Power Apps Canvas App II

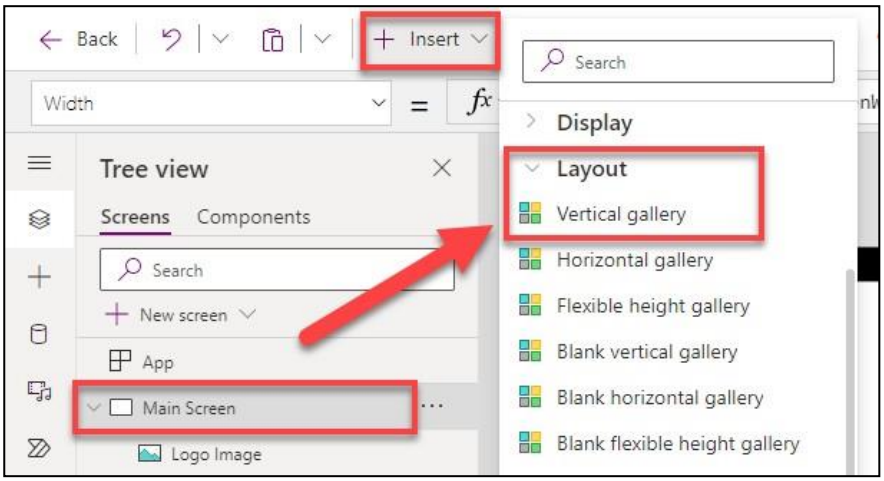
Add Machine Gallery and Connect to Data Source

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

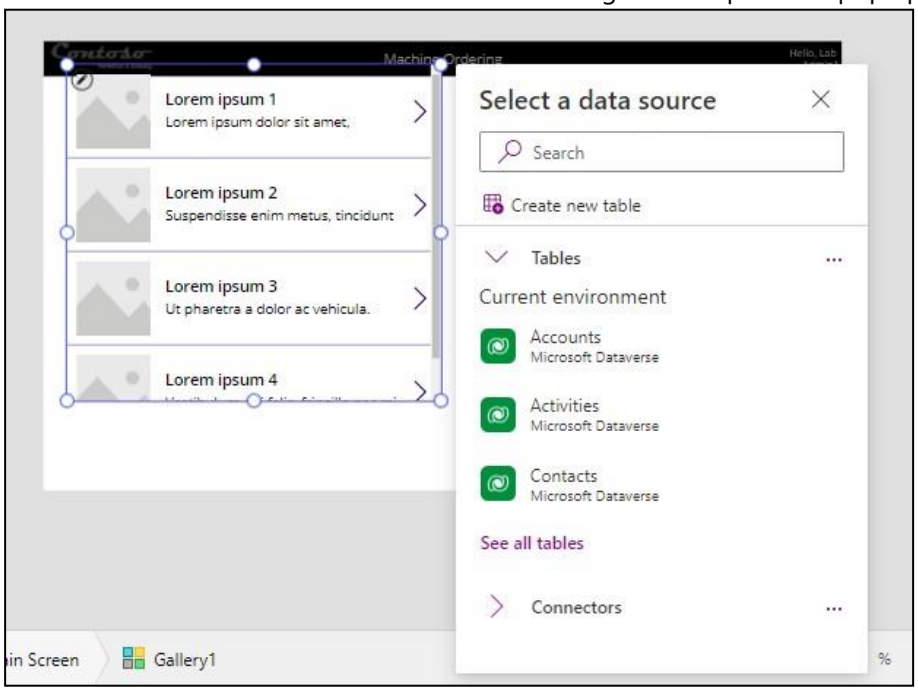
Task 1: Add machine type gallery

In this task, you will add a gallery that will list the machine types. This will be a single column vertical gallery down the left side of the screen, with each cell displaying an image of the machine type. This gallery will later be used as a filter for the Machine gallery you will create.

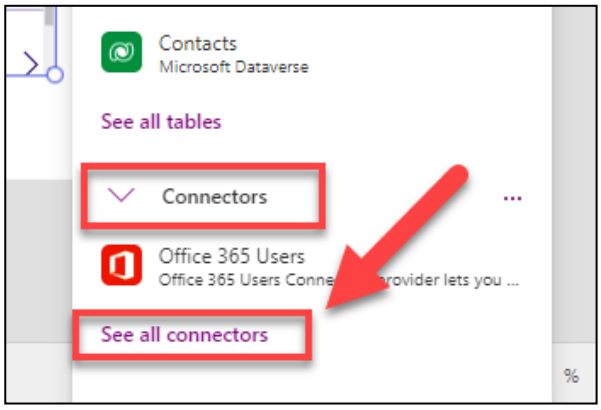
1. Select the **Main Screen from the Tree view pane**.
2. Select **+ Insert from the ribbon**, expand the **Layout** group and select **Vertical gallery**.



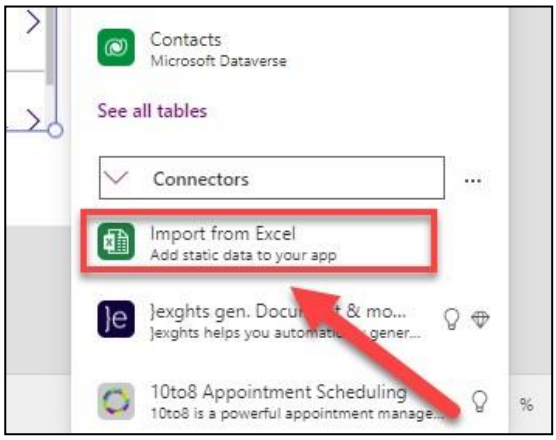
This will add a gallery called **Gallery1** onto the screen. Notice the control tree view on the left displays this gallery with three controls within it – two labels and an image. A data pane will pop up on the right.



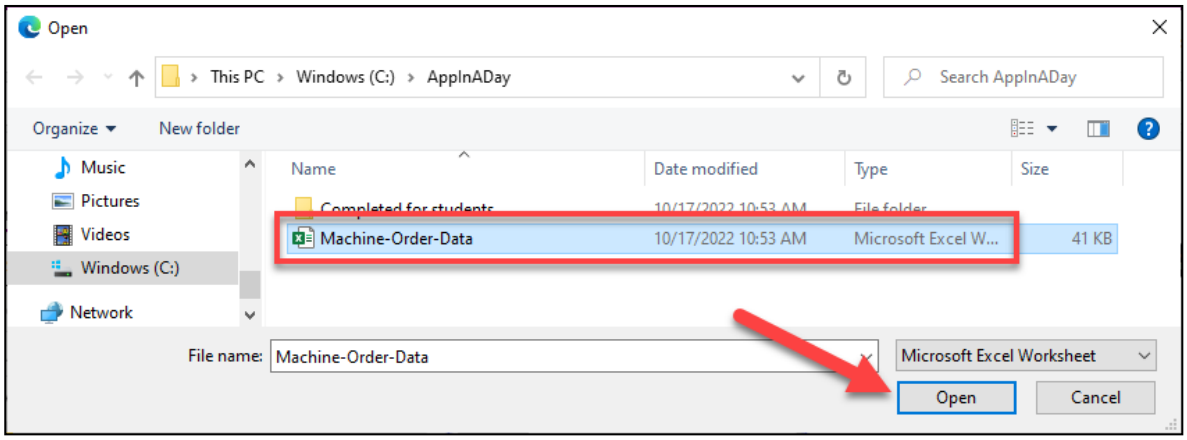
3. From the Select a data source dialog box, expand **Connectors**, then choose **See all connectors**.



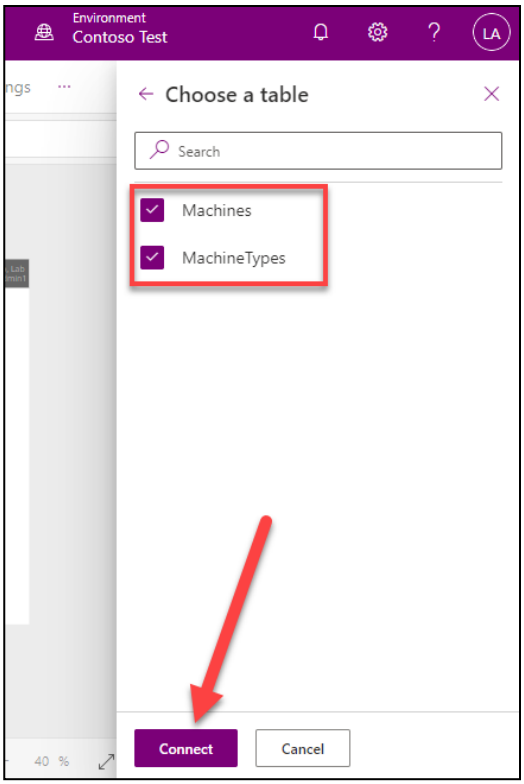
4. Select **Import from Excel.**



In the **File Open** dialog box, browse to the location where you unzipped the data file (for example **C:\AIAD\PAHandsOnLabContent**) and select **Machine-Order-Data.xlsx**. Then, select open in the bottom right corner of the dialog window to load the data.

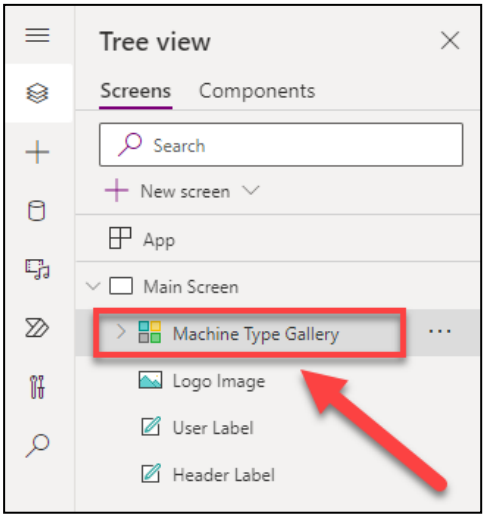


5. Select both tables, **Machines** and **MachineTypes,** from the Choose a table pane and select the **Connect** button at the bottom of the pane. This will add both tables as static data into the application.



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 Microsoft Dataverse table.

6. **Rename** the gallery, using the same steps as we have previously, to **Machine Type Gallery**.



Tips on working with galleries:

Galleries provide a powerful way to visualize tabular data in Power Apps. 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** – select the gallery in the tree view to the left or select the second or third cell. Selecting 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 selecting the first cell of the gallery or select 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 machine image in the template cell and **change its size**. Notice how the size of the image changes in all the cells.

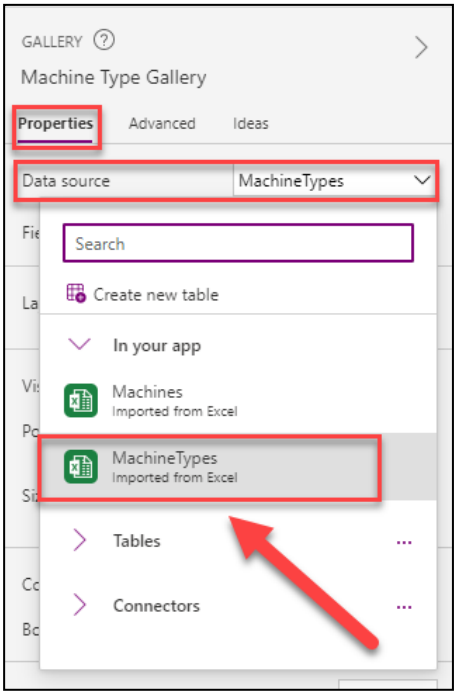
You can also test your gallery right on the canvas by holding down the Alt key to activate.

You will customize the machine gallery in subsequent steps.

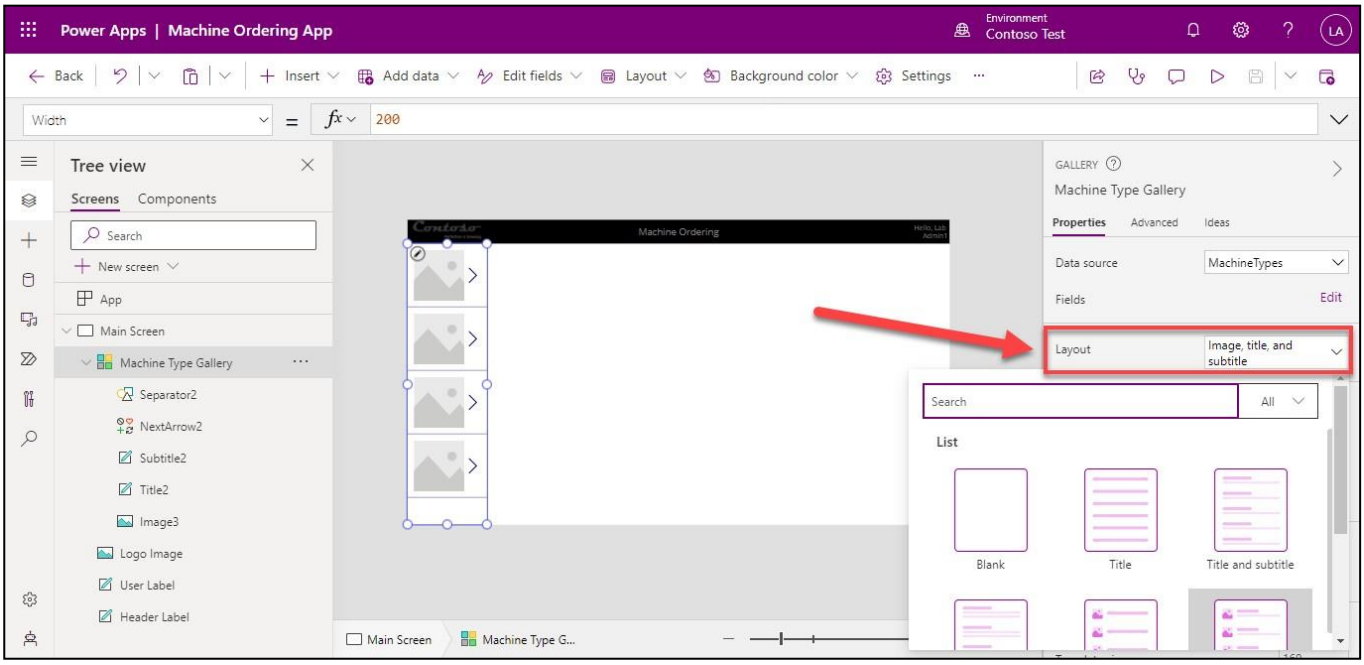
Don't worry about making the gallery pixel perfect, the purpose of this exercise is to get your app working with a good enough UX. You can always repeat these labs to practice your pixel perfect skills.

When working with control positioning X refers to horizontal positioning and Y refers to vertical positioning.

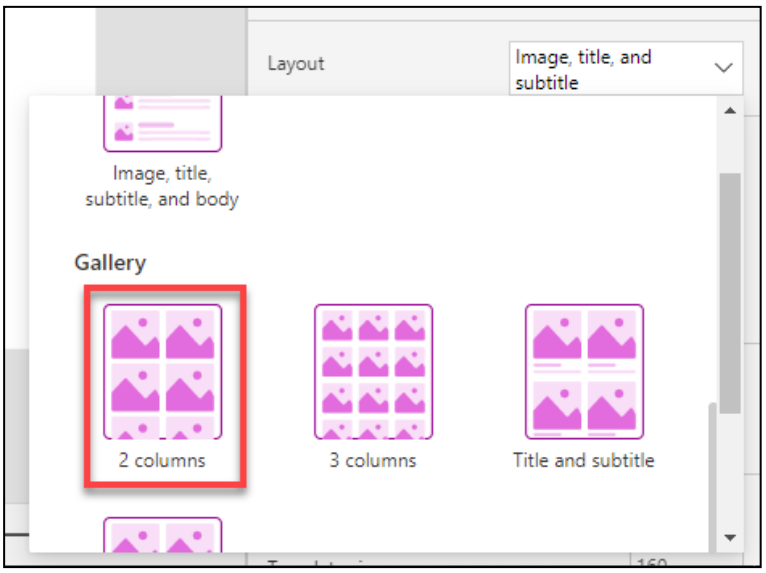
7. Select the **Machine Type Gallery**, go to the Properties tab and select **MachineTypes** as Data source.



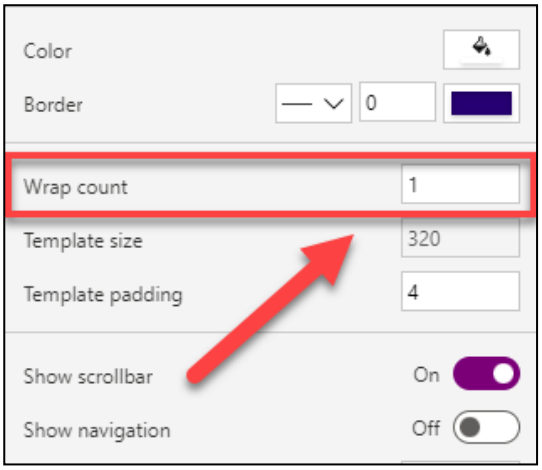
8. Using the same steps as we have previously in the lab, set the **X** property value of the **Machine Type Gallery** to **0**.
9. Set the **Y** property value of the **Machine Type Gallery** to **60**.
10. Set the **Height** property value of the **Machine Type Gallery** to **708**.
11. Set the **Width** property value of the **Machine Type Gallery** to **200**.
12. Select **Machine Type Gallery** to the left of the screen. Then, in the **Properties** tab, select the **Layout drop-down**.



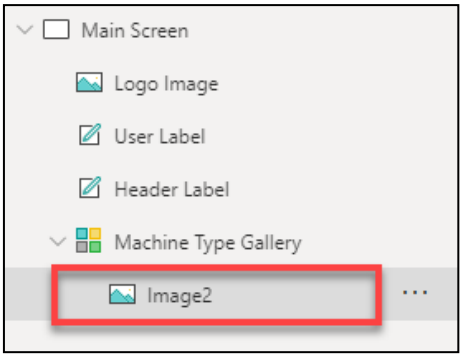
13. Scroll down to the **Gallery** section and select **2 Columns**.



14. Change the **Wrap Count** from **2** to **1**. This will change it to a single column gallery.

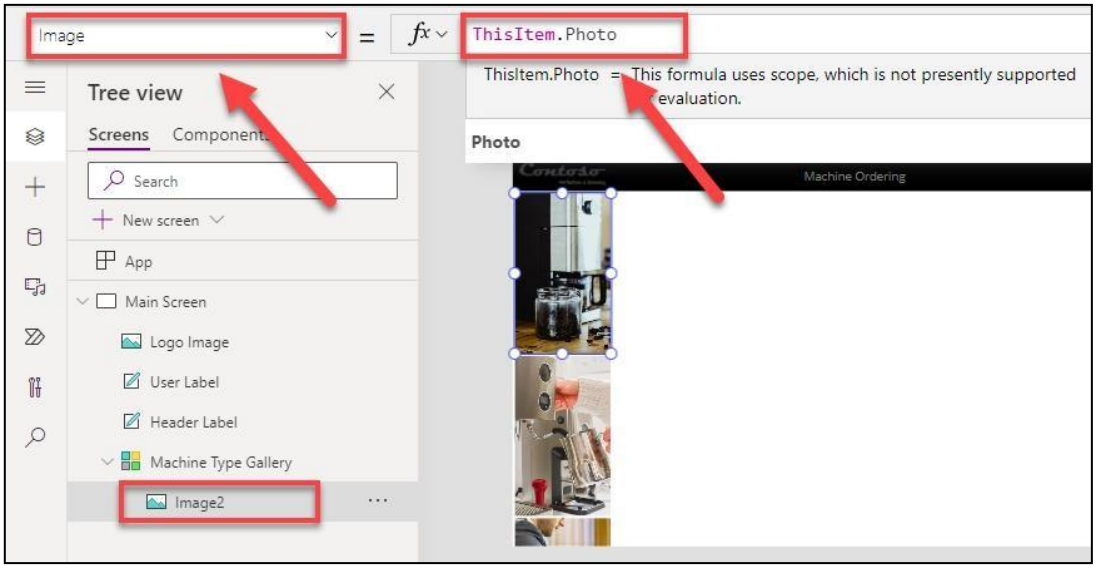


15. Select the **Image control** within the gallery in the Tree view.

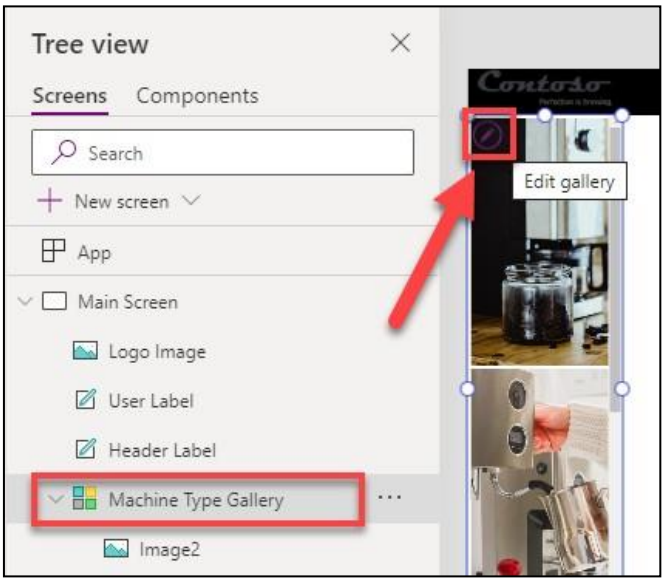


16. Set the **Image** property value to the formula below so that the image value is set to the photo URL:

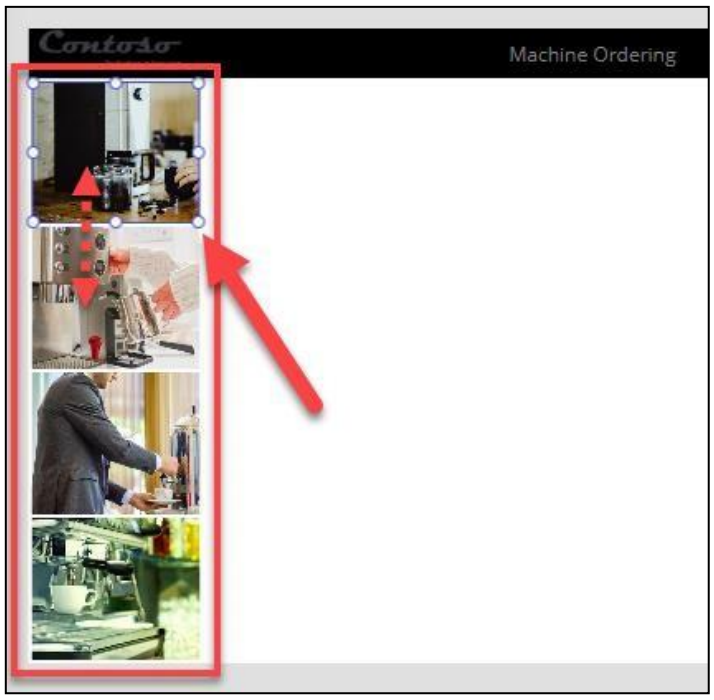
```
ThisItem.Photo
```



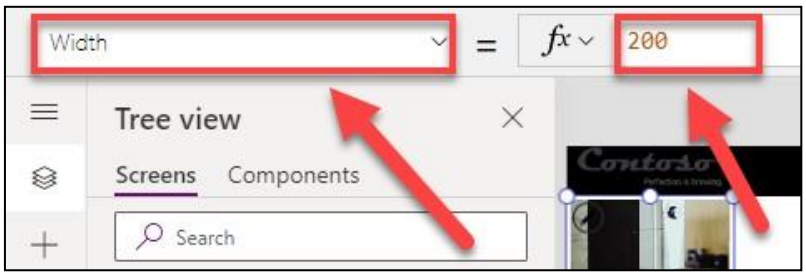
17. Select the **Machine Type Gallery** from the Tree view pane to the left and then choose the **Edit gallery** button. This action will put the gallery in edit mode.



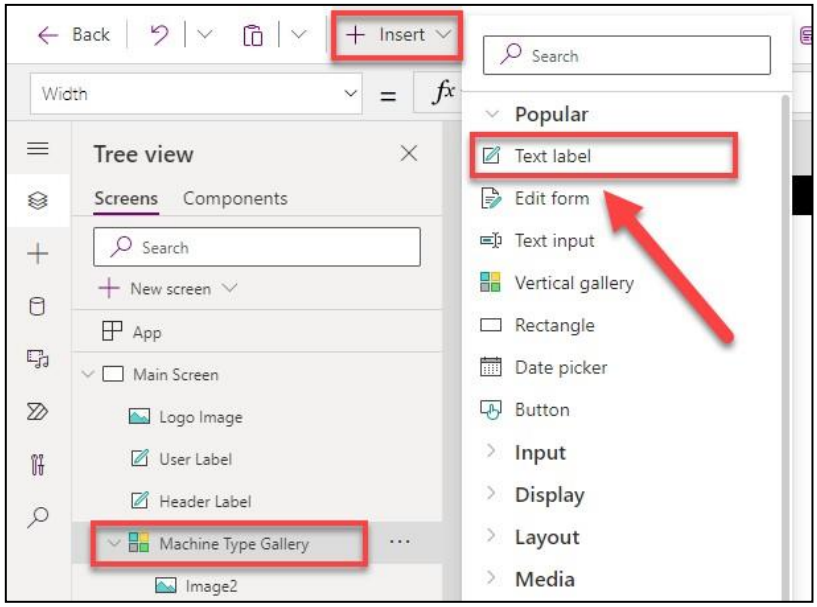
18. Reduce the **height** of the selected template cell by dragging the corners of the image. Notice that as you reduce the height of the selected cell, the rest of the cells reduce in height as well. Continue to reduce the height of the cells until all four image cells occupy the template without having to scroll to view each image.



19. Ensure that after you have changed the height to now show all four images, without scrolling, that the **Width** property value of the **Machine Type Gallery** image is still set to **200**. If the width is not set to 200, change it by typing into the formula bar.

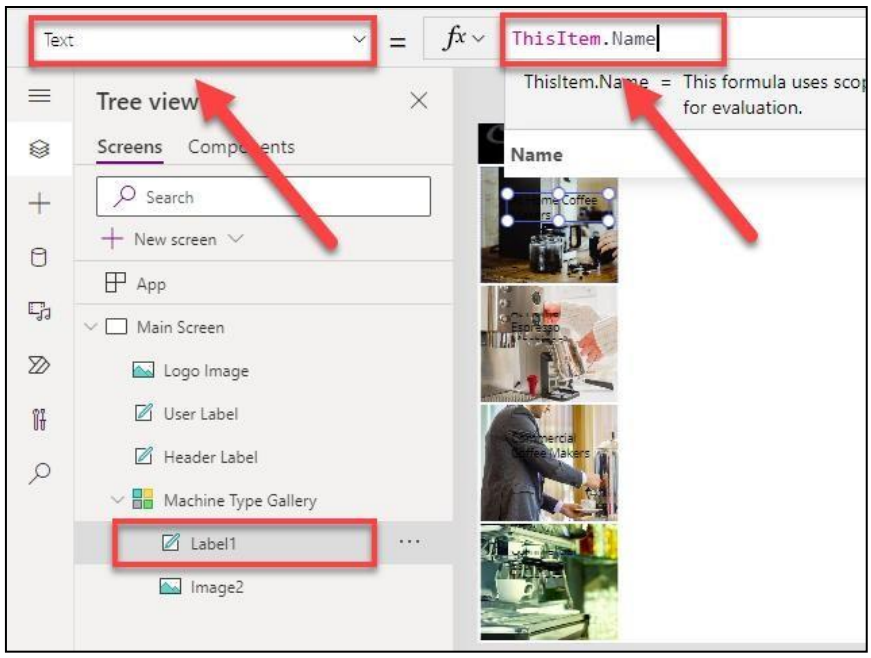


20. Make sure the gallery is still in **Edit** mode. Select **+ Insert** from the ribbon at the top of the screen and select **Text label** from the drop-down.

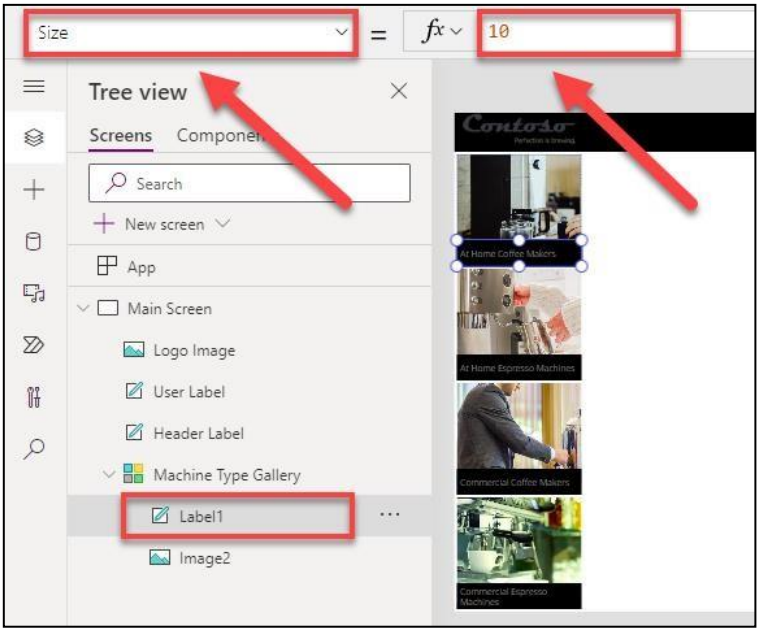


21. Set the **Text** property value of the **Label** to the formula below:

```
ThisItem.Name
```

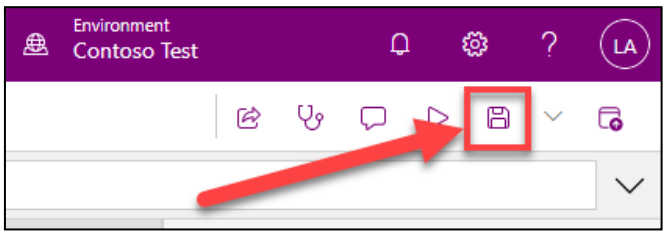


22. Using the same steps as previously in the lab, set the **Width** property value of the **label** to **192**.
23. Set the **X** property value of the **label** to **0**.
24. Set the **Y** property value of the **label** to **132**.
25. Change **Fill** property value of the **label** to **Black**.
26. Change **Color** property value of the **label** to **Gray**.
27. Change the **Size** property value of the **label** to **10**.



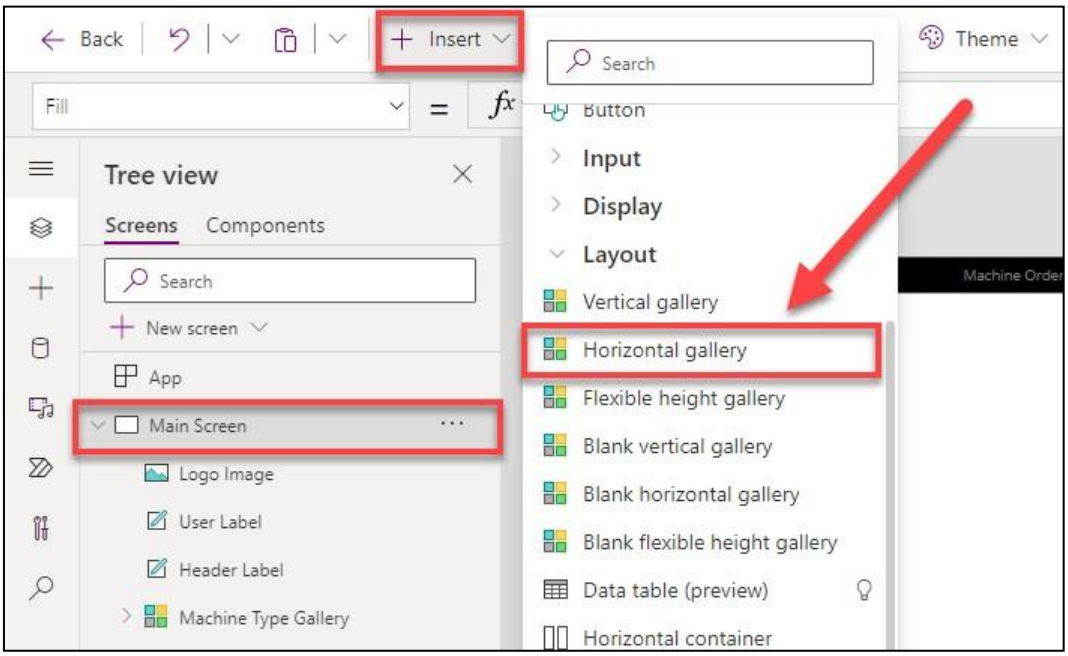
28. The main screen should now look like the image below.

29. Select **Save** from the ribbon at the top of the screen and wait for the application to be saved.

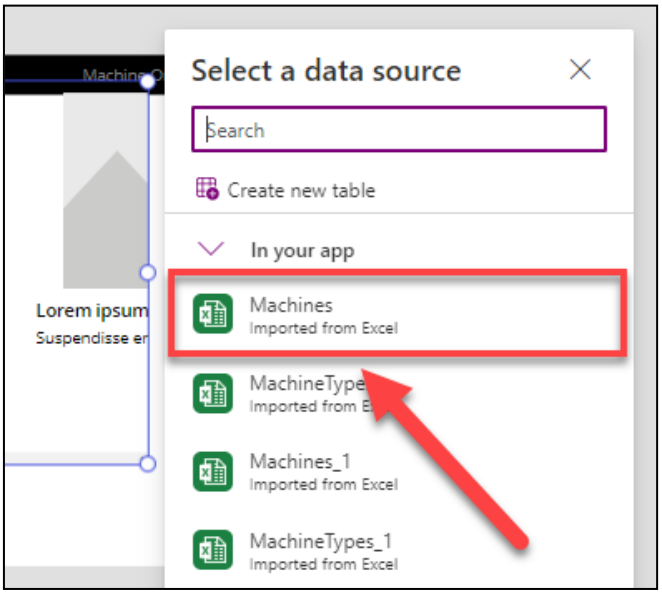


Task 2: Add machine gallery

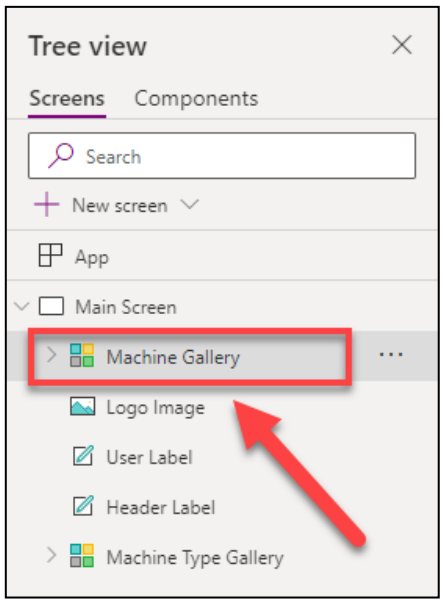
1. With the Main Screen selected from the Tree view pane, select **+ Insert from the ribbon at the top of the screen**. Expand the **Layout** group and select **Horizontal gallery**.



2. Select **Machines** as the Data source in the dialog box that appears.

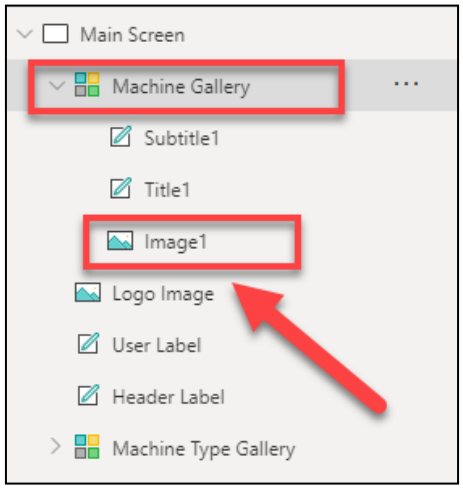


3. **Rename** the gallery, located in the Tree view, to be named **Machine Gallery**. You can either right-click on the gallery name or select the **ellipses** (…) next to the gallery name and type the new name in the text box.



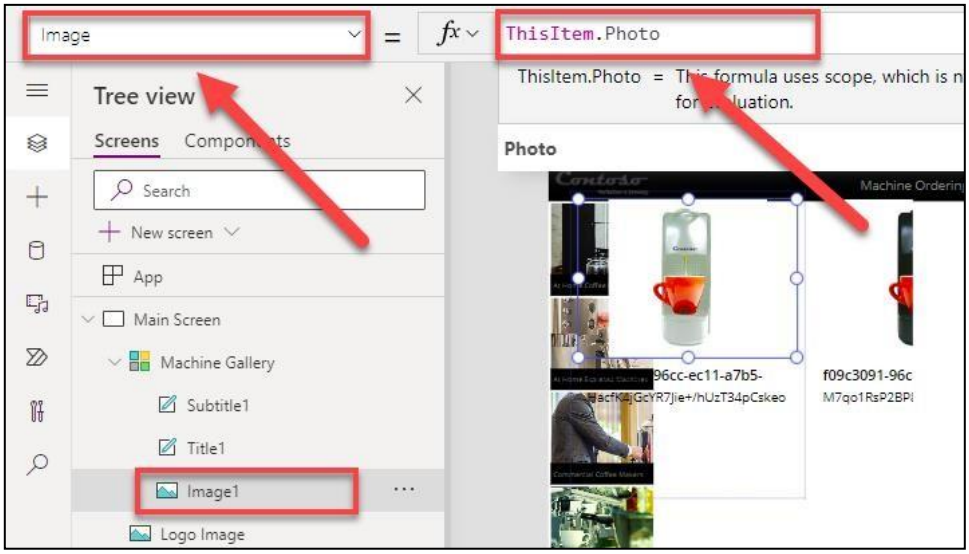
Task 3: Arrange the machine gallery

1. Expand the **Machine Gallery** and select the **Image**.



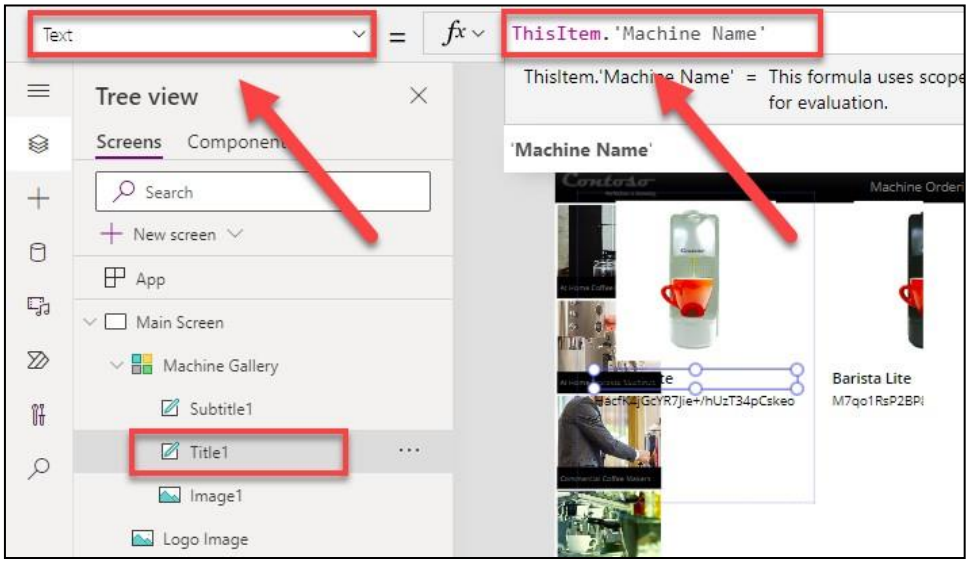
2. Set the **Image** property value of the image to the formula below:

```
ThisItem.Photo
```



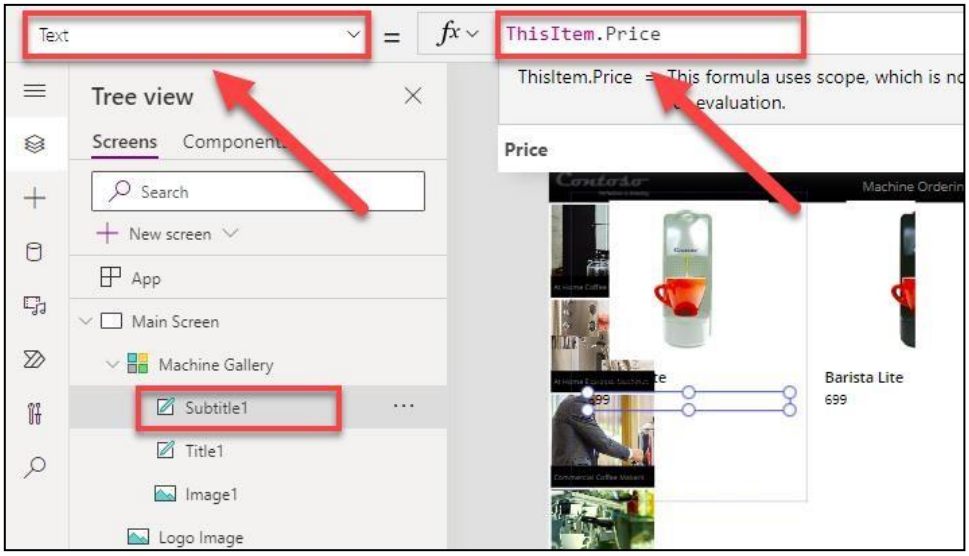
3. Expand the **Machine Gallery** from the Tree view pane and select the **Title**.
4. Set the **Text** property value of the title to the formula below:

```
ThisItem.'Machine Name'
```

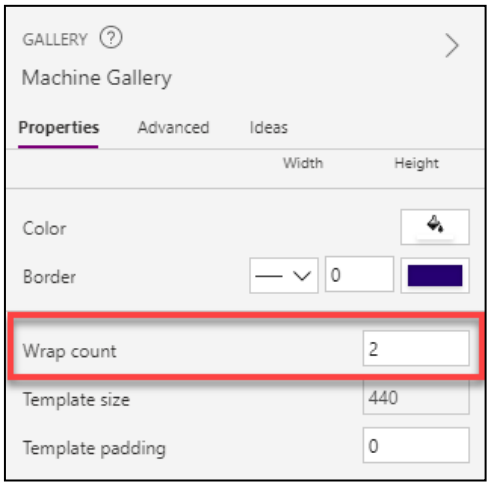


5. Expand the **Machine Gallery** from the Tree view pane and select the **Subtitle**.
6. Set the **Text** property value of the subtitle to the formula below:

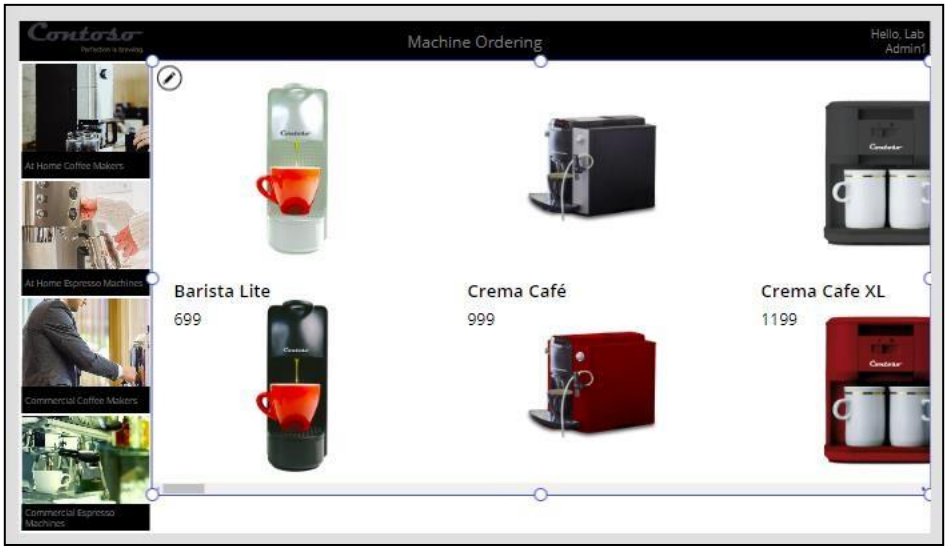
```
ThisItem.Price
```



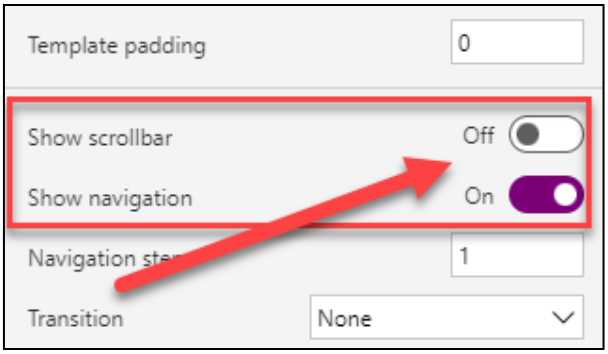
7. Select the **Machine Gallery** from the Tree view pane to the left of the screen.
8. Set the **X** property value of the **Machine Gallery** to **200**.
9. Set the **Y** property value of the **Machine Gallery** to **60**.
10. Set the **Height** property value of the **Machine Gallery** to **650**.
11. Set the **Width** property value of the **Machine Gallery** to **1165**.
12. Navigate to the **Machine Gallery** pane to the right of the screen Under the **Properties** tab, set the **Wrap count** to **2**.



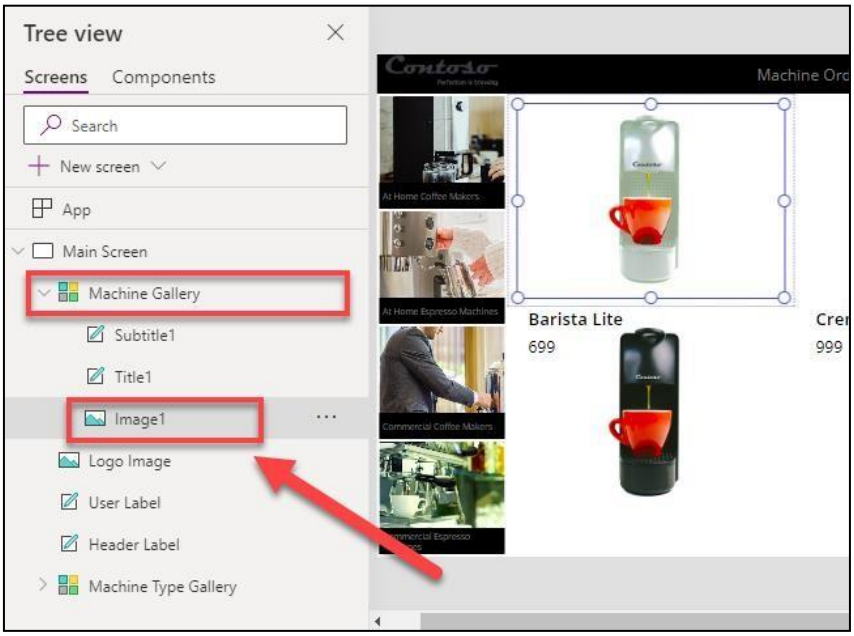
13. Your Machine gallery should look like the one in the figure below:



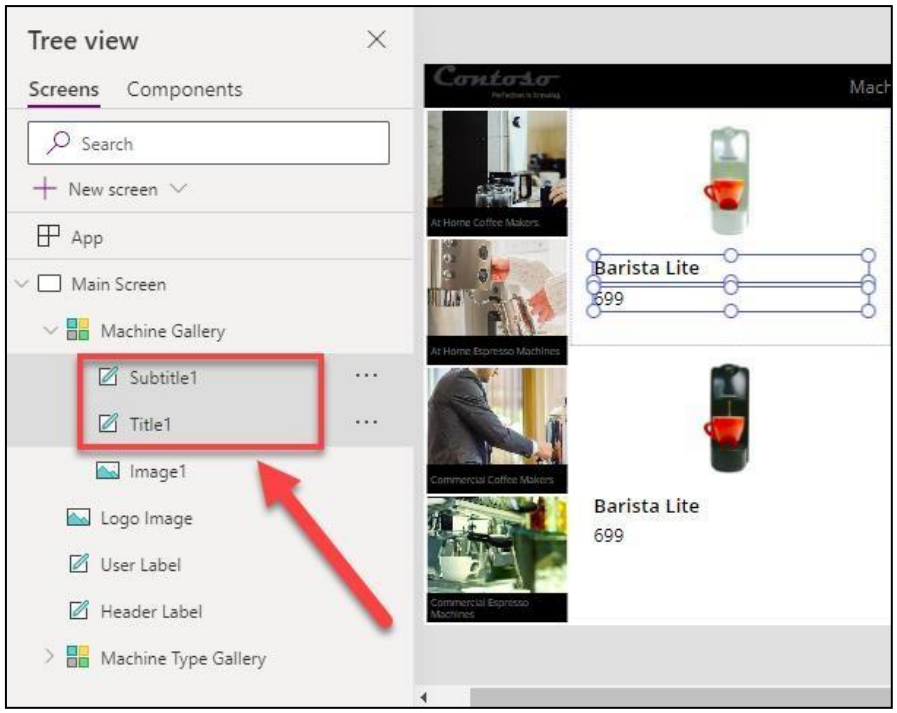
14. While still under the Properties tab of the Machine Gallery pane to the right of the screen, set **Show scroll** to **Off**.
15. Set **Show navigation** to **On**.



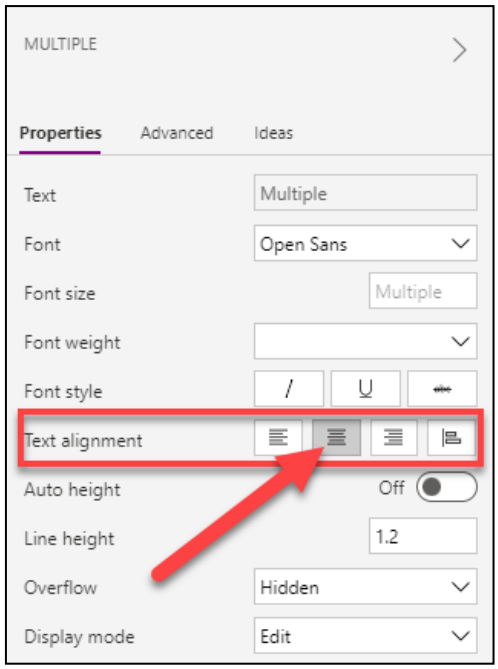
16. Select the **image** inside the **Machine Gallery** in the Tree view pane to the left of the screen.



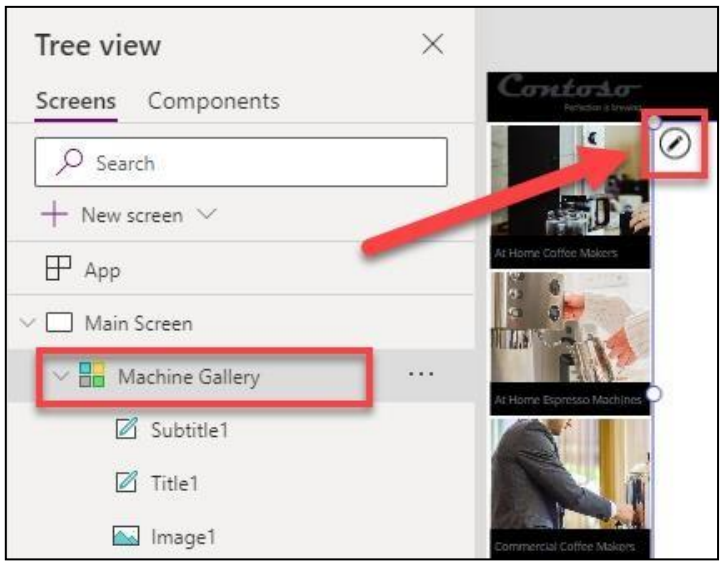
17. Set the **Width** property value of the **image** to **200**.
18. Set the **Height** property value of the **image** to **170**.
19. Select both the **Title** and **Subtitle** inside the **Machine Gallery**. Hold the **Ctrl (control) key** to select multiple controls.



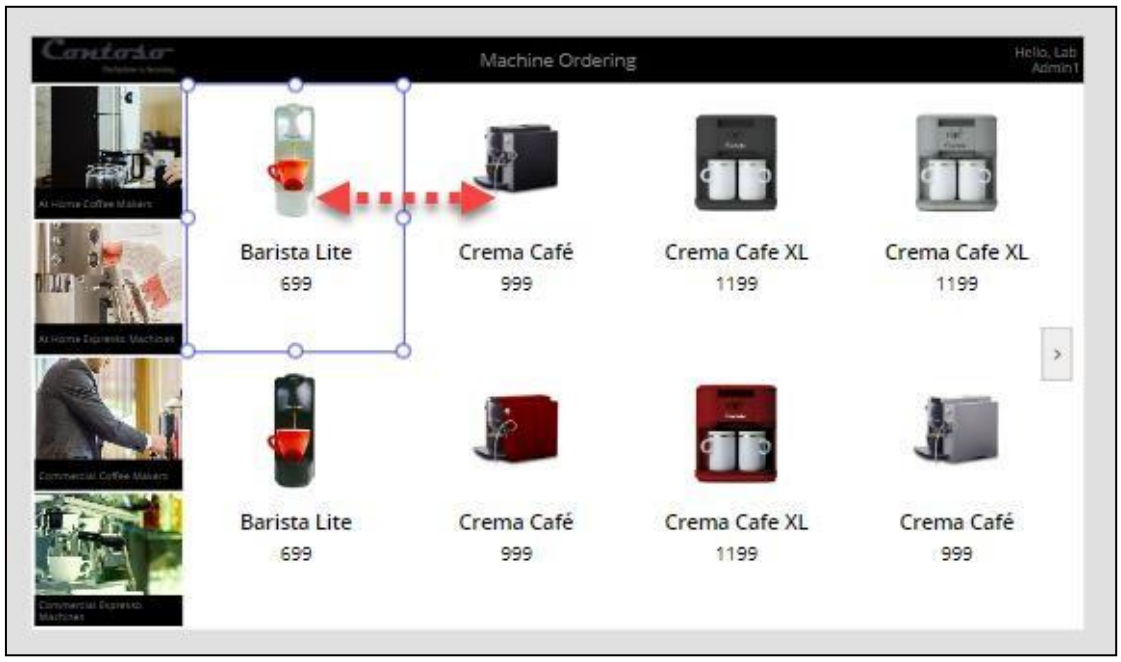
20. Go to the **MULTIPLE** pane to the right, and under the **Properties** tab, select **Center** for **Text alignment**.



21. Select the **Machine Gallery** from the Tree view pane and select the **Edit** gallery button.



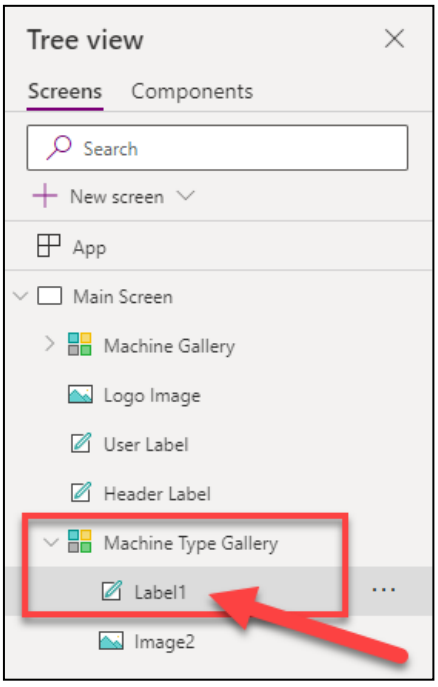
22. Make the template **narrower** by dragging the edges of the image selected until you can see total of **8** machines. Your screen should look like the one in the figure below:



Task 4: Highlight the selected item in the gallery

In this task, you will use the **TemplateFill** property of the **Machine Type Gallery** to specify a highlight color for the selected item. You can decide how you want to indicate the selected item. We will change the label fill for this gallery.

1. From the Tree view pane, select the **Machine Type Gallery** and select the **Label**.



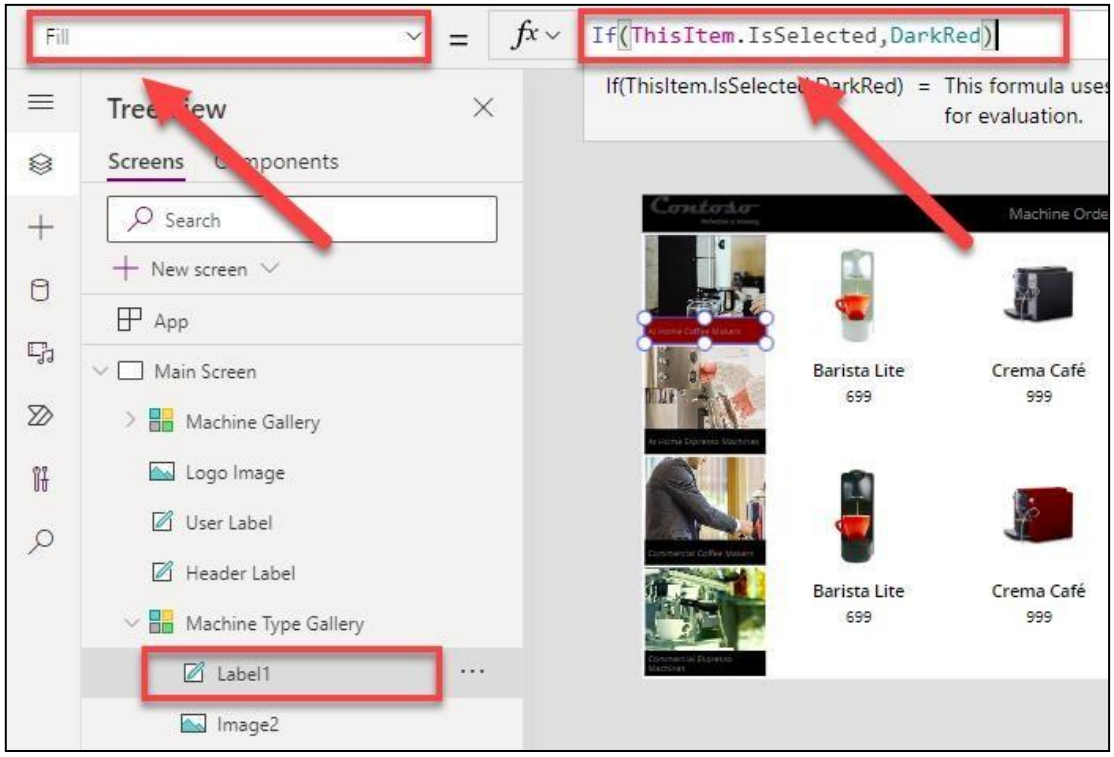
2. Change the **Fill** property value of the **label** to the formula below. This formula will set the label fill to **dark red** for the selected item:

```
If(ThisItem.IsSelected,DarkRed)
```

Alternately, you could set the Fill property to:

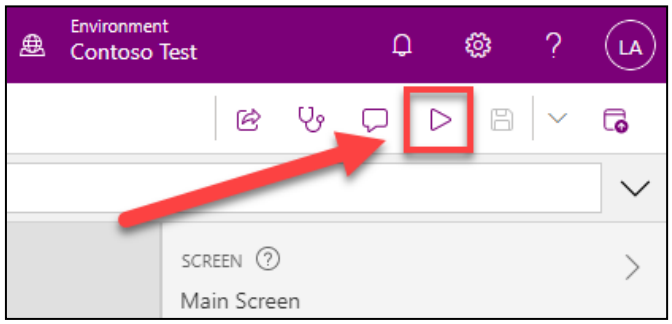
```
If(ThisItem.IsSelected,ColorFade ('Header Label'.Fill,75%))
```

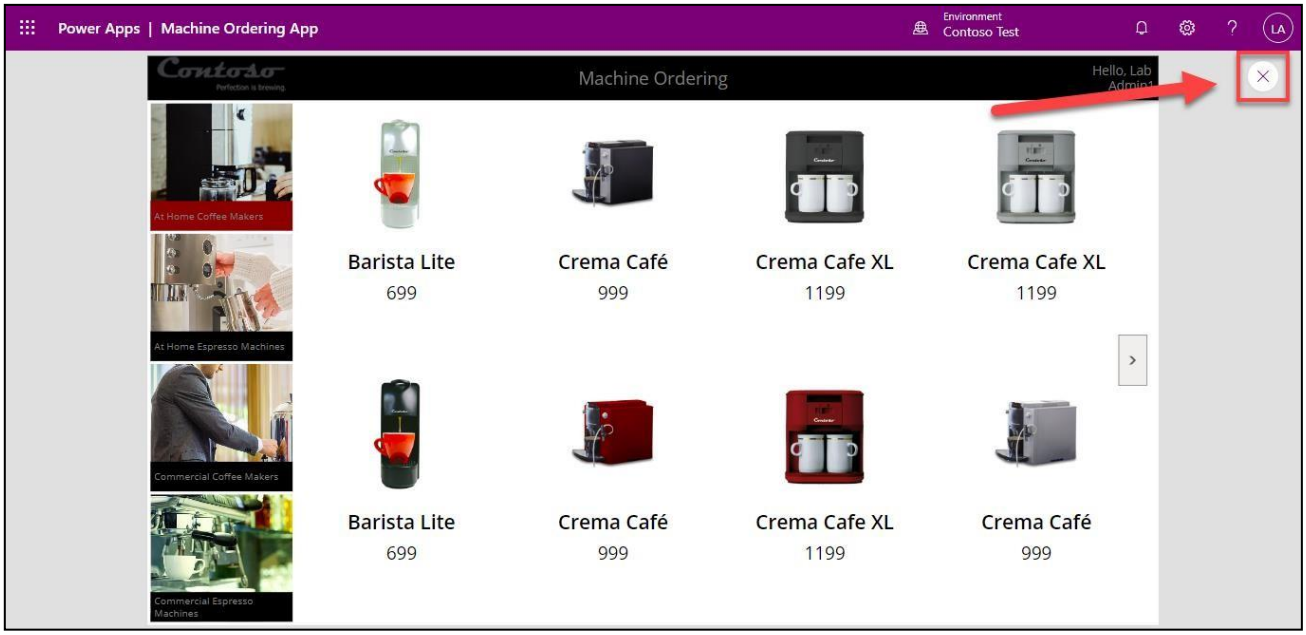
This approach is recommended so the fill color matches the header label with a 75% fade. If you change the fill color of header label, the fill color of the selected item in the gallery will automatically change.



3. Now try using the preview mode to perform a quick test of this highlighting. You can enable preview mode by holding down the **Alt key** (also known as the Option key) and selecting a few different manufacturers in the gallery, notice the selected item in the manufacturer gallery is highlighted in a light blue color. The preview mode ends when you **stop holding the Alt key**.

   Alternatively, you could select the **Play** (▷) button in the top right corner of the screen to enter preview mode. To **exit** the preview mode, you would then select the **X** in the top right corner or use the **Esc key** on your keyboard.





Task 5: Filter the machine gallery based on selected machine type

In this task, you will use the **Filter()** function to filter the items in the **Machine Gallery** to only display machines that match the selected item in the **Machine Type Gallery**.

1. Select the **Machine Gallery** from the Tree view pane to the left of the screen.
2. Set the **Items** property value of the **Machine Gallery** to the formula below:

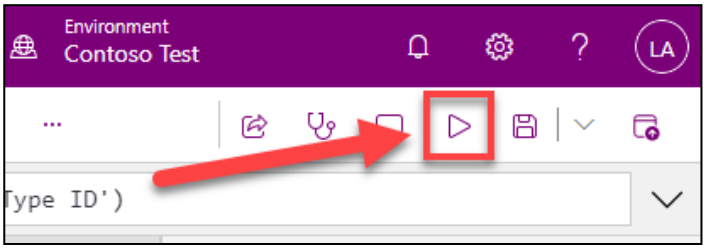
   ```
   Filter(Machines, 'Machine Type ID' = 'Machine Type Gallery'.Selected.'Type ID')
   ```

   for alternate/European locales:

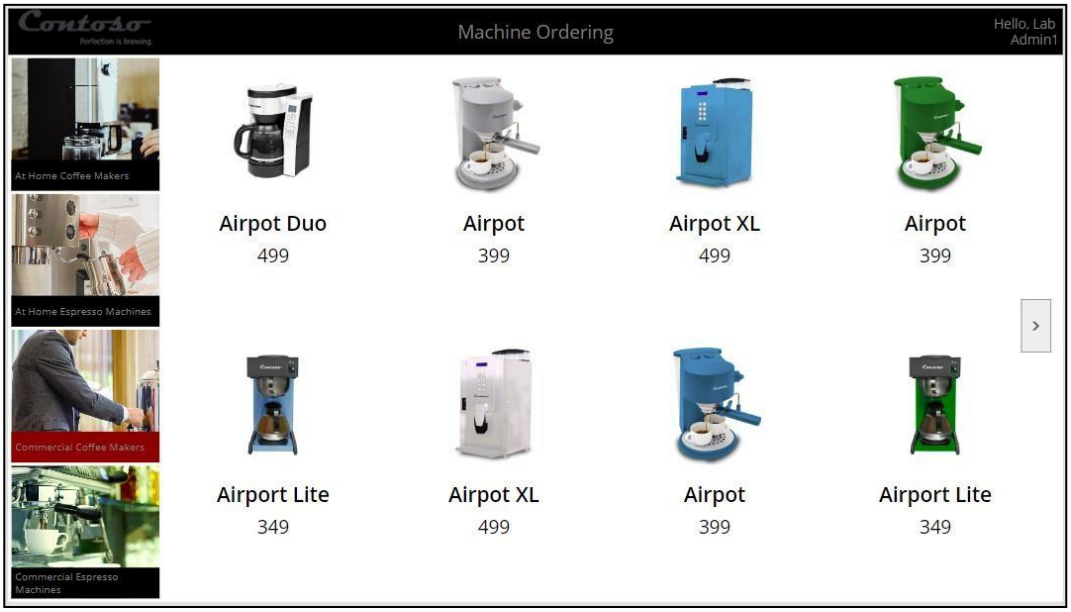
   ```
   Filter(Machines; 'Machine Type ID' = 'Machine Type Gallery'.Selected.'Type ID')
   ```

3. The **Machine Gallery** should now show machines that match the selected item of the machine types. Your app canvas should now look similar to the one shown in the figure below:

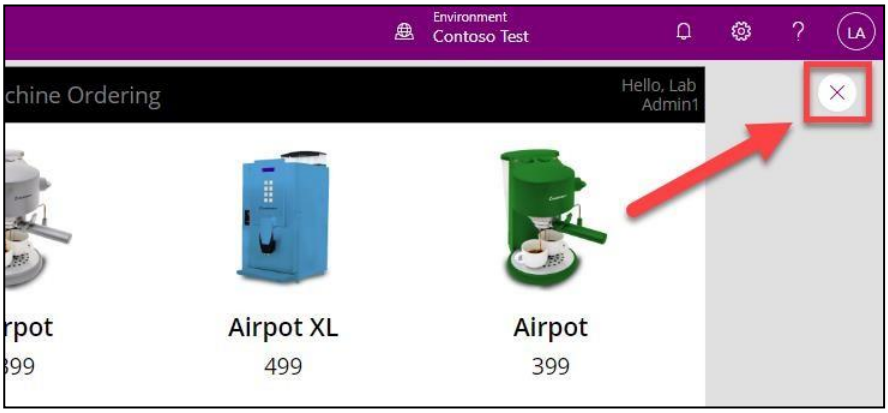
4. Select the button to Preview the app, located in the top right corner of the screen.



5. The app should then be in the Preview mode.
6. Select an item from the machine type gallery.
7. The machine gallery should now show machines that match the selected machine type. Select different machine types to see the machine gallery change in the preview.



8. To **close** the preview, select the **X** in the top right corner of the screen.



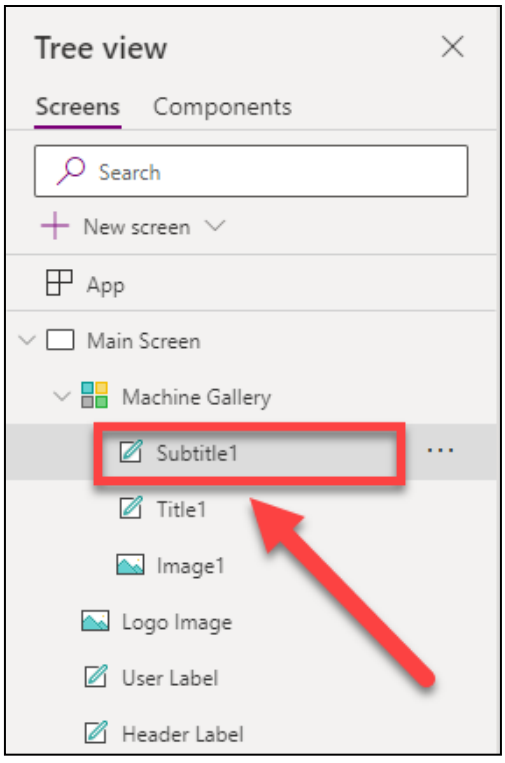
Note: If you get an error when entering the **Filter** command, check the name of the machine type gallery. The name within the filter command must match the name of your gallery.

More details on the Filter() function is available at Filter Lookup.

A complete set of expressions is available at Formula Reference.

Task 6: Configure text labels in the machine gallery

1. Expand the **Machine Gallery** in the Tree view pane and select the **Subtitle**.



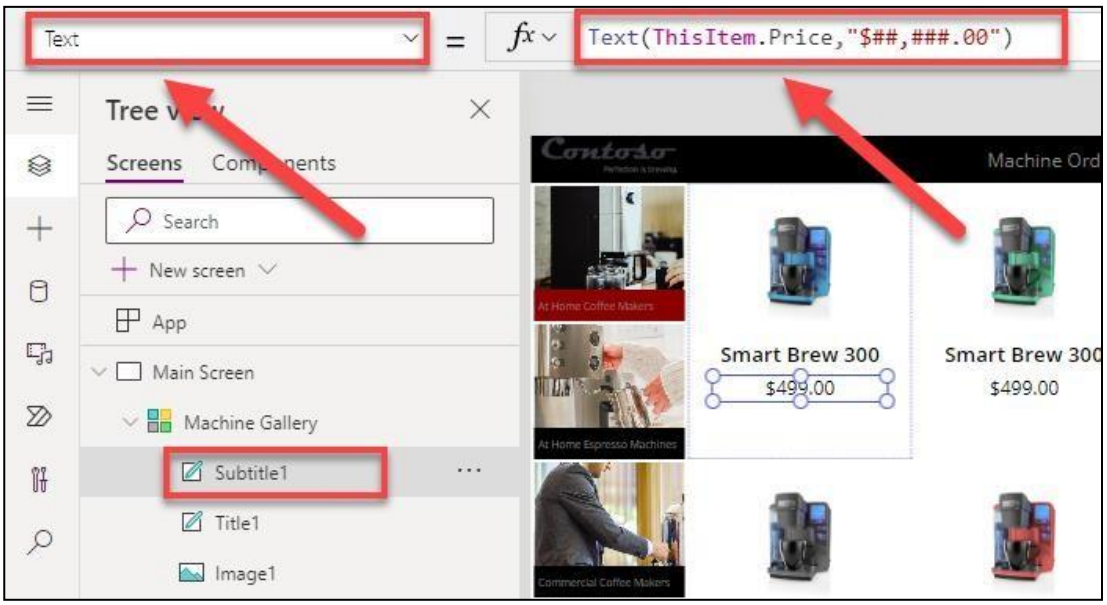
2. To add the **dollar sign** ($) to the **Subtitle**, change the **Text** property value of the **Subtitle** to the following formula:

```
Text(ThisItem.Price,"$##,###.00")
```

Or for alternate/European locales:

```
Text(ThisItem.Price;"$##.###,00")
```

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]:



Task 7: Conditional formatting to highlight machine above $10,000

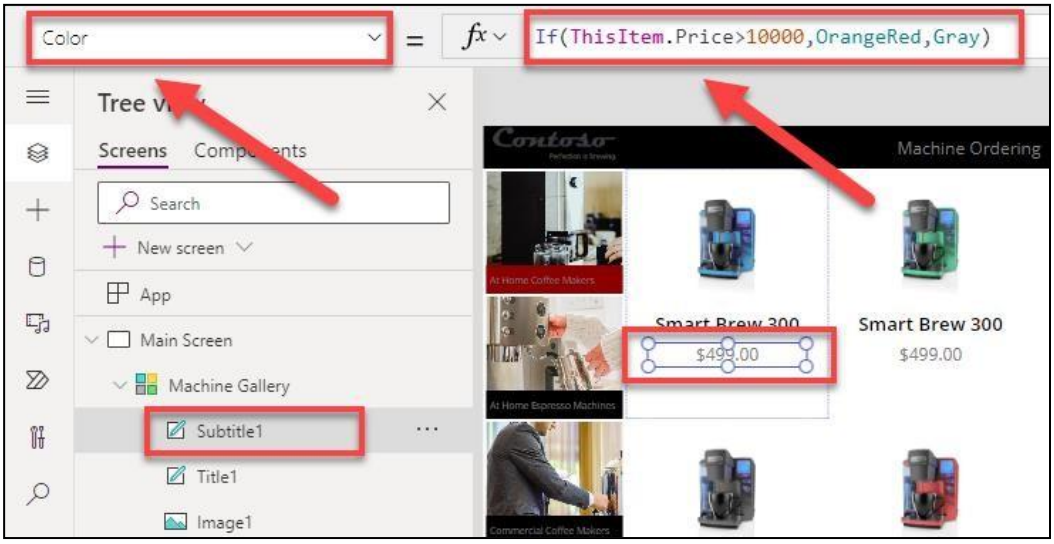
We can make it easy to spot machines that cost more than $10,000, by displaying the price in Red.

1. Select the **label** in the **template cell** that displays the price and set the **Color** property value to the formula below:

```
If(ThisItem.Price>10000,OrangeRed,Gray)
```

Or for alternate/European locales:

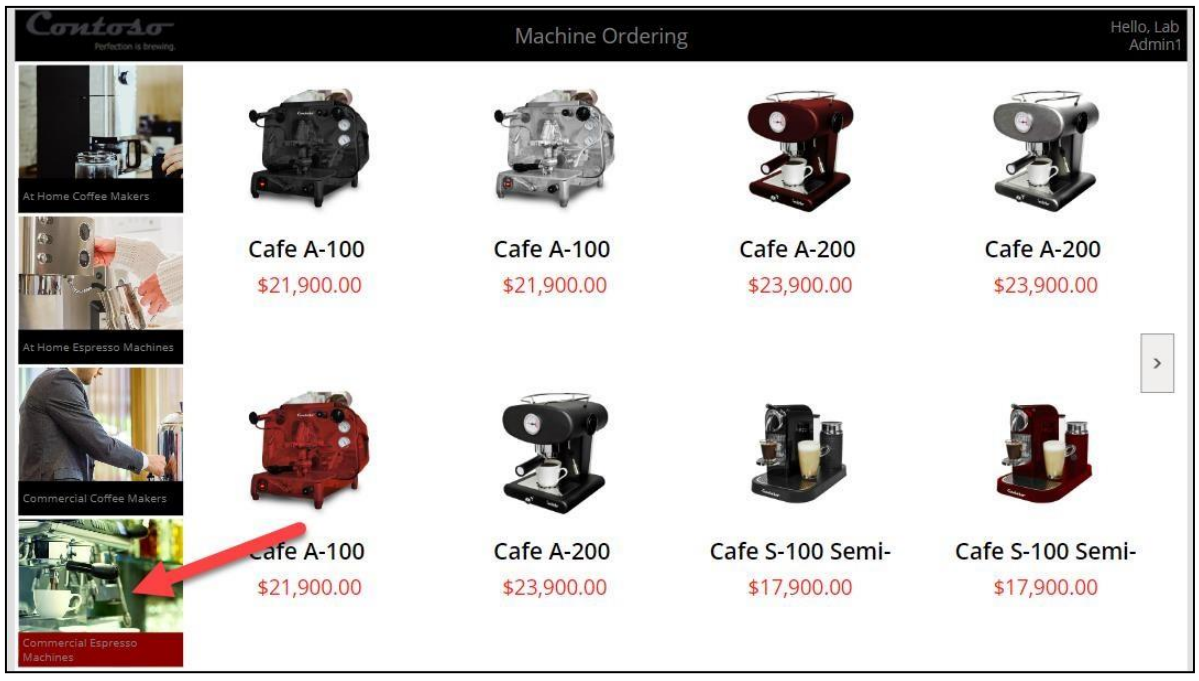
```
If(ThisItem.Price>10000;OrangeRed;Gray)
```



***Note**: As you are typing this formula notice that the autosuggest shows a choice of matching colors. Power Apps 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 [Function Colors]

1. Turn on the **Preview mode** for the app by selecting the **Play** ( ) button in the top right corner of the screen.
2. Select **Commercial Espresso Machines** from the Machine Type Gallery. The price for the machines that are over 10,000 dollars should become red.

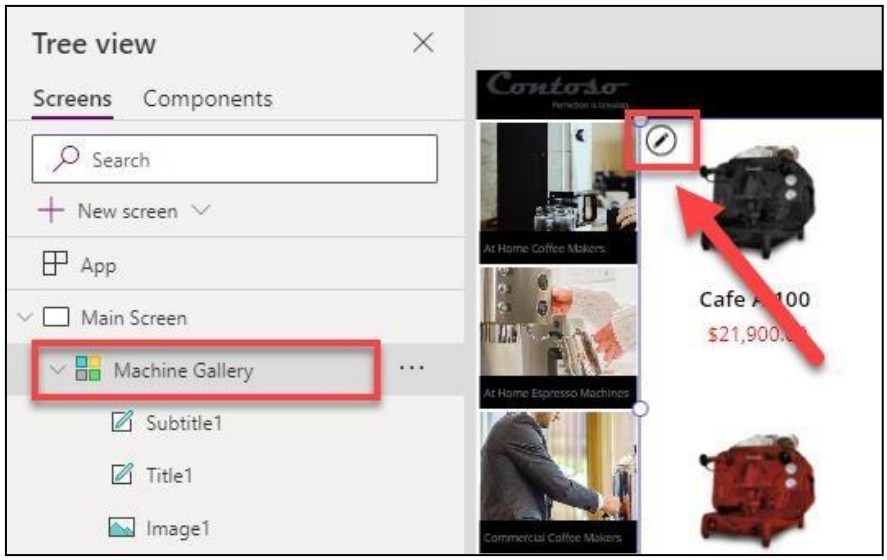


3. To **close** out of the **Preview mode**, select the **X** in the top right corner of the screen.

Task 8: Add a checkbox to add a machine to the Compare list

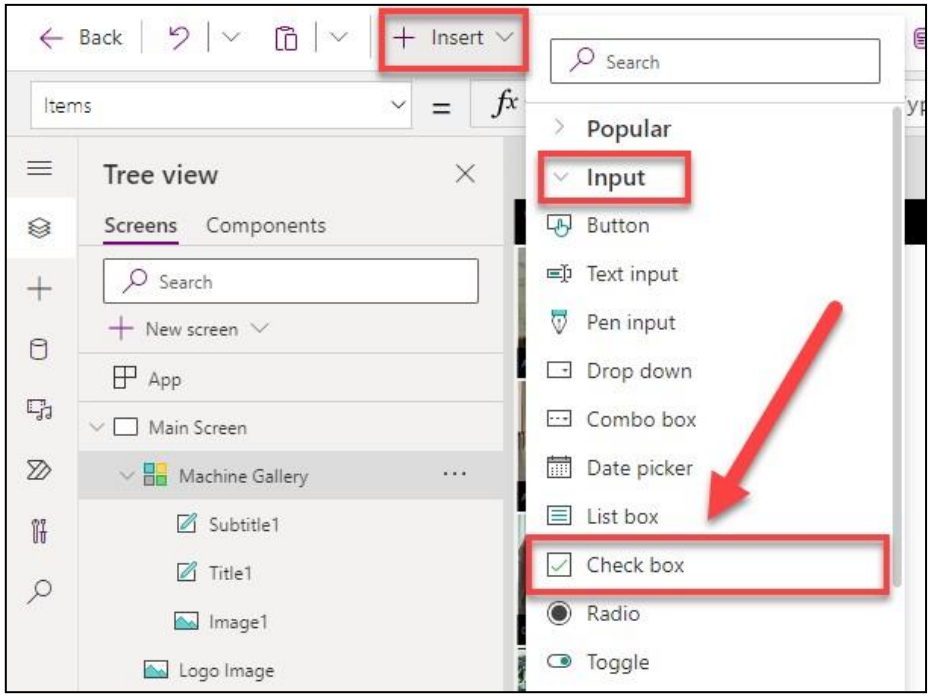
We want to allow users to select multiple machines to compare before making a final selection on the next screen.

1. Select the **Machine Gallery from** the **Tree view pane**, then select the **Pencil edit icon** in the top left of the gallery to select the template cell.



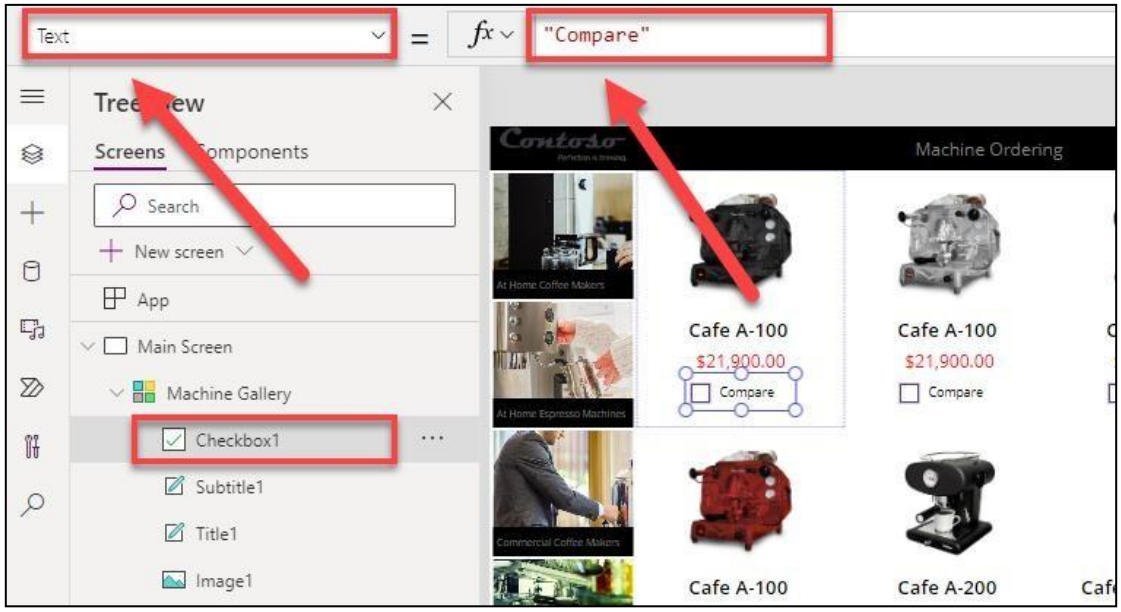
2. Make sure that only the first item in the gallery is selected (not the entire gallery).

3. Select **+ Insert** from the ribbon at the top of the screen, then expand the **Input** group, and select **Checkbox**.

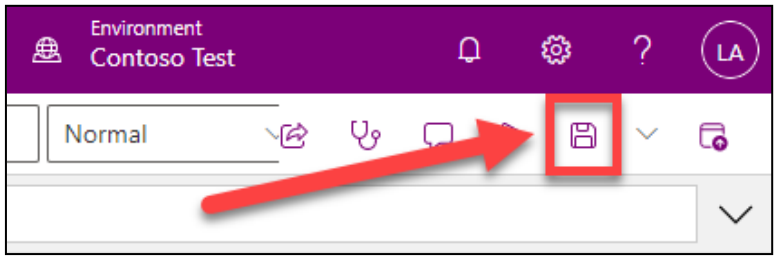


4. Move the inserted checkbox **below** the price.

5. Change the **Text** property value of the **Checkbox** by typing **"Compare"** in the formula bar.



6. Select the **Save** button within the ribbon in the top right corner of the screen and wait for the application to be saved.

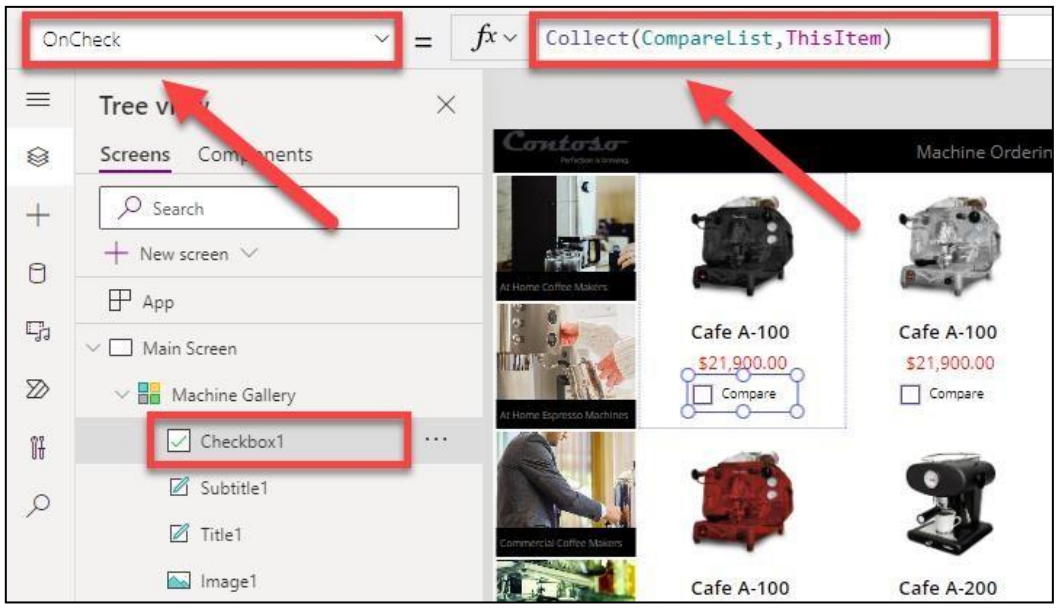


Task 9: Create a collection for the selected machines

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

1. Select the **Checkbox** control from the Tree view pane and change the **OnCheck** property value to the formula below:

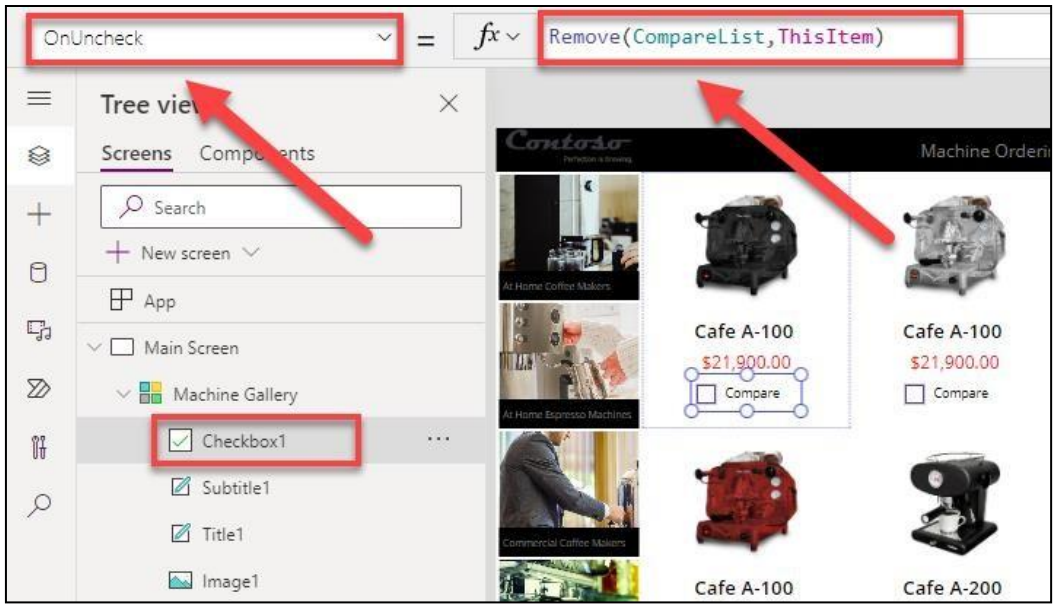
```
Collect(CompareList,ThisItem)
```



2. Next, set the **OnUncheck** property value of the **Checkbox** to the formula below:.

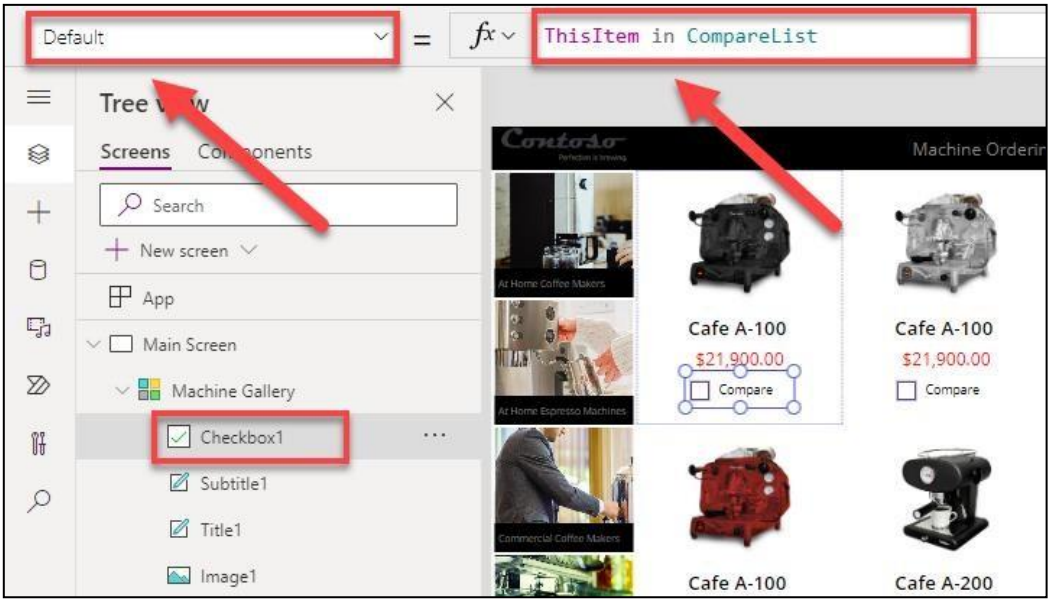
```
Remove(CompareList,ThisItem)
```

This is required to make sure the unchecked items are removed from the collection.



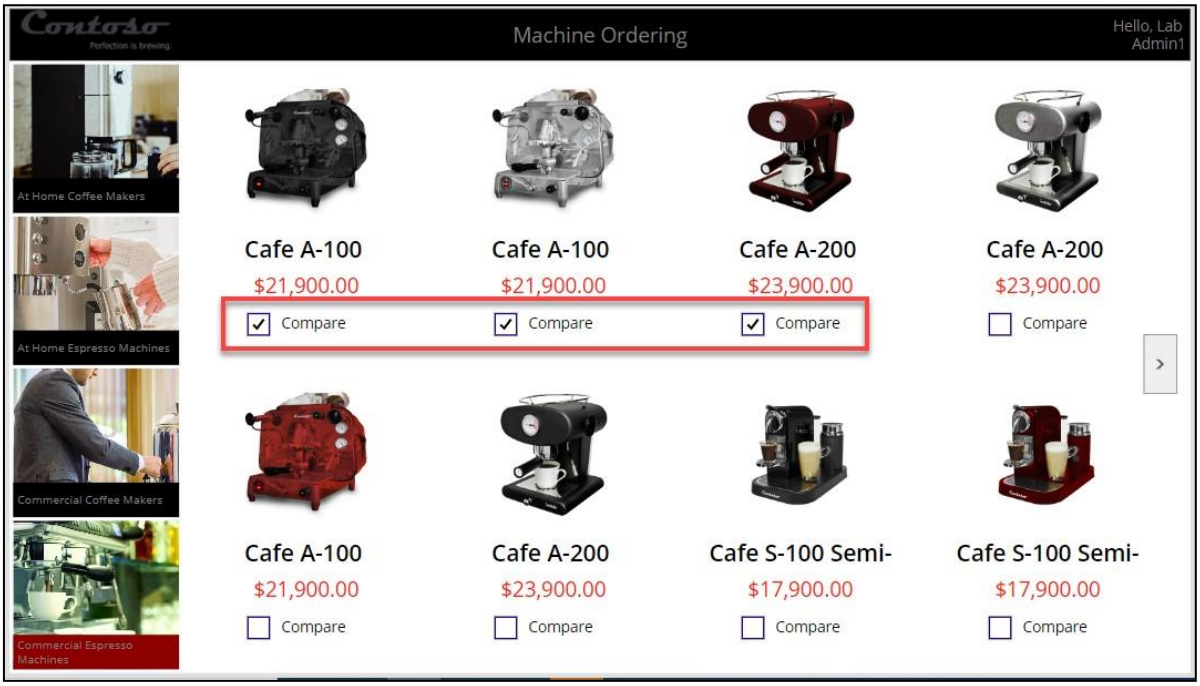
3. Set the **Default** property value of the **Checkbox** to the formula below:

```
ThisItem in CompareList
```

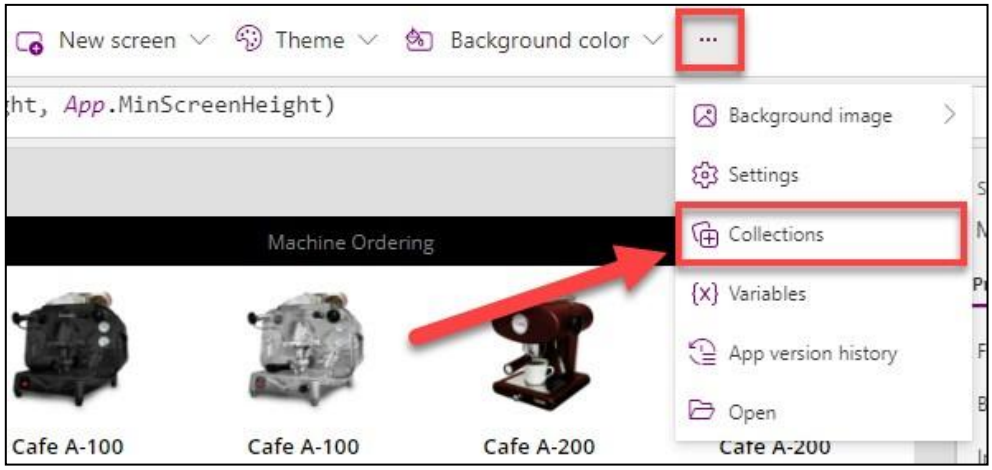


The **Default** setting of the checkbox is a **Boolean true or false value** that determines if the checkbox should be checked or not by default. Setting it to this formula will ensure that the checkbox is checked by default if the item has already been added to the collection since the result will be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

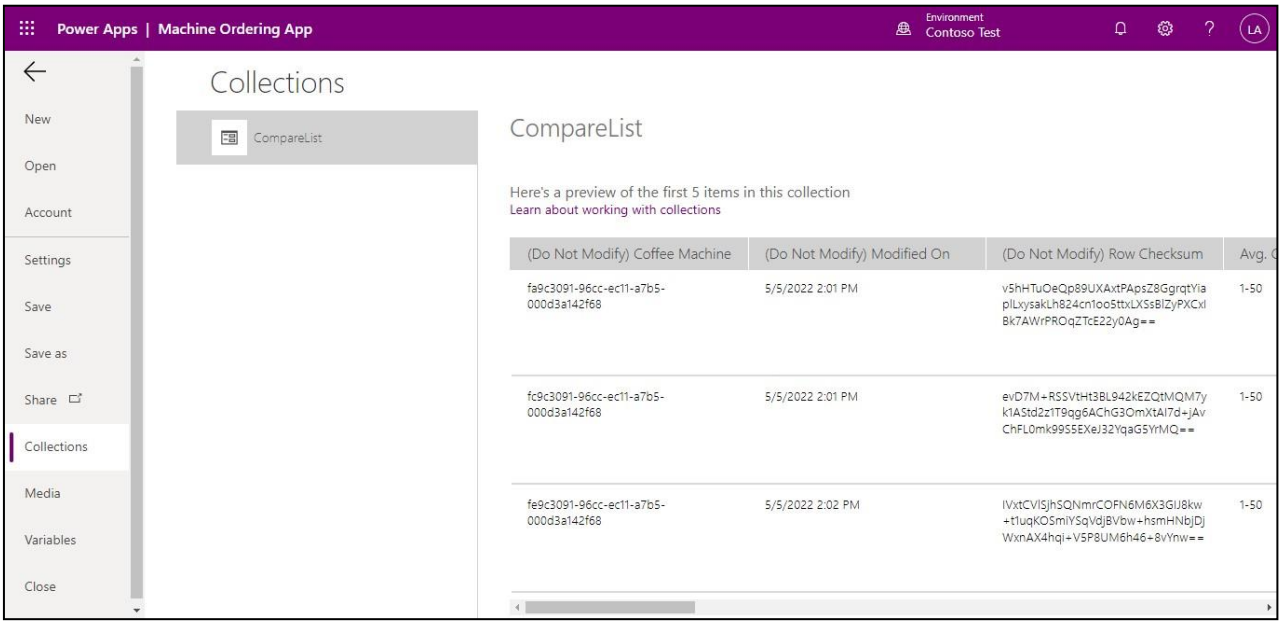
4. Let's test out adding items to a collection by running the app in the **Preview mode**; select the **F5 key** on your keyboard, or select the **Preview button** in the ribbon to the top right of the screen. Select the checkboxes of three different machines within the app.



5. **Close out** of **Preview mode** by selecting the **X** in the top right corner.
6. Select the **ellipses** (**...**) **button** within the ribbon at the top of the screen, then select **Collections**.

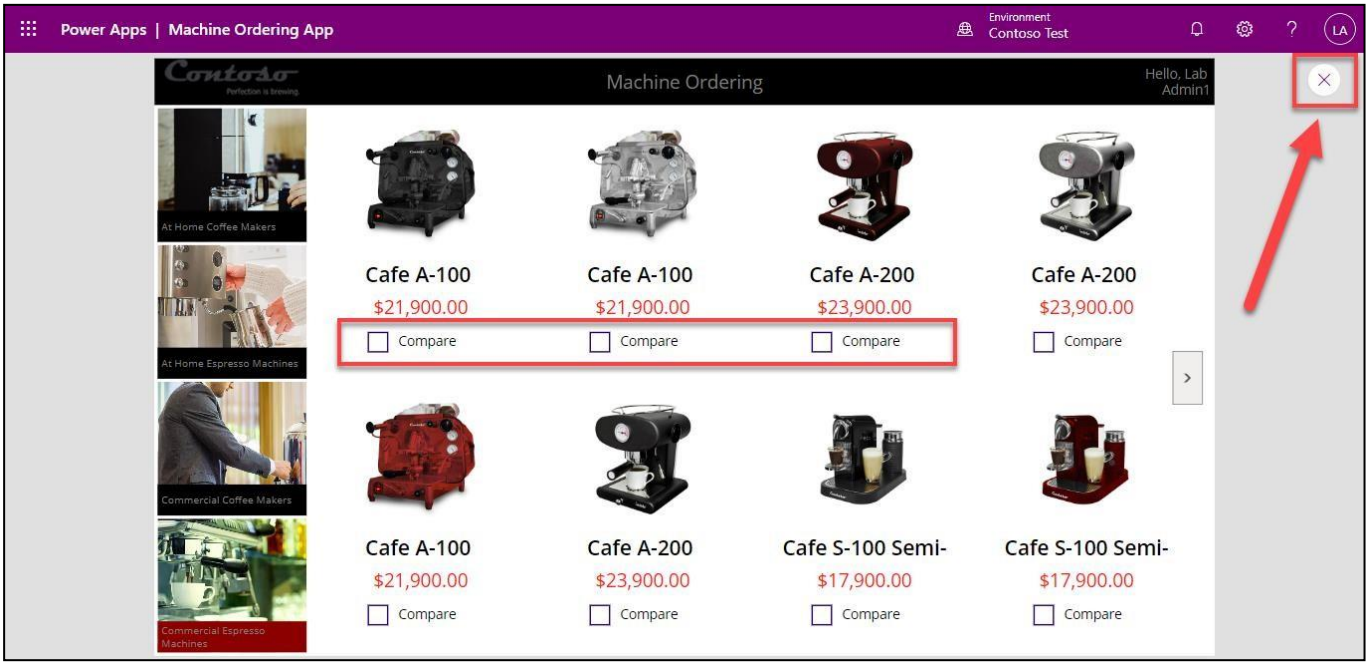


7. You will see the **CompareList** collection appear and the three items you selected while in the Preview mode.

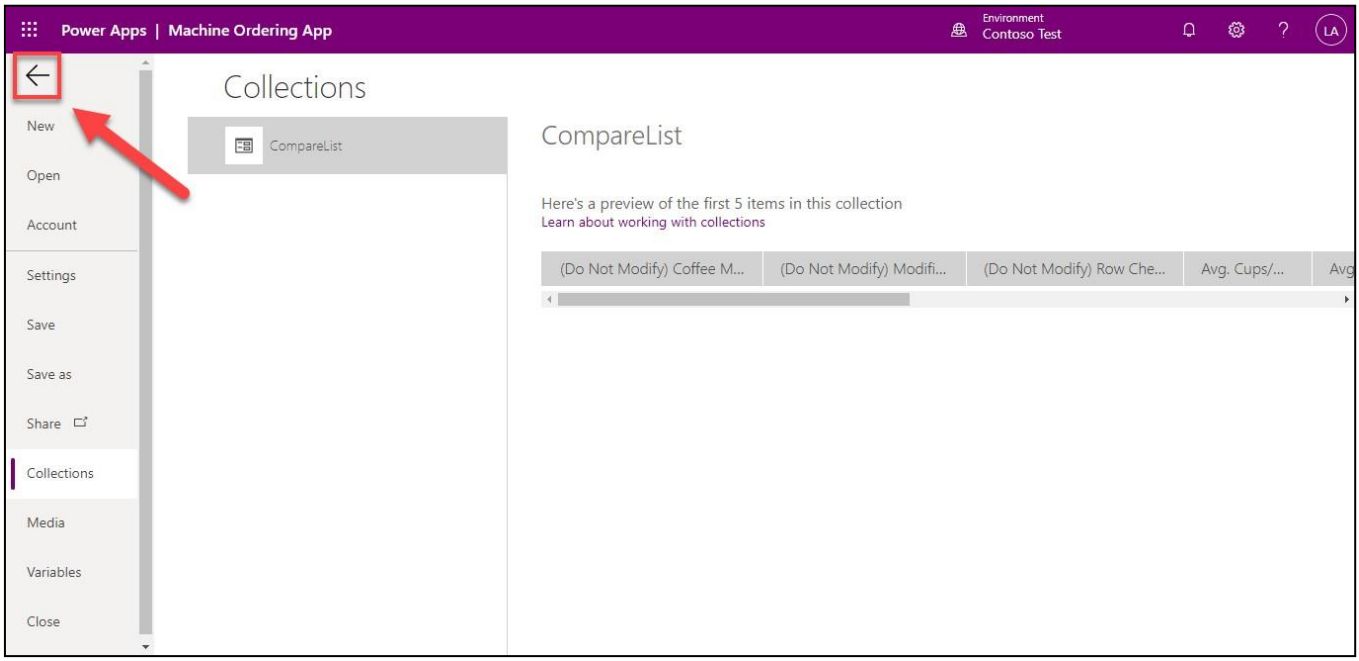


Note: Each item in the collection has all the information for each machine that we get from the **Machines** data source, not just the fields we display in the Machine Gallery.

8. Select the **back arrow** in the top left corner of the screen to navigate **back** to the **main view**.
9. Select the **Preview mode button** again within the ribbon in the top right corner of the screen.
10. **Uncheck** all the checked items and then select the **X** in the top right corner to **close** the preview.



11. Select the **ellipses** (**...**) button in the ribbon at the top of the screen and select **Collections** again.
12. All items have now been **removed** from the **CompareList** collection.
13. Select the **back arrow** in the top left corner to navigate back to the main screen view.



For more information on working with Collections in Power Apps, see:

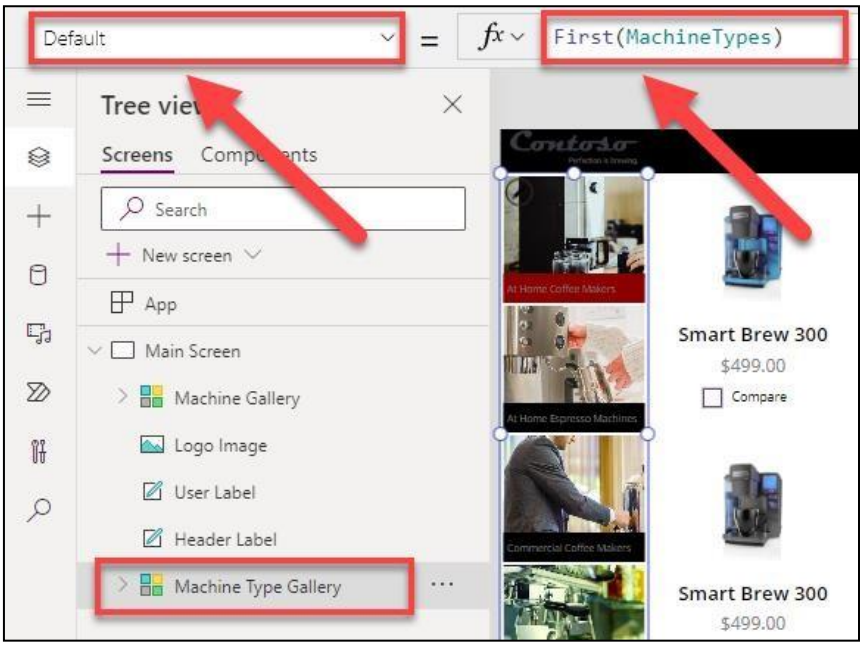
Create Update Collections and Clear Collections

Task 10: Set the default selection to the first machine type and test the app

To avoid getting a **blank list** of machines when the app starts, set the **default selected item** in the **Machine Type Gallery** to be the **first item**.

1. Select **Machine Type Gallery** in the tree view to the left of the screen and set the **Default** value property of the gallery to the formula below:

   ```
   First(MachineTypes)
   ```

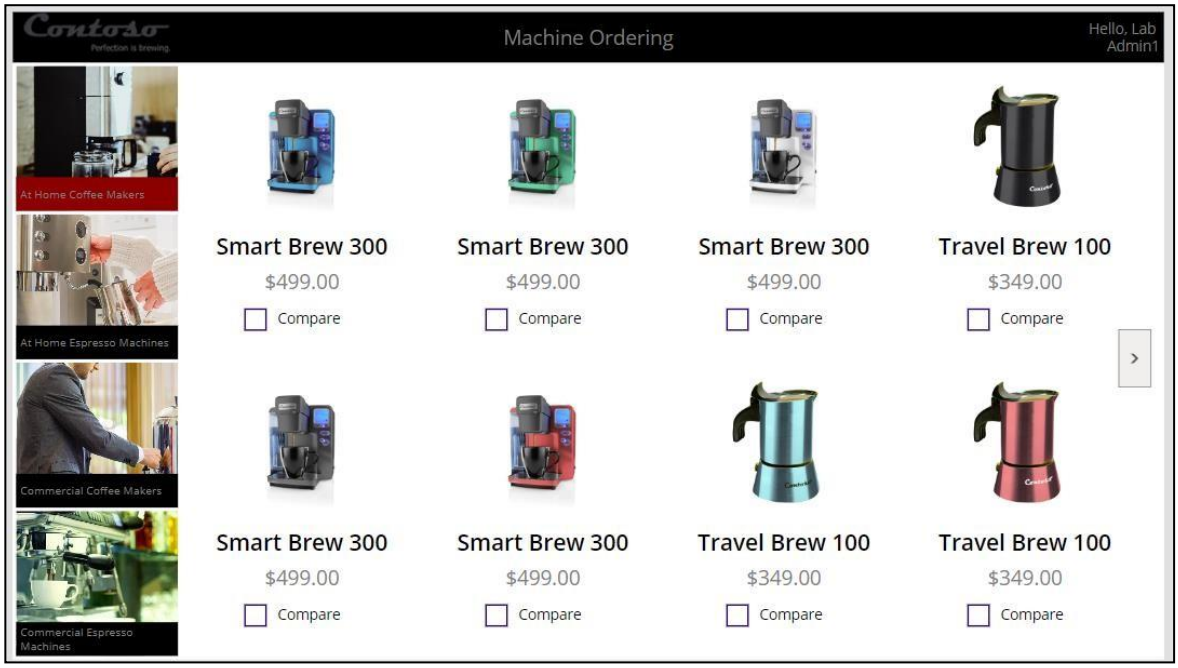


   This will set it to the first item in the table.

2. To **preview** the app, press the **Preview mode** button in the upper right corner of the ribbon at the top of the screen. You can also access the Preview mode by selecting the F5 key on your keyboard.

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 now look like the one in the figure below:



4. To **exit** the **Preview mode**, select the **X** in the top right corner of the screen.
5. Select **Save** located in the ribbon at the top of the screen and wait for the application to be saved. If the Savebutton is not available your app is already up to date.
6. Do not navigate away from this page.