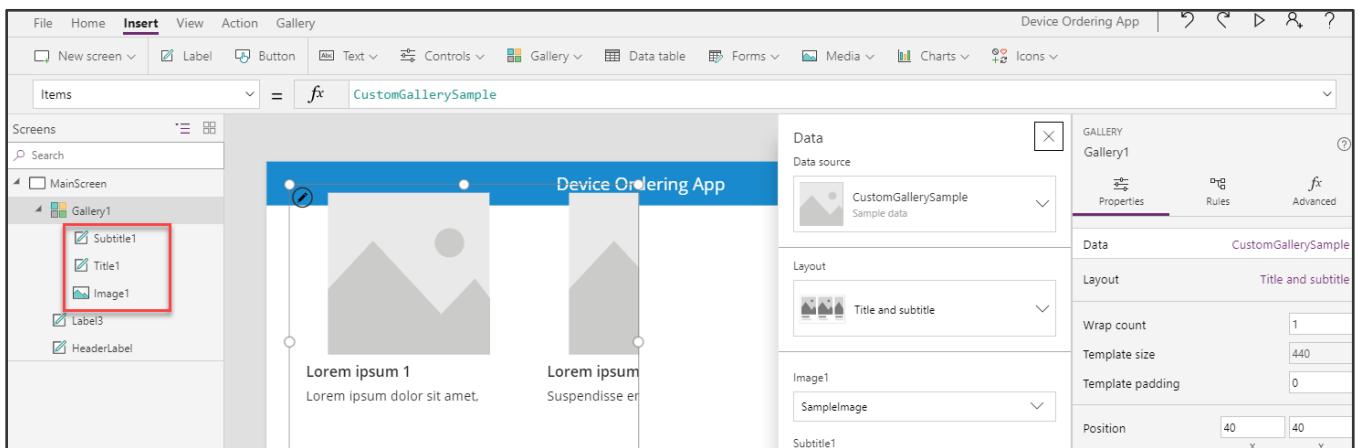
In this exercise, you will add a gallery of all available devices making it easy for users to browse the list and get a quick overview of the devices available.

### Task 1: Add device gallery

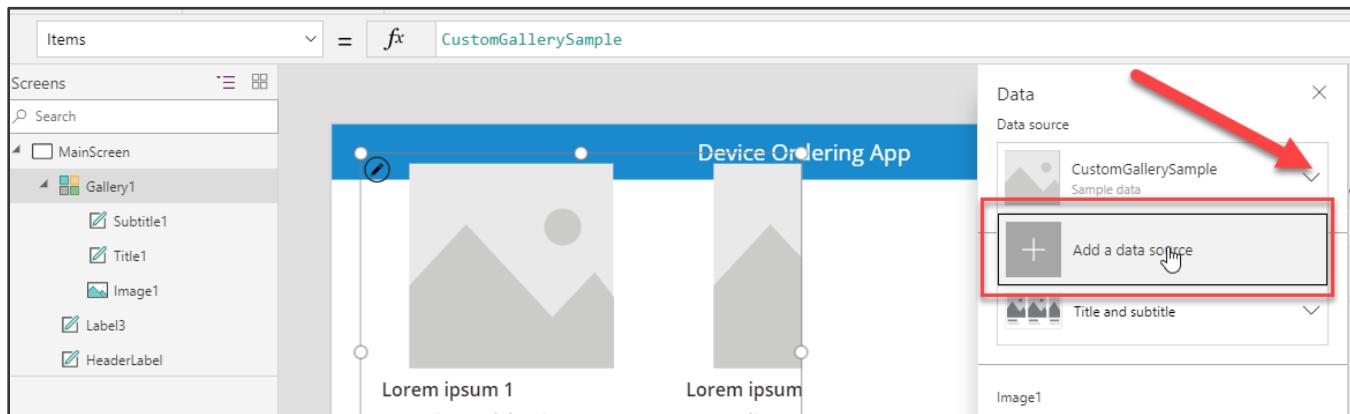
1. Select the Insert tab and click Gallery and select Horizontal.



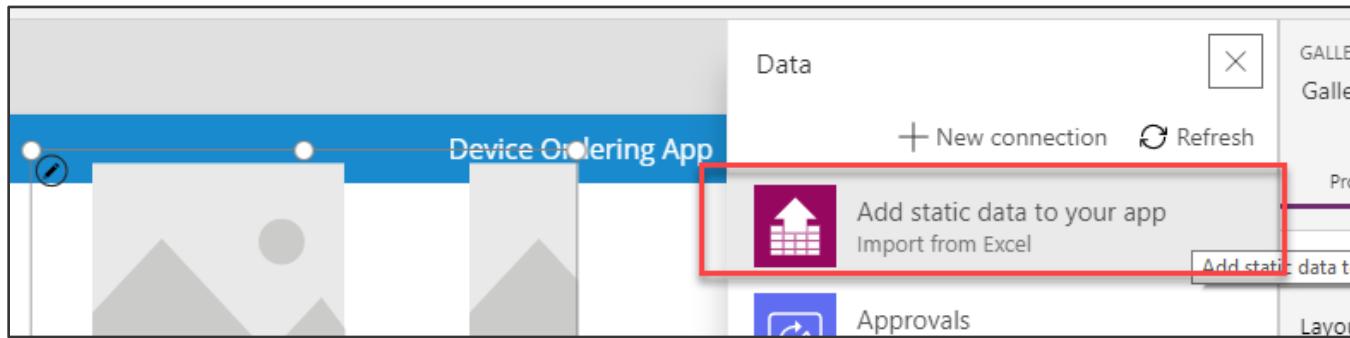
This will add a gallery called **Gallery1** onto the screen. Notice the control tree view on the left displays this gallery with three controls within it – two labels and an image. A data pane will pop up on the right.



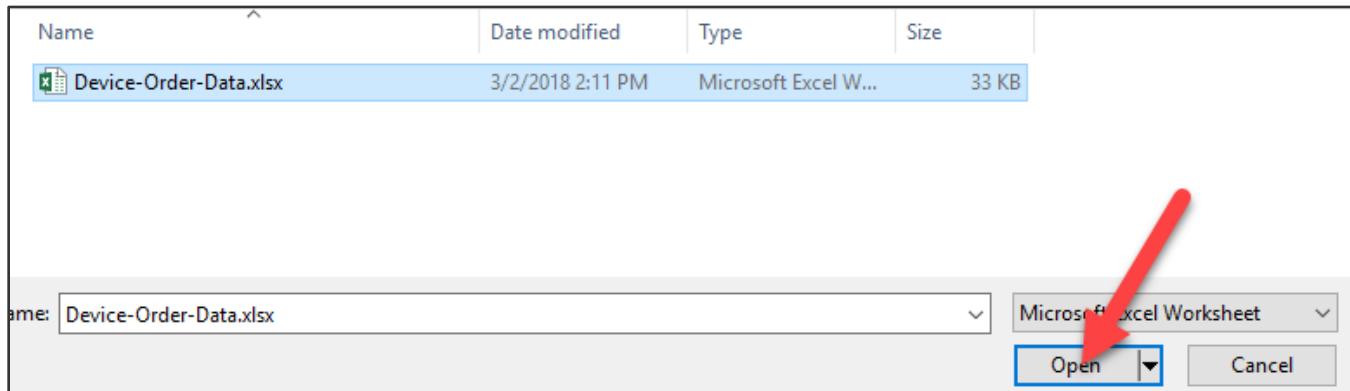
2. In the data pane, click the **Data source** drop-down and select **+ Add a data source**.



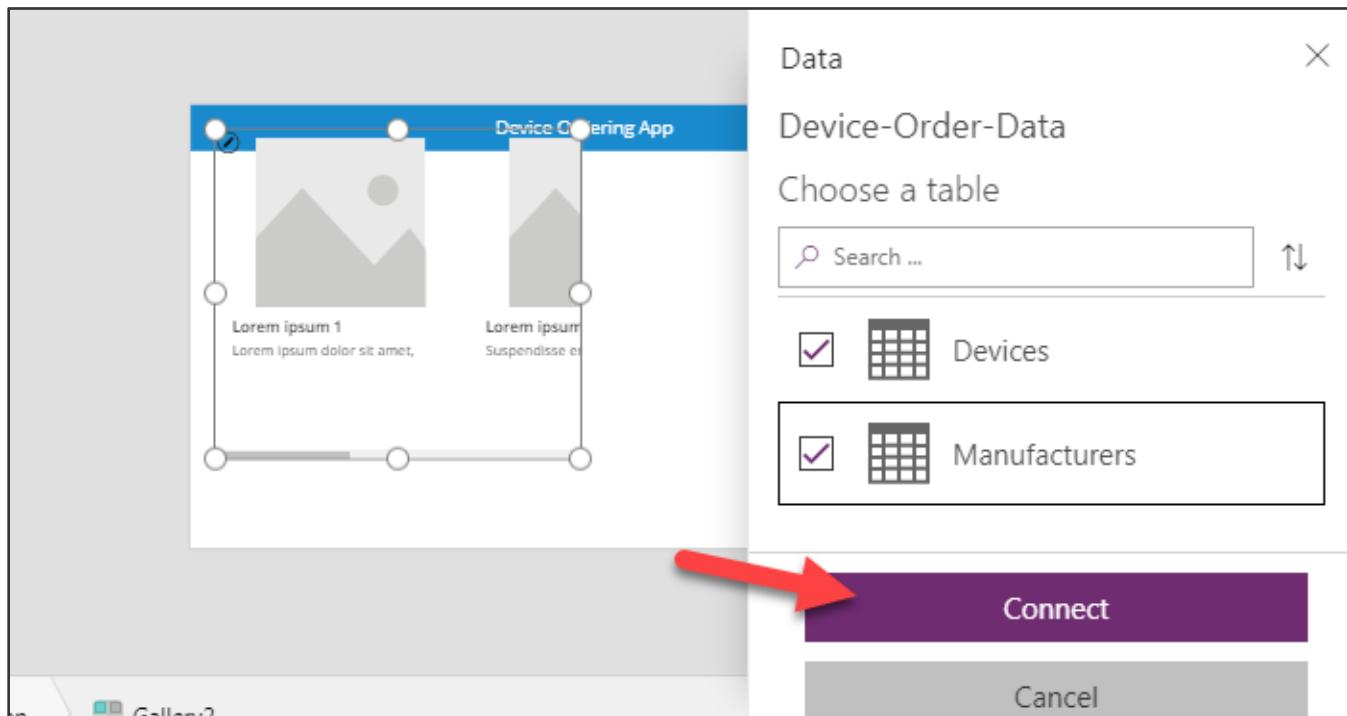
3. Select the “**Add static data to your app (Import from Excel)**” option.



4. In the File Open dialog, browse to the location where you unzipped the data file (for example C:\AIAD\PAHandsOnLabContent\ and select **Device-Order-Data.xlsx** to load it.

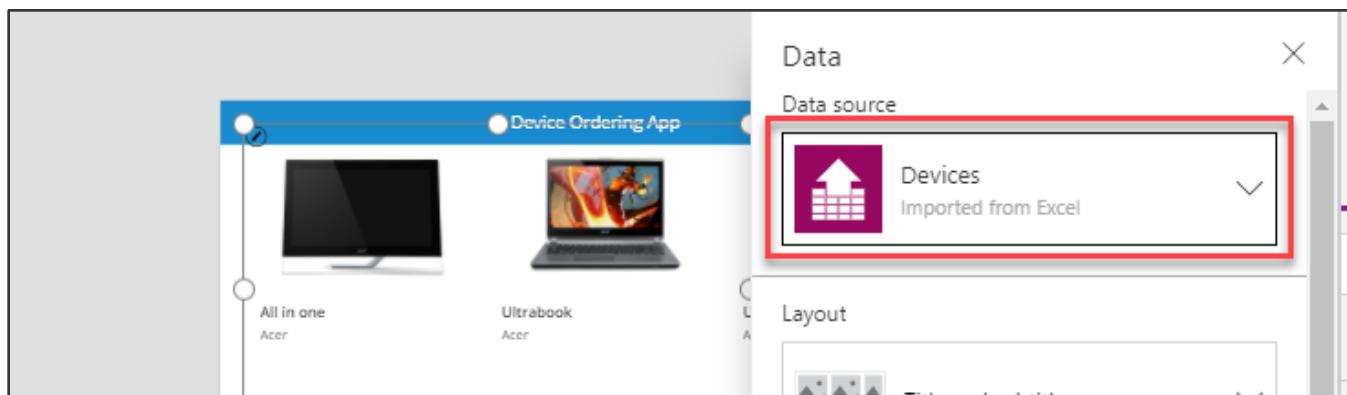


5. Select both tables, **Devices** and **Manufacturers**, and click the **Connect** button. This will add both these tables as static data into the application.

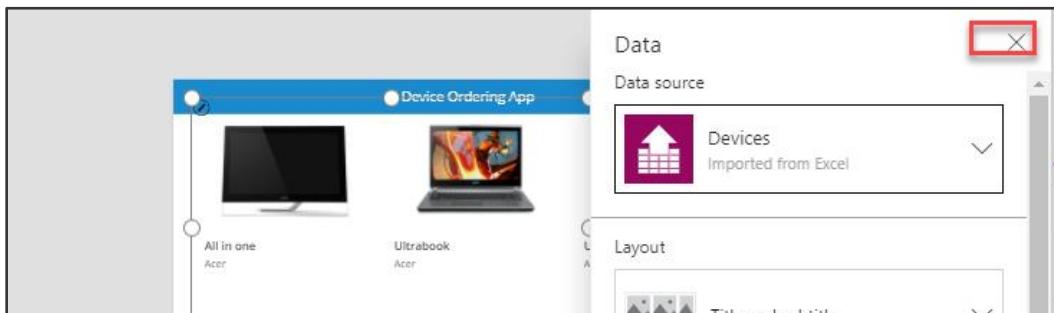


**Note:** In this lab, you will work with tables imported from a static data file and embedded as resources in the app. If you were building a real solution, the same tables would likely be stored in the cloud, such as in a SharePoint list, a SQL table, or a Common Data Service entity.

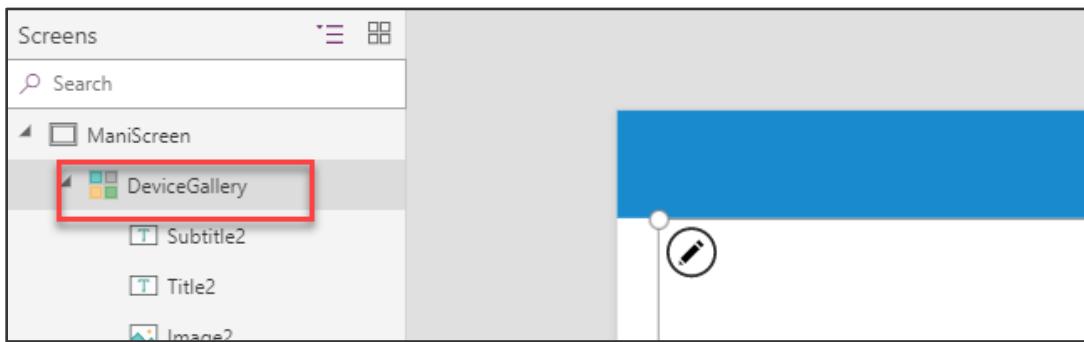
6. Select the data source for this gallery – **Devices**. Notice the gallery will get populated with data.



7. Close the Data pane by clicking the X in the top right of the pane.



8. Rename the Gallery1 to **DeviceGallery**.



#### Tips on working with galleries:

Galleries provide a powerful way to visualize tabular data in PowerApps. It is important to become familiar with customizing a gallery. Key components of a gallery: the gallery control, the template cell (first cell), and controls within the template cell.

To select the **entire gallery** – click on the gallery in the tree view on the left or click on the second or third cell. Clicking any cell that is not the first cell of the gallery will select the entire gallery. Now you can specify properties that apply to the entire gallery, such as the Items property which is the data source, the gallery fill color, borders, etc.

To customize how each item is displayed in the gallery, you will customize the template cell. Select the template by clicking in the first cell of the gallery or click on the pencil icon in the top left corner when the entire gallery is selected.

You can now add, remove and customize the controls within the template cell. These changes will then repeat across each item or row in the table.

Go ahead and select the device image in the template cell and change its size. Notice how the size of the image changes in all the cells.

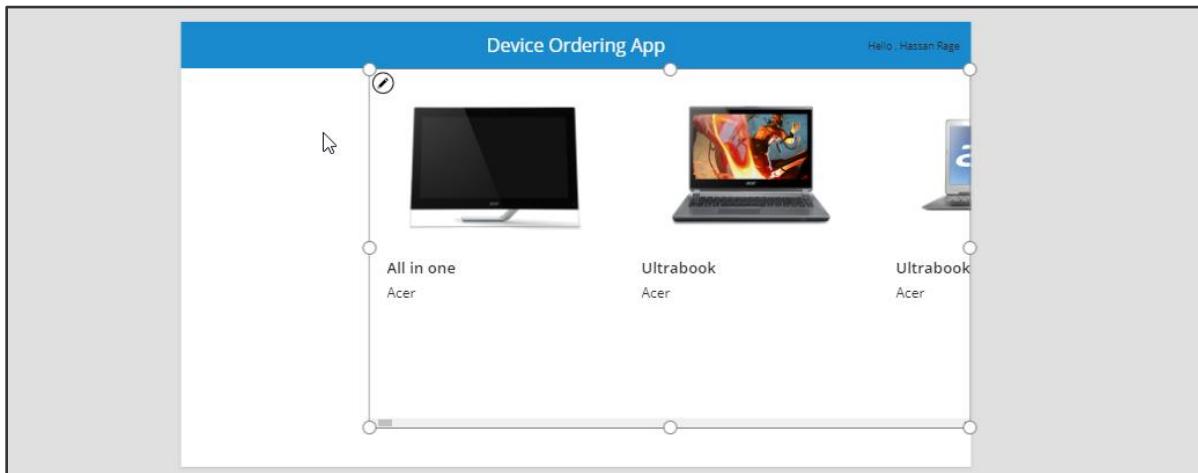
You can also test your gallery right on the canvas by holding down the Alt key to activate.

You will customize the device gallery in subsequent steps.

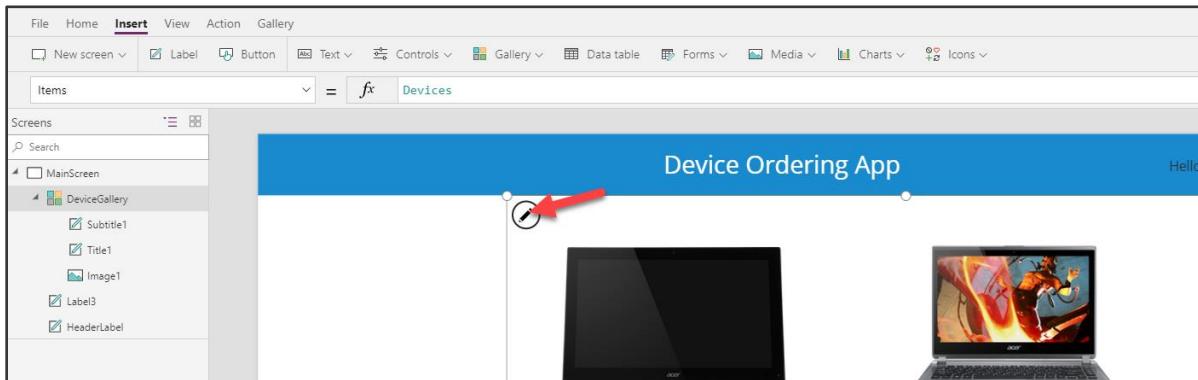
*For now, your gallery should look something like the image above. Don't worry about making it pixel perfect, the purpose of this exercise is to get your app working with a good enough UX.*

## Task 2: Arrange the device gallery

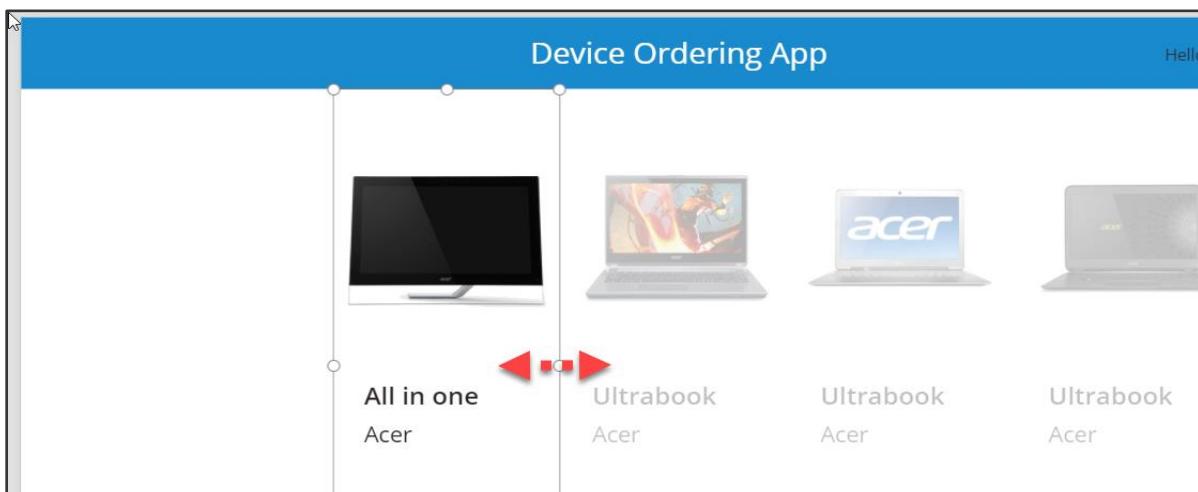
1. Resize and reposition the gallery.



2. Select the DeviceGallery and click the **Edit (pencil) icon** in the top left to edit the template cell.



3. Using the right drag control, **resize the first box to be narrower**. Notice that all the items get narrower and more devices are visible on the screen.



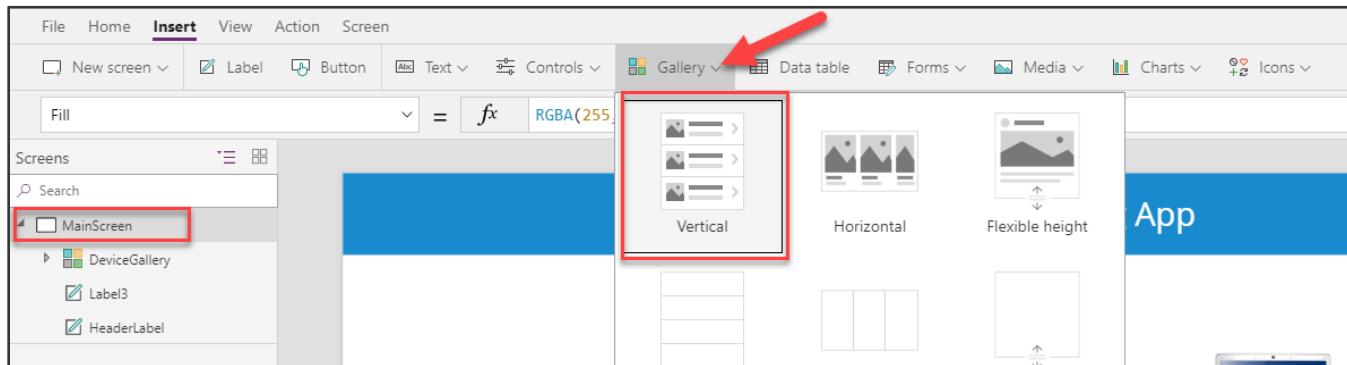
4. Narrow the image as well by **clicking on the image control and resizing it using the drag handles**. Make sure the width of the image control is positioned within the template.



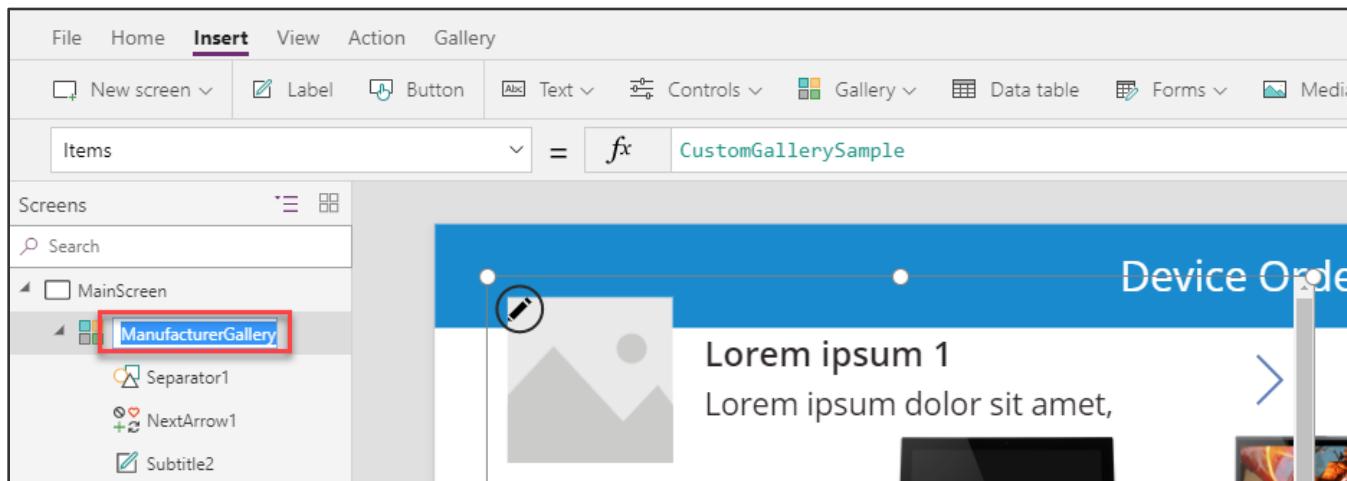
## Task 3: Add gallery to show manufacturers

In this task, you will add a second gallery that will list the various device manufacturers. This will be a single column vertical gallery down the left side of the screen, with each cell displaying the manufacturer's logo image. This gallery will later be used as a filter for the device gallery created above.

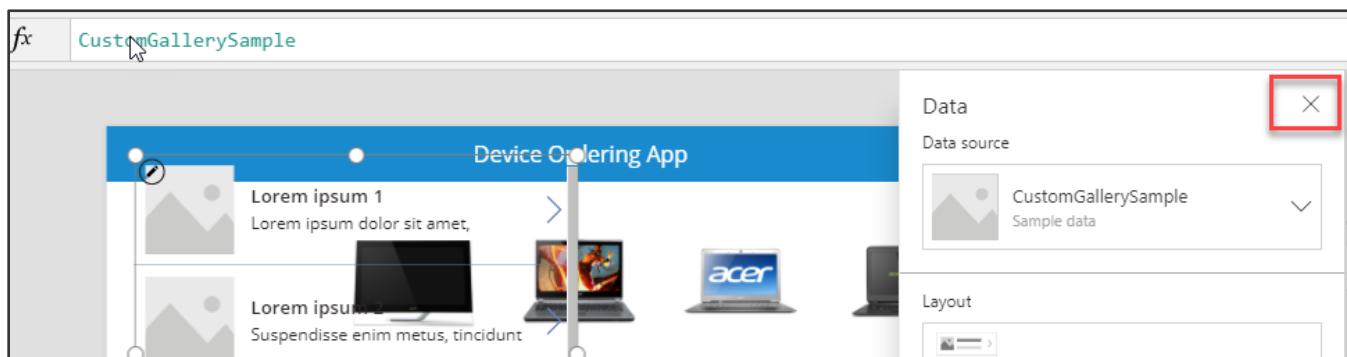
1. Select the MainScreen.
2. Select the **Insert** tab on the ribbon and open the **Gallery** drop-down, then select **Vertical**.



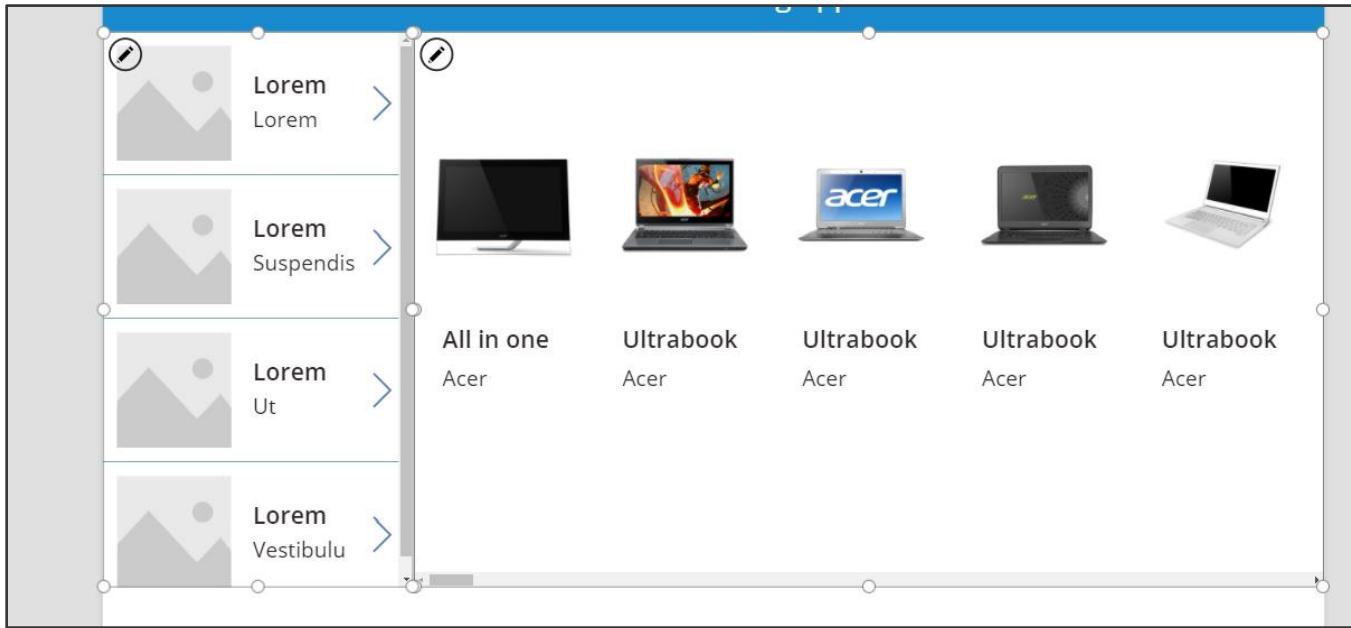
3. Rename the gallery to **ManufacturerGallery**.



4. Close the Data pane.



5. Move this new gallery so that it is left aligned with the left edge of the screen and top aligned with the top of the device gallery. Your two galleries should like the image below.



6. Select **ManufacturerGallery** (not just the template cell), in the Properties tab on the right, select **Layout** or **Data**.

Device Ordering App

Hello, Hassan Raga

**GALLERY**  
ManufacturerGallery

- Properties**
- Rules**
- Advanced**

**Data**      CustomGallerySample

**Layout**      Image, title, and subtitle

Wrap count: 1

Template size: 160

7. This will open a Data pane that allows you to configure the layout template and data source for the gallery.

Device Ordering App

**GALLERY**  
ManufacturerGallery

- Properties**
- Rules**
- Advanced**

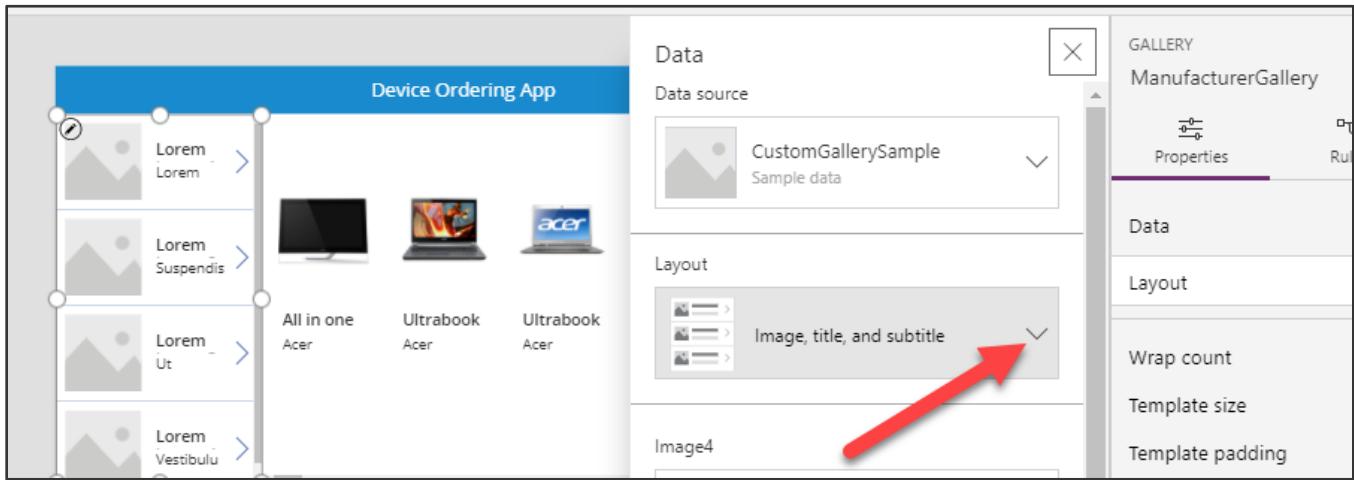
**Data**

Data source: CustomGallerySample

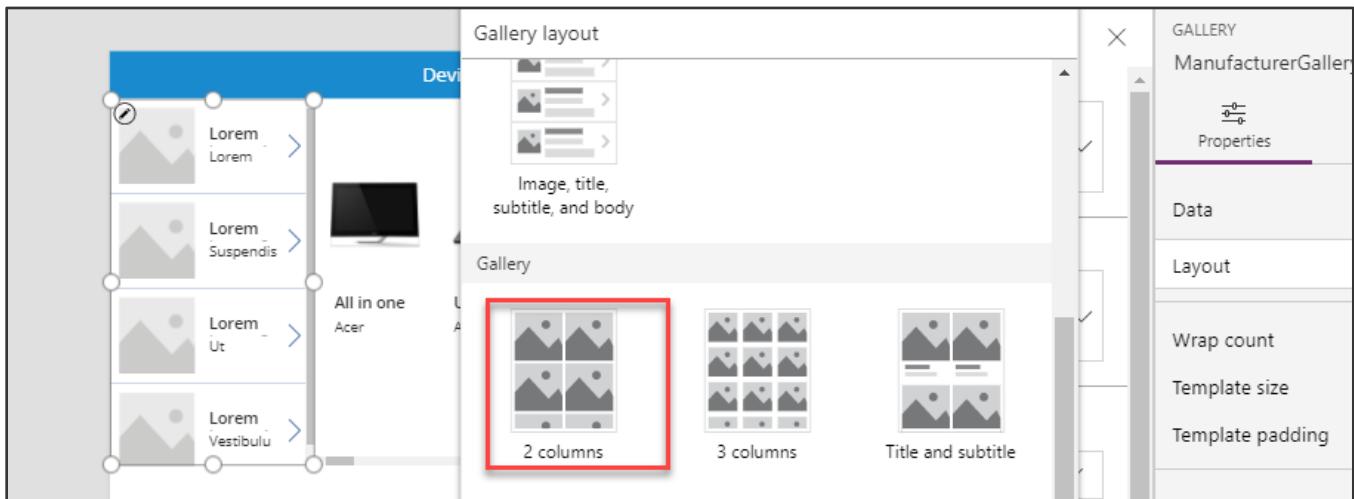
Sample data

**Layout**

8. In the **Data** pane, select the **Layout** drop-down.

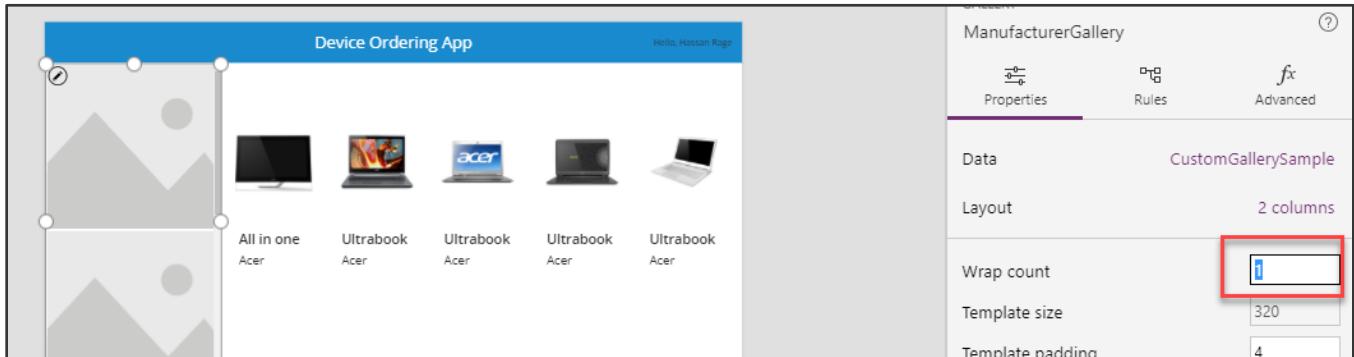


9. Scroll down and select the layout called “**2 columns**” with just images and no text.



10. Close the data pane.

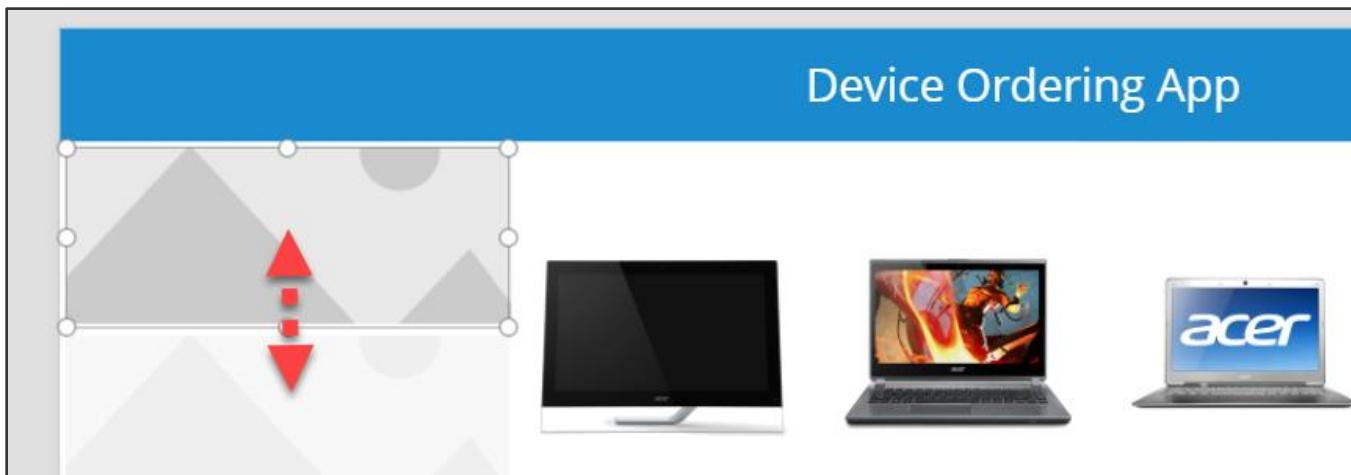
11. Click the **Properties** tab in the right pane and change the **Wrap count** from 2 to 1. This will change it to a single column gallery.



12. Select the **image control** within the gallery (the Edit Pencil icon) and **reduce its height** by dragging the middle bottom drag control upwards. The image size will reduce whereas the template size will still be expanded.



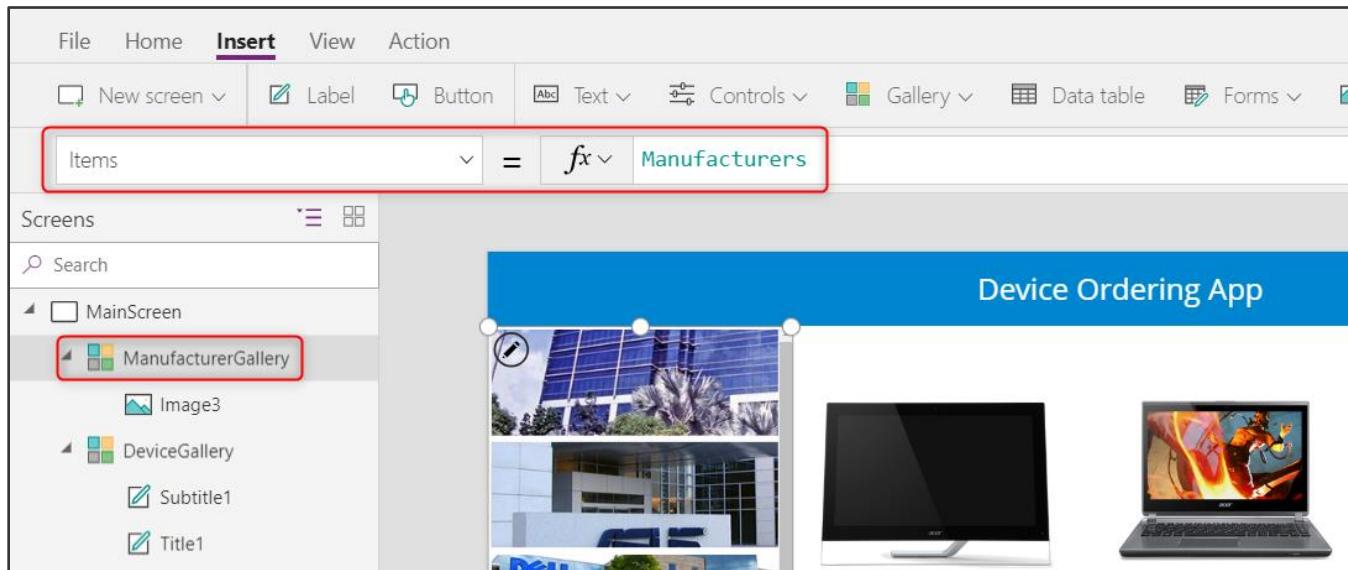
13. Reduce **the height of the template cell** to match the image below. We essentially want the image to occupy the entire cell.



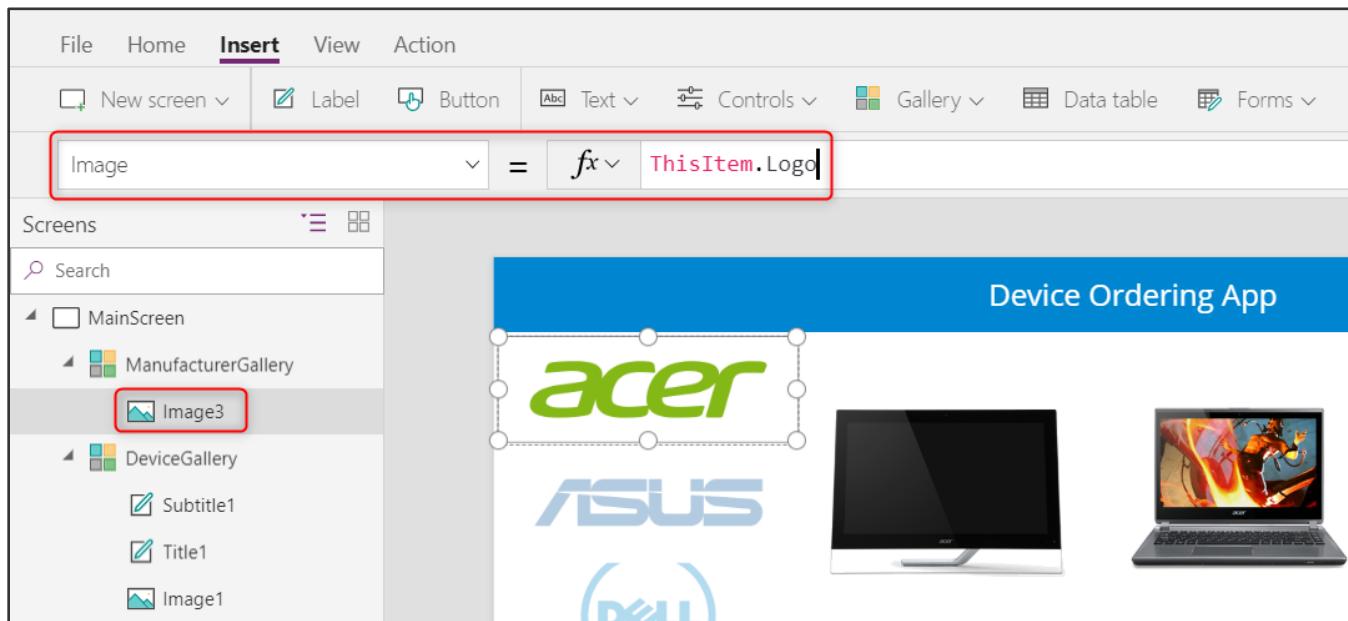
## Task 4: Connect ManufacturerGallery to manufacturers

Earlier you connected the data source using the Data tab in the right pane. You can also connect to data via the formula bar.

1. Select the **ManufacturerGallery**. Make sure the whole gallery is selected and not just the first cell.
2. Select **Items** from the property drop-down next to the formula bar and type Manufacturers in the formula bar. Notice that the gallery gets populated with images of buildings. This is because PowerApps picked a default binding which mapped to the HQ column in the table.



3. Select the image control in the first template cell in the gallery and change the value of **Image** in the formula bar from **ThisItem.HQ** to **ThisItem.Logo**. All the gallery items will now display logo images. You can also use the left tree view to select the controls, sometimes that is easier!



4. Select the first (top-most) image and using the **Properties** pane on the right, set the **Image position** property to **Fit**.

The screenshot shows the PowerApps canvas editor interface. The top navigation bar includes File, Home, Insert (selected), View, Action, and App. Below the ribbon, there are buttons for New screen, Label, Text, Controls, Media, Charts, and Icons. The 'Screens' pane on the left lists MainScreen, ManufacturerGallery, DeviceGallery, and Subtitle1. The ManufacturerGallery contains three items: Image3, Image4, and Image5. The Properties pane on the right is for the 'Image3' item, showing the 'Image position' dropdown set to 'Fit'. Other properties like 'Rules' and 'Advanced' are also visible.

5. Reduce the height of the template cell such that all nine manufacturers fit without a scrollbar. To do this, use the drag handles to first reduce the height of the image and subsequently reduce the height of the template cell. Note again that to select the template cell, select the entire gallery and click on the pencil icon in the top left.

The screenshot shows the 'Device Ordering App' canvas. The title bar says 'Device Ordering App'. On the left, there is a vertical list of manufacturer logos: acer, ASUS, DELL, hp, Microsoft, lenovo, SAMSUNG, SONY, and TOSHIBA. A red box highlights this list. To the right, there is a grid of device images. The first row contains an 'All in one' device (acer), an Ultrabook (Acer), an Ultrabook (Acer), and an Ultrabook (Acer). The second row contains an Ultrabook (Acer) and an Ultrabook (Acer). The third row contains an Ultrabook (Acer) and an Ultrabook (Acer).

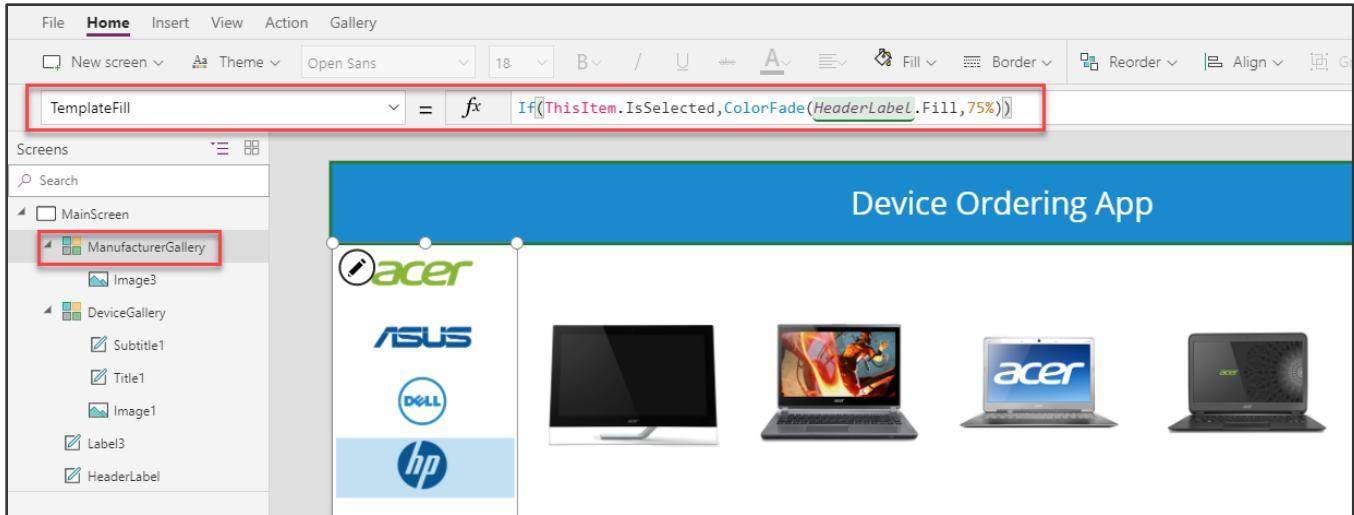
## Task 5: Highlight the selected item in the gallery

In this task, you will use the **TemplateFill** property of the manufacturer gallery to specify a highlight color for the selected item

1. With the whole gallery selected, set the **TemplateFill** property to:

```
If(ThisItem.IsSelected,ColorFade(HeaderLabel.Fill,75%))
```

This is conditionally setting a Fill color if the cell is selected



You could have set a specific color or RGB value, but we recommend using the ColorFade function, so it matches the header label with a 75% fade. If you change the fill color of header label, this template fill color will automatically change.

2. Click a few different manufacturers in the gallery, notice the selected item is highlighted in a light blue color.

## Task 6: Filter the devices based on selected manufacturer

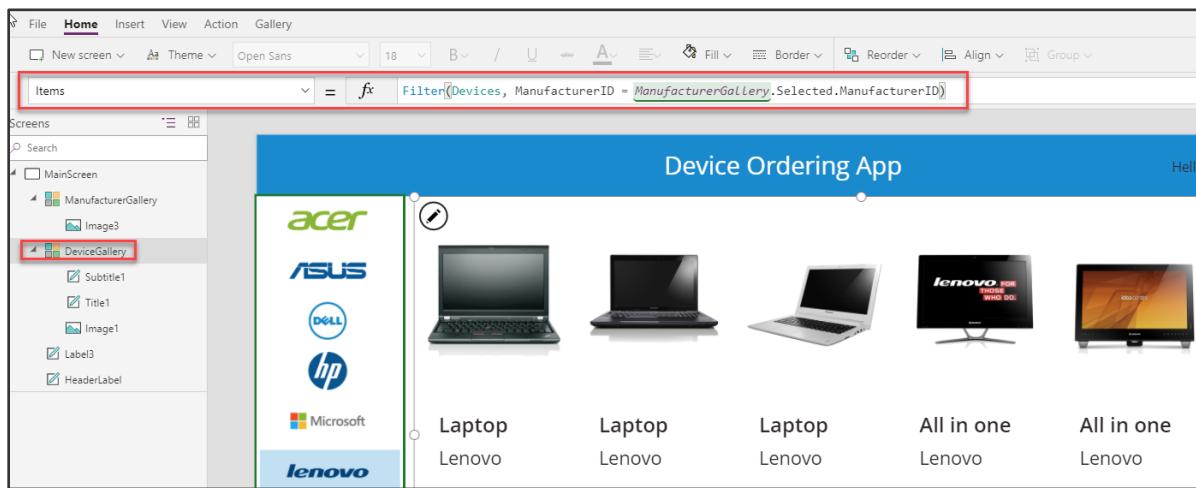
In this task, you will use the **Filter()** function to filter the items in the **DeviceGallery** to only display devices that match the selected item in the **ManufacturerGallery**.

1. Select the **DeviceGallery**. With the **Items** property selected, enter the following expression in the formula bar:  
`Filter(Devices, ManufacturerID = ManufacturerGallery.Selected.ManufacturerID)`

for alternate/European locales:

`Filter(Devices; ManufacturerID = ManufacturerGallery.Selected.ManufacturerID)`

This will filter the device gallery to only display items that match the selected manufacturer based on `ManufacturerID`.



2. Select a different item in the manufacturer gallery on the left, and you will notice the device gallery will update accordingly. Note: In some cases, the first few items won't show the selection, try selecting the 5<sup>th</sup> or 6<sup>th</sup> item if that occurs.



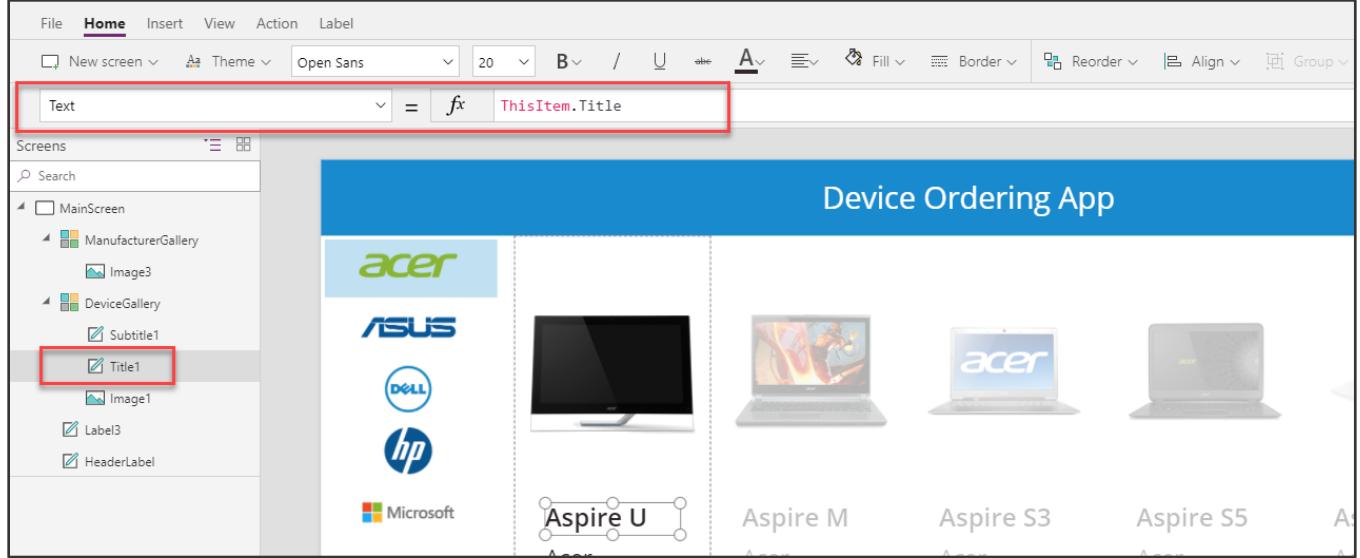
**Note:** If you get an error when entering the `Filter` command, check the name of the manufacturer gallery. The name in the filter command must match the name of your gallery.

More details on the `Filter()` function is available at <https://powerapps.microsoft.com/tutorials/function-filter-lookup/>.

A complete set of expressions is available at <https://powerapps.microsoft.com/tutorials/formula-reference/>.

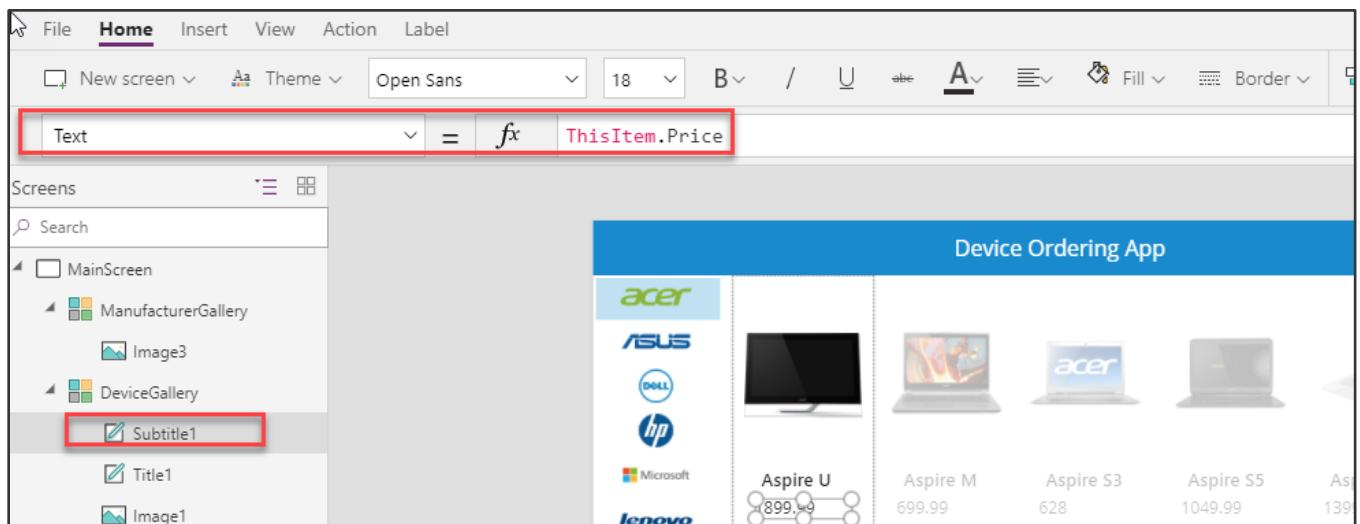
## Task 7: Configure text labels in the device gallery

1. Select the top label in the first item in the DeviceGallery. It is named Title1. It may have the default value set to the DeviceType property (e.g. Tablet).
2. Change the label to display the device name by setting the label's **Text** property to: ThisItem.Title



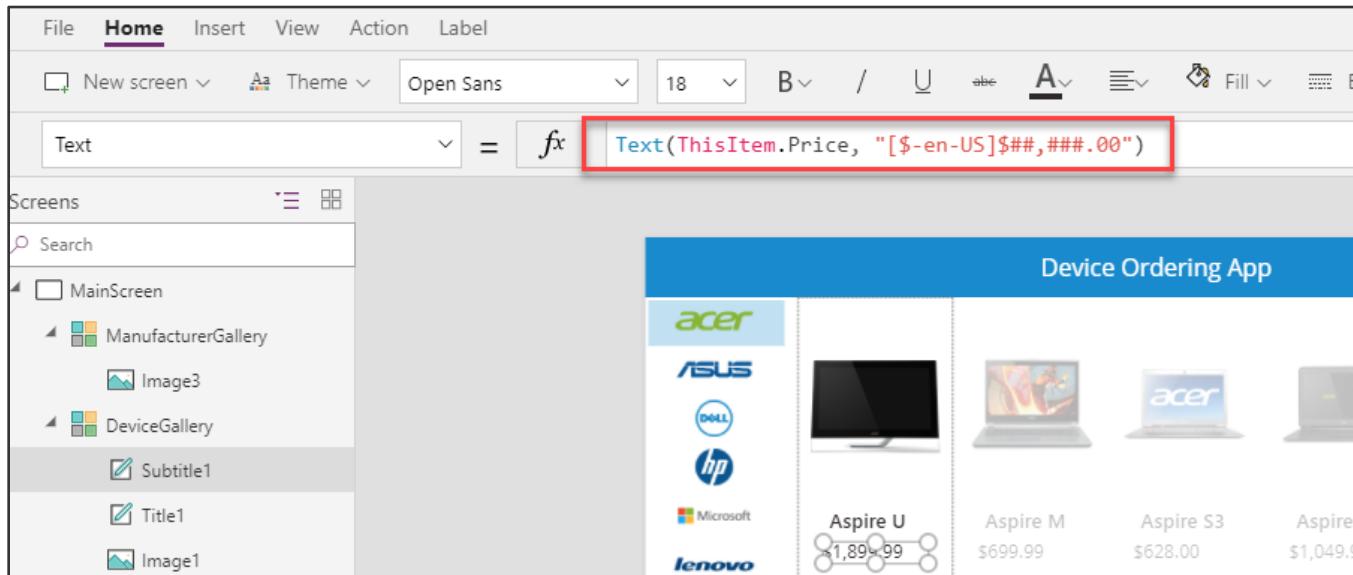
Here are some additional formatting suggestions. These are for cosmetic purposes only, feel free to skip past these:

- Expand the width of the label to the template width.  
*Notice that the second label expands as well. This is because it is X property is set to Title1.X, the X coordinate position of the Title1 label. For more on the relative positioning of controls, see <https://powerapps.microsoft.com/blog/ux-patterns-control-positioning/>*
- Change the **PaddingLeft** from 0 to 10.
- Change the font to **Segoe UI**.
- 3. Select the second label.
- 4. In the property drop-down list, select the **Text** field and change it from ThisItem.ManufacturerName to ThisItem.Price.



5. To add the \$, use the text format expression: `Text(ThisItem.Price, "$##,###.00")` or for alternate/European locales:

**Note:** After you enter the above value in the formula bar, it will automatically resolve to include your locale, e.g. [\$-en-US]. If you see an error here, it might be because your locale is not yet supported, in which case as a workaround, manually change it to [\$-en-US]:



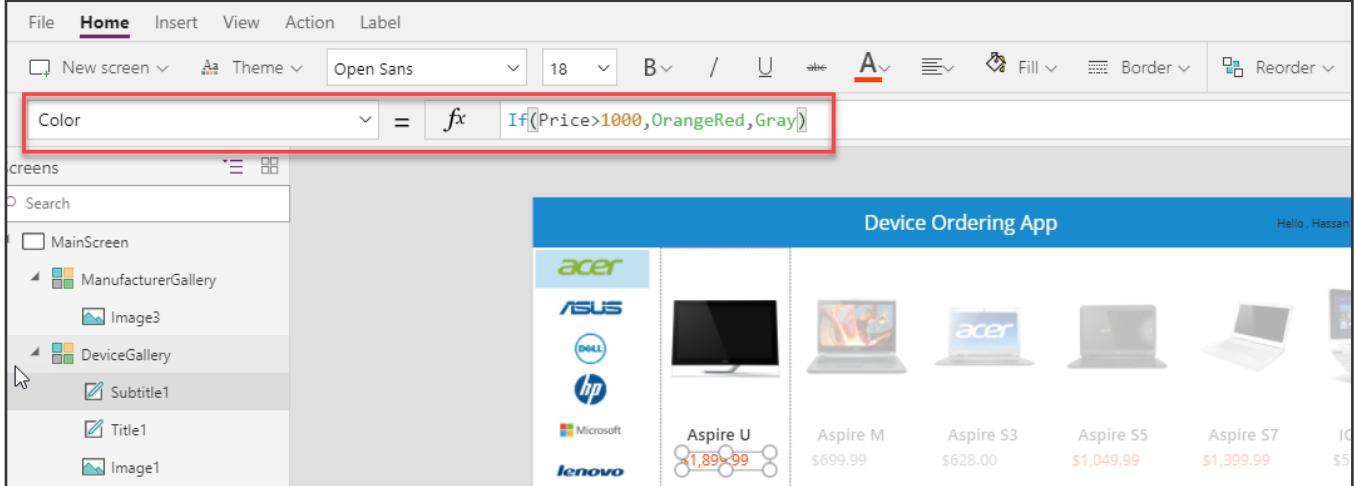
#### Optional UI enhancement:

- Like above, change the value of the **PaddingLeft** property of the SubTitle1 label from **0 to 10**. Or set it to `Title1.PaddingLeft`.
- Change font to **Segoe UI**.

## Task 8: Conditional formation to highlight devices above \$1,000

We can make it easy to spot devices that cost more than \$1,000, by displaying the price in Red.

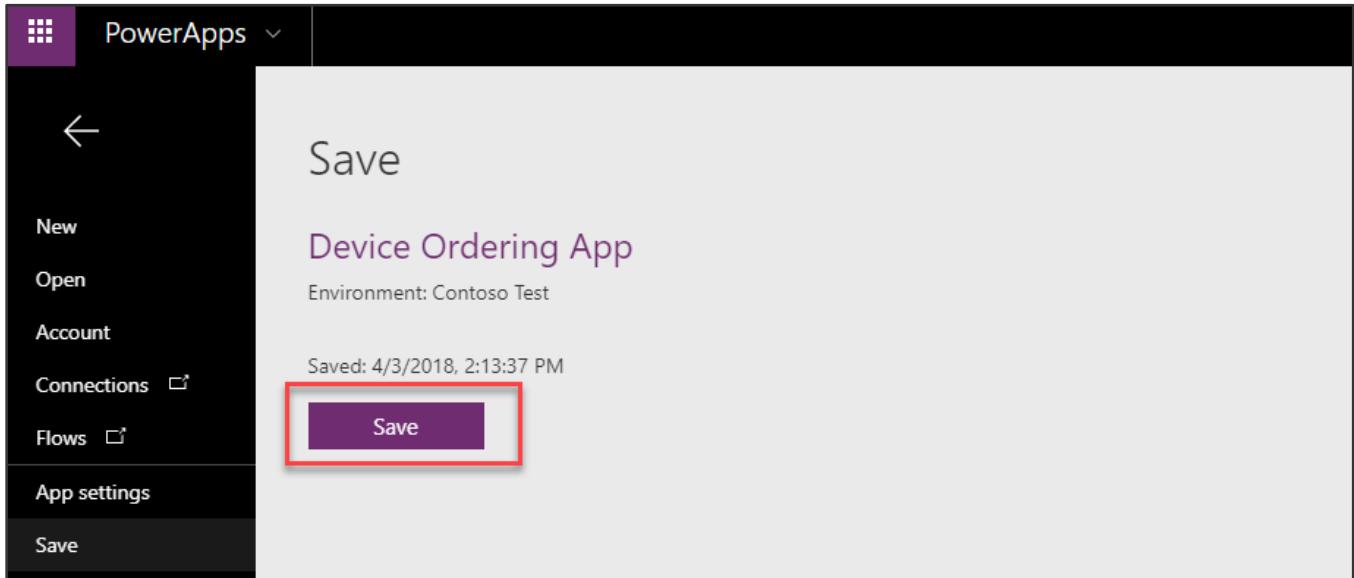
1. Select the label in the template cell that displays the price and set the **Color** to `If(Price>1000,OrangeRed,Gray)` or for alternate/European locales: `If(Price>1000;OrangeRed;Gray)`



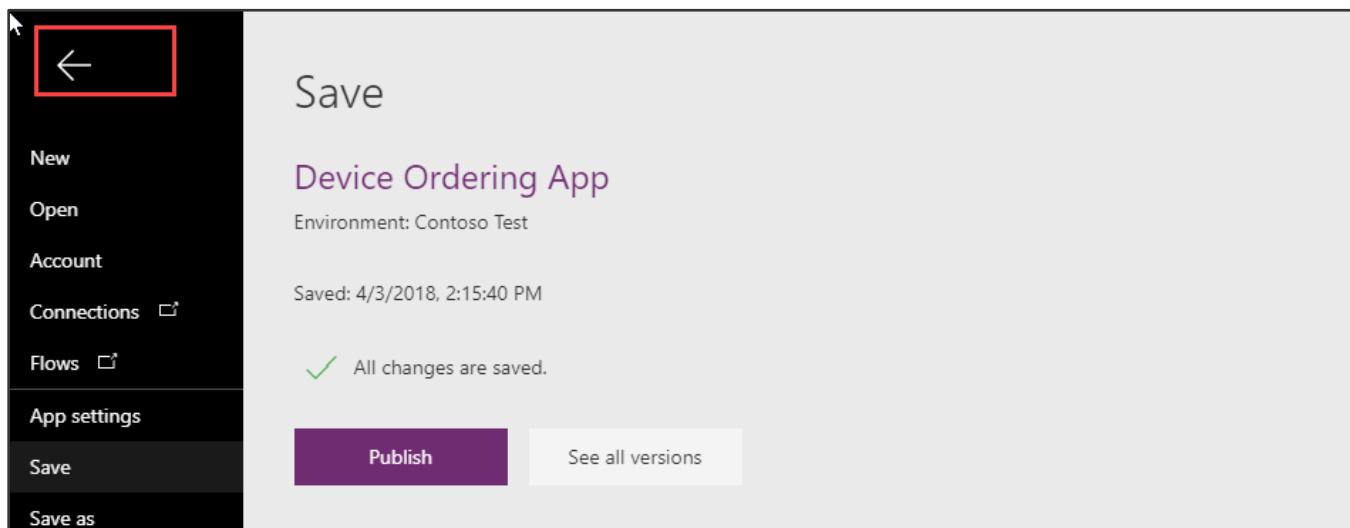
**Note:** As you are typing this formula notice that the autosuggest shows a choice of matching colors. PowerApps comes with a set of standard colors that you can easily reference in any property that accepts a color value. You can also set specific RGB values.

For a full list of Color functions and colors, see <https://powerapps.microsoft.com/tutorials/function-colors/>

2. Click File and select Save.



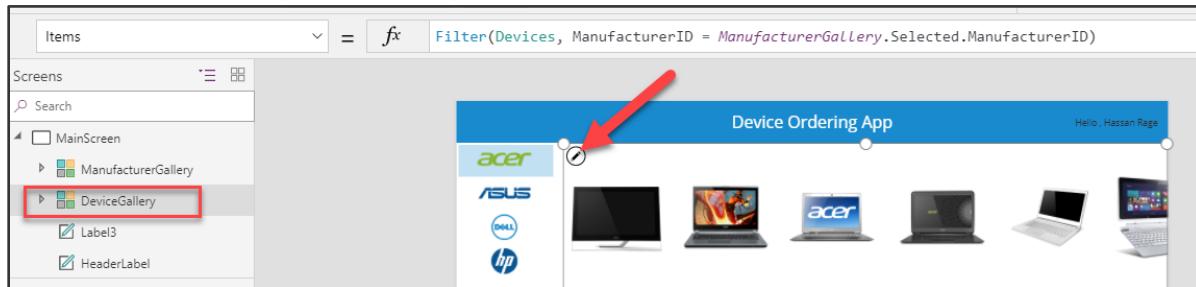
3. Click the back arrow.



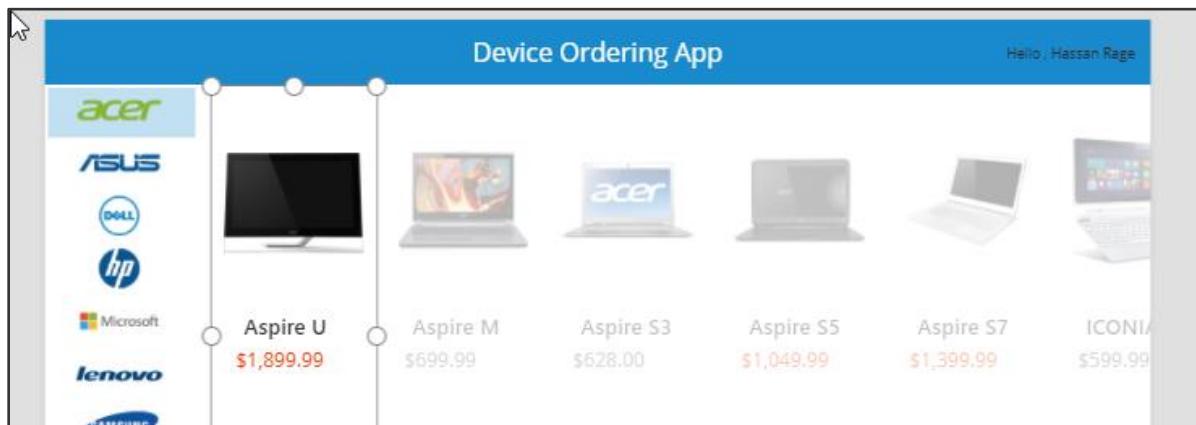
## Task 9: Add a checkbox to add a device to Compare list

We want to allow users to select multiple devices to compare before making a final selection on the next screen.

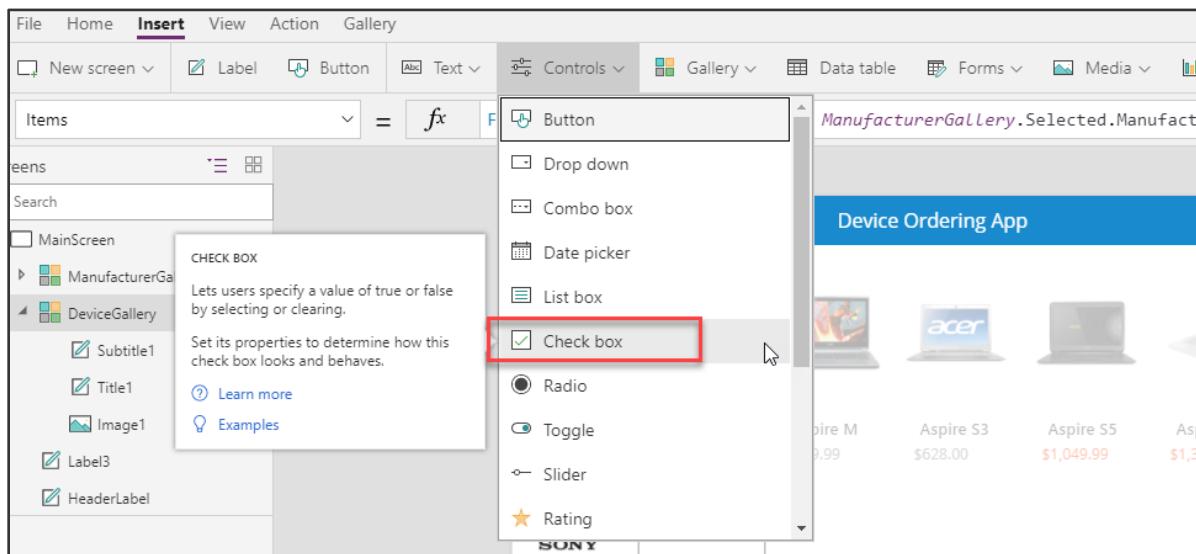
1. Select the device gallery, click the Pencil edit icon in the top left of the gallery to select the template cell.



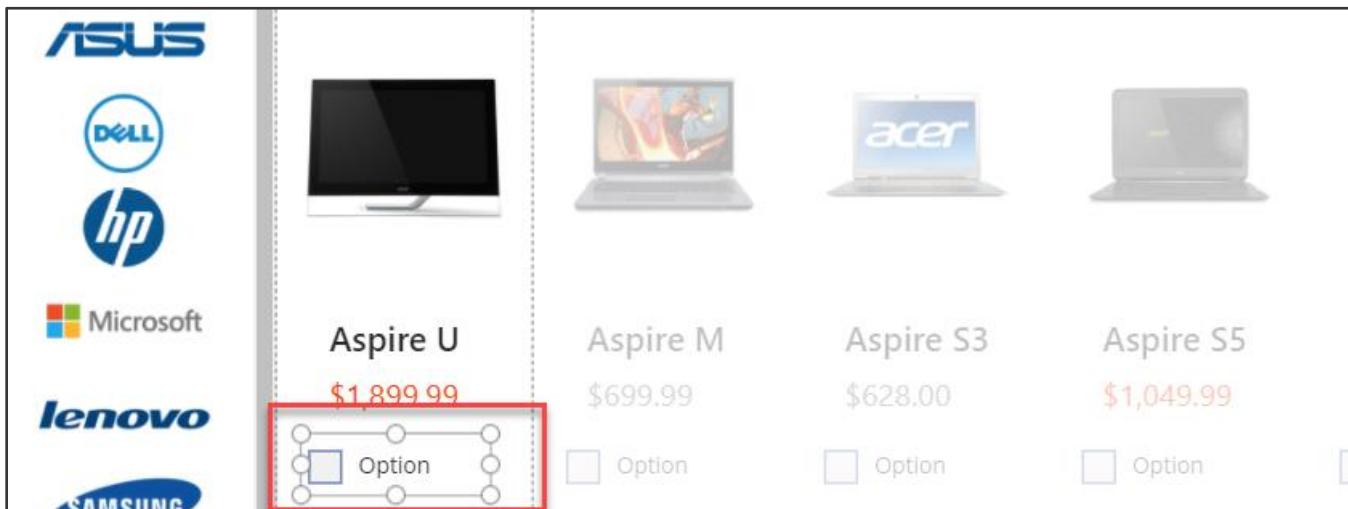
2. Make sure that only the first item in the gallery is selected (not the entire gallery).



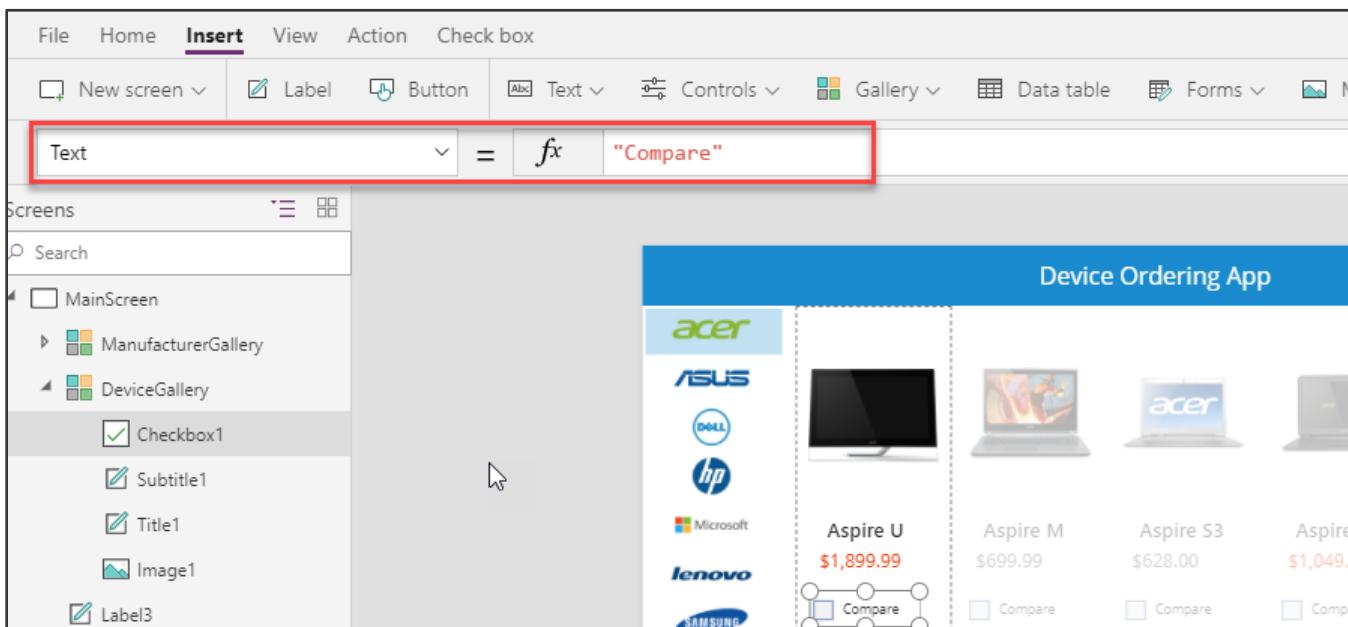
3. Add a checkbox by clicking **Insert** -> **Controls** -> **Checkbox**.



4. Move the inserted checkbox below the price.



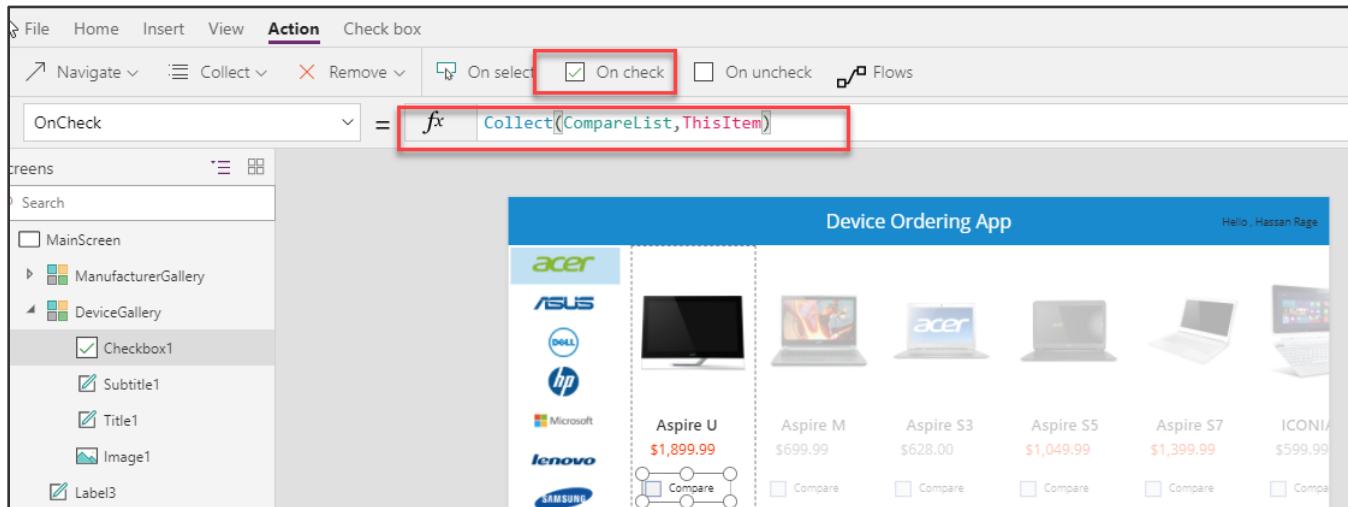
5. Change the checkbox text to “**Compare**”. You can do this by setting the **Text** property or clicking within the text of the control and typing directly into the control.



## Task 10: Create a collection for the selected devices

When a user selects a device to compare, we will add it to a collection called `CompareList`. You can think of this as an in-memory collection of devices that have been selected for comparison.

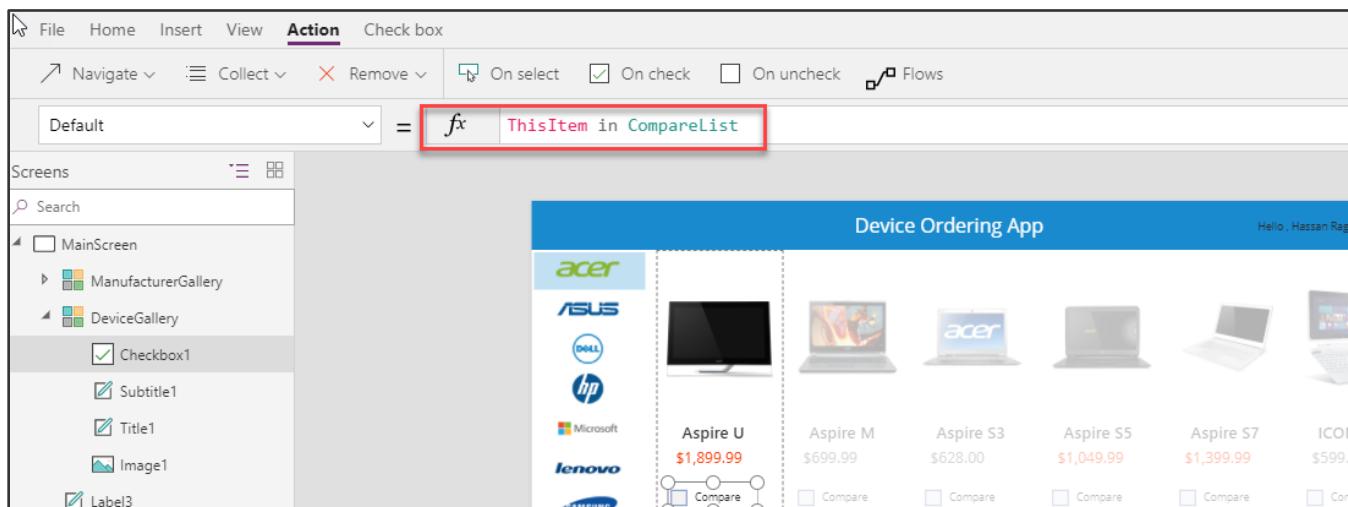
1. Select the Checkbox control and click on the **Action** tab in the ribbon, click **OnCheck** and set the value in the formula bar to: `Collect(CompareList, ThisItem)`



2. Set the **OnUncheck** value to: `Remove(CompareList, ThisItem)`

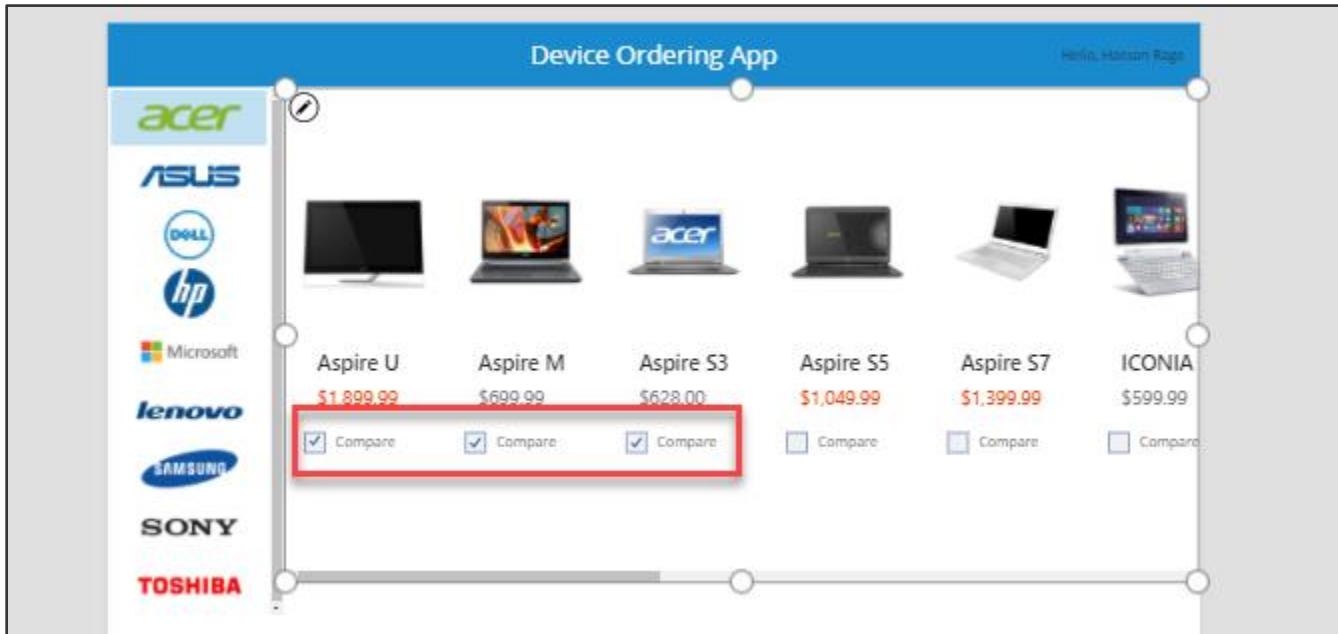


3. Set the **Default** property of the checkbox to: `ThisItem in CompareList`

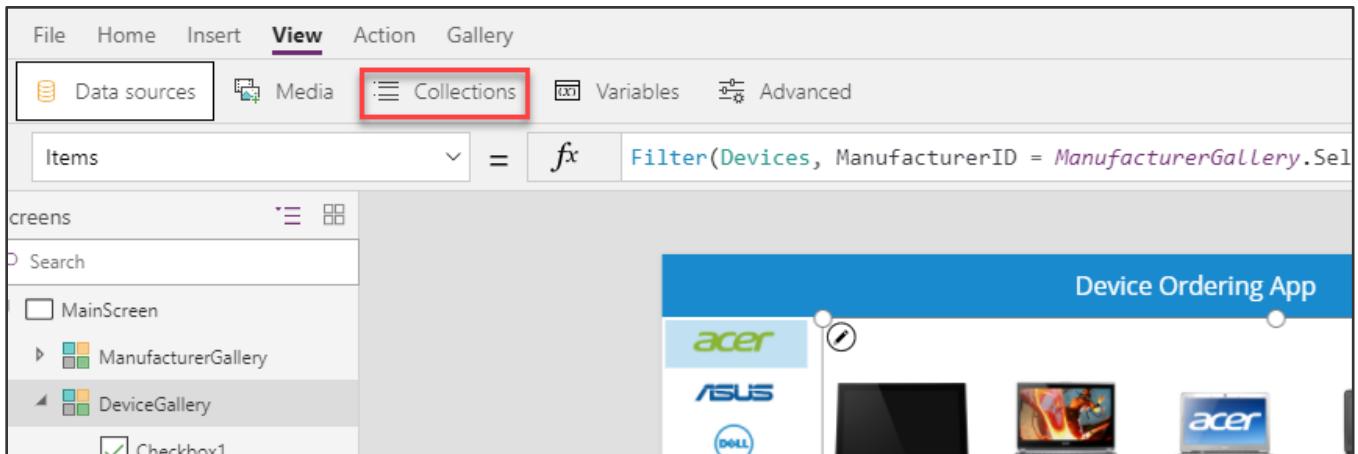


The **Default** setting of the checkbox is a Boolean true or false value that determines if the checkbox should be checked or not by default. Setting it to this formula will ensure that the checkbox is checked by default if the item has already been added to the collection since the result will be true, i.e. this item \*is\* in `CompareList`.

4. Let's test out adding items to a collection by running the app in Preview (F5) or by clicking the Preview button on the top right. Click on the checkboxes of three devices.



5. Click the **View** tab and select **Collections**.



6. You will see the **CompareList** collection and the three items you selected.

The screenshot shows a PowerApps canvas application interface. On the left, there's a sidebar with a purple header containing a grid icon and the text "PowerApps". Below the header are three buttons: "New" (highlighted with a red border), "Open", and "Account". The main area has a light gray header with the title "Collections" and a sub-header "CompareList". Below the header, there's a message: "Here's a preview of the first 5 items in this collection" and a link "Learn about working with collections". A table displays the first three items from the collection:

DeviceID	DeviceType	ManufacturerID	ManufactureName	Memory	Photo	Price	Processor	ScreenSize	Storage	Thumbnail
1	All in one	1	Acer	8GB DDR3		1899.99	Intel Core i5-3210M (2.5 GHz)	15.6	1TB	<a href="https://deviceim...ces/Acer/thur...ng">https://deviceim...ces/Acer/thur...ng</a>
2	Ultrabook	1	Acer	6GB DDR3		699.99	Intel Core i5-3317U (1.7 GHz)	15.6	500GB	<a href="https://deviceim...ces/Acer/thur...ng">https://deviceim...ces/Acer/thur...ng</a>
3	Ultrabook	1	Acer	4GB DDR3		628	Intel Core i3-2377M (1.5 GHz)	13.3	500GB	<a href="https://deviceim...ces/Acer/thur...ng">https://deviceim...ces/Acer/thur...ng</a>

7. Click the back arrow on the top left to get back to the main view.

The screenshot shows the main view of the PowerApps canvas application. On the left, there's a sidebar with a purple header containing a grid icon and the text "PowerApps". Below the header are three buttons: "New" (highlighted with a red border), "Open", and "Account". The main area has a light gray header with the title "Collections" and a sub-header "CompareList". Below the header, there's a message: "Here's a preview of the first 5 items in this collection" and a link "Learn about working with collections".

Note that each item in the collection has all the information for each machine that we get from the **Machines** data source, not just the fields we display in the Devices Gallery.

For more information on working with Collections in PowerApps, see:

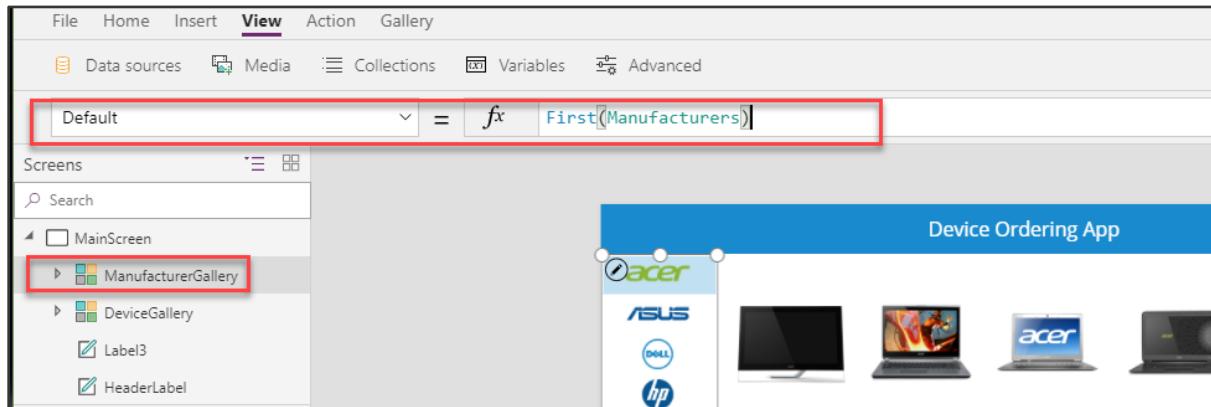
<https://powerapps.microsoft.com/tutorials/create-update-collection/> and

<https://powerapps.microsoft.com/tutorials/function-clear-collect-clearcollect>

## Task 11: Set the default selection to the first manufacturer and test the app

To avoid getting a blank list of devices when the app starts, set the default selected item in the Manufacturer gallery to be the first item.

1. Select the **entire gallery** (by clicking ManufacturerGallery in the tree view on the left) and set the **Default** property of the gallery in the formula bar to: First(Manufacturers)

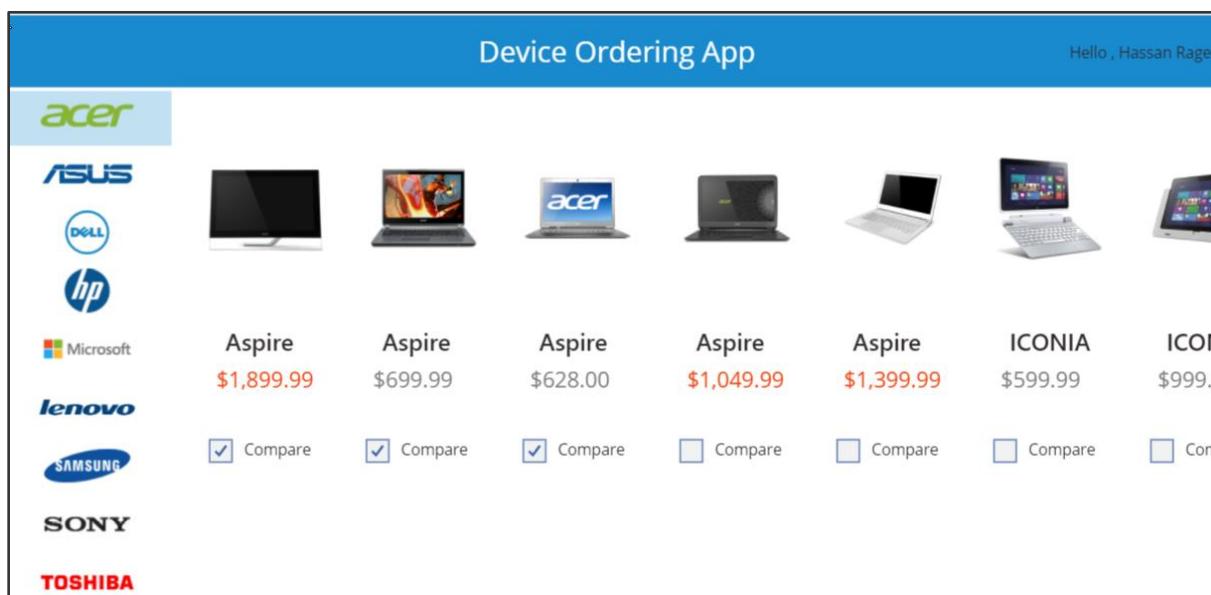


This will set it to the first item in the table.

2. To preview the app, press the Preview button on the upper right of the top menu. Pressing the F5 key will also preview the application. **Note:** You can also test your app right on the canvas by holding down the Alt key to activate buttons and other controls, as well as double-clicking to type into controls.



3. Your app should look like the image below.



4. To exit preview mode, click the X in the top right corner.



5. Save the application.

## Exercise 3: Add Second Screen

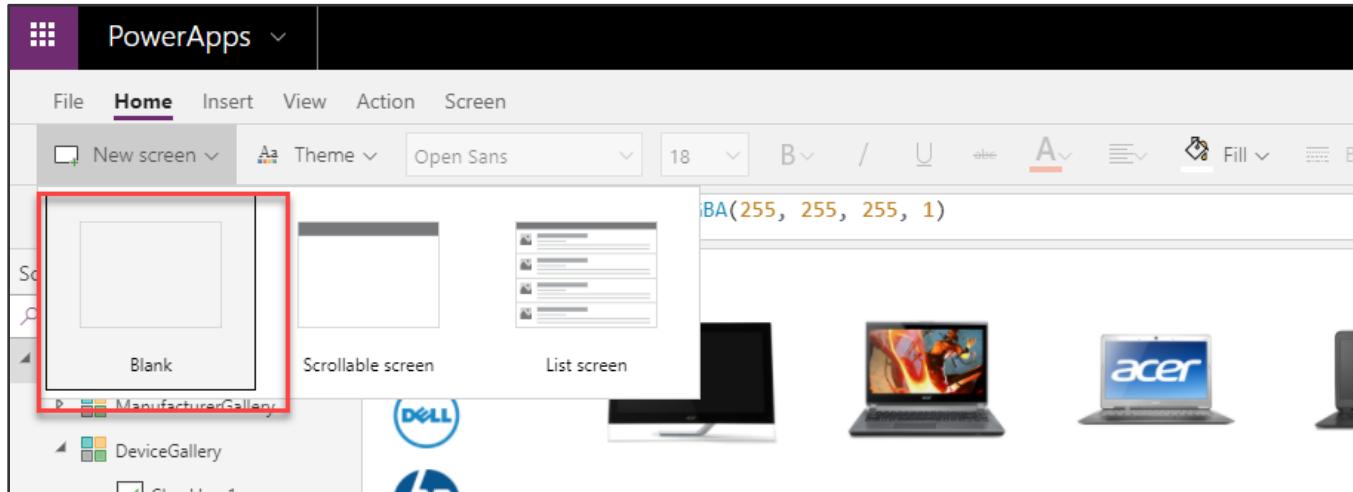
The second screen is where users compare the selected devices and then choose the one they wish to submit for approval. This screen will include:

- A back button for navigation back to the main screen.
- A list of selected devices for comparison (carried over from the main screen).
- Additional details for each device.
- Highlighting the selected device

In a subsequent lab, you will create the database entities to store the device orders and add an edit form to this screen to enter additional information and submit the request.

### Task 1: Add screen

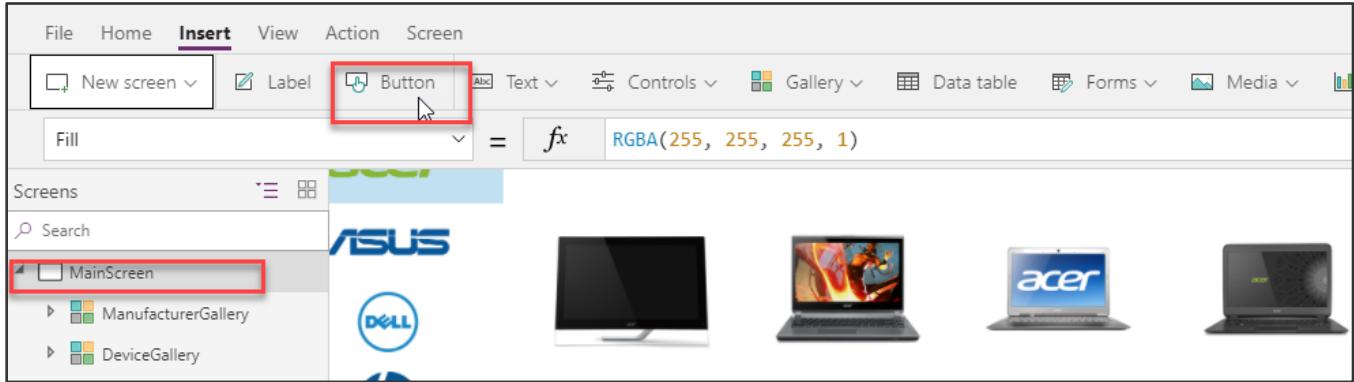
1. From the ribbon click **Home** and **New Screen** and choose **Blank**.



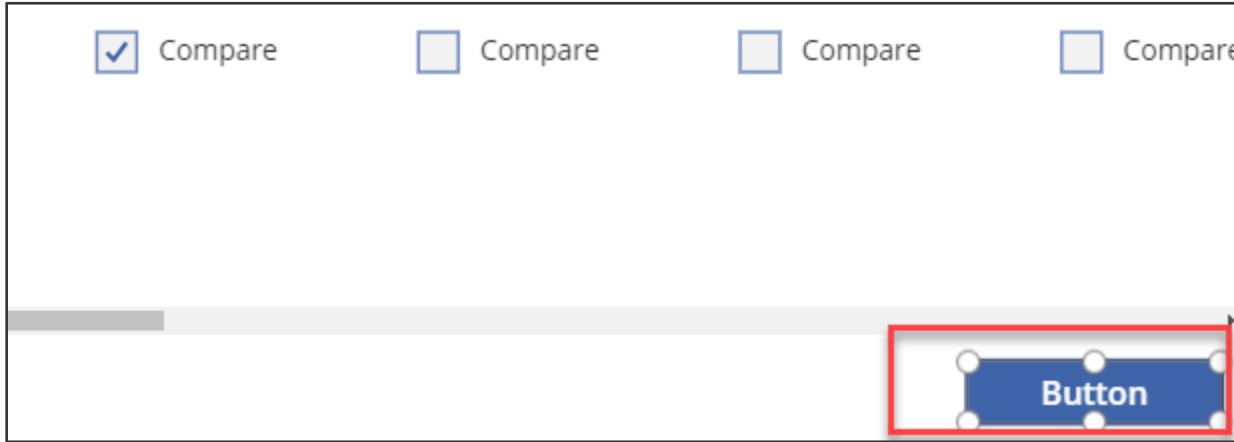
2. Rename the screen to **CompareScreen**.



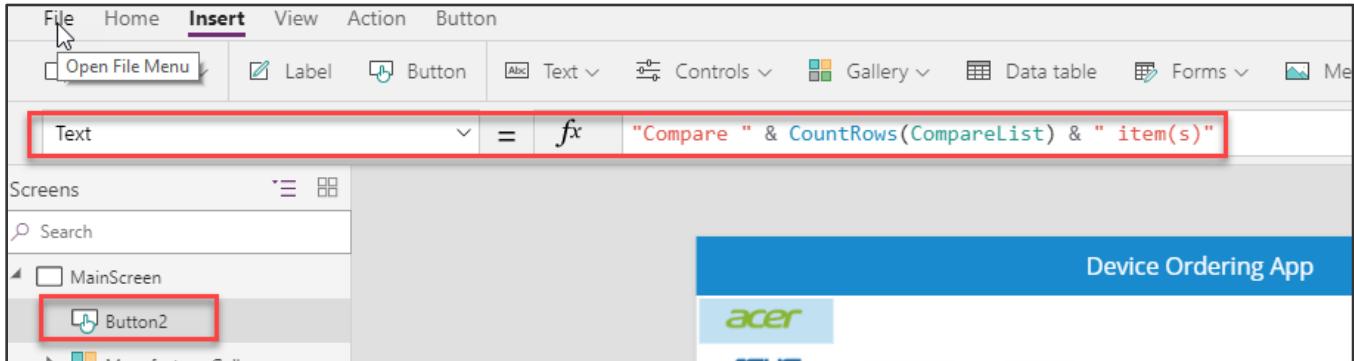
3. In the left tree view, click on **MainScreen**, click on the **Insert** tab on the ribbon and select **Button** to add a button to the screen.



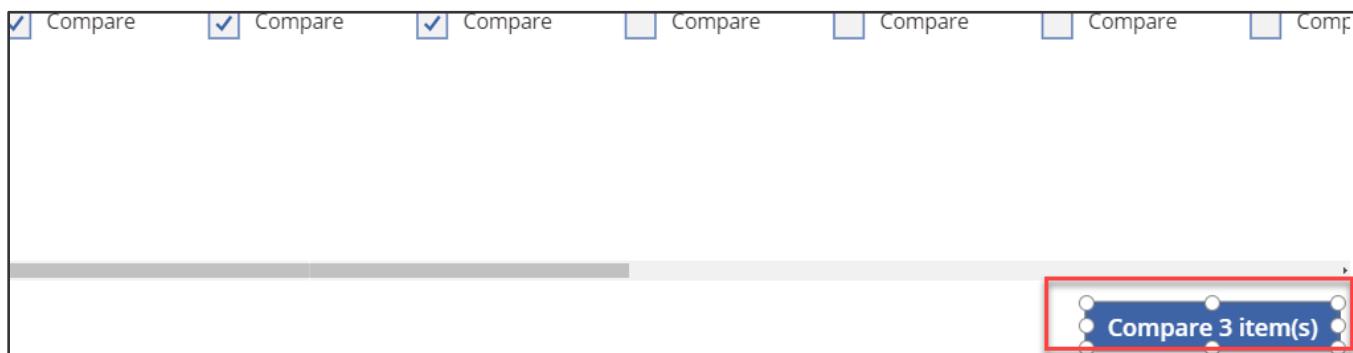
4. Place the button in the bottom right corner.



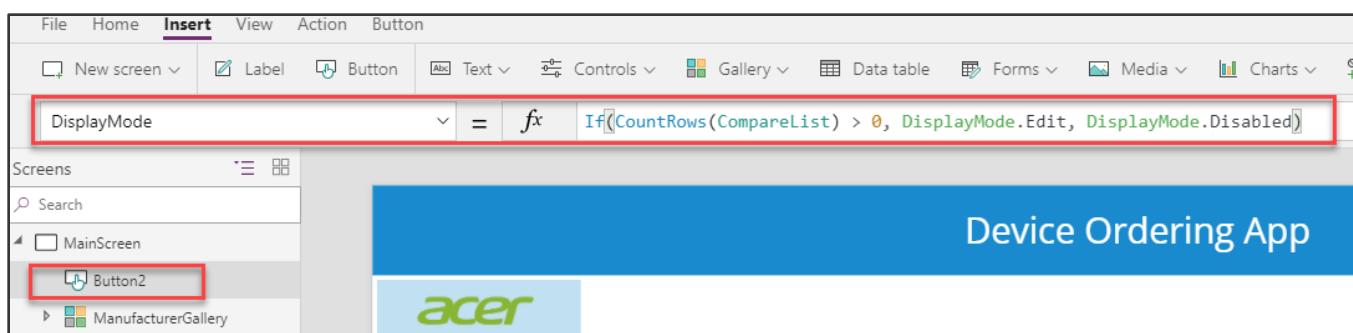
5. Set the button's **Text** property to: "Compare " & CountRows(CompareList) & " item(s)"



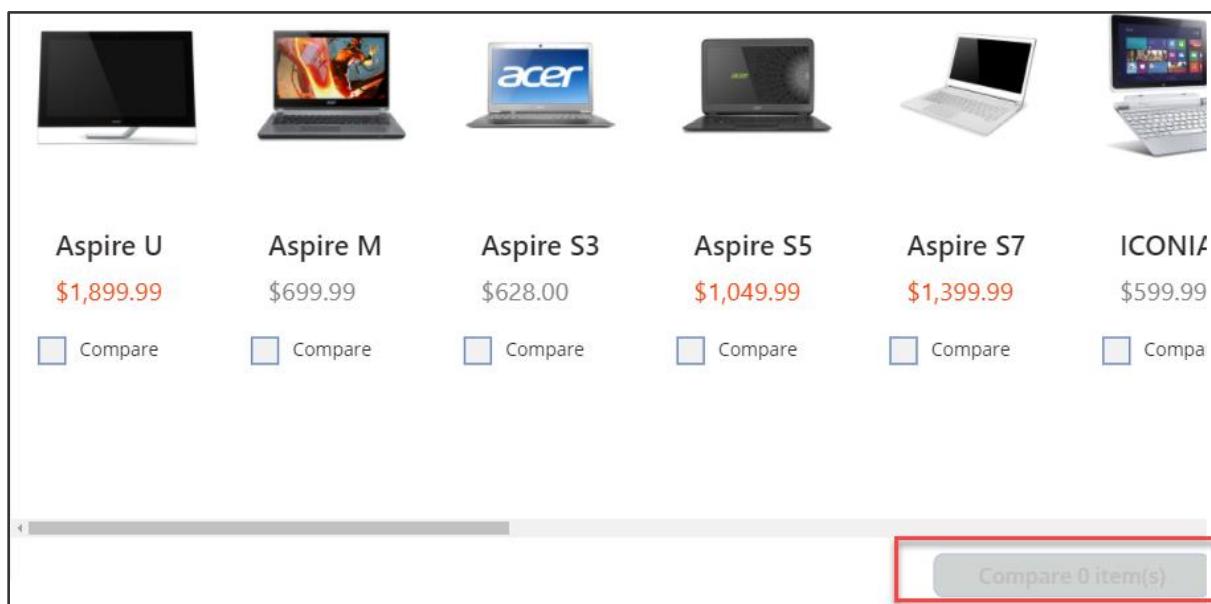
6. Resize the button, so the text fits.



7. Select the button, and set its **DisplayMode** property to Disabled if there are no items in CompareList:  
If(CountRows(CompareList) > 0, DisplayMode.Edit, DisplayMode.Disabled)



8. Unselect all devices – notice the button is grayed.

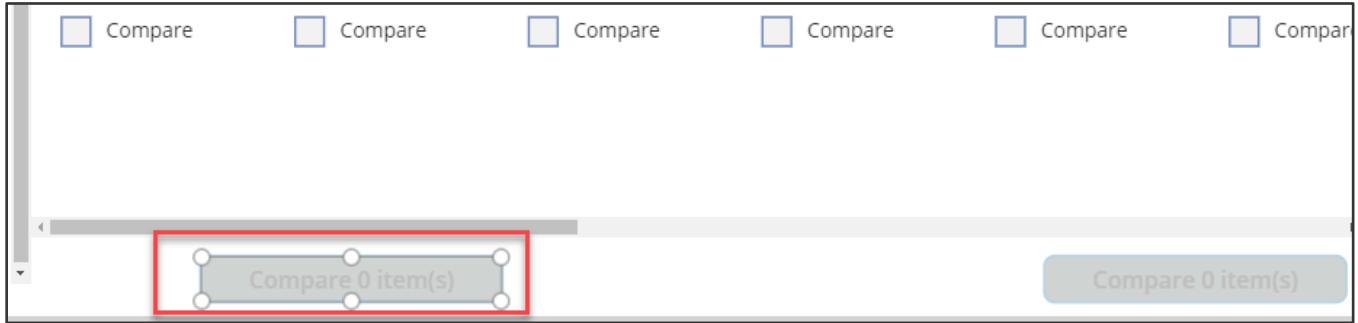


#### Optional UI enhancement:

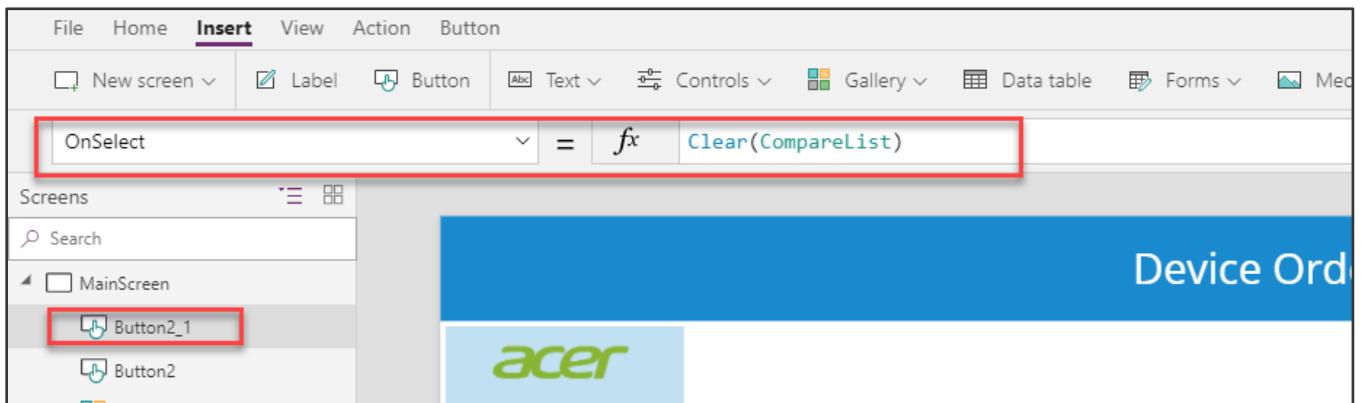
Set the **Fill** property of the button to `HeaderLabel.Fill`. This will match the button color with the header banner.

9. Select the **compare button** and **copy (Ctrl-C)** this button.

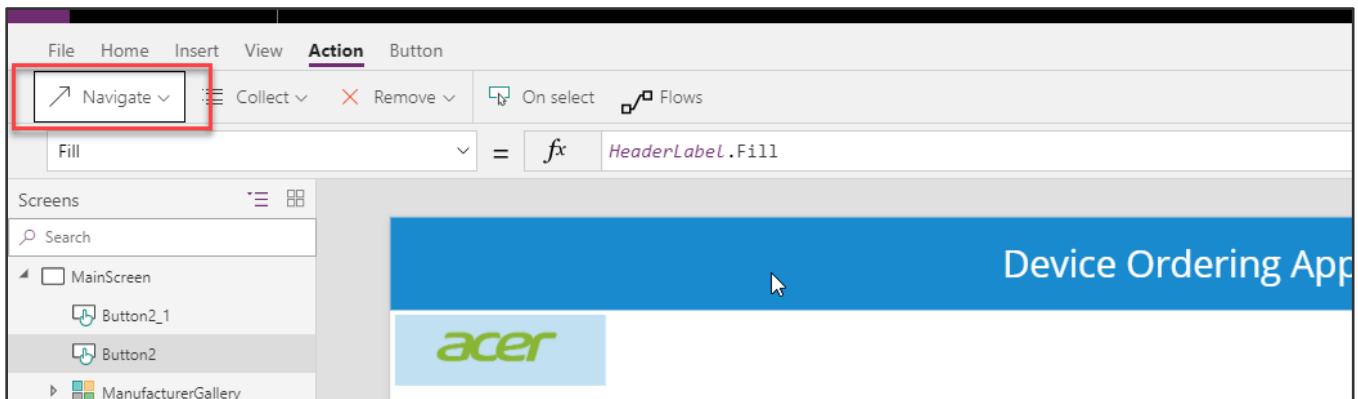
10. Paste (**Ctrl-V**) the button on the same screen.
11. Position it to the left of the compare button.



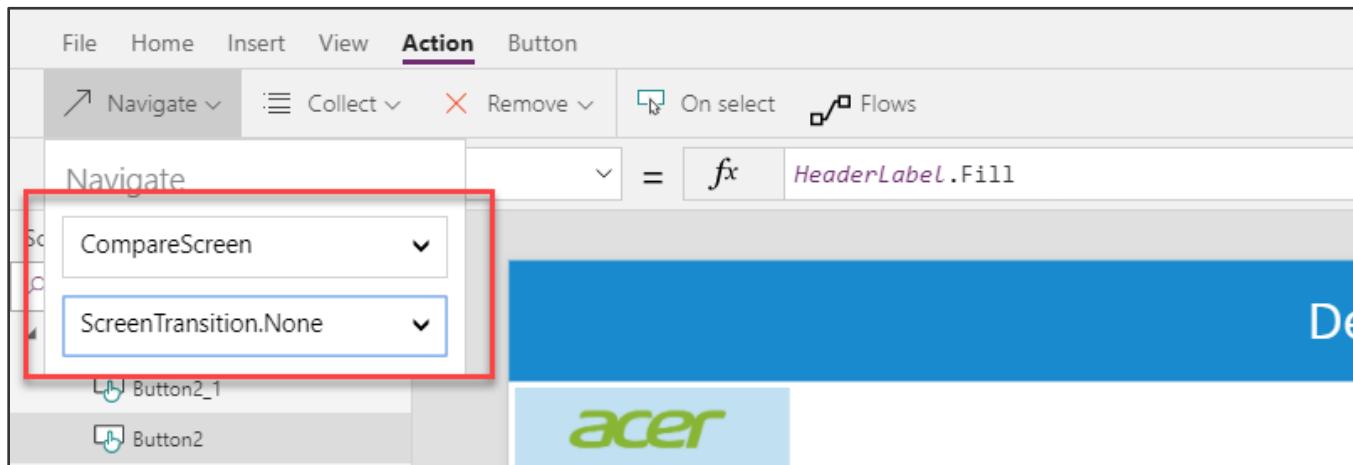
12. Change the **Text** property to "Clear selection"
13. Set the **OnSelect** property for this button to: Clear(CompareList) This will remove all the items in the CompareList collection.



14. Select the Compare button, click on the **Action** tab and select **Navigate**.



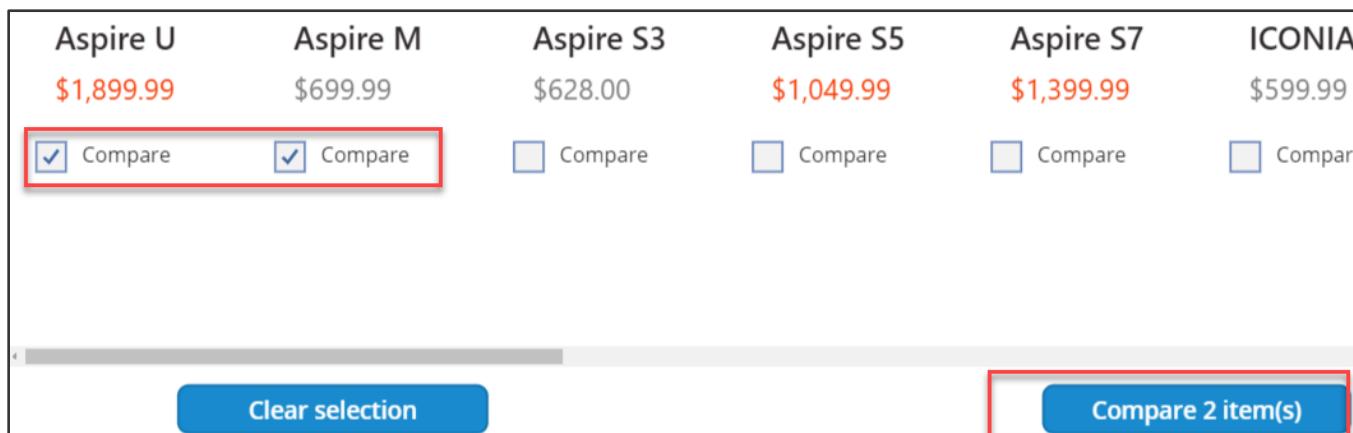
15. Select **CompareScreen** from the drop-down and ScreenTransition.None for transition type.



16. Click Preview.



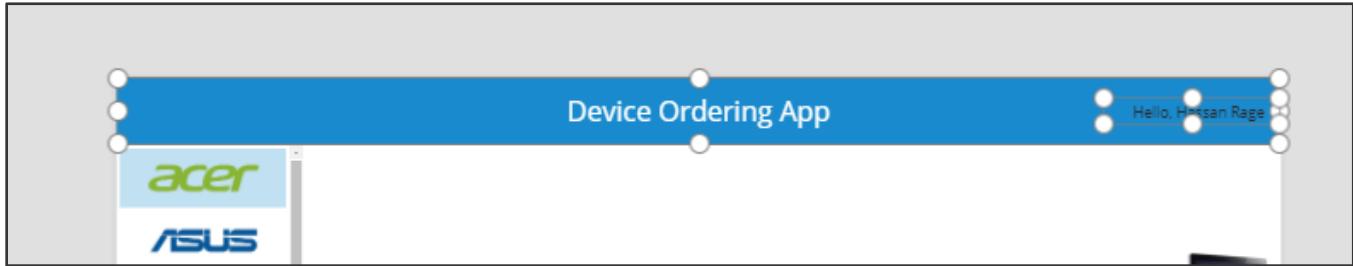
17. Select a couple of devices and click the compare button and verify that it takes you to the second screen.



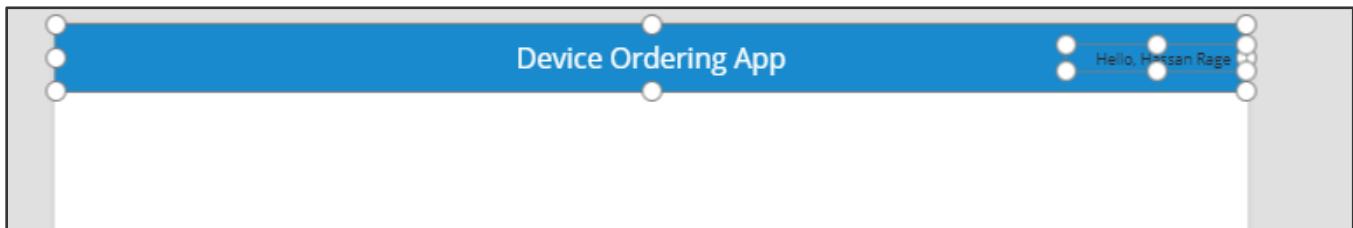
18. You should navigate to the new empty screen. Close the preview.



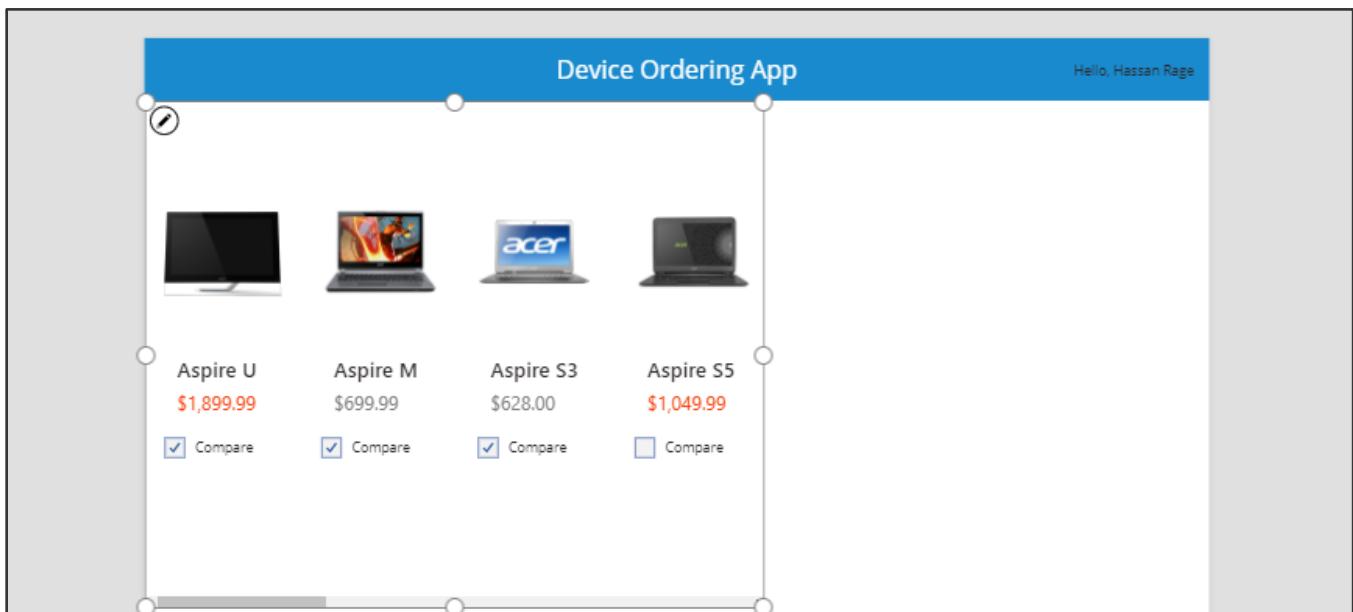
19. Select the **MainScreen** in the left navigation bar and keep the Ctrl key pressed down while multi-selecting the blue header label and the "Hello, <user>" label. Once you have multi-selected the controls, type (Ctrl-C) to copy them to the clipboard.



20. Go back the **CompareScreen** by clicking in the left navigation bar, and type (Ctrl-V) to paste the controls. You may need to move them up to align with the top of the screen.



21. Finally, copy the **DeviceGallery** from the MainScreen and paste a copy into to the newly created **CompareScreen**.  
22. Move the gallery to the left edge of the screen. Align the top of the gallery to be just under the header banner. Use the right drag handle to reduce the width of the gallery and create space for a data entry form on the right of the screen. You will insert a Form control here and configure it in a subsequent lab.



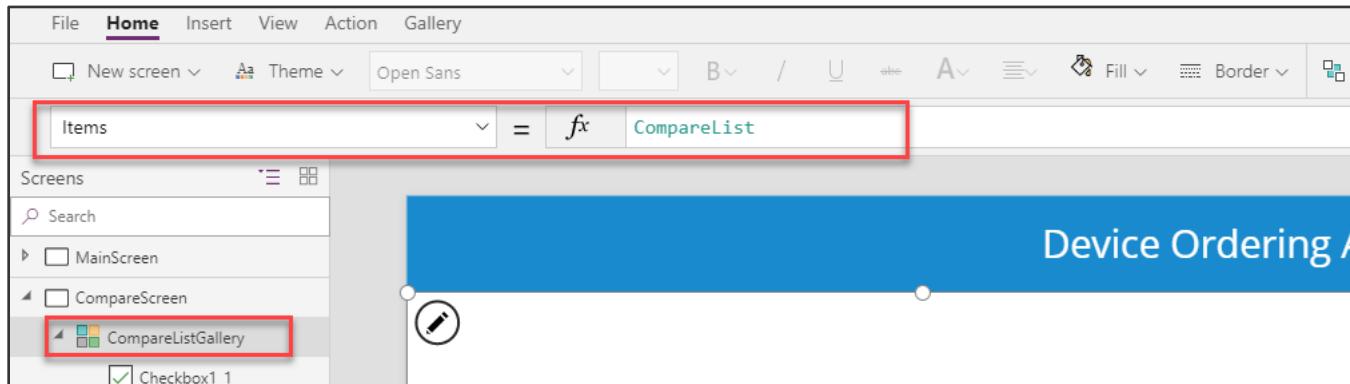
23. Rename this gallery to **CompareListGallery**.



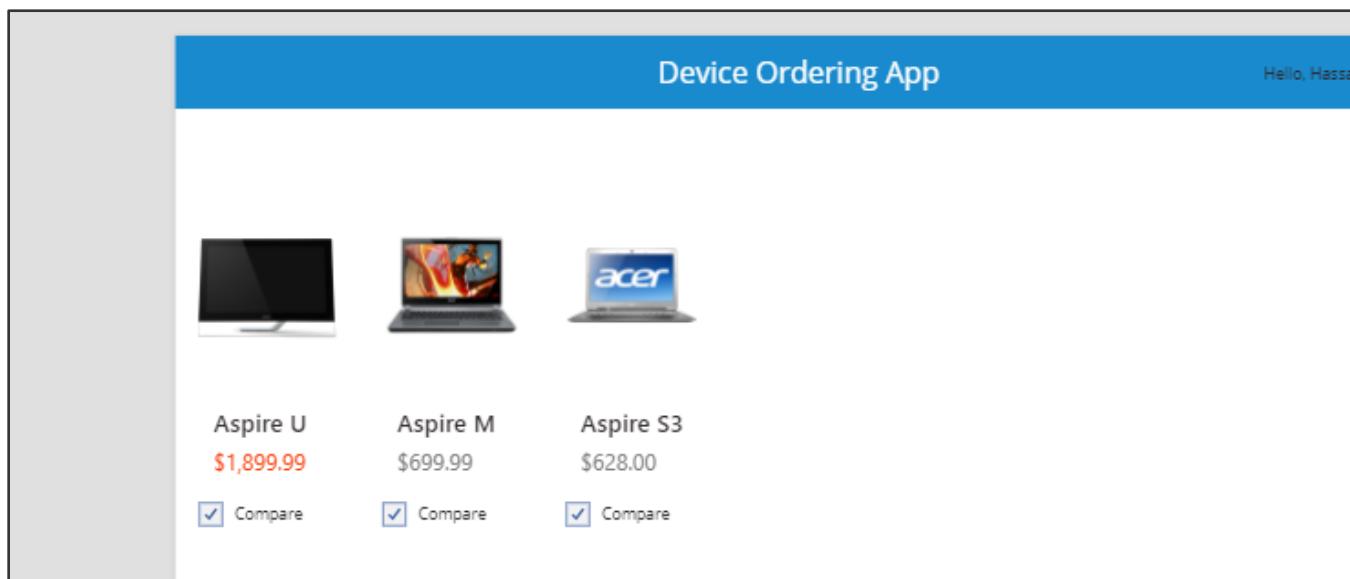
## Task 2: Configure the gallery

In this task, you will configure the gallery to show devices that were selected from the comparison gallery on the MainScreen.

1. Select the new **CompareListGallery**.
2. Select **Items** in the property drop-down list and change the data source in the formula bar to **CompareList**.



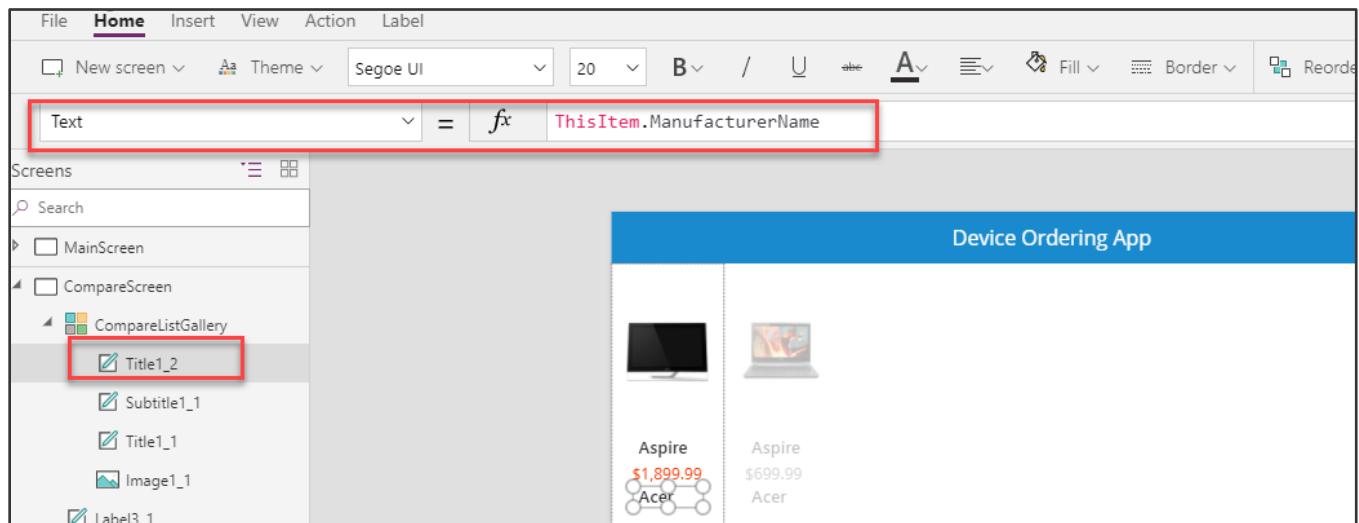
3. The gallery will now show the selected items from the MainScreen.



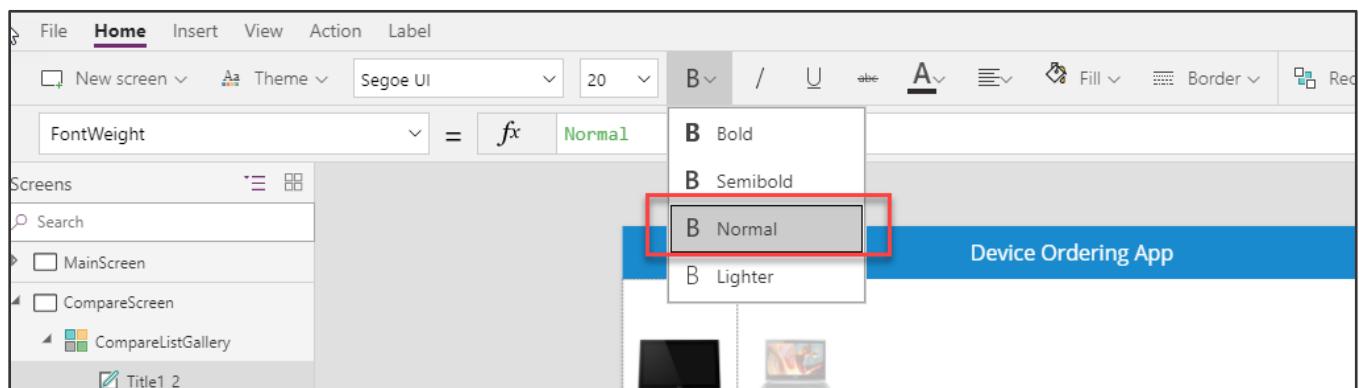
## Task 3: Remove and add controls to the gallery

In the second screen we are selecting a given item to get approved, so we do not need a Compare checkbox.

1. Select the **Compare checkbox** on the left most template cell and press the Delete key to delete the checkbox.
2. Now let's add a few labels to display additional attributes about the device. A good way to do this is to copy paste an existing label. Select the first label in the gallery that is displaying the device name. Copy it (Ctrl-C) and paste it (Ctrl-V).
3. Move the pasted label so that it is just below the price. Set the **Text** property to: `ThisItem.ManufacturerName`.



4. Use the ribbon to change the font weight from **Semibold** to **Normal** and Change the **Size** property from 20 to 18.



5. Copy and paste this label and move the new fourth label below the third label. Set its **Text** property to: `ThisItem.Memory`



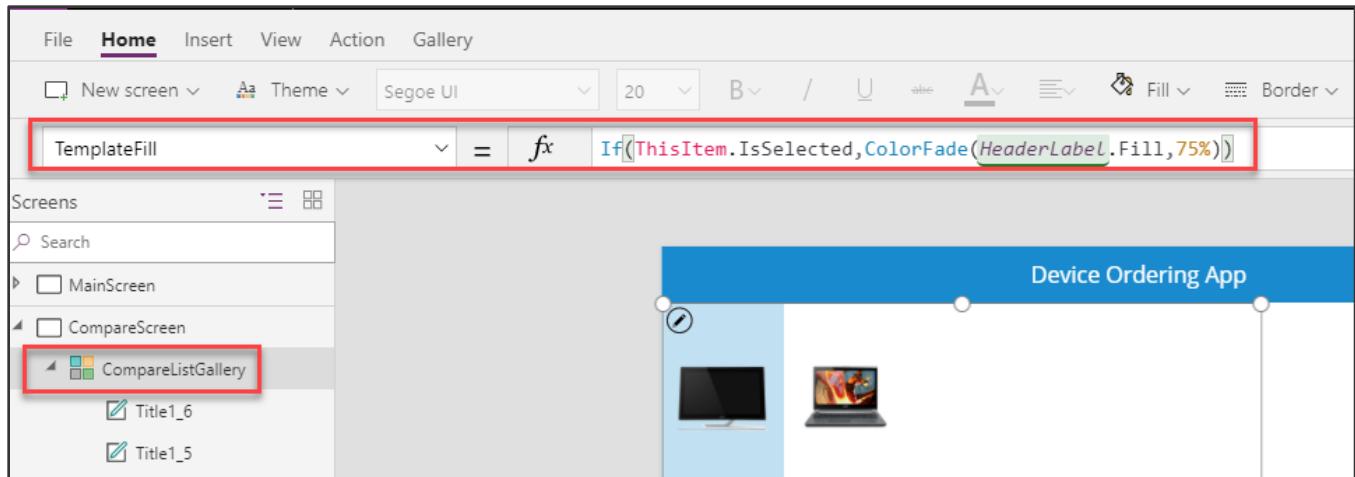
6. Repeat this and add text boxes to display the additional device properties – Processor, Storage, Screen Size, etc. Feel free to customize the labels by changing their Size, Color, Fill and FontWeight properties.

**Note:** For this lab, to save time you may add one or two of these additional properties and skip adding all of the additional device properties.

## Task 4: Highlight the selected device

Like the behavior in the manufacturer gallery in the first screen, use the **TemplateFill** property to specify a highlight color for the selected item.

1. Select the **CompareListGallery**.
2. With the whole gallery selected, set the **TemplateFill** property to:  
`If(ThisItem.IsSelected,ColorFade(HeaderLabel.Fill,75%), White)`



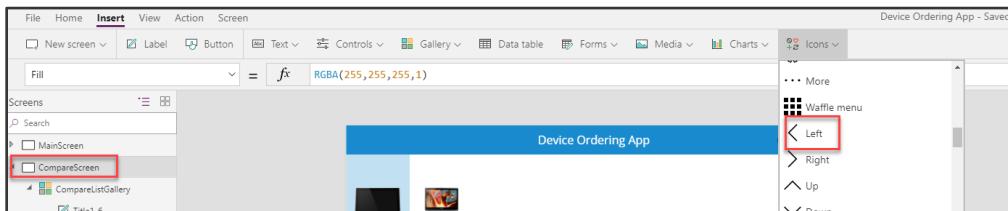
This is conditionally setting a Fill color if the cell is selected.

You could have set a specific color or RGB value, but we recommend using the ColorFade function, so it matches the header label with a 75% fade. If you change the fill color of header label, this template fill color will automatically change.

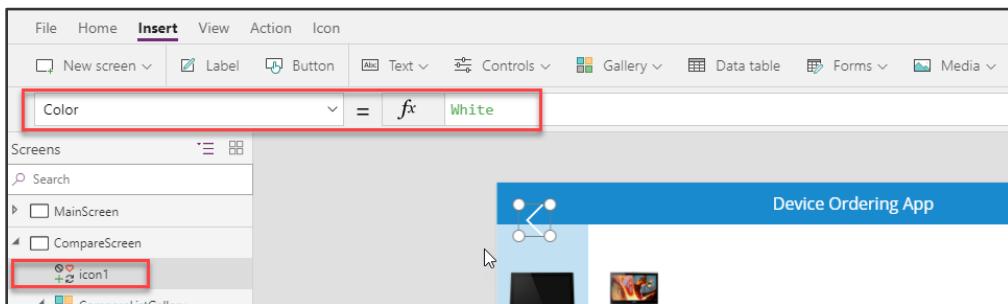
3. Click a few different items in the gallery, notice the selected item is highlighted in a light blue color.

## Task 5: Add a button to navigate to the first screen

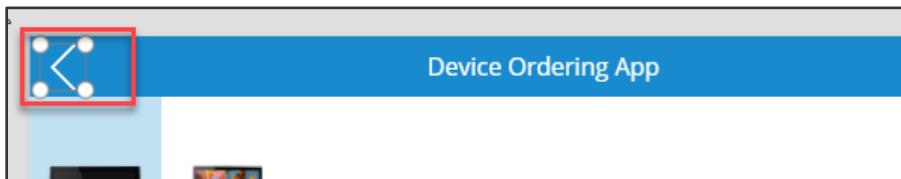
1. Select the **CompareScreen**.
2. Go to **Insert**, then **Icons** and select the **Left** icon. Position it in the upper left corner of the screen.



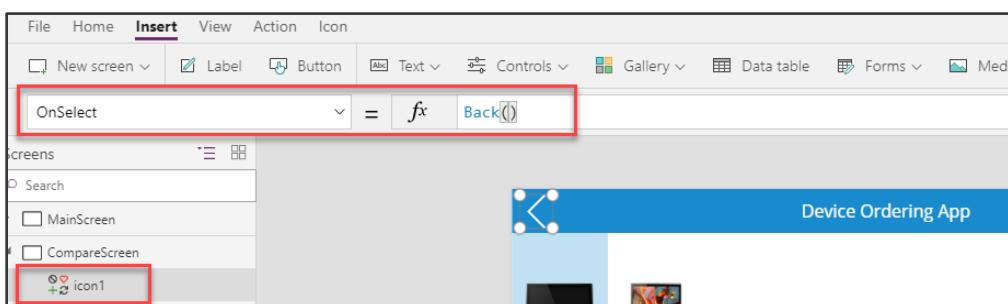
3. Select the arrow control, change the **Color** property to **White**. You can change this in the formula bar or through the Properties pane on the right.



4. Move the arrow to the top-left corner.



5. Set the **OnSelect** action for the icon to `Back()`. This will cause navigation back to the previous screen.



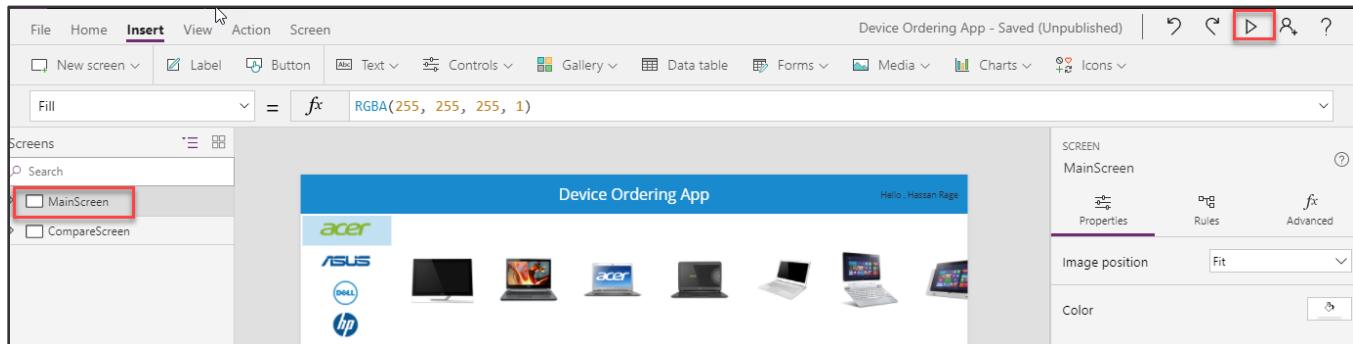
### Optional UI enhancement:

Add **padding around the icon** using the Properties pane. Set the padding values to 10 each for Top, Bottom, Left, and Right. This will make the icon look smaller but still have a larger hit target for the click action. This is a good pattern to use for most icons.

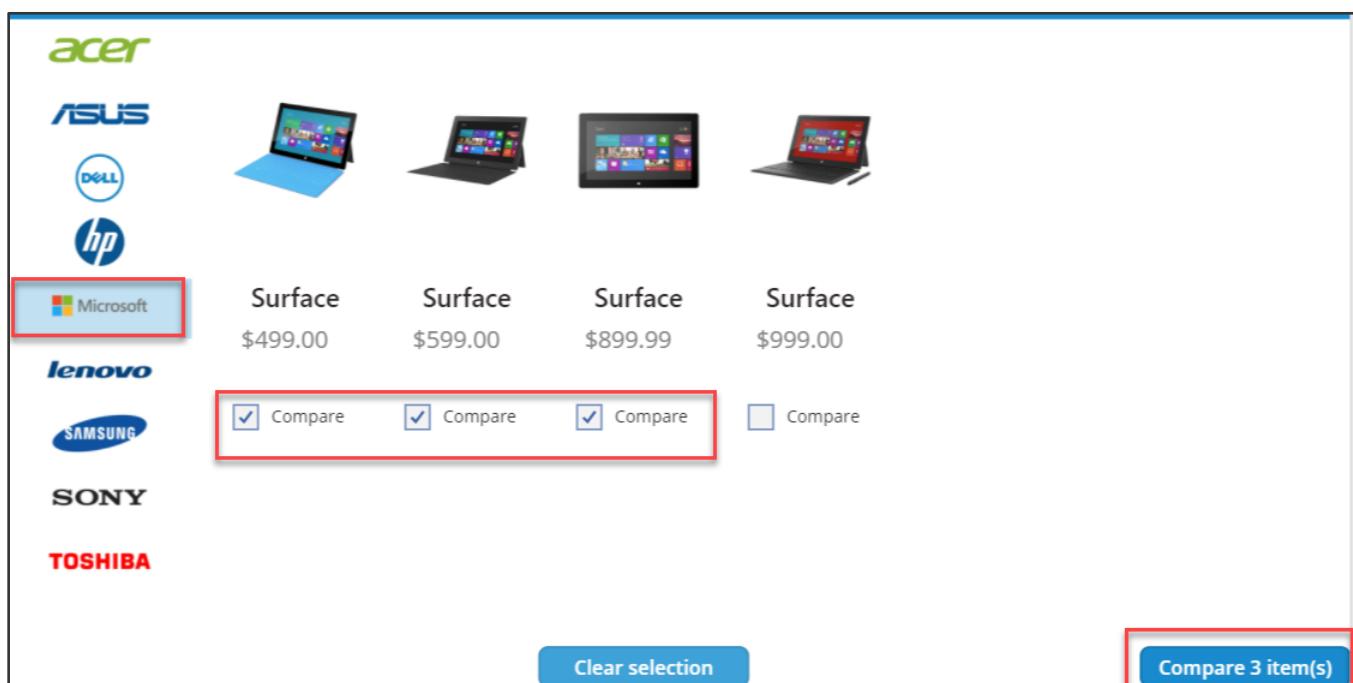
## Task 6: Test the app

Let's save the app by selecting **File -> Save**. It is a good idea to save your app regularly. **Note:** You can also test your app right on the canvas by holding down the Alt key to activate buttons and other controls, as well as double-clicking to type into controls.

1. Go to the main screen and **Preview** the app by hitting the Play button in the top right.

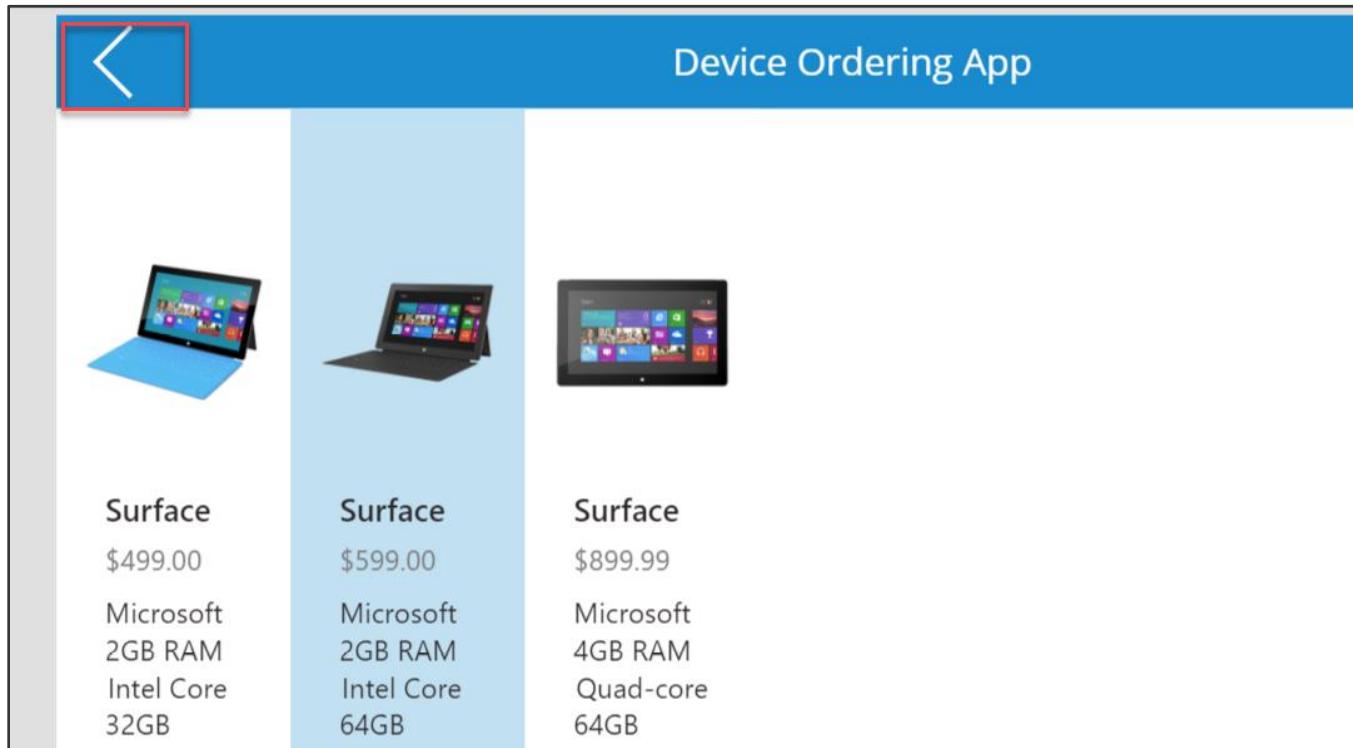


2. Select a manufacturer logo on the left to show a filtered set of devices.
3. Check the compare box on a few devices on the main screen from a few different manufacturers.
4. Click the **Compare** button to navigate to the compare screen.



5. Tap or click on different devices in the gallery and verify that the selection highlight works.

6. Click the back button and confirm you get back to the main screen.

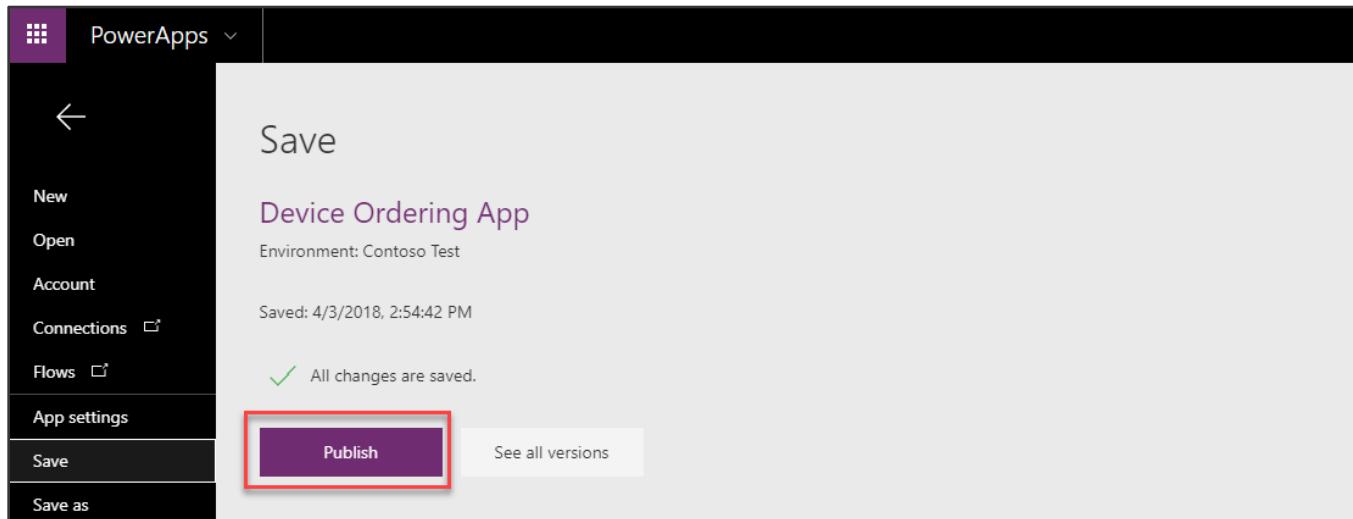


7. Close the preview.

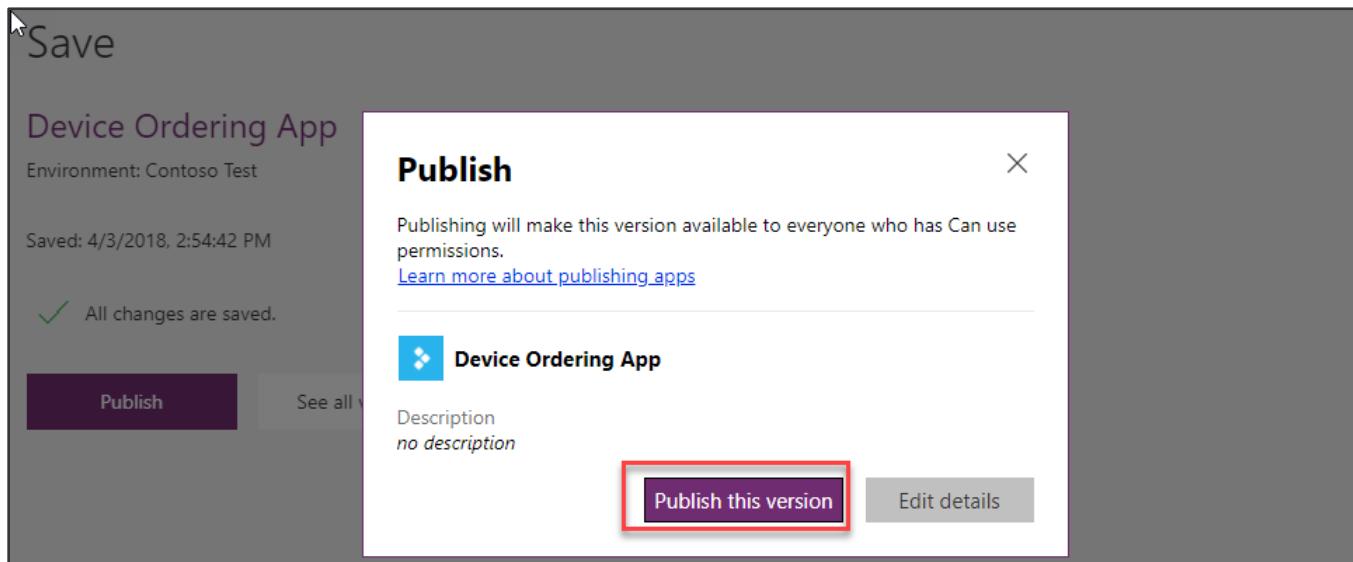
## Task 7: Test the app on a mobile device

Congratulations! You've created your PowerApps app. Now let's publish and test it on a mobile device.

1. **File** -> **Save** and click the **Publish** button.



2. Click **Publish this version** on the confirmation prompt.



This action will publish the latest saved version of the app.

3. Go to your device's app store application. Search for "**PowerApps**" and install the PowerApps application. Launch the app.

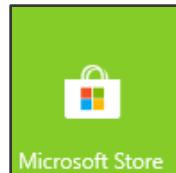
[Android:](#)



[iOS:](#)



[Microsoft Store:](#)

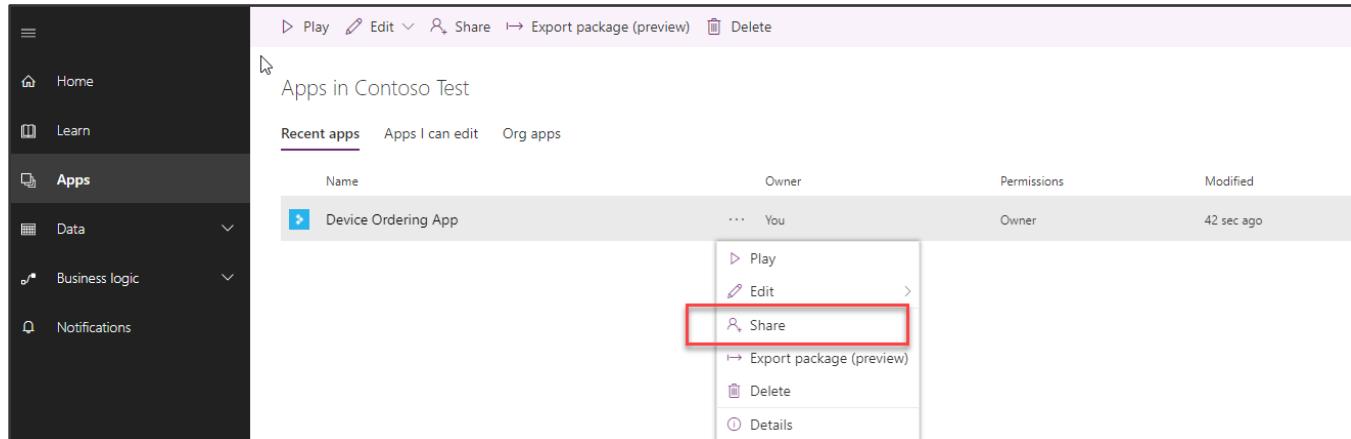


4. When the app starts, it will prompt for your business or school account credentials. **Log in** with the same account that you used to create the PowerApps app. You should see the app you just created in the list of apps. **Run the app.**

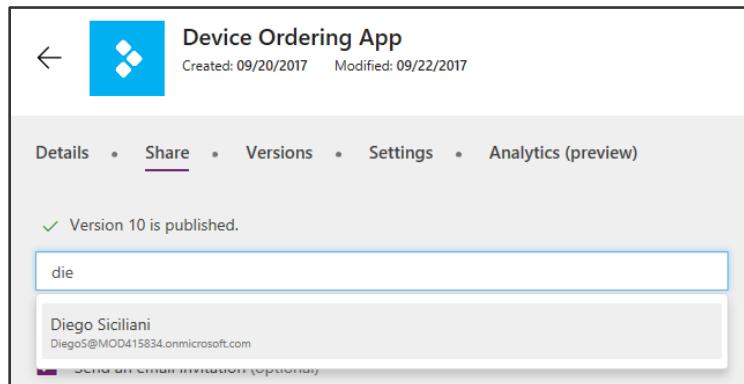
## Task 8: [Optional] Share the application with a colleague

You may optionally share the application with another user within the same organizational tenant as the user who created the app. So, if you had logged in as [meganb@contoso.com](mailto:meganb@contoso.com), you may share the app with any other User, Security Group or Distribution Group within the @contoso.com tenant.

1. To share the app, go to <http://web.powerapps.com>. Log in if prompted for credentials.
2. Select **Apps** in the left pane, look for your Device Ordering app in the app list, click the three dots (...) next to the app to bring up the context menu. Click the **Share** option.



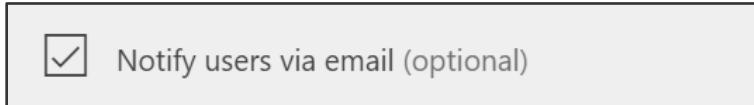
3. In the share screen, enter the name or email of the user you would like to share the app with. You may also share it with a user group.



4. Select the user or group; this will add it to the **Shared with** list below. You may provide this user/group either **Can use** or **Can edit** permissions.



5. If the **Notify users via email option** is checked, when you hit **Save**, the user or all users in the group will receive an email letting them know that the app has been shared with them, along with a link to open the app.



## Next steps

Now that you have learned the basics of creating an app, take a little time to think about what you would like to create next. What made you most excited about the device ordering app? What would you have done differently? Here's an example of some changes you can make to the UI:

Brand	Product	Price	Processor	Add to Compare
acer	Pavilion dv6	\$699.0	AMD Quad Core A8-4500M	<input type="checkbox"/>
ASUS	ProBook 4545s	\$499.0	Intel Core i3-3110M (2.4 GHz)	<input checked="" type="checkbox"/>
DELL	Z1	\$2,679.0	Intel Xeon E3-1245v2 (3.4	<input checked="" type="checkbox"/>
hp	Spectre XT Pro	\$1,099.0	Intel Core i5-3317U (1.7 GHz)	<input type="checkbox"/>
Microsoft	HP Elite	\$1,349.0	Intel Core	<input type="checkbox"/>
lenovo	EliteBook 8570p	\$1,049.0	Intel Core i5-3320M (2.6 GHz)	<input type="checkbox"/>
SAMSUNG	ProBook 4440s	\$679.0	Intel Core i5-3210M (2.5 GHz)	<input type="checkbox"/>
	Compaq Pro ...	\$859.0	Intel Core i5-3470S (2.9 GHz)	<input type="checkbox"/>
	ENVY Pro	\$849.0	Intel Core i5-3317U (1.7 GHz)	<input type="checkbox"/>
	Touch	\$899.99	AMD Lynx	<input type="checkbox"/>

**Compare 3 item(s)**

Features like shading, number of rows, and greying out items not selected can have a big impact on how your app looks and feels. To learn more, check out the links in the reference section and take the next step in building great apps.

## Lab survey

We would appreciate your feedback on the Business Application Platform technologies and on this hands-on-lab, such as the quality of documentation and the usefulness of the learning experience.

Please use the survey at <http://aka.ms/appinadayLabSurvey> to share your feedback.

You may provide feedback for each module as you complete it or at the end once you've completed all the modules.  
Thank you!

## References

App in a Day introduces some of the key capabilities available in PowerApps. For a list of learning resources, see <http://aka.ms/powerapps-resources> and <http://aka.ms/flow-resources>.

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- [Feature updates](#)

### Microsoft Business Platform

- <https://businessplatform.microsoft.com/>

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