



# Power platform App in a Day

Module 2: Common Data Service for Apps  
Hands-on Lab Step-by-Step

November 2018

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# Common Data Service for Apps

## Lab Prerequisites

This is the second lab in a five-part series covering PowerApps Canvas Apps, Common Data Service for Apps, PowerApps Model-driven Apps and Microsoft Flow. The assumption is that you have successfully completed the initial part of setting up an environment as described in the overview document – “**00-AppInADay Lab Overview.pdf**”.

If you have not completed building the PowerApps Canvas App in module 1, you can use the partially completed version of the lab package in the “\Completed\Module1” folder. Follow the instructions in the document “Importing Module 1 Completed” before proceeding with this module.

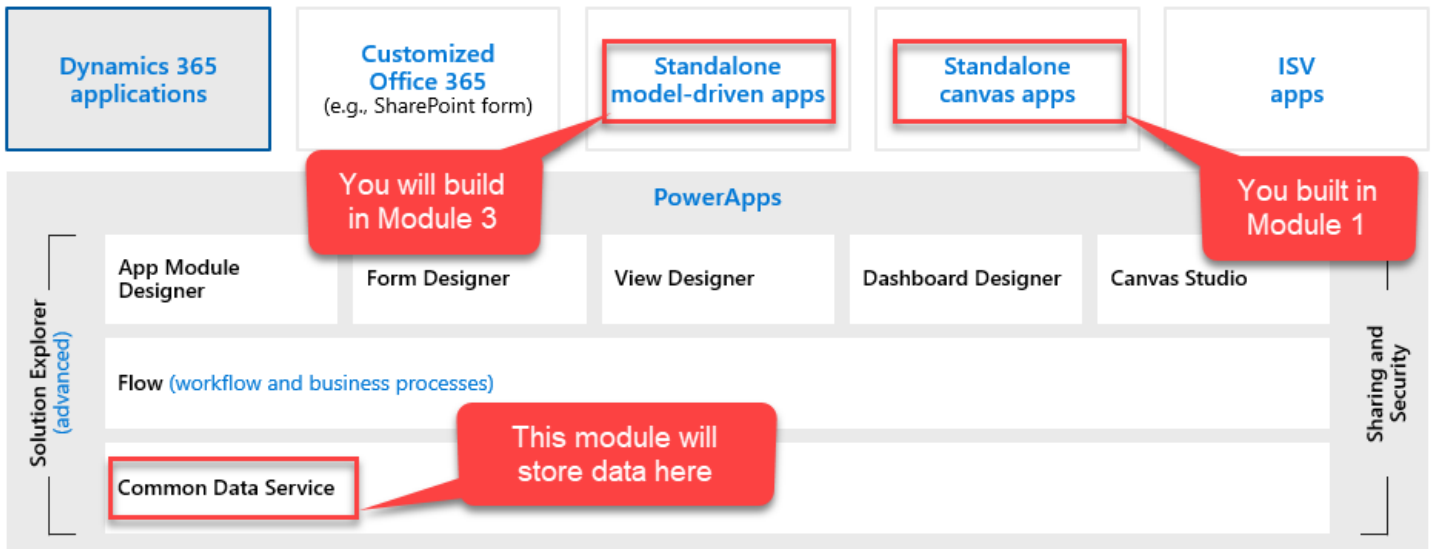
## Before you begin

You must be connected to the internet.

1. **System requirements:** At a minimum, a computer with 2-cores and 4GB RAM running Windows 7+ or MacOS.
2. **Have a Test Environment with permission to create Common Data Service database:** You should have gone through the steps to create a new environment using the Admin center. In this lab, you will create a database in this environment if you haven't already created one.
3. **Sign-in to PowerApps:** Go to <http://powerapps.com> and **sign in** with the same account you used to complete the first lab. Make sure you switch to the environment where you created the app.

## Overview

The [Common Data Service for Apps \(CDS for Apps\)](#) adds data storage and modeling capabilities to PowerApps that is scalable and easy to provision. In this module, you will be using CDS for Apps to model and store the data from the device ordering canvas app that you built in module 1. In the next module, you will be building a model-driven application using the same CDS data that will be used by the back-office staff to process the device orders. These apps that you build on CDS use the same technology framework (CDS for Apps) that Microsoft Dynamics 365 apps are built-on.



## Goals for this lab

After this lesson you will be able to:



- Provision a Common Data Service database.
- Create a custom entity and add custom fields to it.
- Use the PowerApps Form control to populate the entity table
- View the entity data in the entity table.
- Create a calculated field.
- Implement a server-side business rule.



The time to complete this lab is **[60]** minutes.

# Exercise 1: Exploring the Common Data Service (CDS)

In this exercise, you will explore the Common Data Service standard entities. Entities in CDS are like tables in a database or worksheets in Microsoft Excel. Entities can be connected together with relationships that model real world interactions between the entities. Each entity contains multiple records (rows), each having data fields. For example, a "Project" entity may have fields such as Name, Due Date, Status, etc. and it may be related to a "Project Owner" entity which might have fields such as Name, Email, etc.

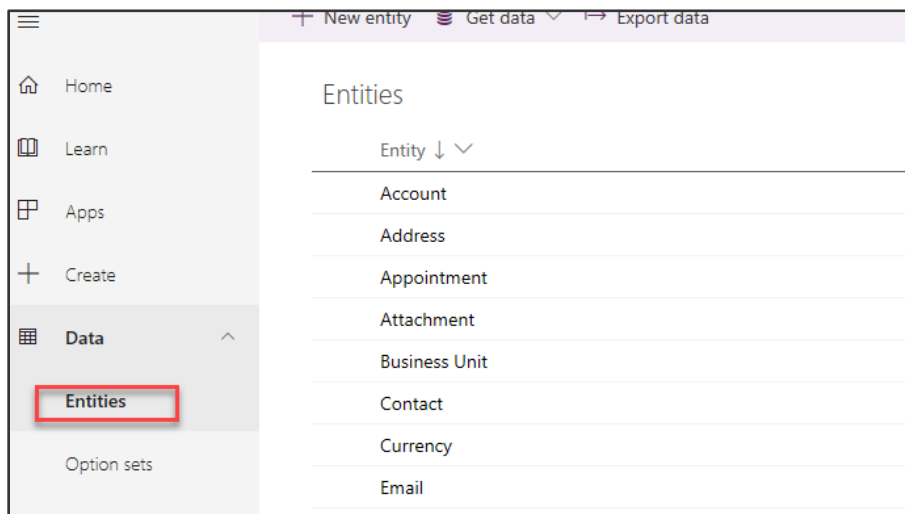
CDS abstracts a lot of the typical low-level database management work to make it easier for you to configure a custom data model that fits your application.

In addition to allowing for the creation of custom entities, CDS for Apps contains a Common Data Model (CDM) currently consisting of 100+ standard entity definitions. You can find the current CDM schema at <https://github.com/Microsoft/CDM> and you can browse the CDM using the CDM Visual Entity Navigator located here <https://microsoft.github.io/CDM/>. You can read more about the CDM here <https://docs.microsoft.com/powerapps/common-data-model/overview>

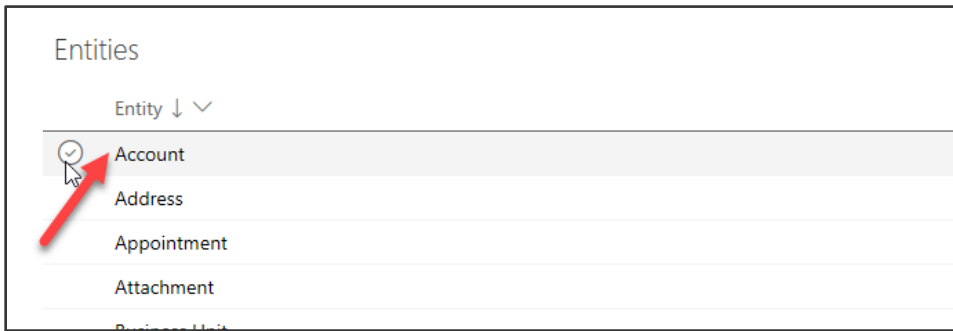
## Task 1: Explore standard entities

In this task, you will explore Common Data Service standard entities.

1. Navigate to <http://web.powerapps.com> and in the left pane, expand **Data** and select **Entities**.



2. This will bring up the list of entities in this database instance. Click on a few of the standard entities (for example, **Account**) to get familiar with some of the features of an entity.



For detailed documentation on CDS entities, see <https://docs.microsoft.com/en-us/powerapps/developer/common-data-service/reference/about-entity-reference>

**Fields:**

An entity has a list of fields. In the example below, the "Account" entity has fields such as Account Name, Account Number, etc. Each field has a data type, such as Text, Number, etc. The datatype is chosen when you create a field and is not changeable. The data type also defines many of the characteristics and behaviors of the field when your application runs. For example, an Option Set allows you to have a pre-defined list of values for use in your application. When this field is used on a form in a model-driven application the visual presentation is a drop-down control. The field helps to ensure data consistency and allows for built-in support for multi-language applications.

Fields of standard entities cannot be edited or removed, but you can extend existing entities by adding additional custom fields.

For a list of supported data types, see <https://docs.microsoft.com/dynamics365/customer-engagement/customize/types-of-fields>. Please note that a few of the field names have changed slightly in how they present in the list of choices. For example, Single Line of Text is just Text.

Entities > Account								
Fields	Relationships	Business rules	Views	Forms	Dashboards	Charts	Keys	Data
Display name ↓				Data type ↓		Type ↓		Required
Account				Unique Identifier		System		✓
Account Name				Text		Standard		✓
Account Number				Text		Standard		
Account Rating				Option Set		Standard		
Address 1				Multiline Text		Standard		
Address 1: Address Type				Option Set		Standard		
Address 1: City				Text		Standard		

**Relationships:**

Allows you to manage relationships between entities. Relationships supported are One to Many (1:N), Many to One (N:1) and Many to Many (N:N). Relationships also define the behavior that happens when actions occur on the primary record in a 1:N relationship. For example, if the parent record is deleted you can configure the relationship behavior so that all child records are also deleted or simply remove the reference.

Entities > Account

Fields Relationships Business rules Views Forms Dashboards Charts Keys Data

Display name ↓	Related entity ↓	Relationship type ↓	Type ↓
Company Name	...	Contact	One-to-many System
Connected From	...	Connection	One-to-many System
Connected To	...	Connection	One-to-many System
Created By	...	User	Many-to-one System
Created By (Delegate)	...	User	Many-to-one System
Created By (External Party)	...	External Party	Many-to-one System
Currency	...	Currency	Many-to-one System


**Business Rules:**

Building a Business Rule is like building a flowchart where you can define conditions and actions. You can find out more about Business Rules in link below.

More about Business Rules <https://docs.microsoft.com/dynamics365/customer-engagement/customize/create-business-rules-recommendations-apply-logic-form>

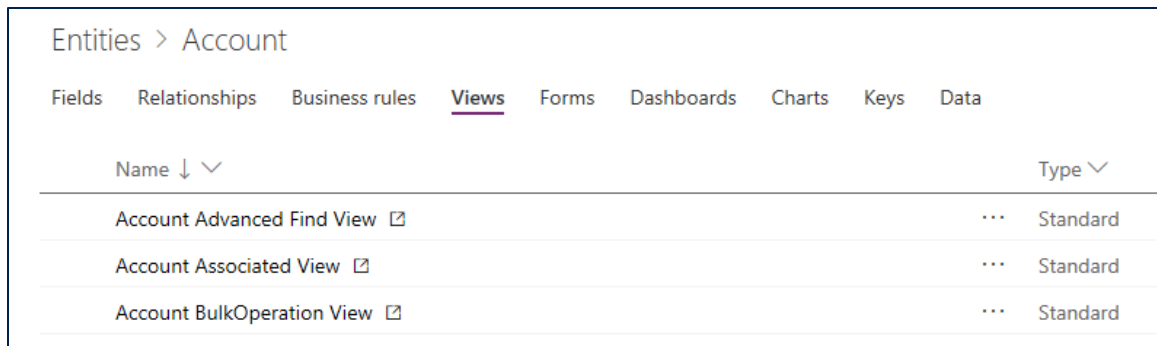
Entities > Account

Fields Relationships Business rules Views Forms Dashboards Charts Keys Data

Name ↓	Status ↓	Sc
		

**Views:**

Views will let you define how a list of records are shown in the app. You can create multiple custom views, each having their own filtering and sorting criteria. For example, you could create a view to see only the records created in the last week and another one to see records that haven't been updated in a year. Create views to make the application users more productive in filtering their data.

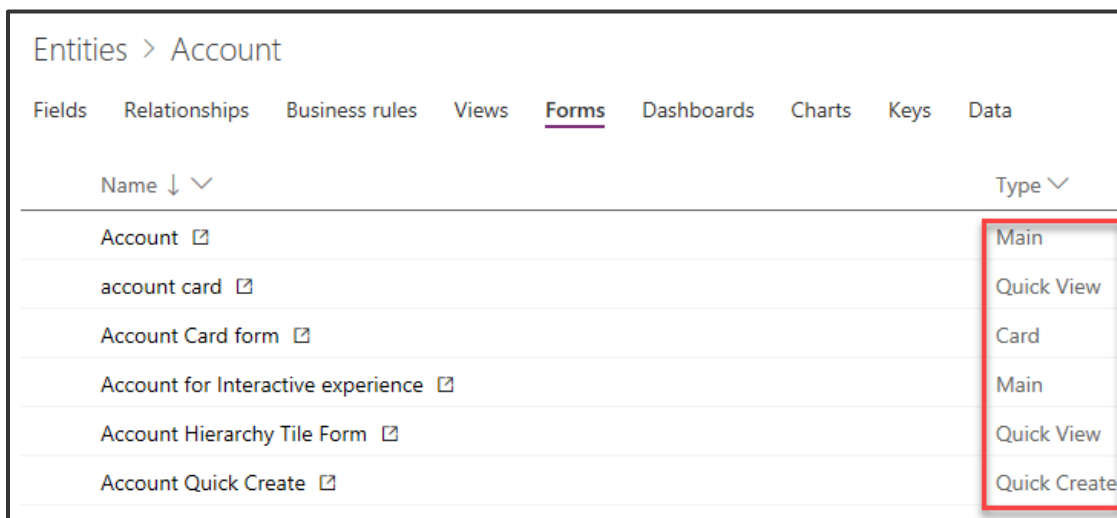


The screenshot shows the 'Views' tab for the 'Account' entity. The table lists three views: 'Account Advanced Find View', 'Account Associated View', and 'Account BulkOperation View'. All three are of type 'Standard'.

Name	Type
Account Advanced Find View	Standard
Account Associated View	Standard
Account BulkOperation View	Standard

**Forms:**

Forms provide the user interface that people use to interact with the data they need to do their work. It's important that the forms people use are designed to allow them to find or enter the information they need efficiently. You can create different types of forms like Quick Create, Quick View, Card, and a Main form.



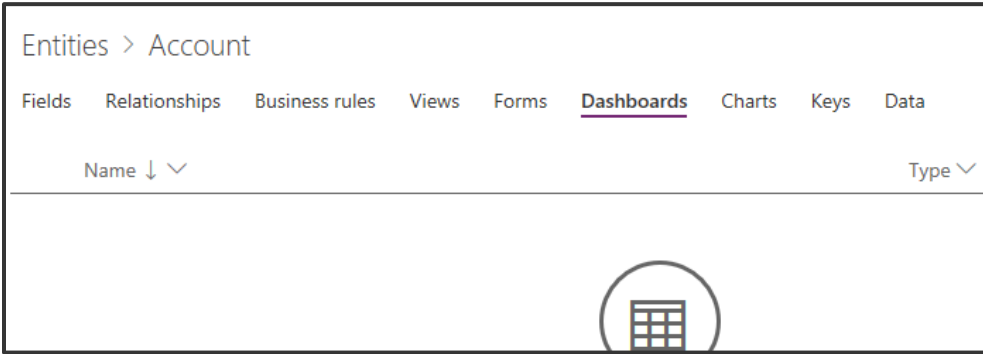
The screenshot shows the 'Forms' tab for the 'Account' entity. The table lists six forms with their respective types: 'Account' (Main), 'account card' (Quick View), 'Account Card form' (Card), 'Account for Interactive experience' (Main), 'Account Hierarchy Tile Form' (Quick View), and 'Account Quick Create' (Quick Create). The 'Type' column is highlighted with a red box.

Name	Type
Account	Main
account card	Quick View
Account Card form	Card
Account for Interactive experience	Main
Account Hierarchy Tile Form	Quick View
Account Quick Create	Quick Create



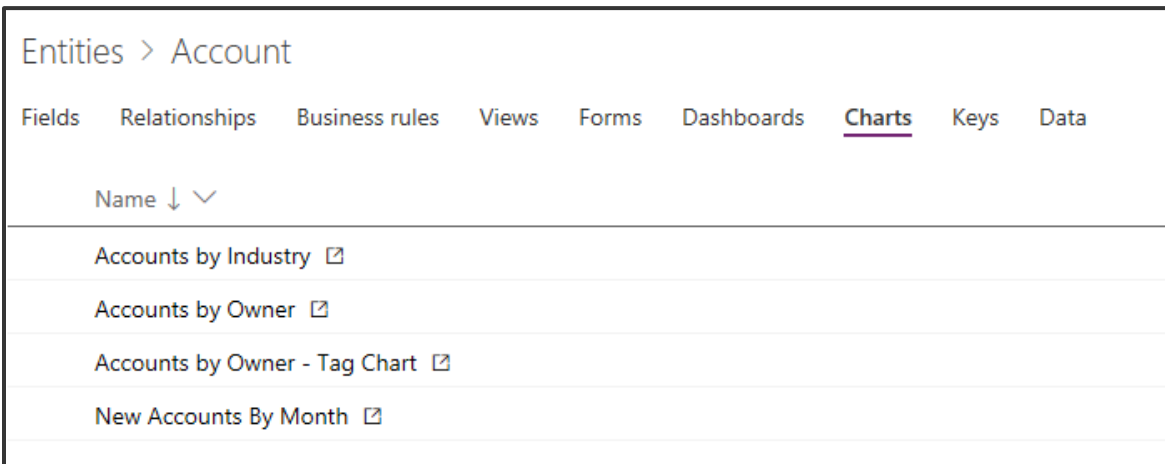
**Dashboards:**

Dashboards helps you bring your views, charts, and web resources together in one place.



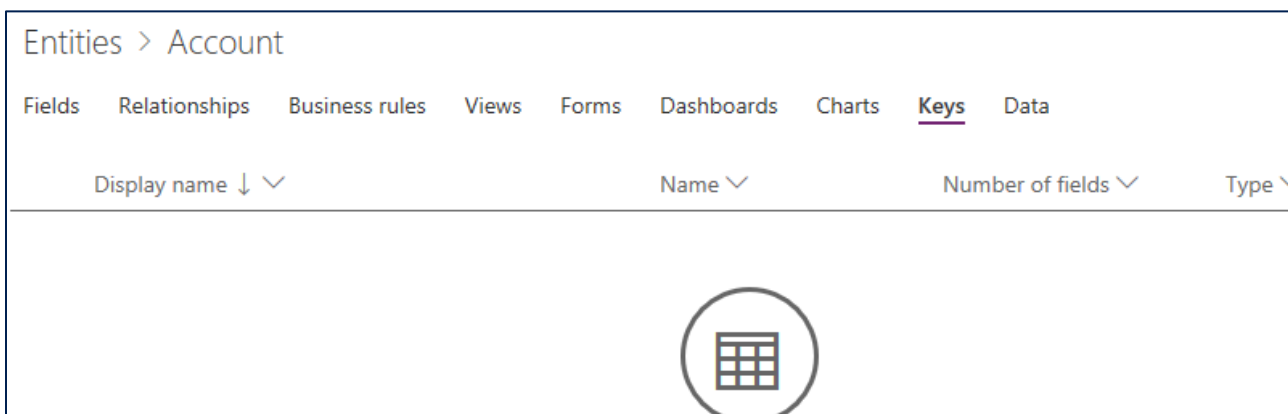
**Charts:**

Use Charts to display high-level view of your data.



**Keys:**

Allows you to view the lookup keys for the entity. Keys can contain multiple fields to define a composite key. Keys enforce uniqueness, so they should not be used when there is a need to store duplicate values of fields used.



**Data:**

You can view and search the data in the entity table. This gives you a quick way to see some of the data for the entity without having to jump into a specific Canvas or Model-driven app.

Entities > Account

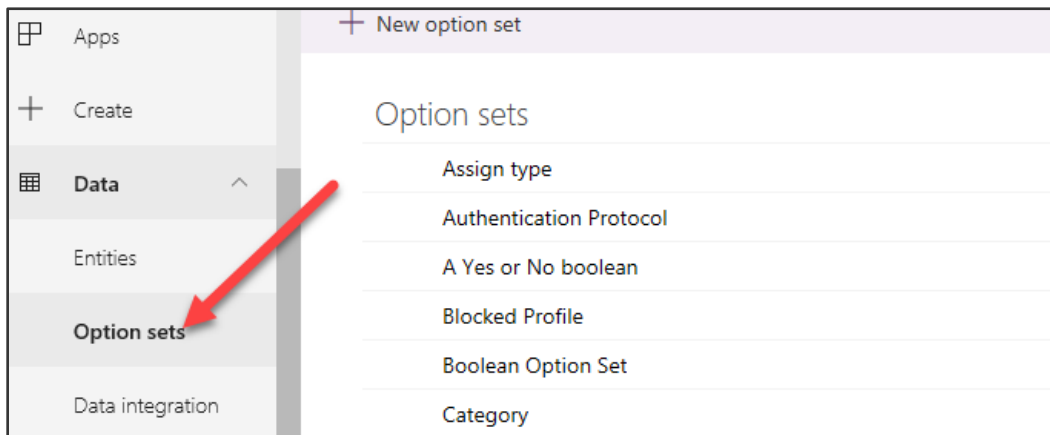
Fields Relationships Business rules Views Forms Dashboards Charts Keys Data

ACCOUNT NAME	MAIN PHONE	ADDRESS 1: CITY	PRIMARY CONTACT
A. Datum Corporation (sample)	555-0158	Redmond	Rene Valdes (sample)
Adventure Works (sample)	555-0152	Santa Cruz	Nancy Anderson (sam...
Alpine Ski House (sample)	555-0157	Missoula	Paul Cannon (sample)

## Task 2: Explore standard option sets

Just like standard entities, the Common Data Service includes a set of standard **Option Sets**. You can also create custom **Option Sets**. Later in this lab, we will create a custom **Option Set** called **ApprovalStatus** to set the approval status of a device order.

1. Select **Option Sets**.



2. Examine the standard **Option Sets**.

+ New option set		🔍 Search
Option sets		
Option set ↓ ▾	Type ▾	
Activity Type	System	...
Approve Article	System	...
Assign type	System	...
Authentication Protocol	System	...
A Yes or No boolean	System	...
Blocked Profile	Standard	...
Boolean Option Set	System	...
Category	Standard	...
Channel Activities	System	...
Component State	System	...
Component Type	System	...
Convert Activity	System	...

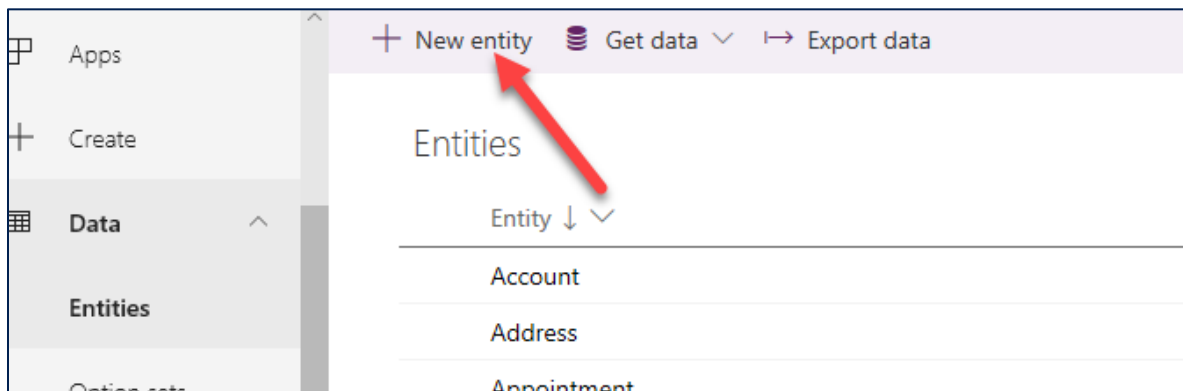
## Exercise 2: Custom Entities and Fields

In this exercise, you will create a new custom entity named Device Order, add fields necessary to track the device requests. You will also create a server-side Business Rule that will default the estimated ship date.

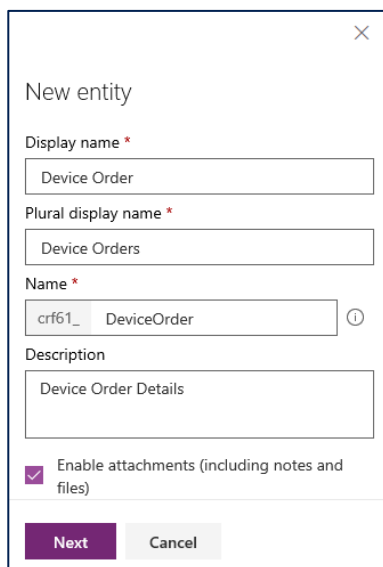
### Task 1: Create a custom entity

In this task, you will create a custom entity to store device order requests.

1. Select **Entities** in the left pane and click **New Entity** in the upper left corner of the page.



2. Enter **Device Order** for Display Name, **DeviceOrder** for Name, **Device order details** for Description. Check the Enable attachments since this will allow creating notes on the device order. Then click **Next**. The Plural display name will be populated automatically but if needed you can override the name provided. The plural name is used by the system by default anytime a set of the records are shown.

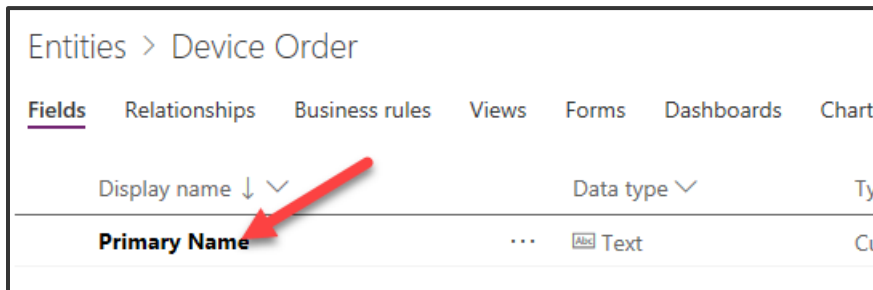
A screenshot of the 'New entity' dialog box in Microsoft Dynamics 365. The dialog has a title bar with a close button. It contains the following fields and options:

- Display name \***: A text box containing 'Device Order'.
- Plural display name \***: A text box containing 'Device Orders'.
- Name \***: A text box containing 'crf61\_ DeviceOrder' with a help icon to the right.
- Description**: A text box containing 'Device Order Details'.
- Enable attachments (including notes and files)**
- At the bottom, there are two buttons: 'Next' (highlighted in purple) and 'Cancel'.

3. After you click Next you will be able to change the primary attribute (labeled as Primary Name) and create other custom Fields prior to actually saving the entity and causing the system to create it. The primary attribute defaults

to being named Primary Name, for some scenarios that might not be the best label and you can customize it if needed. The primary attribute however is always a Text field, that is not changeable.

4. Click on Primary Name.



5. Change Display name to Device Name, Name to DeviceName, and click Done.

Device Name

Display name \*

Device Name

Name \*

crf61\_ DeviceName

Data type \*

Text

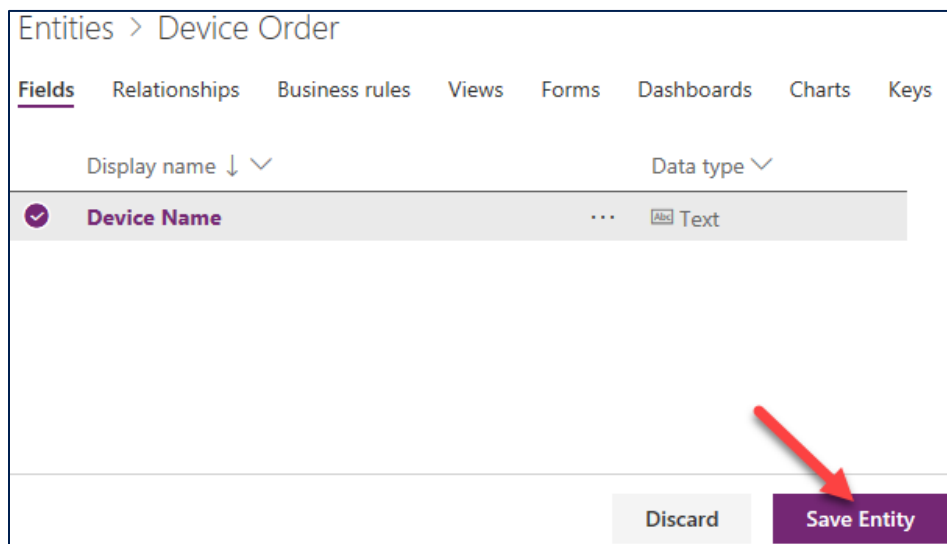
Required

Searchable

Calculated or Rollup ⓘ + Add

Done Cancel

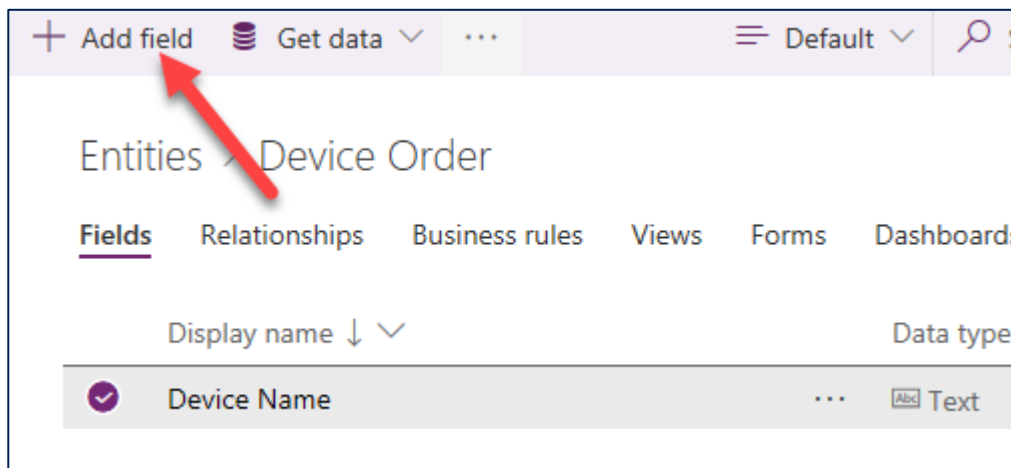
6. Click **Save Entity**.



## Task 2: Create custom fields

In this task, you will create custom fields for the Device Order entity.

1. Click on the **Add field** button to add fields to your custom entity.



2. Enter **Price** for Display Name, select **Currency** for Data Type, make the field **Required** and **Searchable** and click **Advanced Options**.

**Note:** Currency is a special data type. For each currency field you add, another currency field is added with the prefix "\_Base" on the name. This field stores the calculation of the value of the currency field you added and the base currency. For additional information on using the Currency field, see [here](#).

Price

Display name \*

Price

Name \*

cr6bd\_ Price ⓘ


Data type \*

Currency ⓘ

Required

Searchable

Calculated or Rollup ⓘ + Add ▾

Advanced options ▾ 

**Done** Cancel

3. Enter **Device Price** for Description, **0** for Minimum Value, **5000** for Maximum Value, and click **Done**.

Price

Description

Device Price|

Minimum value

0

Maximum value

5,000

Precision source

Currency precision ▾

IME mode

Auto ▾

**Done** Cancel

4. Click Add Field again.
5. Enter **Requested By** for Display Name, **RequestedBy** for Name, **Email** for Data type, make the field **Searchable** and click **Done**.

Requested By

Display name \*

Requested By

Name \*

crf61\_ RequestedBy ⓘ

Data type \*

Email ⓘ

Required

Searchable

6. Now repeat the Add Field process and add the following fields

Display Name	Name	Type
Request Date	RequestDate	Date Only
Approver	Approver	Email
Comments	Comments	Multiline Text
Estimated Ship Date	EstimatedShipDate	Date Only
Approved Date	ApprovedDate	Date Only

- Now we are going to create the Approval Option Set. Click Add Field.
- Enter **Approval Status** for Display Name, **ApprovalStatus** for Name, select **Option Set** for Data type, and select **New Option Set** for Option Set.

Approval Status

Display name \*

Approval Status

Name \*

crf61\_ ApprovalStatus ⓘ

Data type \*

Option Set ⓘ

Option set \*

+ New option set

A Yes or No boolean

- Change the New Item label to **Approve**
- Click **Add new item**.



Approval Status

Display name \*

Name \*

[View more](#)

**Items (1)**

Approve	...
---------	-----

[Add new item](#)

11. Enter **Reject** and click **Save**.

**Items (2)**

Approve	...
Reject	...

[Add new item](#)

**Save** Cancel

12. Click **Done**.

Approval Status

Display name \*

Approval Status

Name \*

crf61\_ ApprovalStatus

Data type \*

Option Set

Option set \*

Approval Status

Edit option set

Default value

Done Cancel

13. Click Save Entity.

Entities > Device Order

Fields Relationships Business rules Views Forms Dashboards Charts Keys Data

Display name ↓	Data type ↓	Type ↓
<input checked="" type="checkbox"/> <b>Approval Status</b>	Option Set	Custom
<b>Approved Date</b>	Date Only	Custom
<b>Approver</b>	Email	Custom
<b>Comments</b>	Text Area	Custom
Device Name	Text	Custom
<b>Estimated Ship Date</b>	Date Only	Custom
<b>Price</b>	Currency	Custom
<b>Request Date</b>	Date Only	Custom

Discard Save Entity

## Task 3: Create a calculated field

In this task, you will add a Department Contribution field and set its value to 10% of the price. In our scenario, this is the amount that will come from the department managers budget. Calculated fields are special fields that automatically perform the calculation when the data is retrieved. When you create or modify a calculated field you can set the formula used in the calculation.

1. In the upper left corner of the screen, click on **Add field** to add fields to your custom entity.
2. Enter **Department Contribution** for Display Name, enter **DepartmentContribution** for Name, select **Currency** for Data Type, click **Add Calculated or Rollup**, and select **Calculation**.

Department Contribution

Display name \*

Department Contribution

Name \*

crf61\_ DepartmentContribution

Data type \*

Currency

Required

Searchable

Calculated or Rollup

+ Add

+ Calculation

+ Rollup

Advanced options

Done Cancel

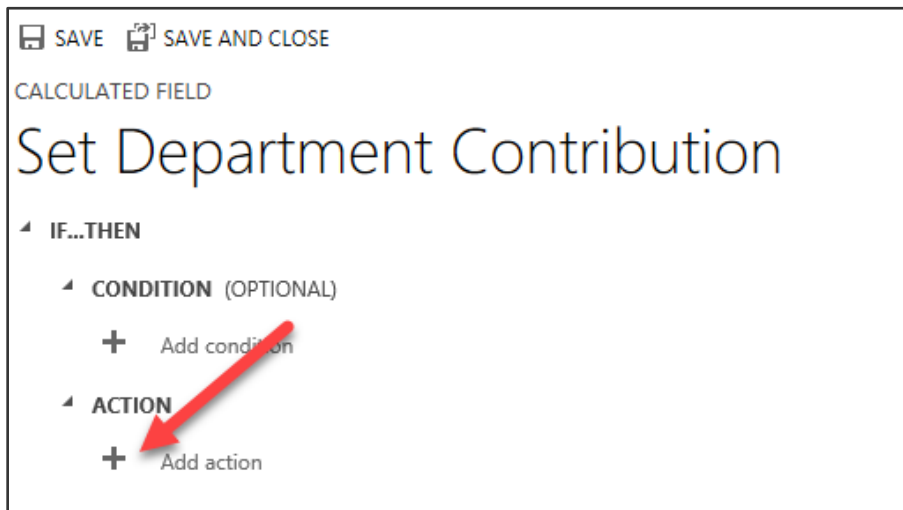
3. Click Save.

Pending changes

In order to open the calculated field editor, you must first save the current entity. Click Save below if you are ready to save the current entity.

Save Cancel

1. Click **Add Action**.



SAVE SAVE AND CLOSE

CALCULATED FIELD

## Set Department Contribution

IF...THEN

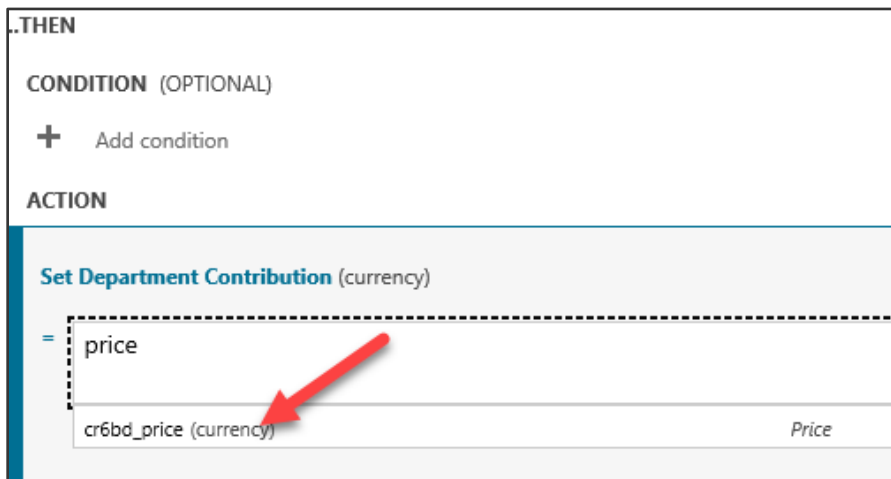
CONDITION (OPTIONAL)

+ Add condition

ACTION

+ Add action

2. Type price and select the Price field you created.



.THEN

CONDITION (OPTIONAL)

+ Add condition

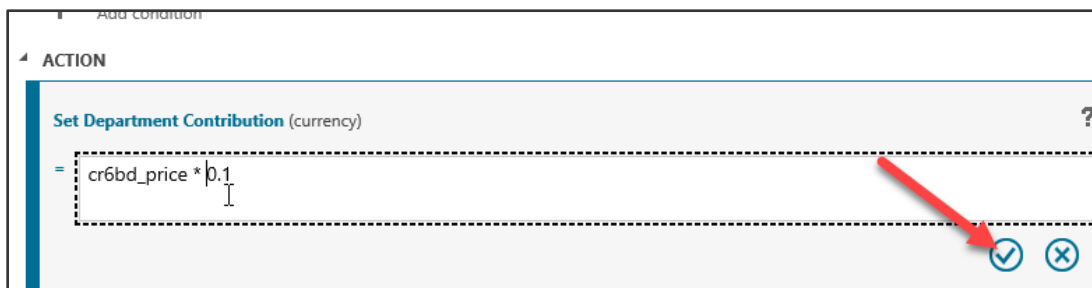
ACTION

Set Department Contribution (currency)

= price

cr6bd\_price (currency) Price

3. Add **\*.1** and click the **Check Mark** button.



IF...THEN

CONDITION (OPTIONAL)

+ Add condition

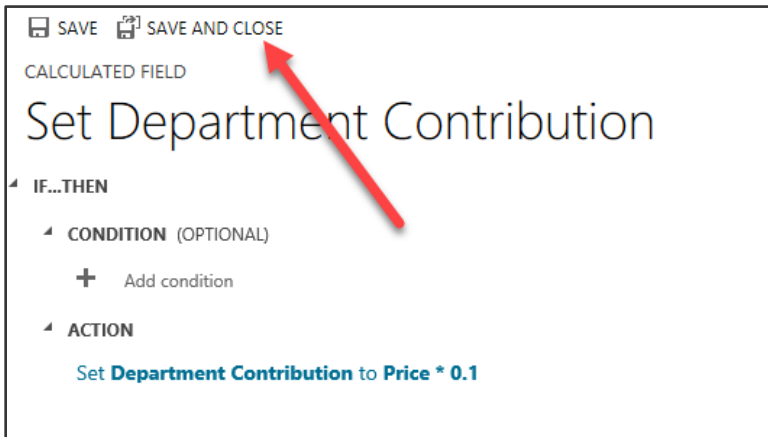
ACTION

Set Department Contribution (currency) ?

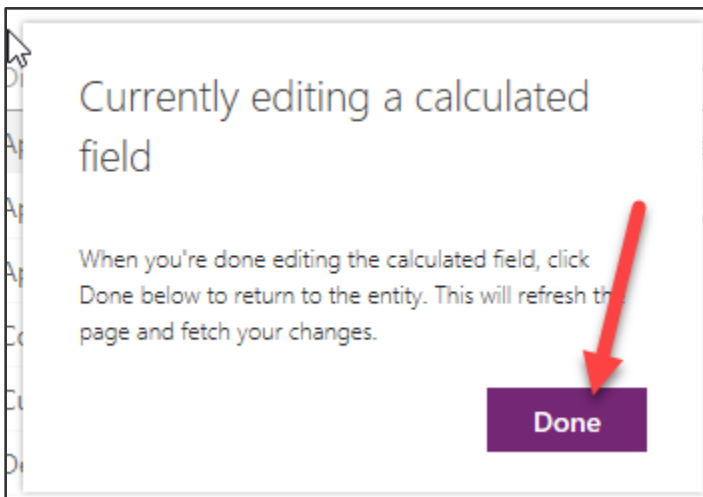
= cr6bd\_price \*.1

✓ ✕

4. Click **Save and Close**.



5. Click **Done**.



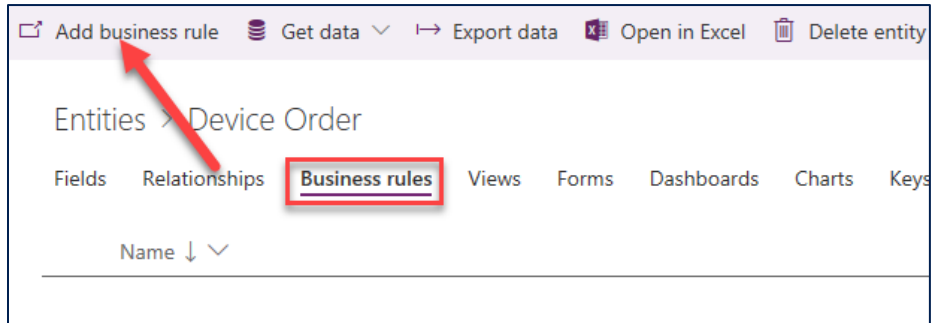
Note on currency fields: You might notice that there are two Department Contribution fields one with (base) next to it. Currency fields in CDS store the base currency value (this is the configured default currency for the environment) and the transaction currency (this can be selected on a record by record basis) to allow support for multi-currency transactions. Generally, want to make sure to pick the field with out the (base) in the name. The (base) value is commonly used in reporting where you want to normalize multiple currencies to allow reporting on them in the base currency value.

Currency	...	Lookup	Standard
Department Contribution	...	Currency	Custom
Department Contribution (Base)	...	Currency	Custom
Device Name	...	Text	Custom
Estimated Ship Date	...	Date Only	Custom

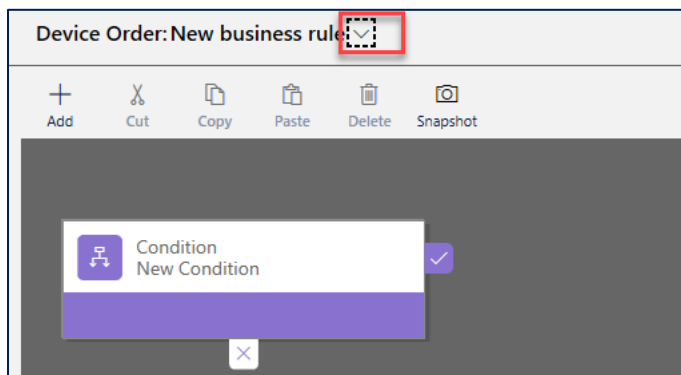
## Task 4: Create a business rule

In this task, you will create a **Business Rule** that will set the Estimated Delivery Date to 14 days after approval of the order.

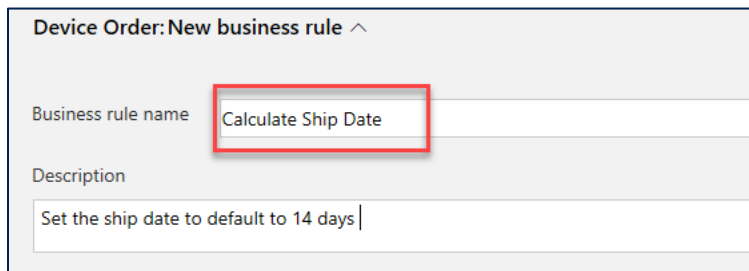
1. Select the **Business Rules** tab and click **Add Business Rule**.



2. Click the arrow to **Show Details**.



3. Change the Name to **Calculate Ship Date** and click the arrow to Hide Details.

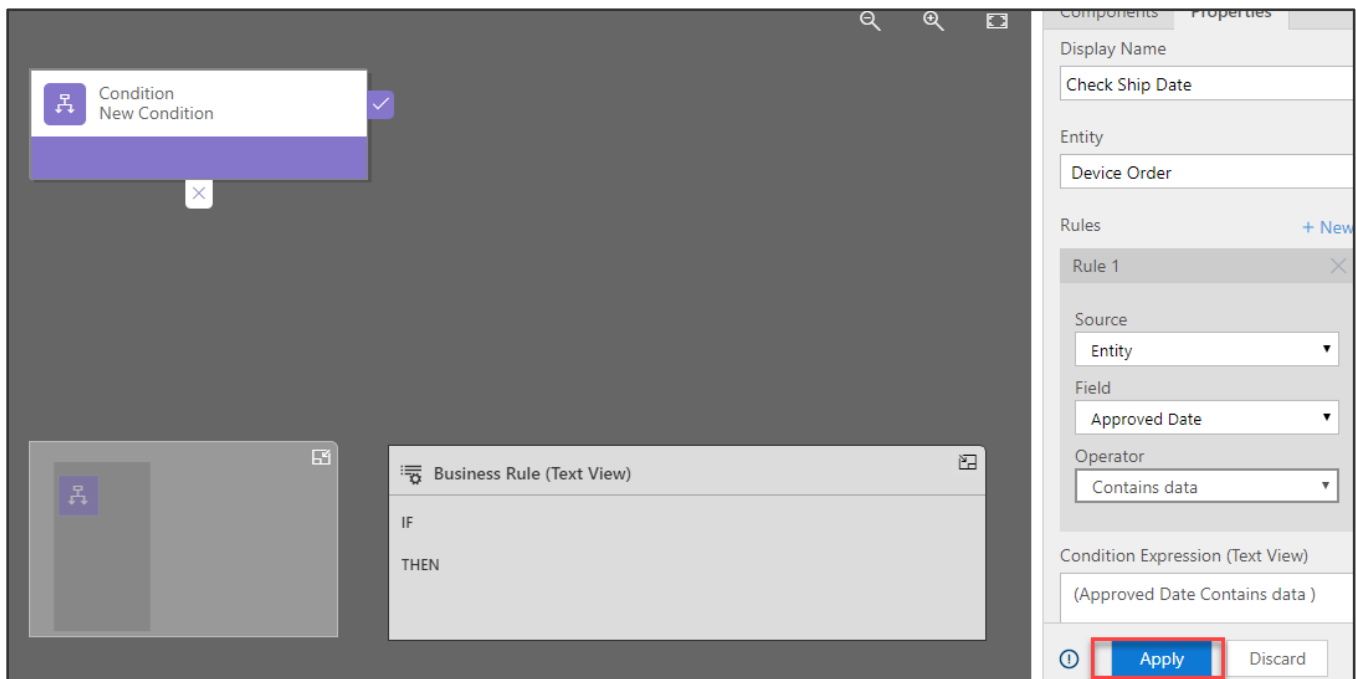


4. Select the **Condition**, change the name to **Check Ship Date**.

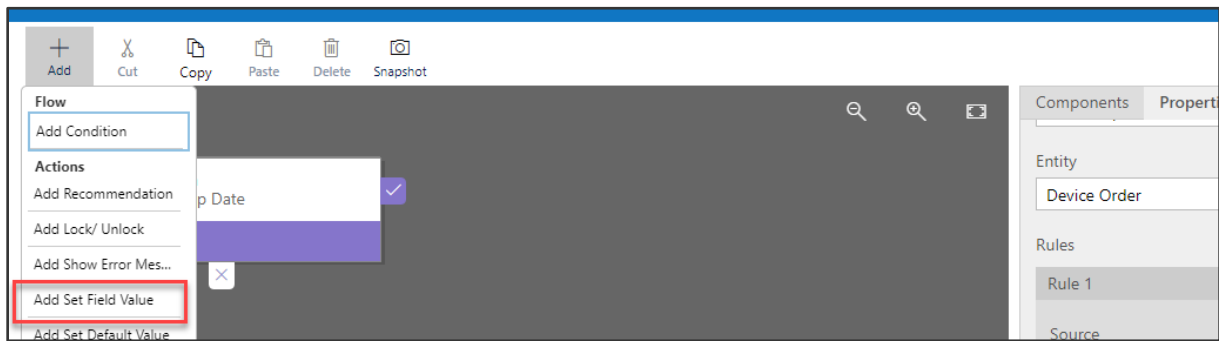


- In the **Rule 1** section select **Entity** for Source, **Approved Date** for Field, **Contains Data** for Operator and click **Apply**.

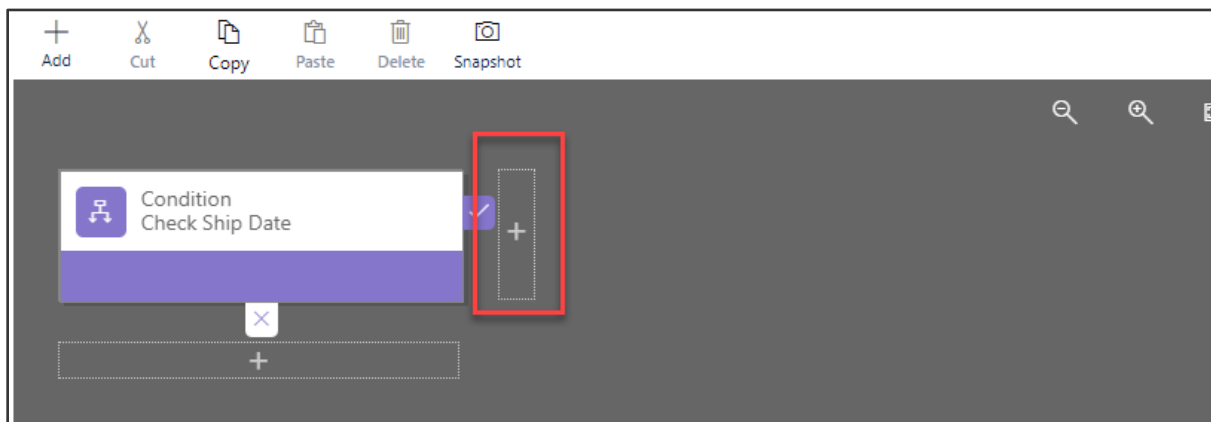
**Note:** You may need to scroll down to the bottom of all scroll bars to see the Apply button. You must click Apply after any change to the properties otherwise they will revert to the prior value. The Business Rule (Text View) will automatically update after you hit apply when you are done modifying the rule.



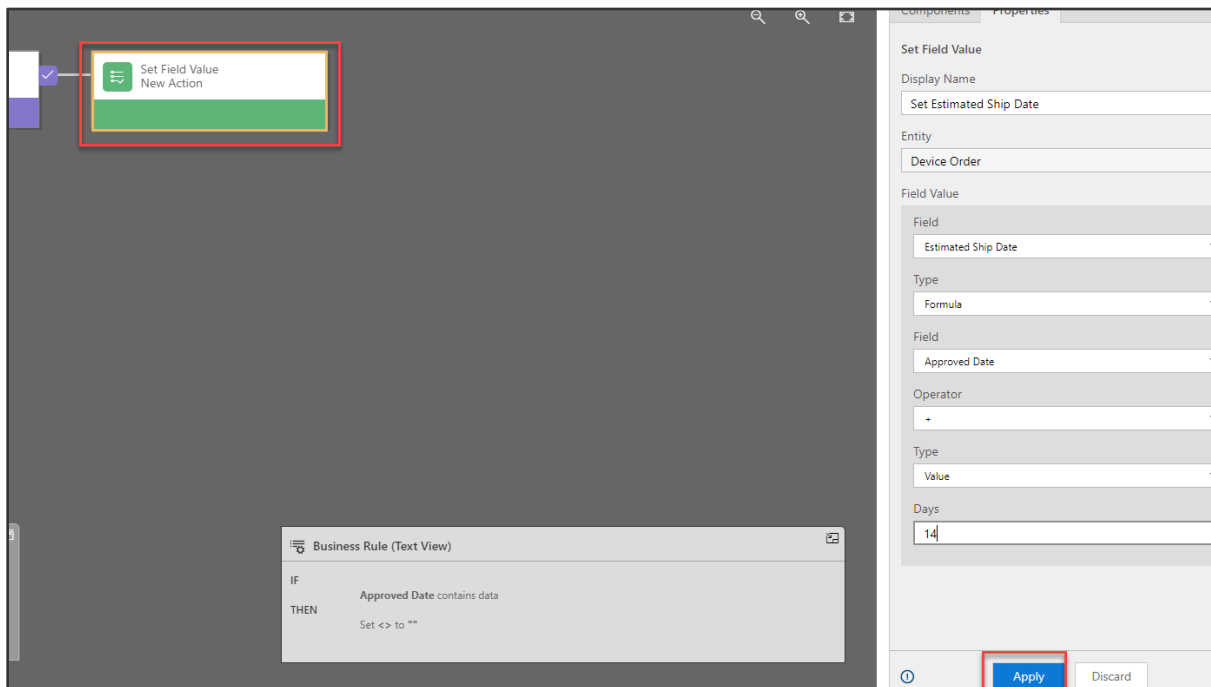
- Click **Add**, select **Set Field Value**.



- Select the True side of the condition.

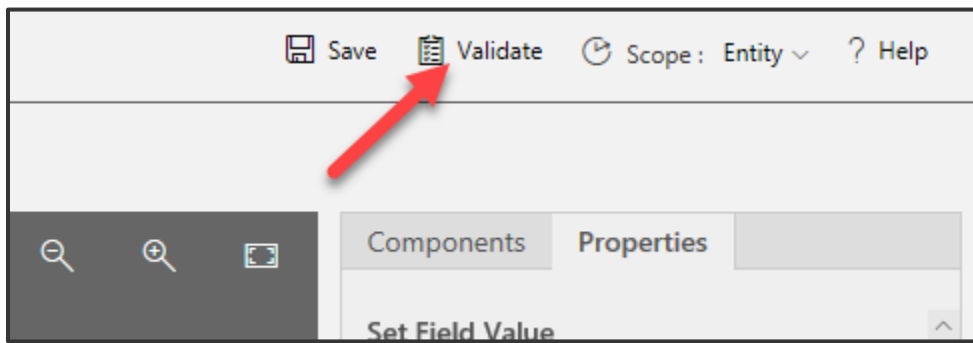


- Enter **Set Estimated Ship Date** for Display Name, select **Estimated Ship Date** for Field, **Formula** for Type, **Approved Date** for Field, **+** for Operator, **Value** for Type, **14** for Days, and click **Apply**.

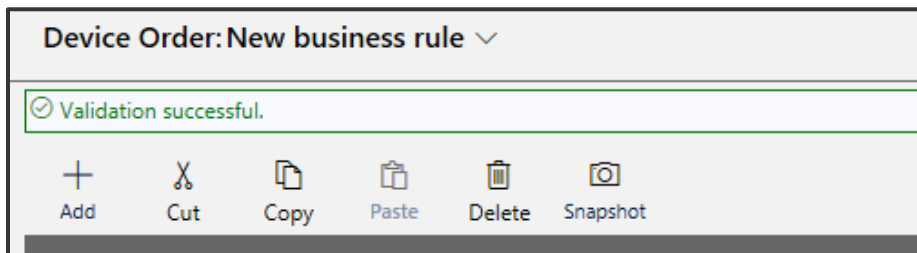




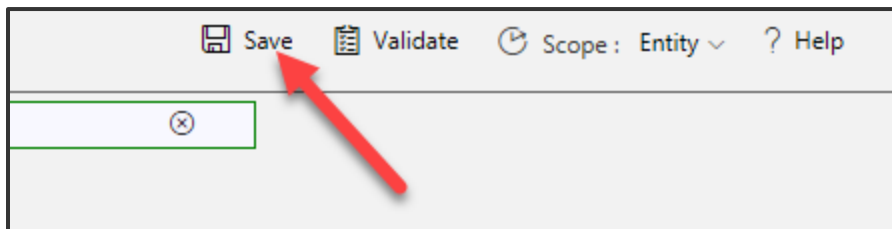
9. Click **Validate**.



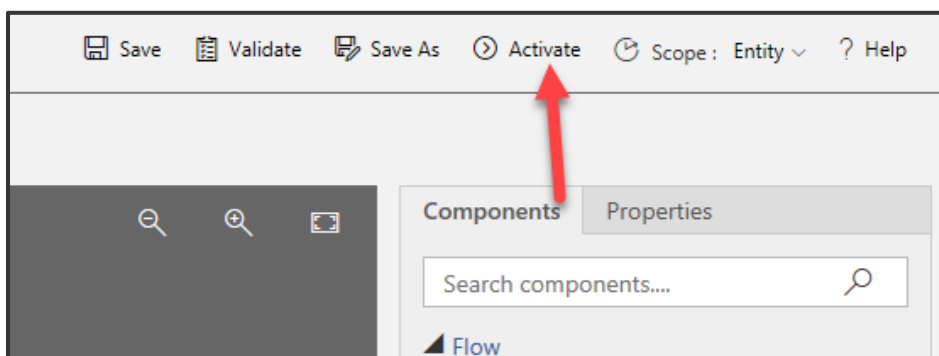
10. Make sure validation succeeds.



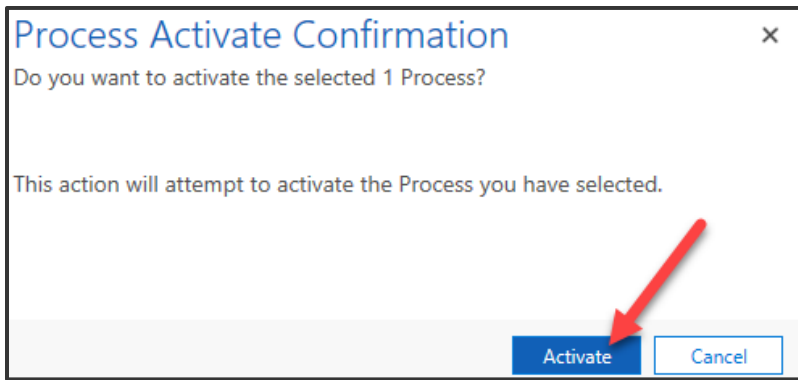
11. Click **Save**.



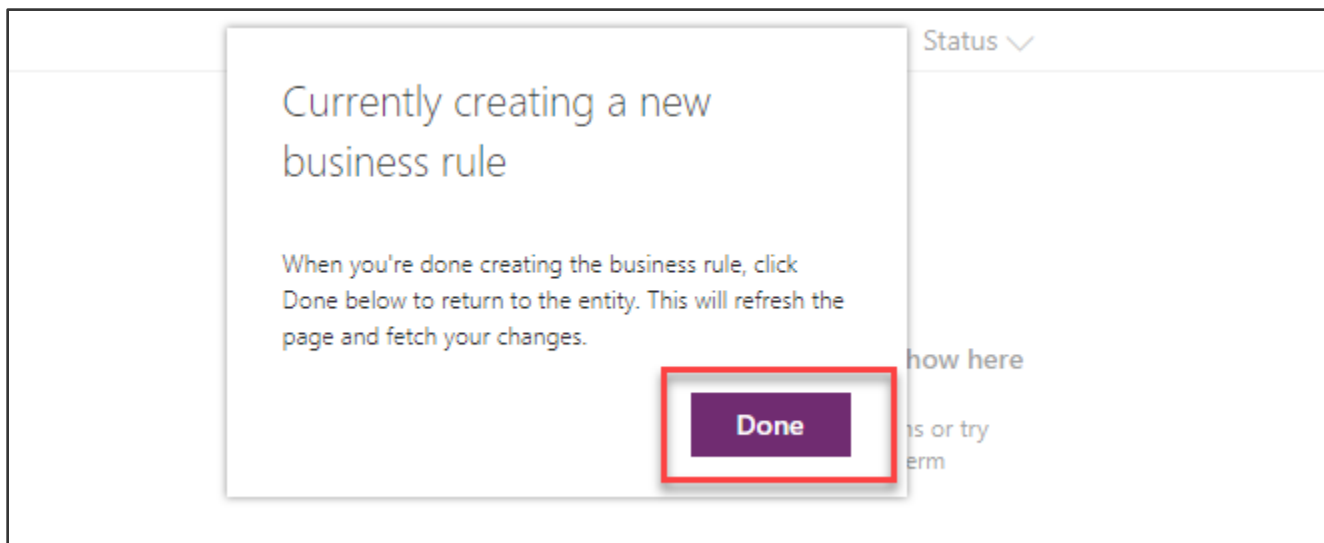
12. Click **Activate**.



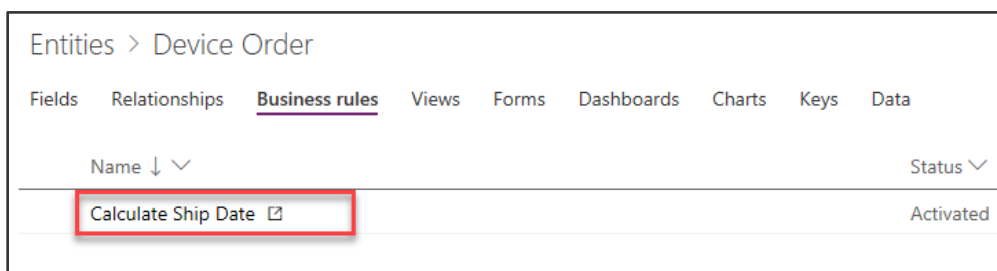
13. Confirm activation. Business rules only execute when they are activated. In the future to make changes to rules you deactivate them, make the change, and then re-activate the rule.



14. Close the process editor browser window or tab.
15. Click **Done**. The list should refresh showing the Business Rule you just created.



16. Your Common Data Service will have one Business Rule.



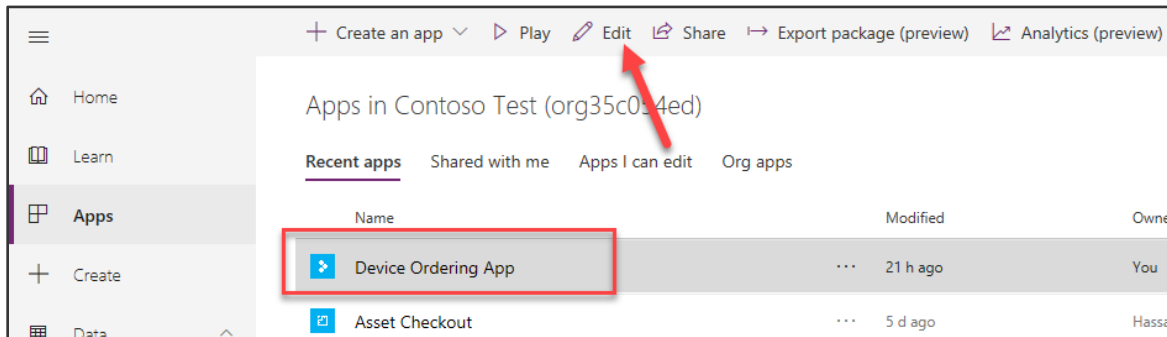
# Exercise 3: Connect the data from the Canvas App

Now that you have created the entity to store device order requests let's connect your Device Ordering Canvas app to this entity and add a form to submit device approval requests.

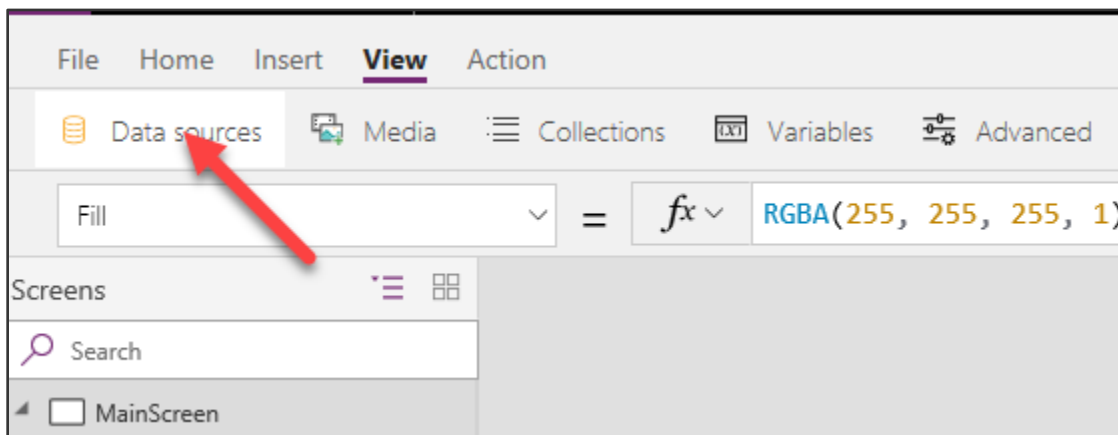
## Task 1: Add CDS entity as a data source to the app

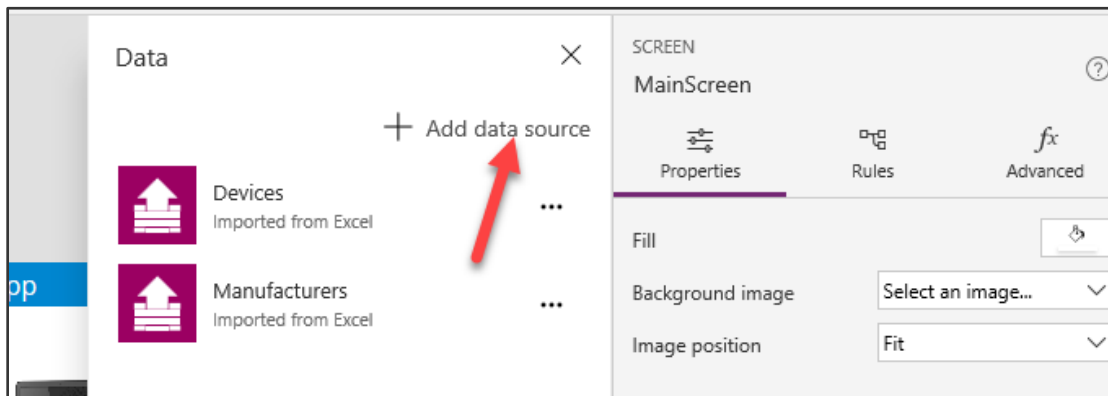
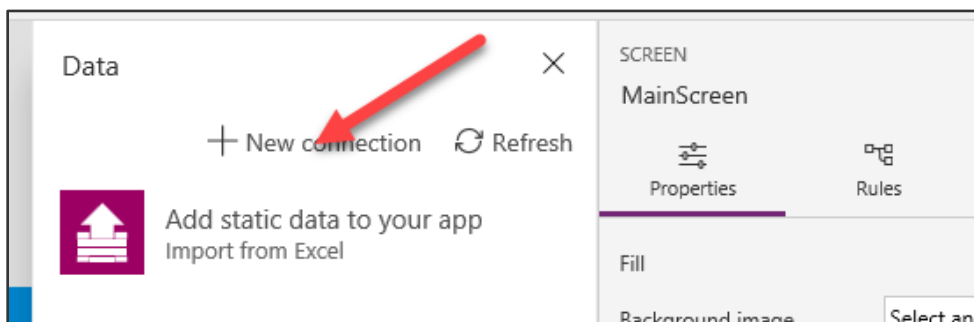
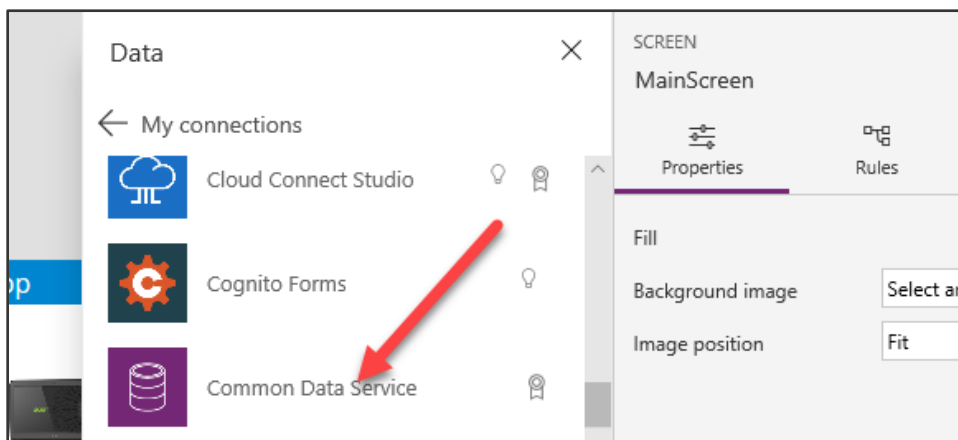
Open the device ordering app. Make sure you are opening the version of the app that is in the newly created environment that has the CDS database instance.

1. Navigate to the Device Order App you created in Module 1, select the App and click **Edit**.

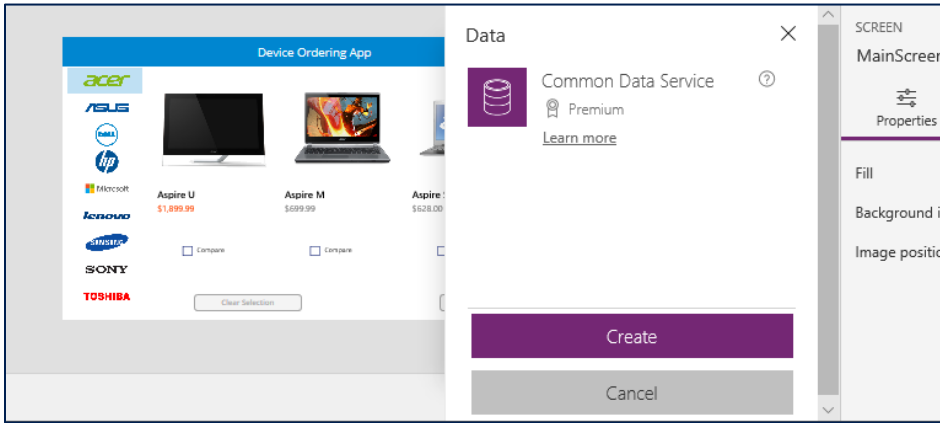


2. Select the **View** tab and then click **Data sources** to display the Data sources property pane to the right of the canvas.

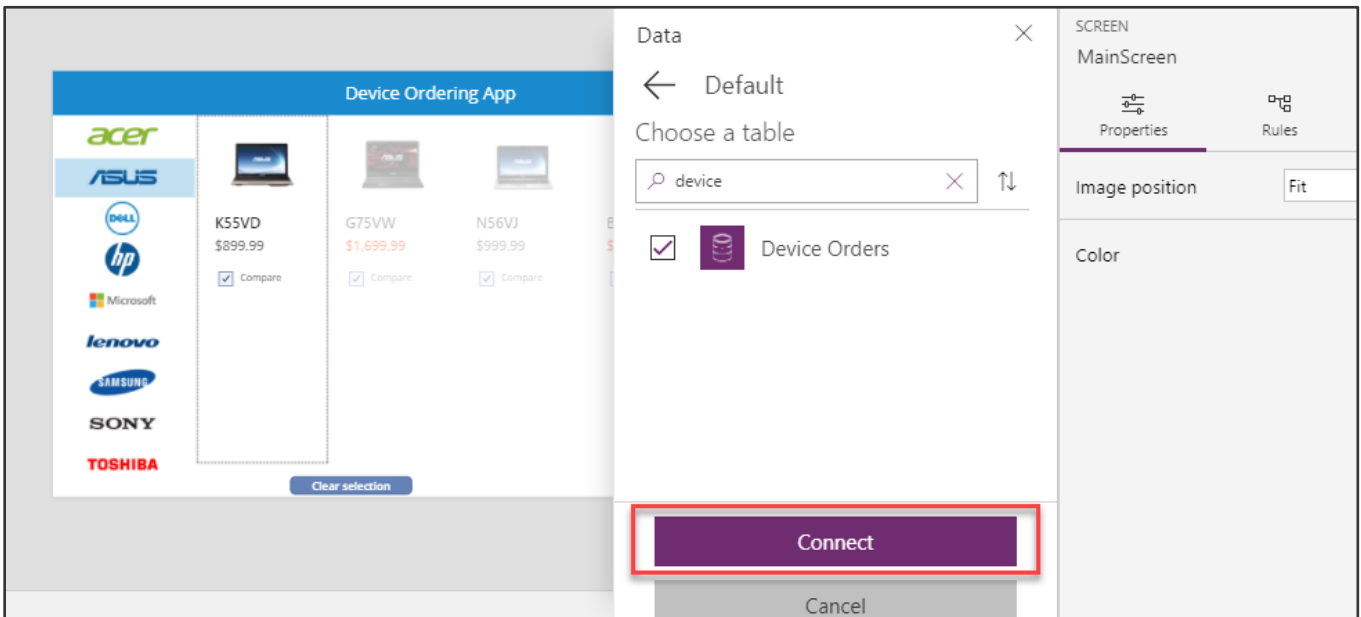


3. Click **Add Data Source**.4. Click **New Connection**.5. Select **Common Data Service**. Double check that you \*did not\* choose the "experimental" connector.

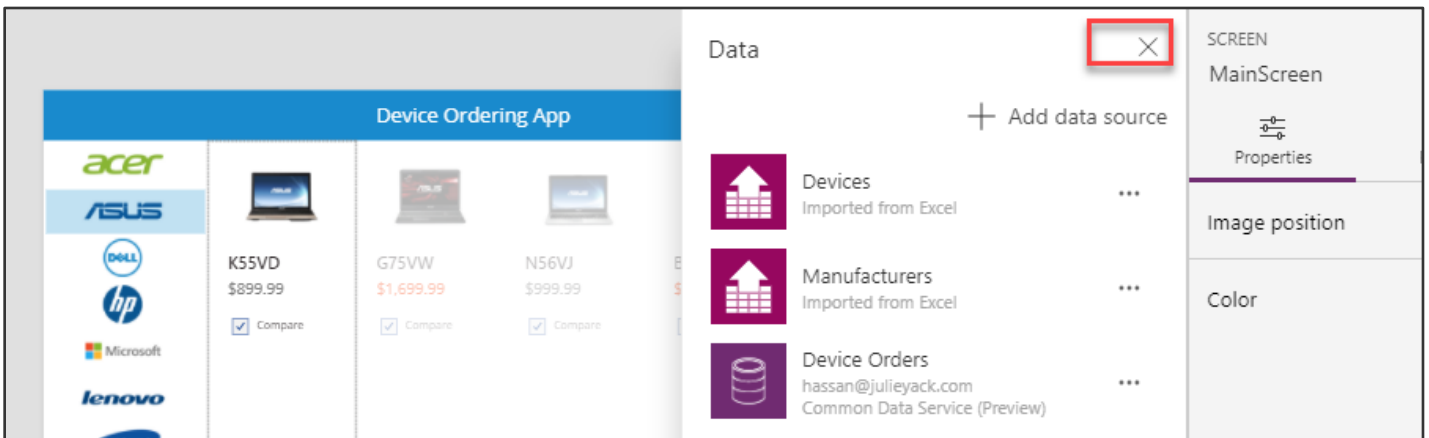
6. Click **Create**.



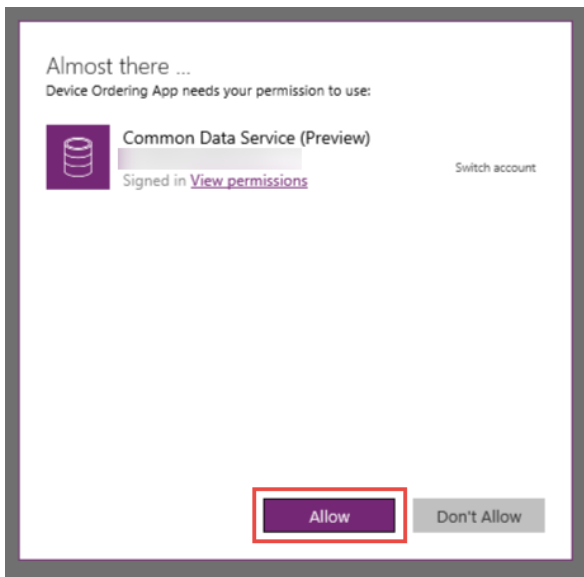
7. Type device in the search text box, this will filter the list of all entities down to just those that contain device. Select **Device Orders** and click **Connect**.



8. Close the Data pane.

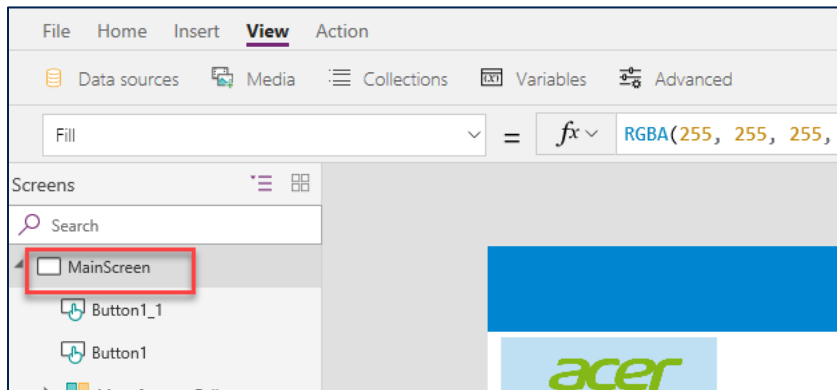


9. If prompted, click Allow to authorize the App to access the Common Data Service.

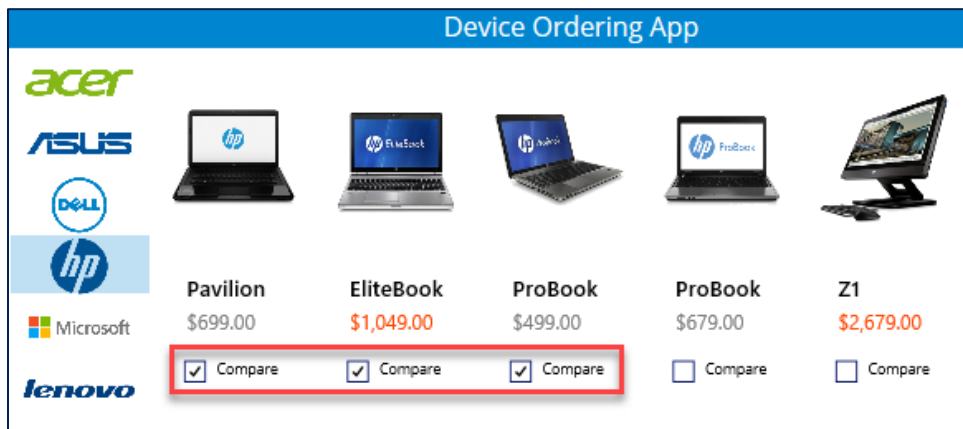


## Task 2: Create the edit form

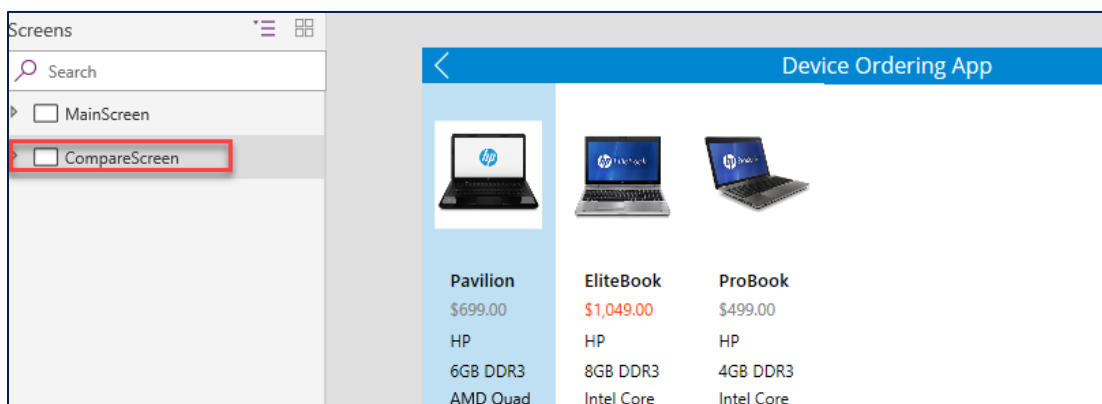
1. Select the **MainScreen**.



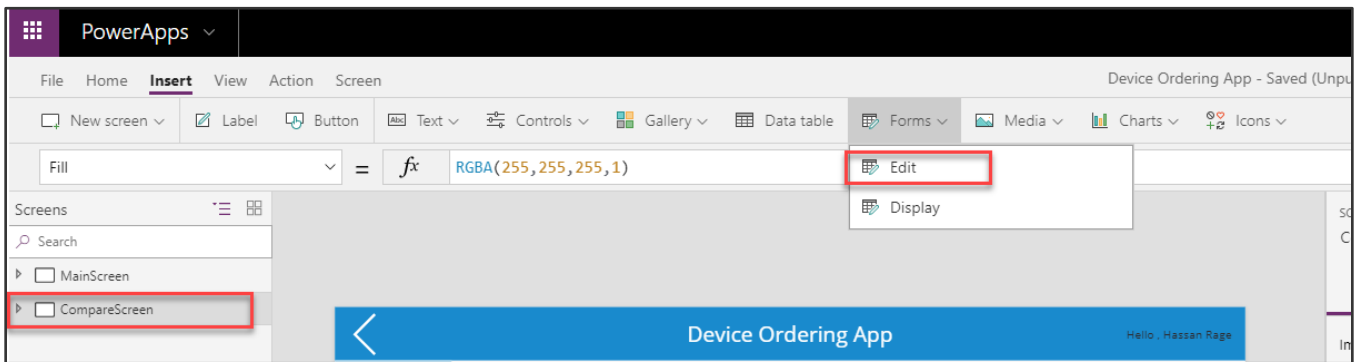
2. Select few devices. Hold the "Alt" key, and then it will allow you to check the compare on the devices



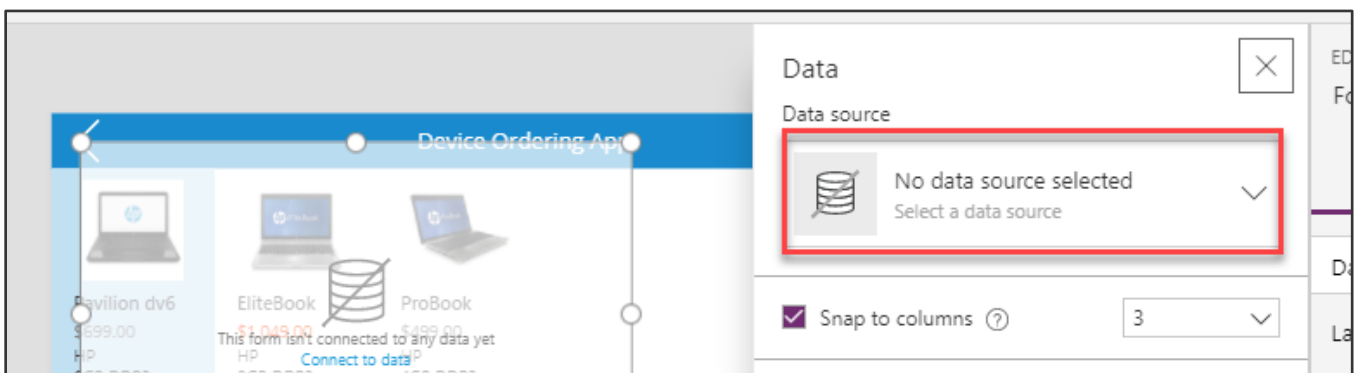
3. Select the **CompareScreen**. You will now have the selected devices.



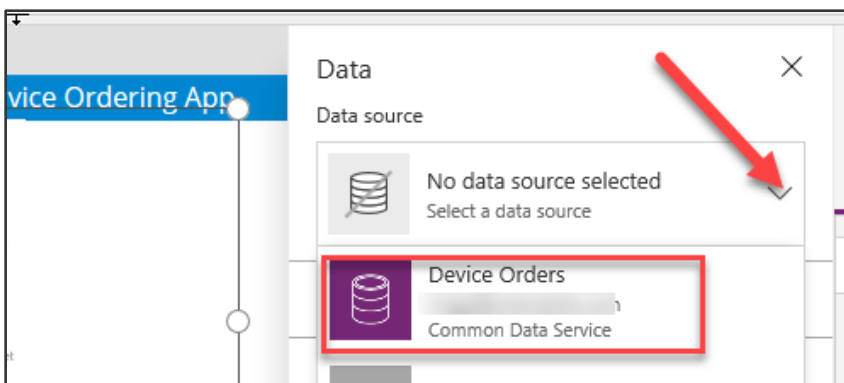
4. Select the **Insert** tab, click **Forms**, and select **Edit**.



5. Click the **Data source** drop-down in the Data pane on the right.

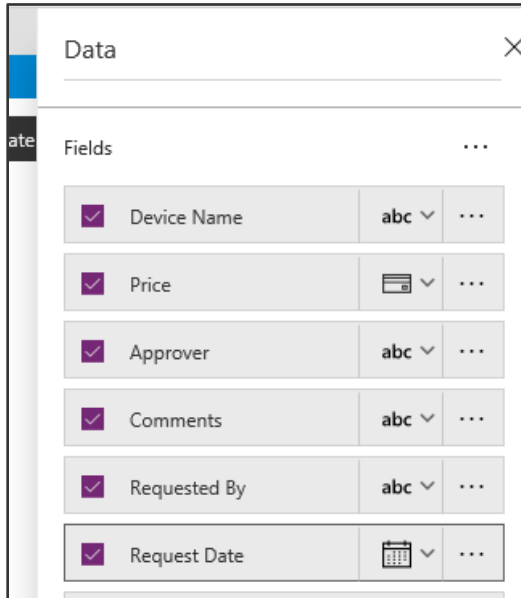


6. Select the **Device Orders** entity as the data source.

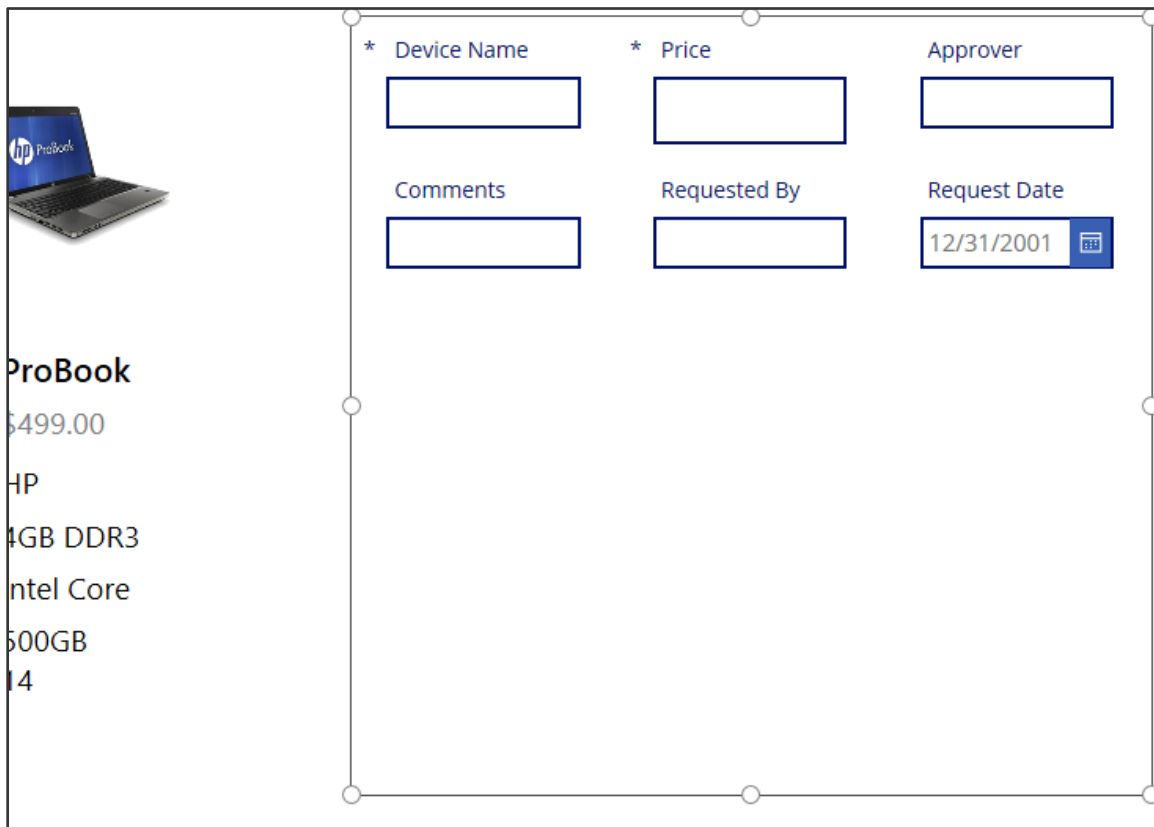




7. Select the fields shown in the image then close the Data pane. To ensure you match subsequent steps, **select the fields in the order shown in the following image**

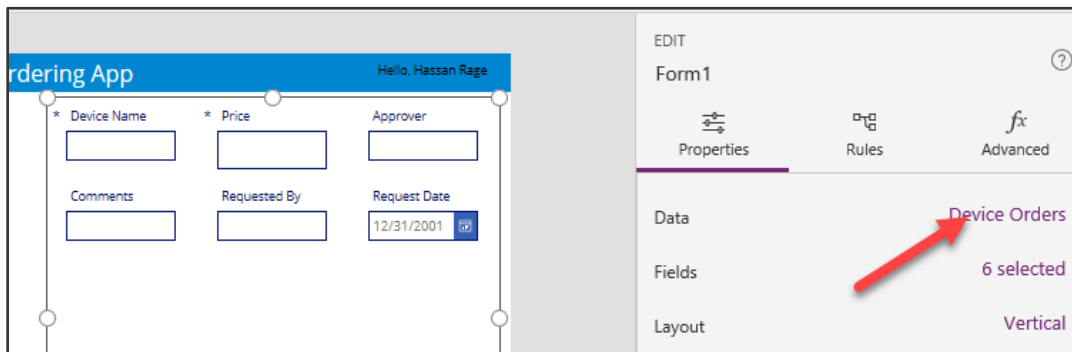


8. Move the form control Form1 to the right of the screen and resize it using the drag handles such that it fits in the empty space. See picture on the right. Make sure there is enough space below the form to add a Submit button.

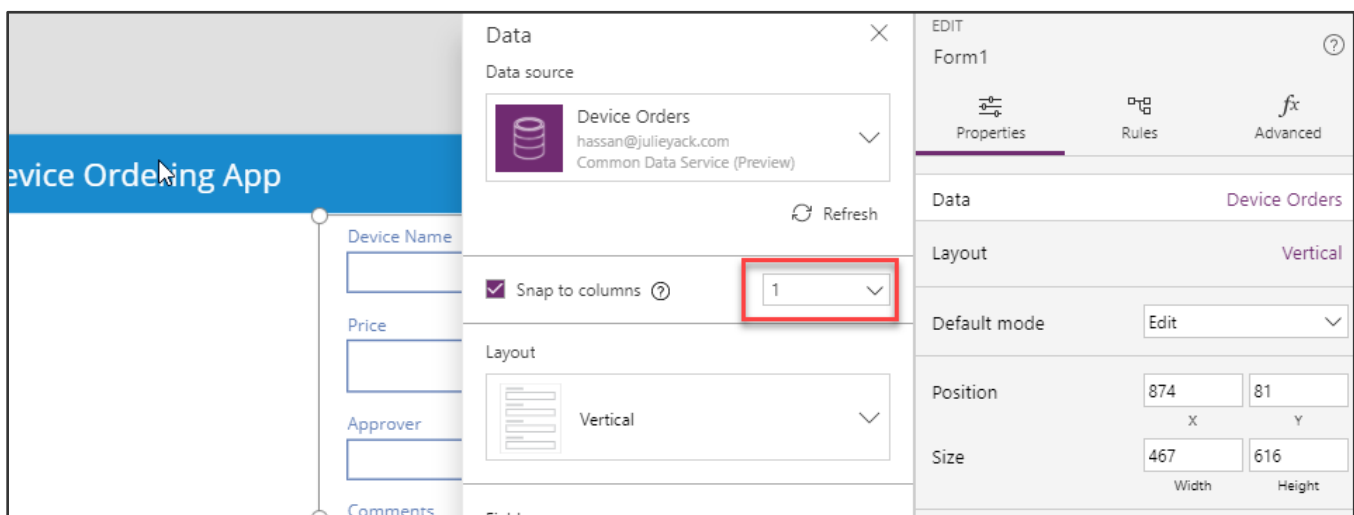


**Note:** You can always select controls, such as the Form1 control, from the tree view on the left to make sure you are selecting the correct control. To move it make sure you select the Form and not a control within the form.

9. Click the **Data** link on the right to open the Data pane.

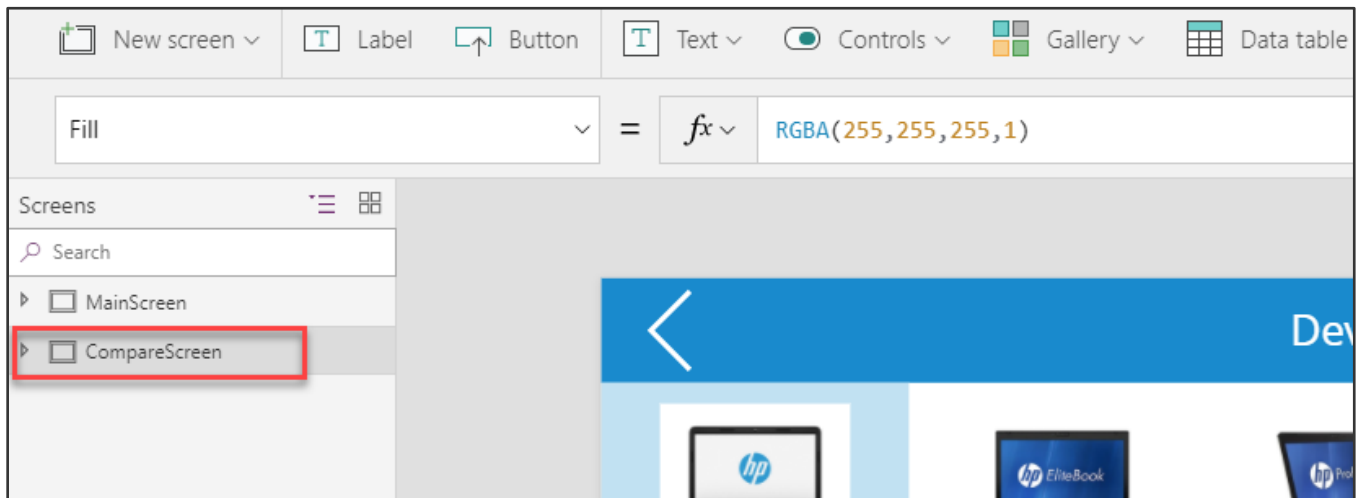


10. Change the **Snap to columns** setting from 3 to 1. This will modify the layout of the edit form to be single column. **Close the Data pane.**

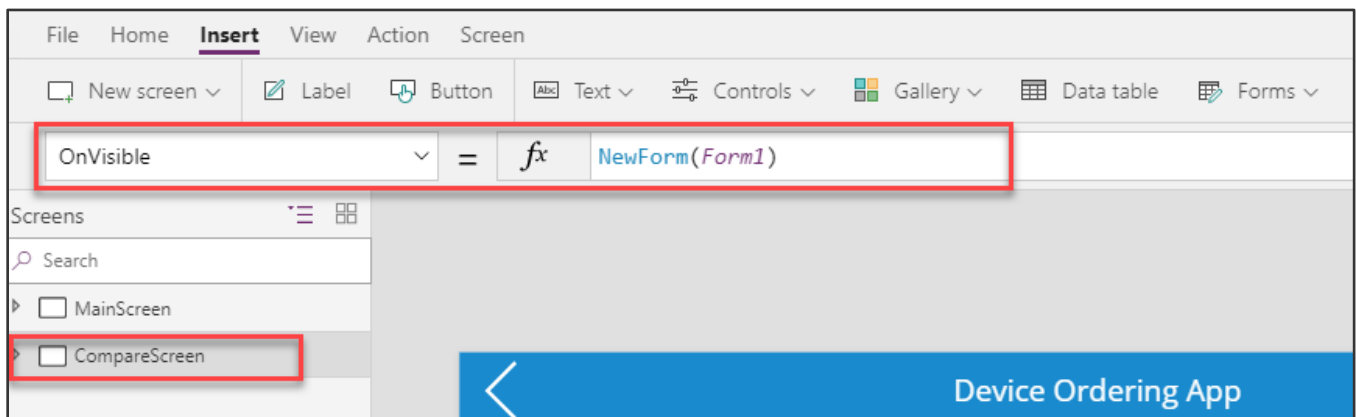


For more info on working with multi-column form layouts, see <https://powerapps.microsoft.com/tutorials/working-with-form-layout/>.

11. To create a new instance of the form when the screen is loaded. Click **CompareScreen** in left tree view pane.



12. Select the **OnVisible** property of the screen, enter: **NewForm(Form1)**.

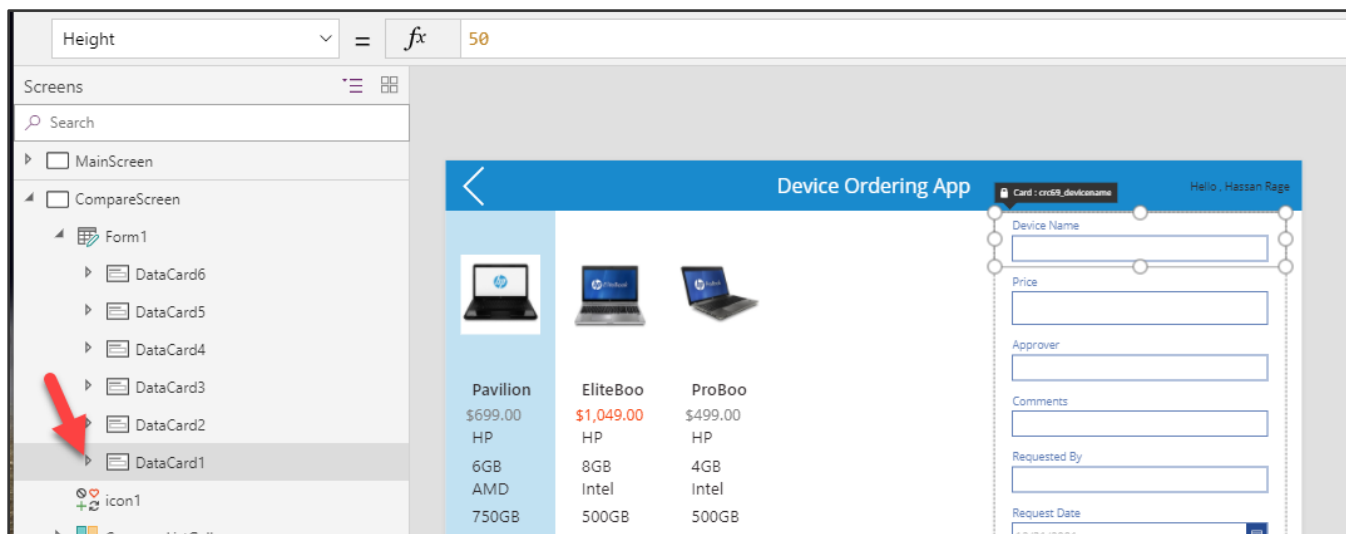


## Task 3: Configure the title field

In the next few steps, you will configure each of the form fields.

Let's start by configuring the Title to display the manufacturer and device name for the selected device. For example, if the user selects the Surface Pro device, we want the device order to have the title: "Microsoft – Surface Pro".

1. Expand the **Title card**. The control name is **DataCard1**.



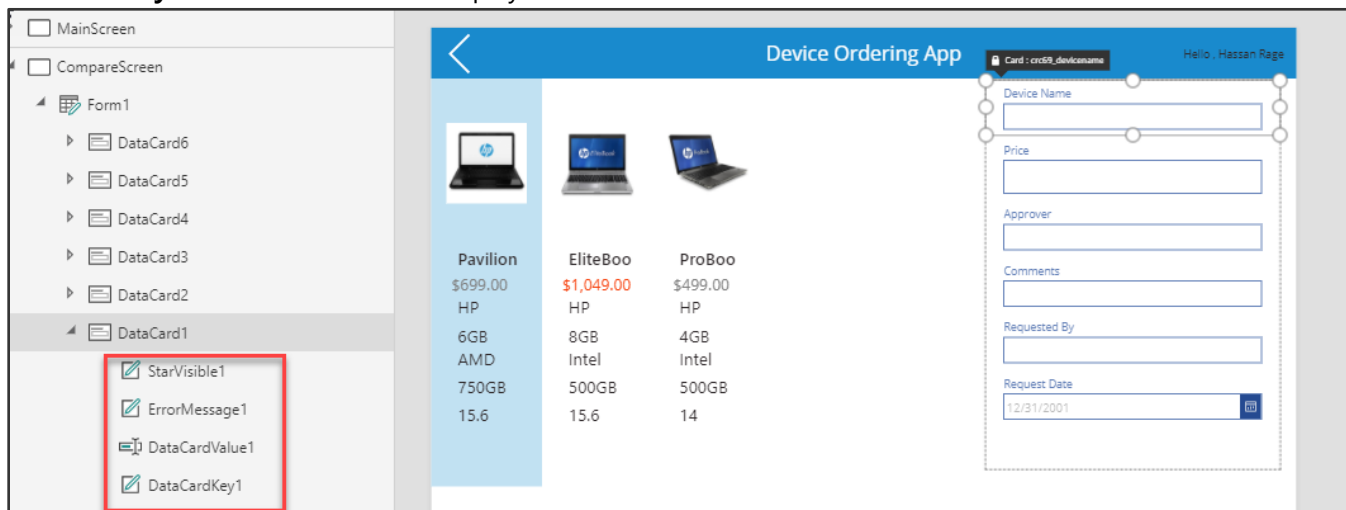
Notice that the default card contains a few controls:

**StarVisible1**: This is a label control that has an asterisk (\*) which has its Visible property set to true or false depending on whether the field is Required or not. Since the Title field was marked as Required when you configured the entity, its Required property is set to true.

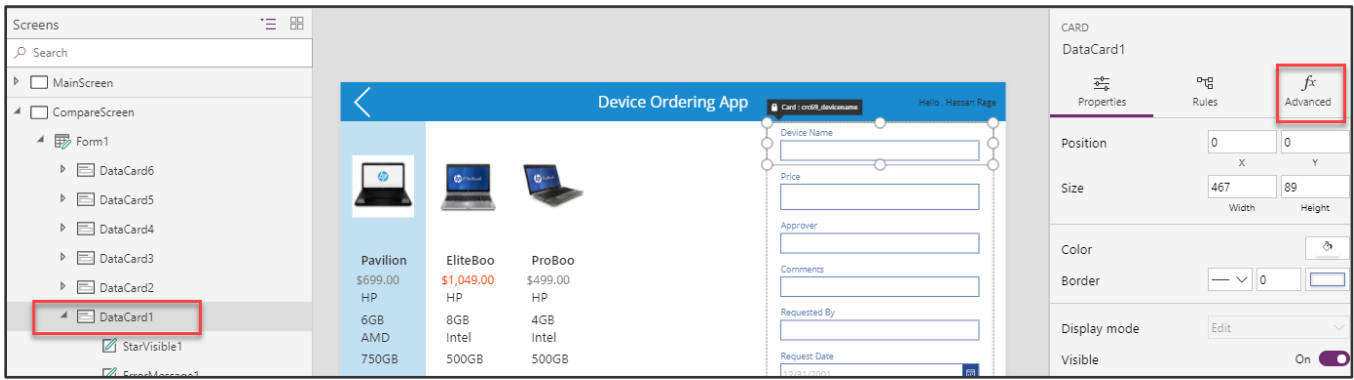
**ErrorMessage1**: This is a label that is just below the main data entry field which displays error messages.

**DataCardValue1**: This is the text input control where you can enter the Title. For this scenario, we will set the title based on the selected device.

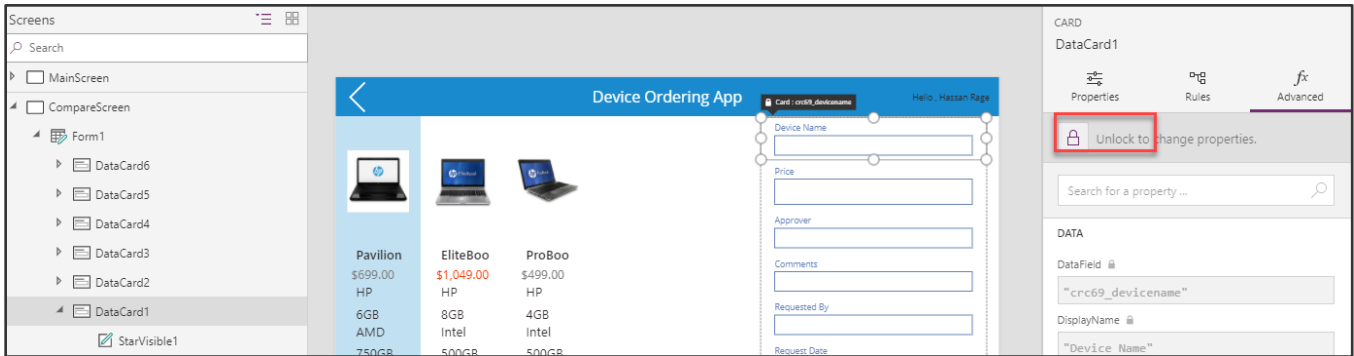
**DataCardKey1**: This is the label that displays the title of the field.



2. Select **DataCard1** and click **Advanced**.

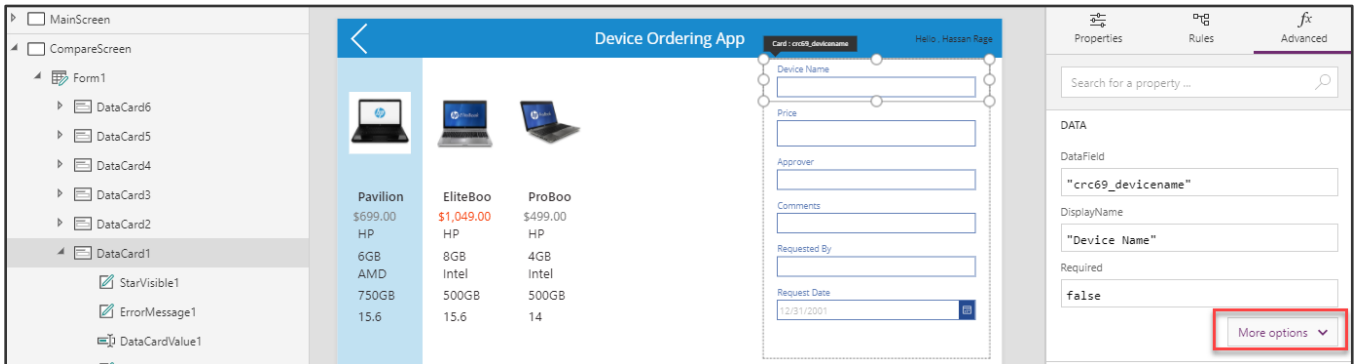


3. Click **Unlock** so you can customize the card

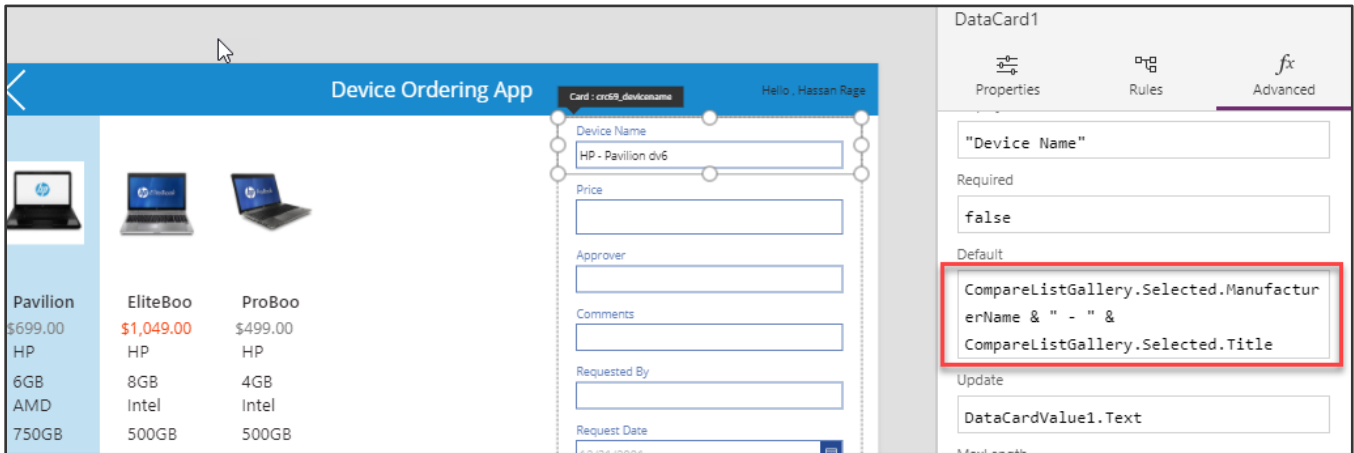


For the next few steps, we will use the Advanced pane to customize control properties within the form, note that you can perform the same customizations using the property drop-down and formula bar in the top left of the studio.

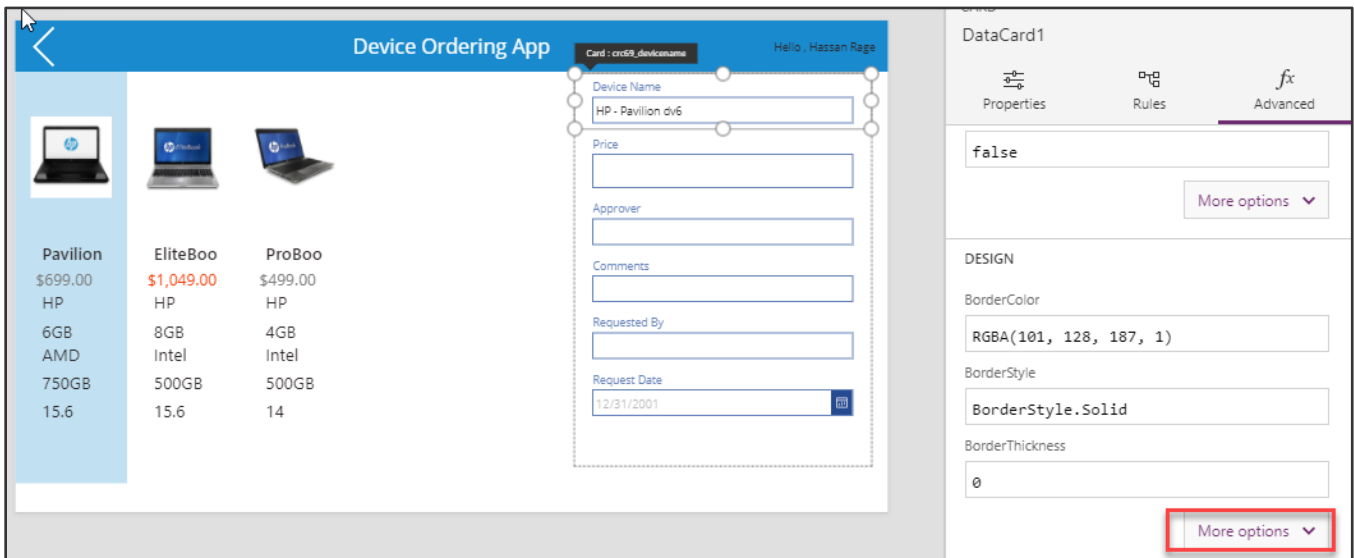
4. Click **More Options** button in the **DATA** section of the Advanced pane.



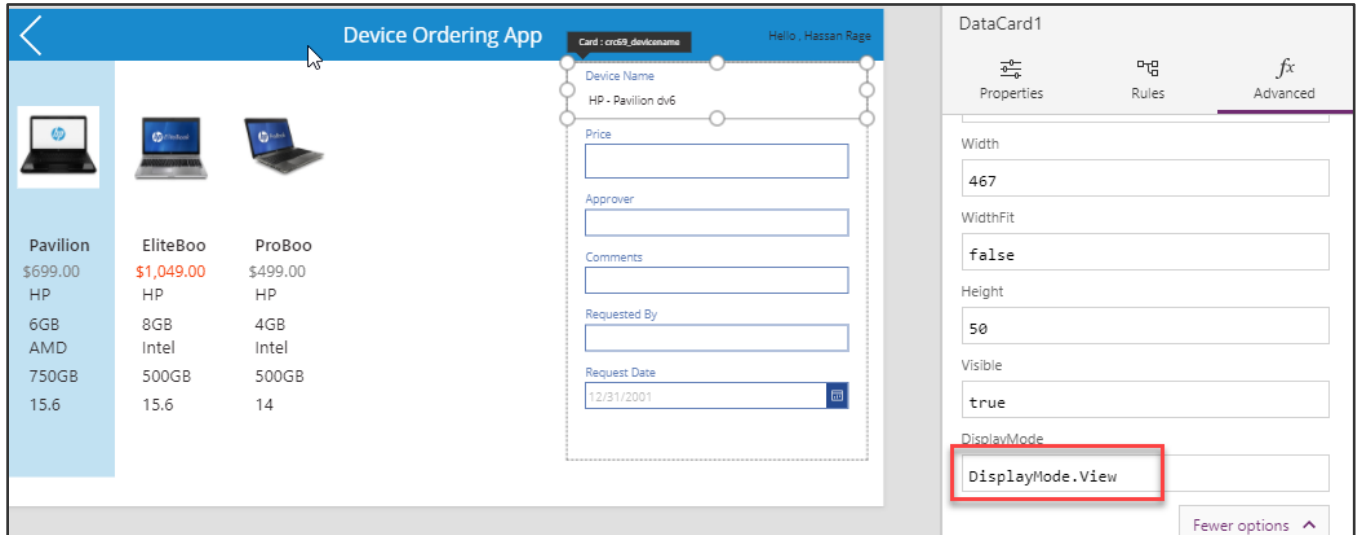
- To display the selected item in the Title field, set the **Default** property to `CompareListGallery.Selected.ManufacturerName & " - " & CompareListGallery.Selected.Title`



- Click **More Options** button in the **DESIGN** section of the Advanced pane. We are going to change the Device Name field to be read only so they don't change it.



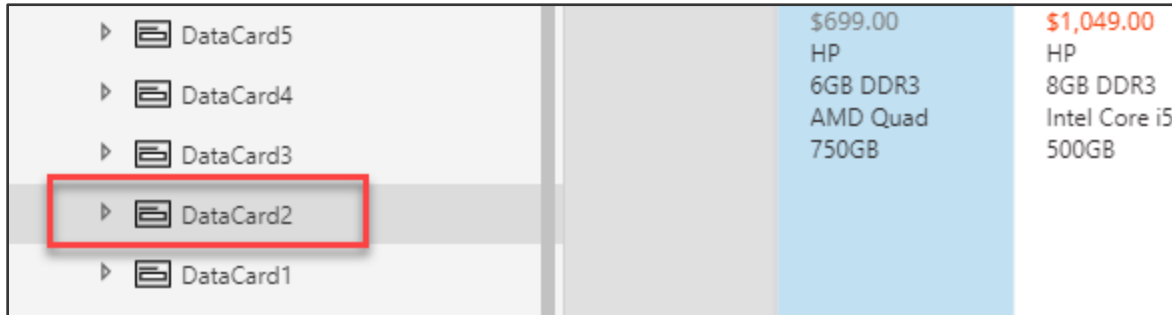
- Change the **DisplayMode** to **DisplayMode.View**. This will prevent users from changing the value within the text box.



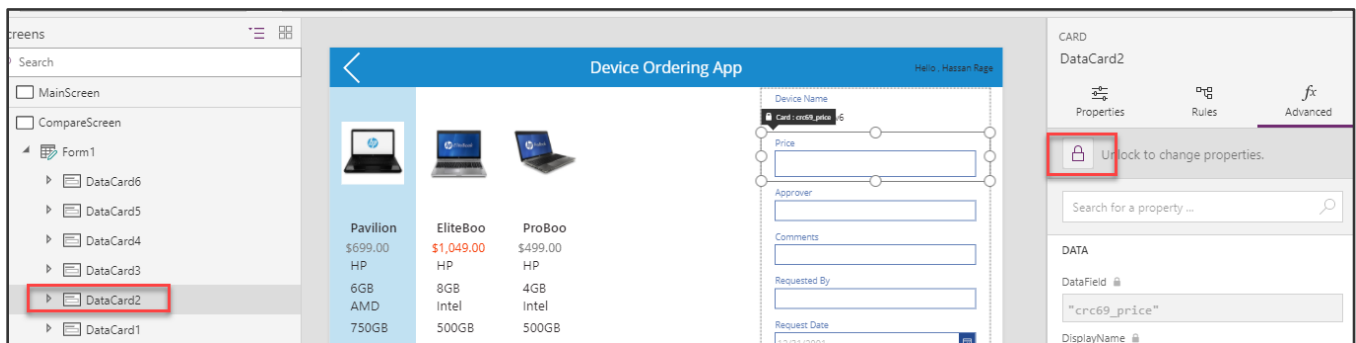
## Task 4: Configure the price field

In this task, we are going to set the price to the price of the item and then make it read-only.

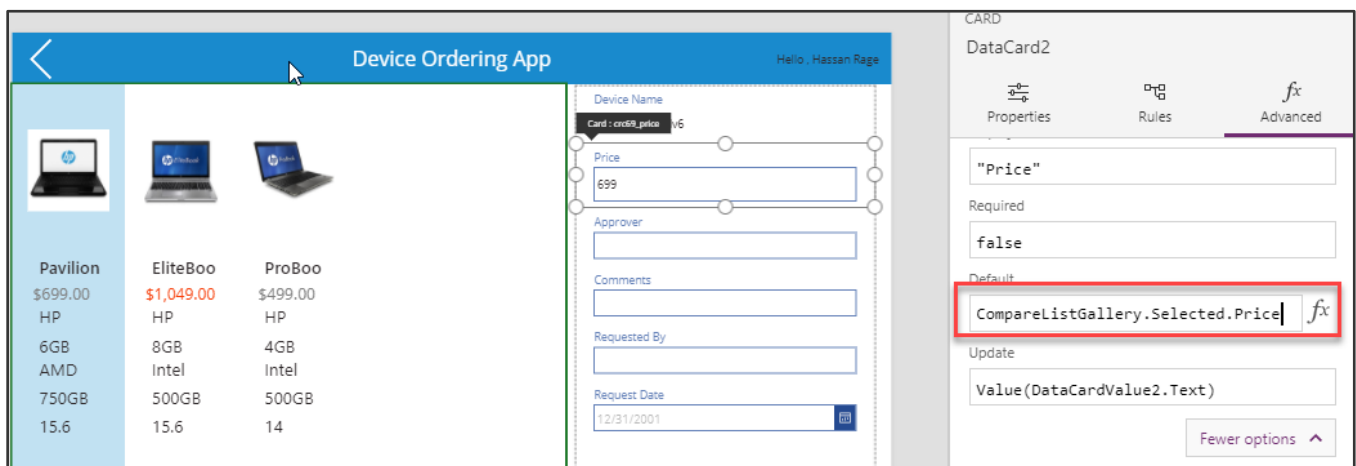
1. Select DataCard2.



2. Select the **Advanced** tab and click **Unlock**.

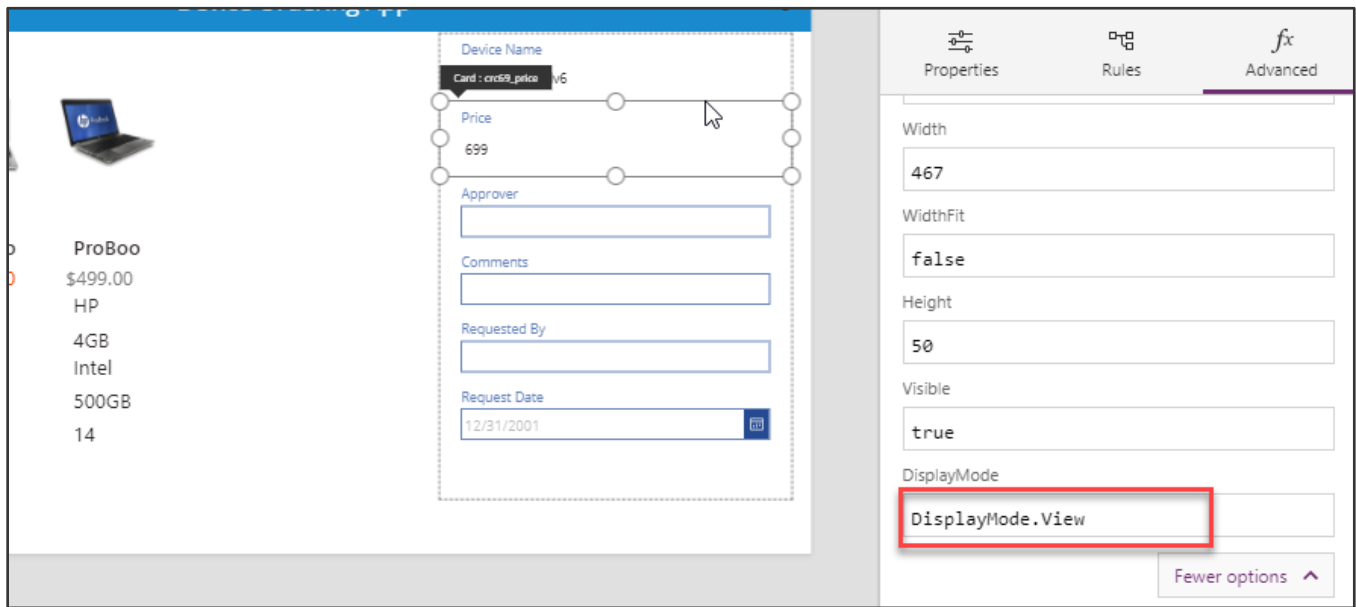


3. Change the **Default** property to: `CompareListGallery.Selected.Price`





- 4. Change the **DisplayMode** property to: DisplayMode.View

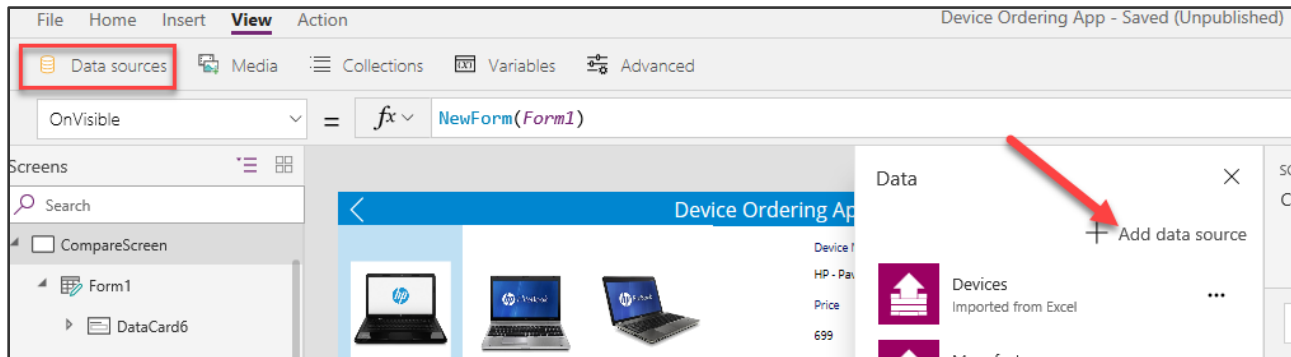


## Task 5: Configure the approval field

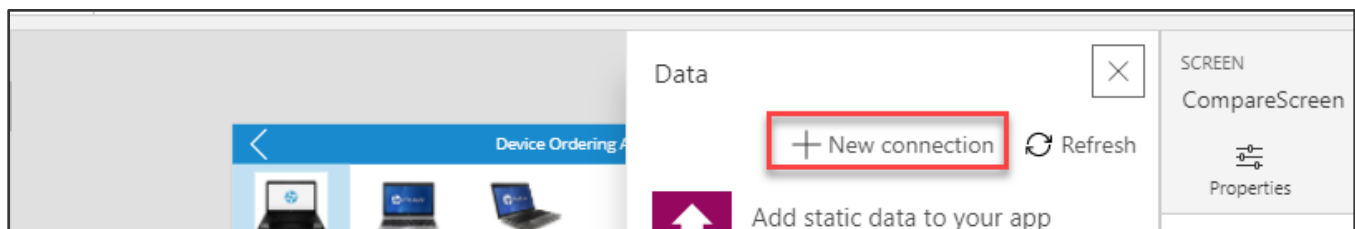
Let's set the **default** value for the Approver to be the email address of the **logged in user's manager**.

You will use the **Office 365 graph** to retrieve the manager's email. You can find more about the Office 365 Users Connection provider here <https://docs.microsoft.com/connectors/office365users/>

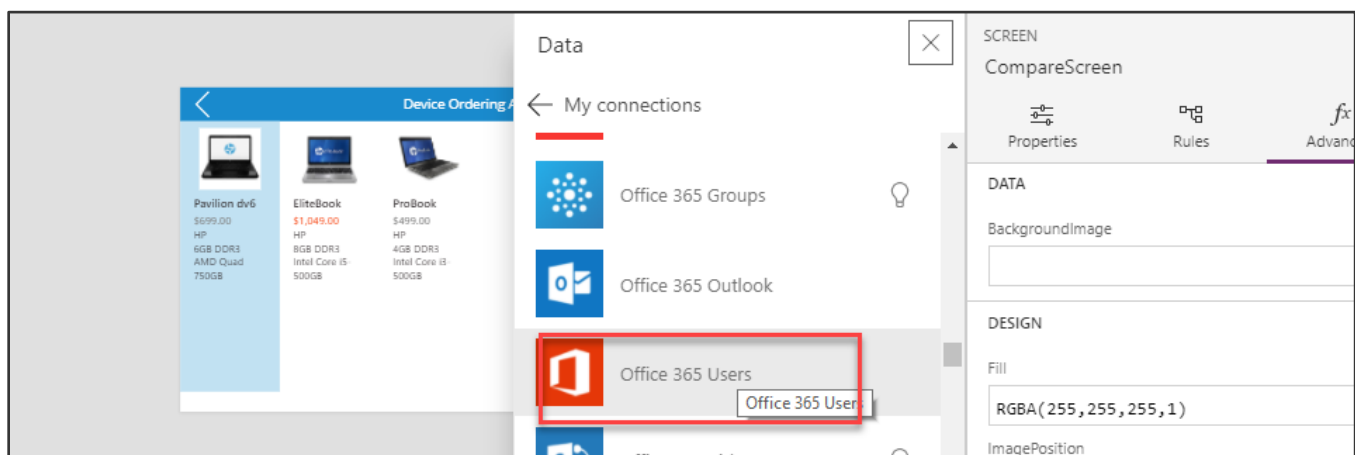
1. Select **View** in the ribbon, then **Data sources**. In the right-hand Data pane, select **+Add data source**.



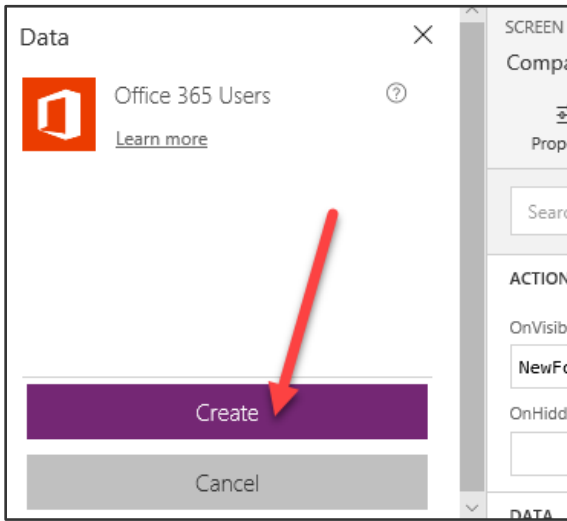
2. Click **+New connection**.



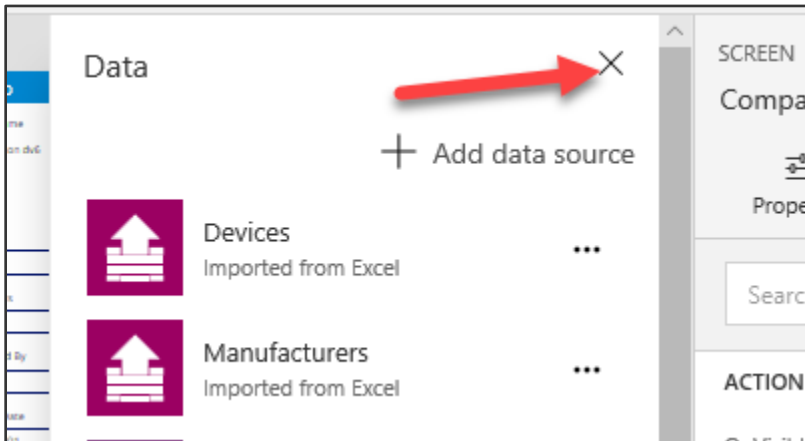
3. Select the connection type - **Office 365 Users**.



4. Click **Create**.

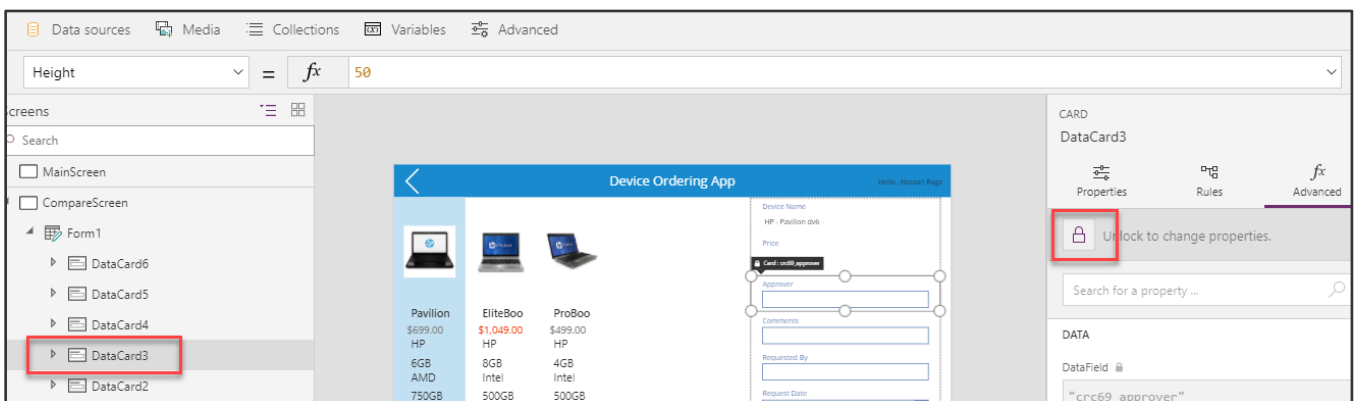


5. Close the **Data** pane.



6. Select the **Approver** card also known as **DataCard3**.

7. Go to the **Advanced** pane and **Unlock**.



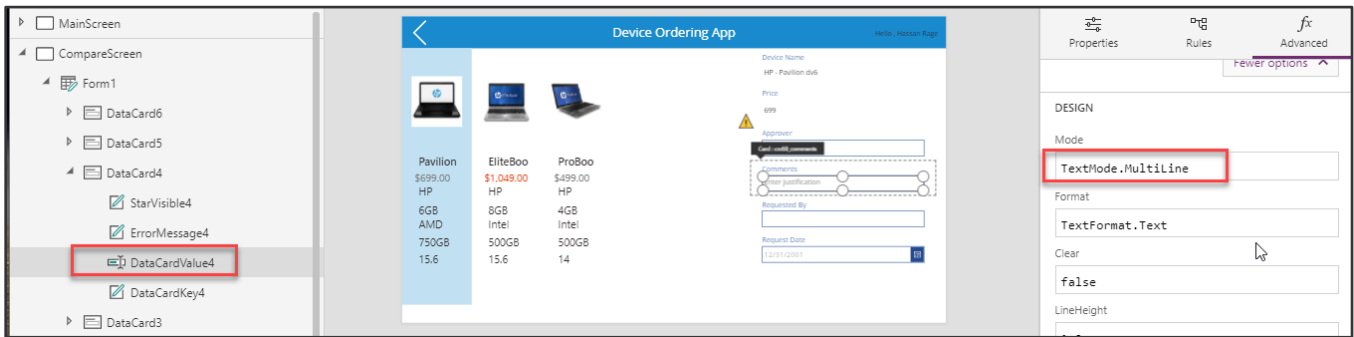
8. Set the Default value to: `User().Email` This expression will use your user's email, so you won't accidentally e-mail your manager to approve your testing.

In a real application or if you wanted to try the expression to use your managers email would be `Office365Users.Manager(User().Email).Mail` This would make an API call at runtime to get the manager's email address of the logged-on user. *If you try this and hit an error when calling the `Office365Users.Manager()` function, this may be because a manager is not set up in the system for the logged in Office 365 user. In that case, you can simply go back go `User().Email`.*

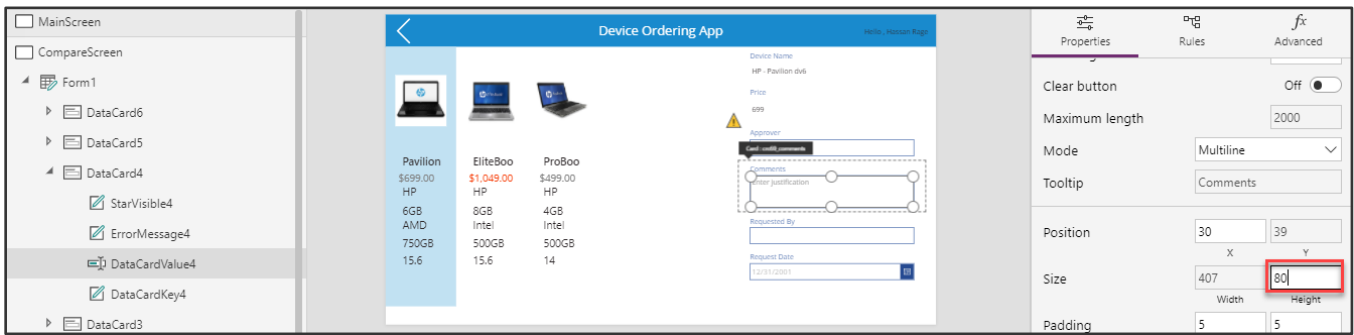
The Office 365 User connector has access to many other valuable types of information you can learn more about the other actions and data available here <https://docs.microsoft.com/en-us/connectors/office365users/>

## Task 6: Configure the Comment field

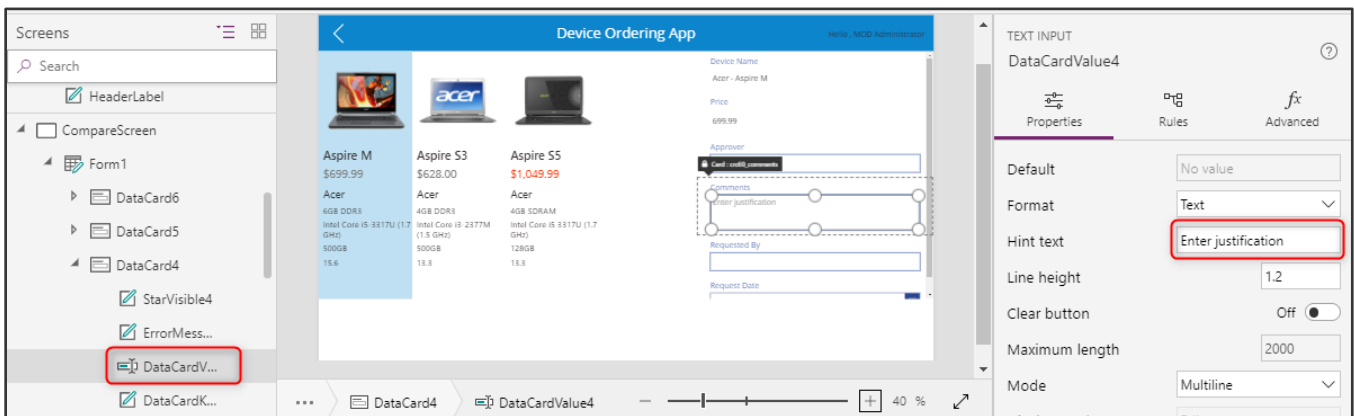
1. Select **DataCard4** -> **DataCardValue4** and change the **Mode** to **TextMode.Multiline**



2. Select the **Properties** tab and change the **Size** -> **Height** value to **80**.



Optionally, you may select the Text Input control **DataCardValue4** and set its **HintText** property to: "Enter justification" (without quotes).



## Task 7: Configure the Requested By field

Let's set the Requested By field to be the current logged on user's email, and disable the control so the user cannot change this value.

1. Select the Requested By card, also known as **DataCard5**
2. Go to the **Advanced** pane and **Unlock** the card.
3. Change the **DisplayMode** property to: `DisplayMode.View`

The screenshot shows the Power Apps designer interface. On the left, the 'Screens' pane shows a tree view with 'CompareScreen' expanded to 'Form1', where 'DataCard5' is selected. The main canvas displays a 'Device Ordering App' with a table of laptops and a form for requesting a device. The 'Requested By' field in the form is highlighted. On the right, the 'Properties' pane for 'DataCard5' is open, and the 'DisplayMode' property is set to 'DisplayMode.View'.

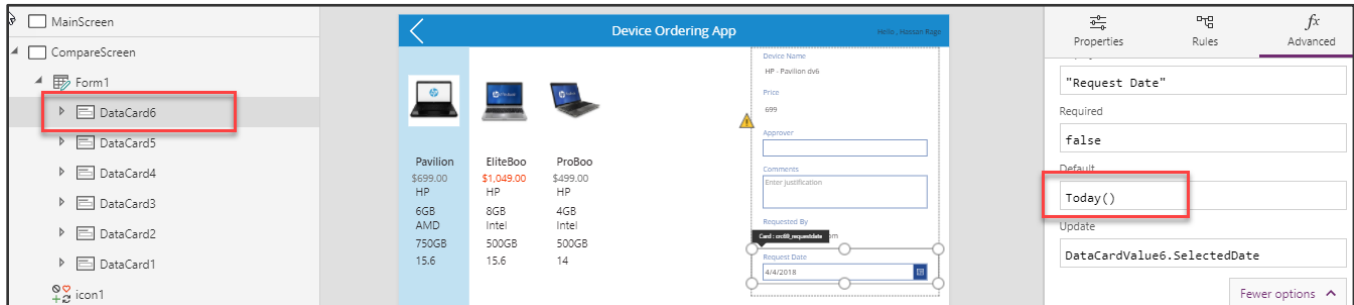
4. Set the **Default** value to `User().Email`  
This is the email of the currently logged in user

The screenshot shows the Power Apps designer interface. On the left, the 'Screens' pane shows 'CompareScreen' expanded to 'Form1', where 'DataCard5' is selected. The main canvas displays the 'Device Ordering App' with the 'Requested By' field in the form highlighted. On the right, the 'Advanced' pane for the 'Requested By' field is open, and the 'Default' value is set to 'User().Email'.

## Task 8: Configure the requested date field

Let's set the Request Date to be today's date.

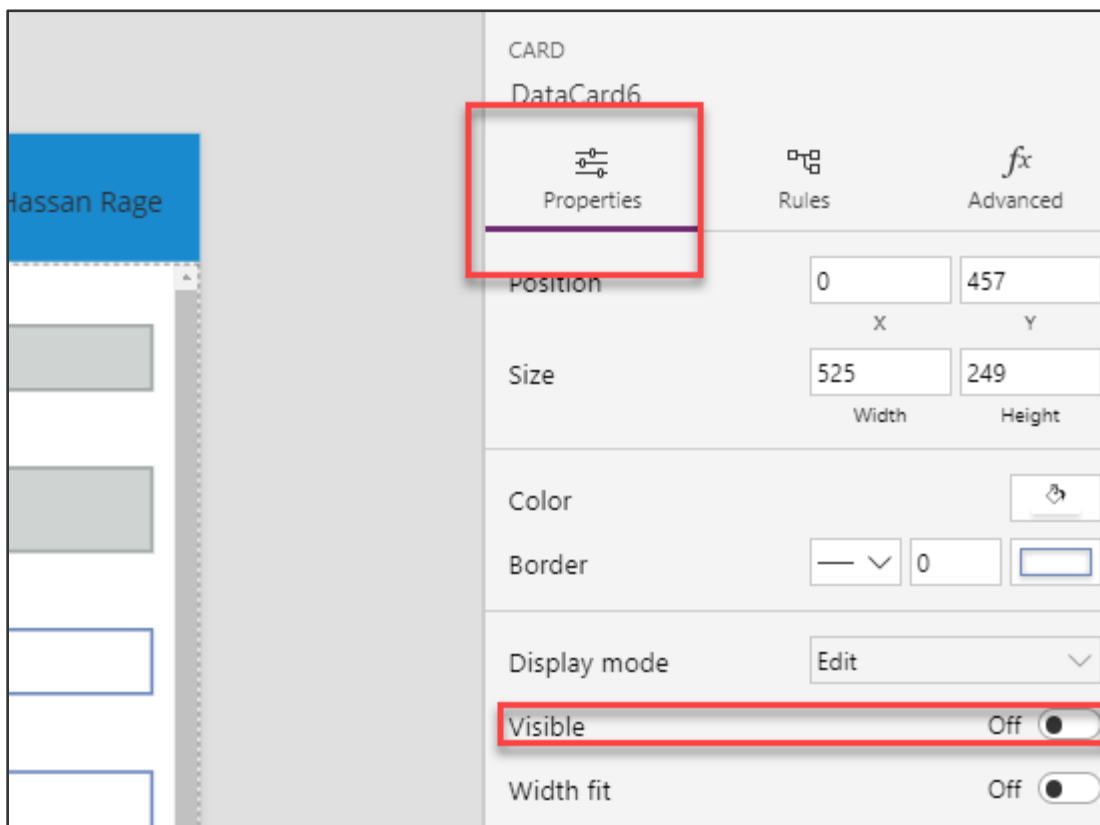
1. Select the Request Date card, also known as **DataCard6**.
2. Go to the **Advanced** pane and **Unlock the card**.
3. Change the **Default** property to `Today()`



Notice that the date in the calendar control will change to today's date.

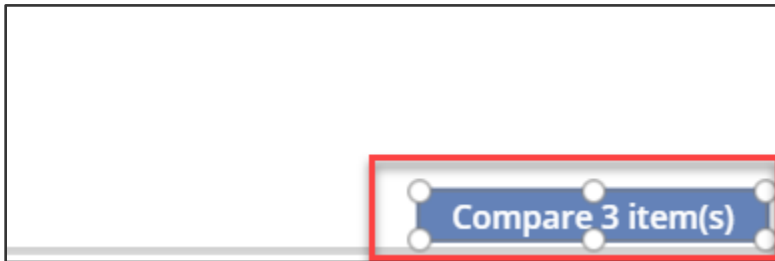
Now we will hide the Request Date card. We don't need to show this field to the user. Since we have included it as part of the form the field will get updated as part of the form submit.

4. Go to the **Properties** pane on the right.
5. Toggle the **Visible** property to **Off**.

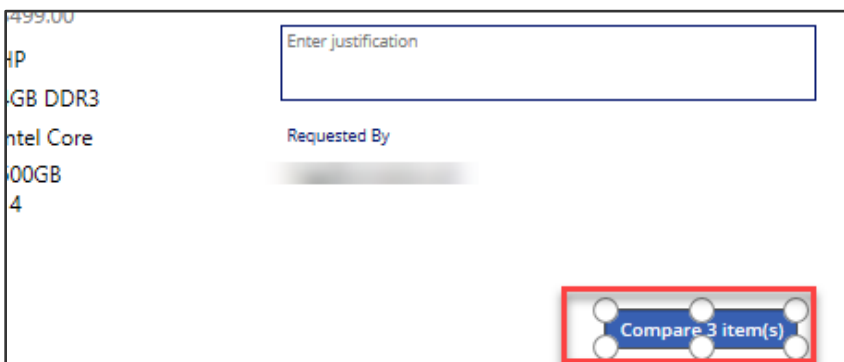


## Task 9: Add a button to submit the form

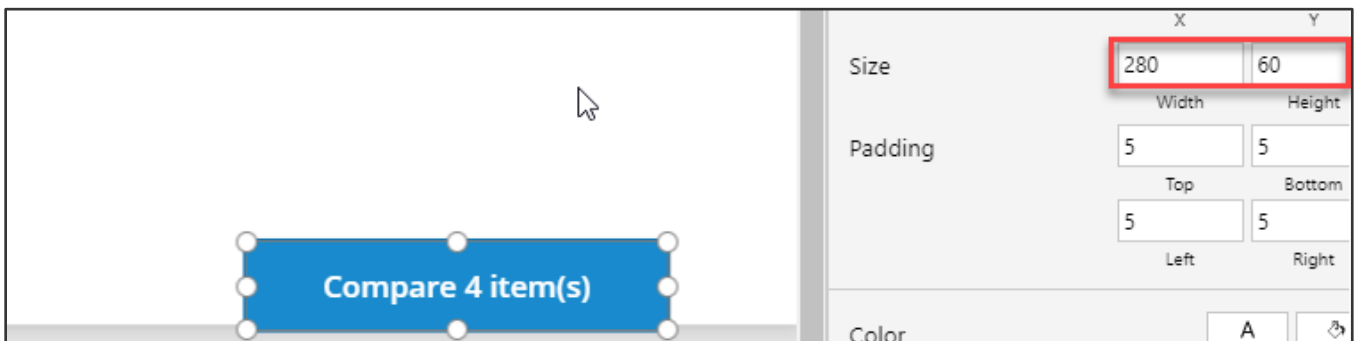
1. Select the **MainScreen**.
2. Copy the **Compare button** from the first screen which has the correct color values.



3. Go back to the **CompareScreen** and paste (Ctrl-V) the button.

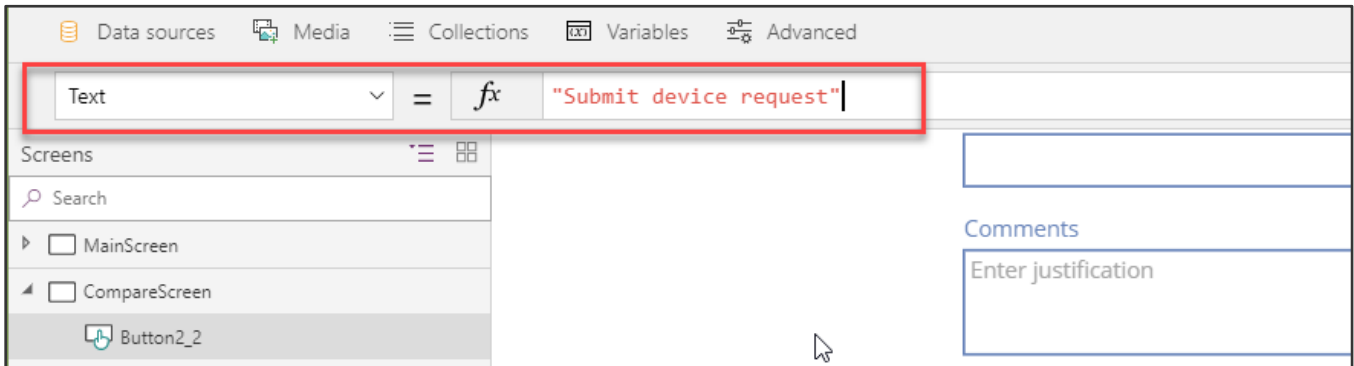


4. Position it in the bottom right of the screen, center aligned with the Form.
5. Make the button larger – you can resize to 280x60 using the Properties pane on the right.

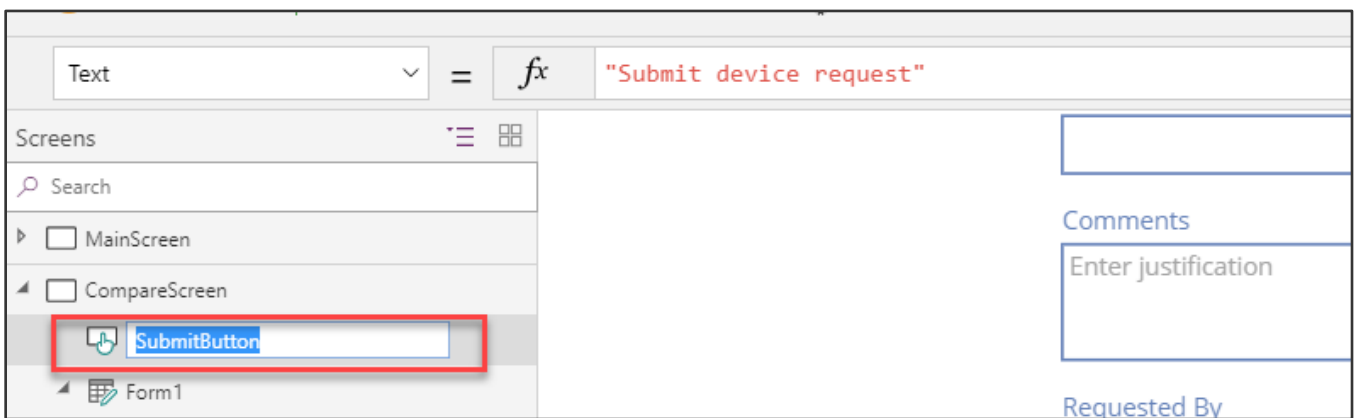




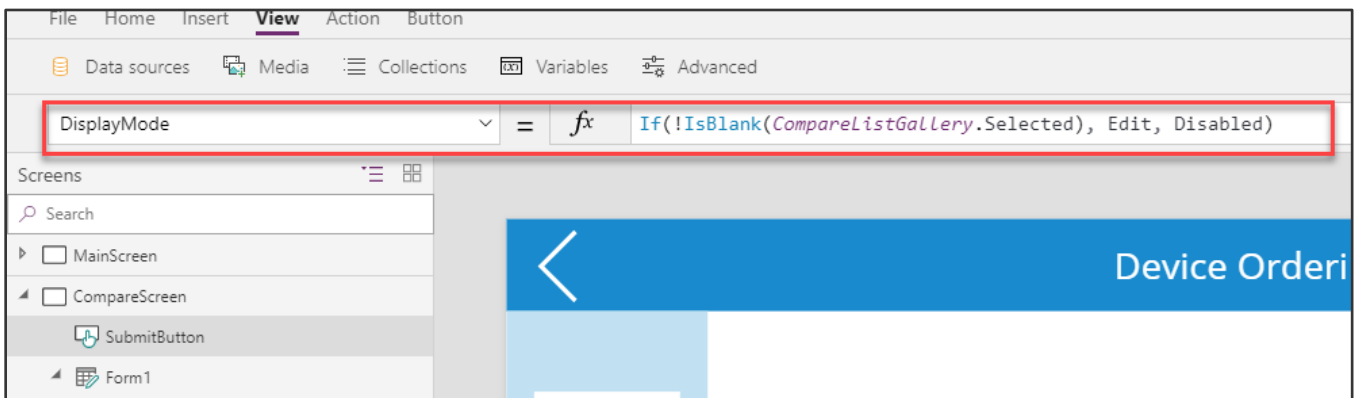
- Set the button's **Text** property to **"Submit device request"**



- Rename the button to **SubmitButton**.

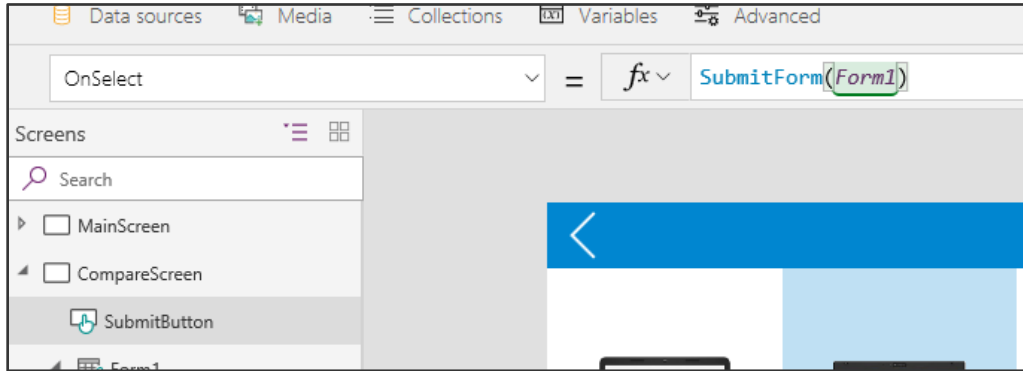


- The button should be enabled only if a device is selected. To do this, change the button's **DisplayMode** property to: `If(!IsBlank(CompareListGallery.Selected), DisplayMode.Edit, DisplayMode.Disabled)`



Note: You might notice the exclamation mark (!) in the formula `!IsBlank()`. Normally if you just have `IsBlank()` the check is for blank. Adding the exclamation mark (!) in front of it changes it to check if it is NOT blank.

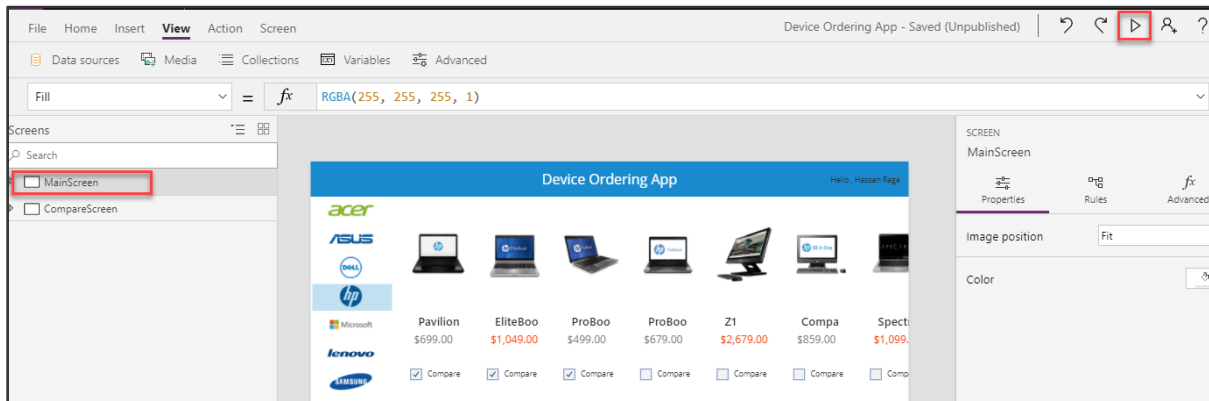
- Next, we are going to configure what we want to happen when the button is clicked. Set the **OnSelect** property to `SubmitForm(Form1)`



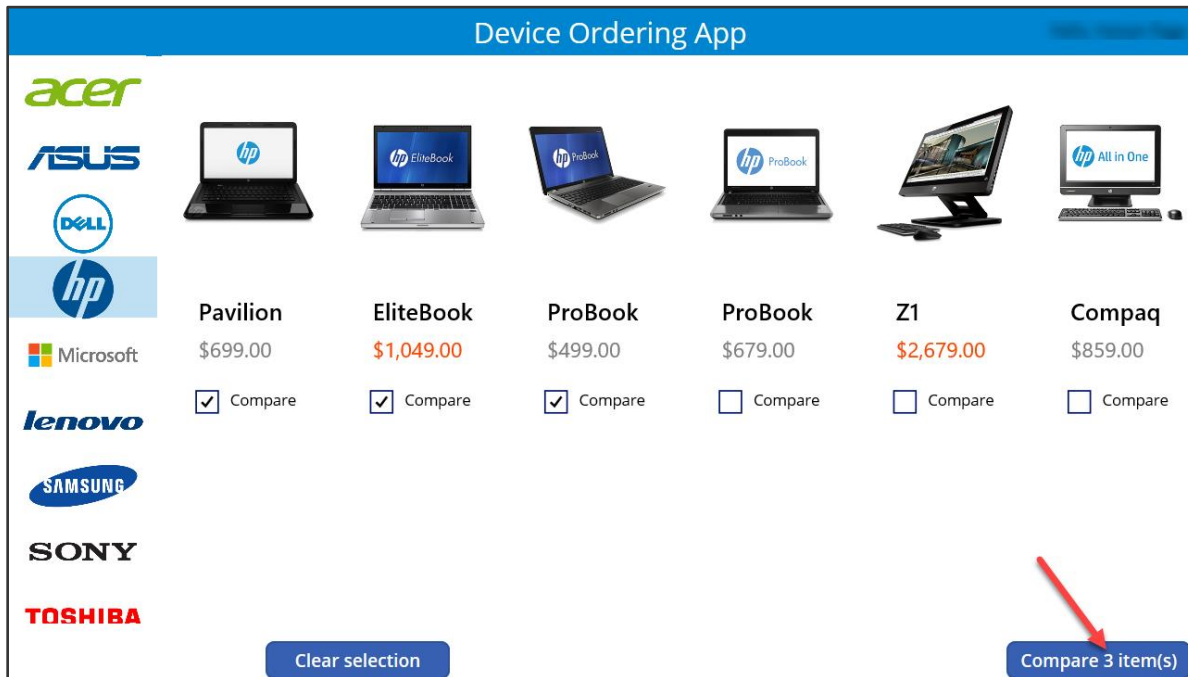
When the button is pressed, the form data will be submitted to the Common Data Service.

## Task 10: Test the form

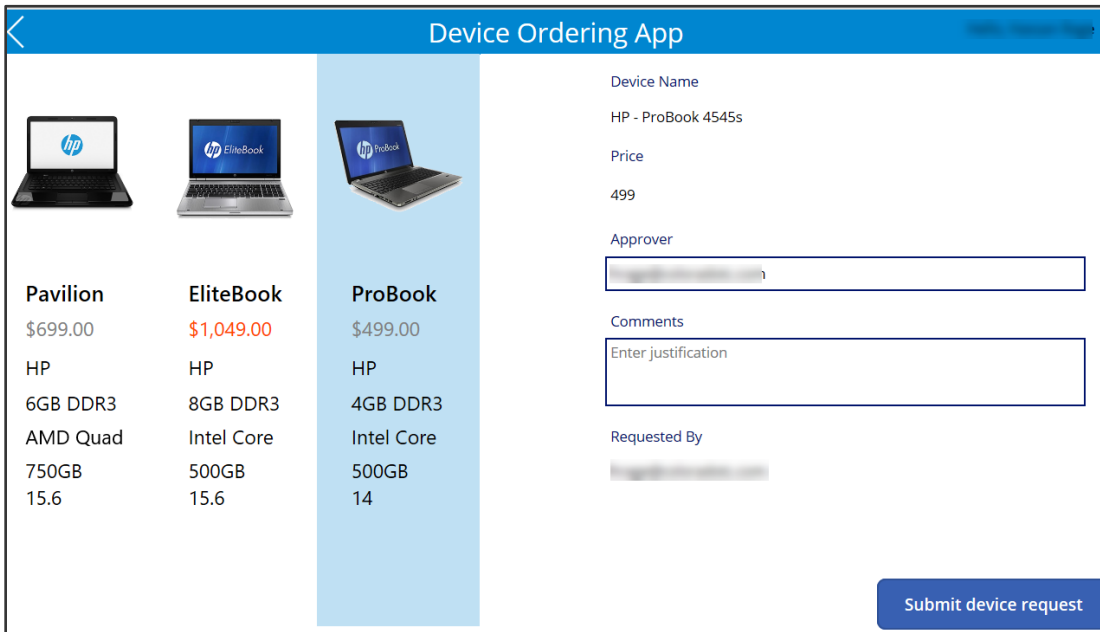
1. Select the **MainScreen** in the left side tree navigation and click Play.



2. Select a few devices to compare. And click **Compare**.

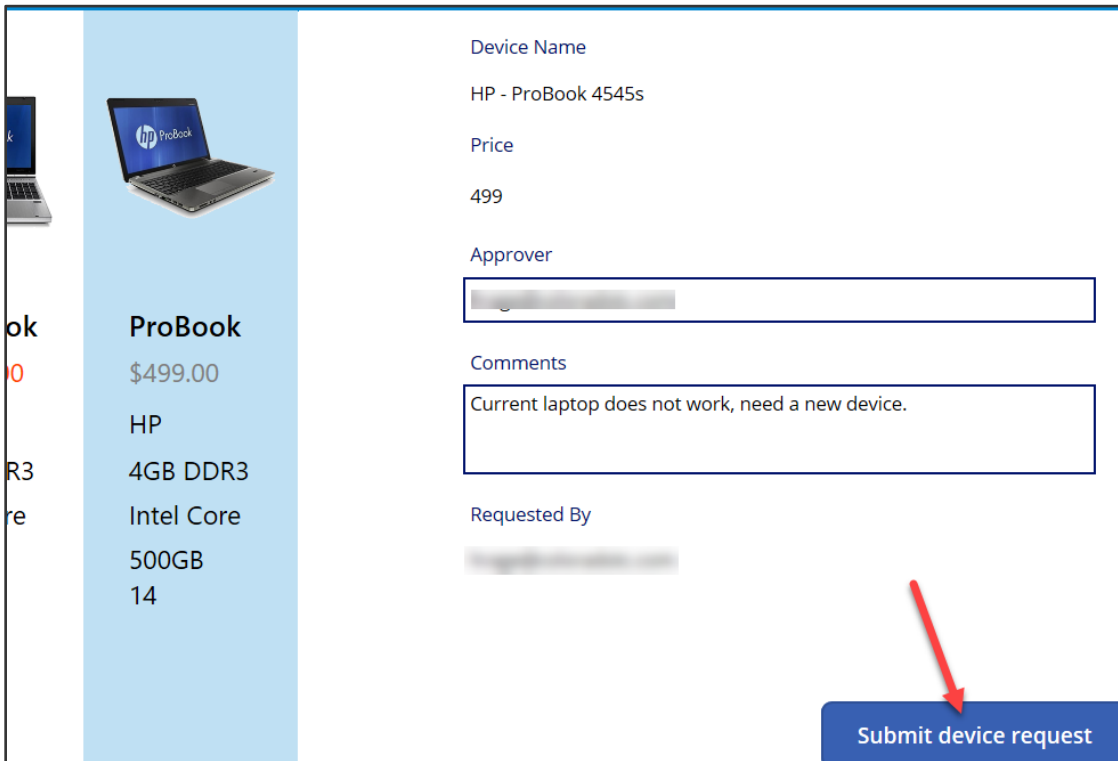


3. Select one of the devices.



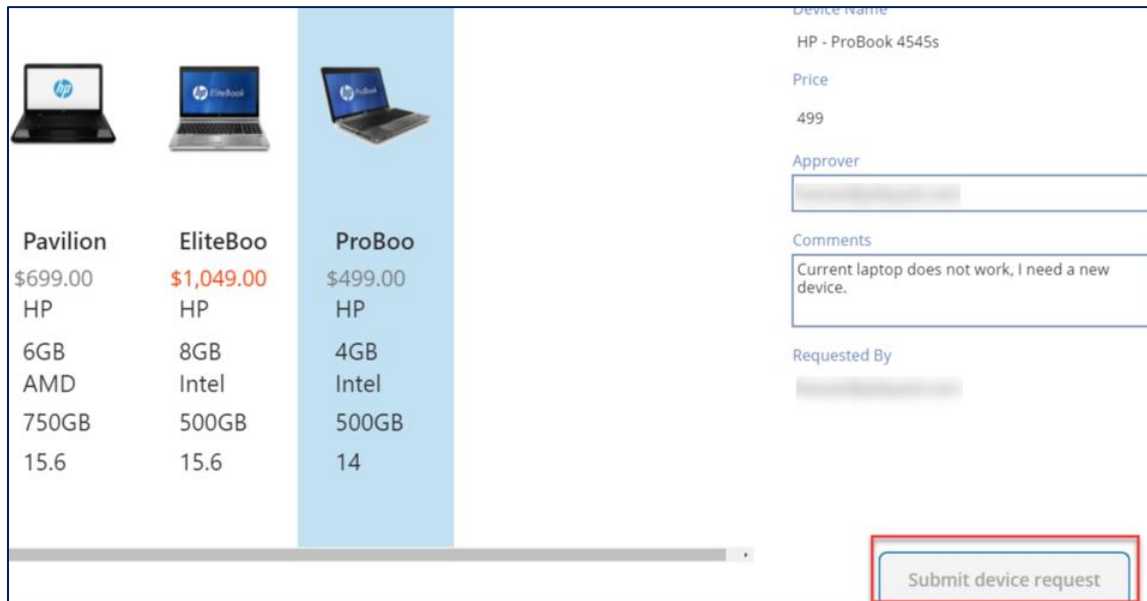
Notice that the Title, Price and Requested By fields are already filled in.

4. Change the Approver email to your own email for test purposes
5. Add some **Comments**, such as: "Current laptop does not work, need a new device."
6. Click **Submit device request**.

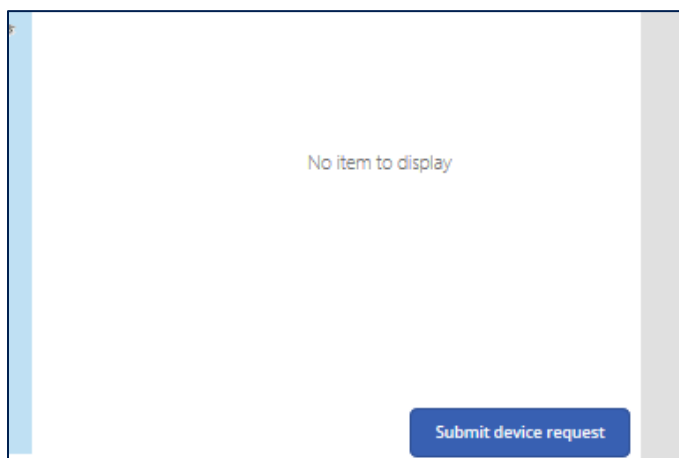


The button should turn disabled (gray) for a few seconds while it's submitting the request. If it does not do this there is likely an error. Click the X in top right to get back to the design mode.

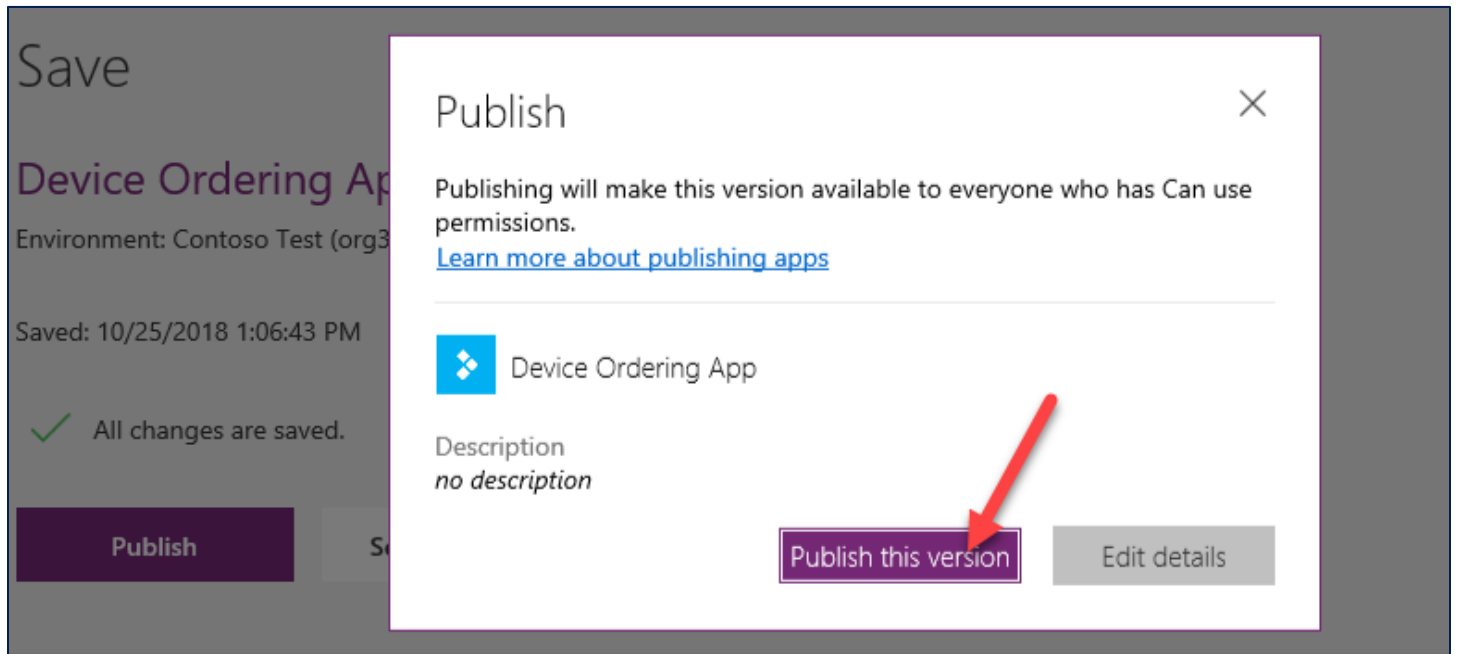
If there is an error, you will see a yellow error icon next to the Submit button, hover over it to check the error.



- The form will become empty after the record gets created, we will fix this issue in optional task. Exit the preview mode ('X' in top right).

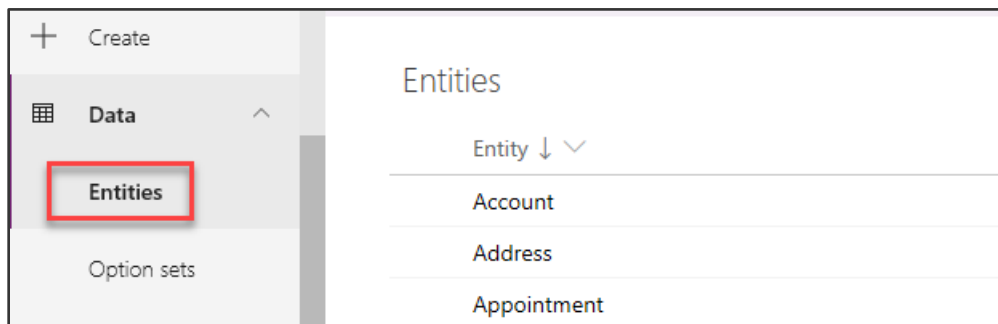


- Save the Application and Publish

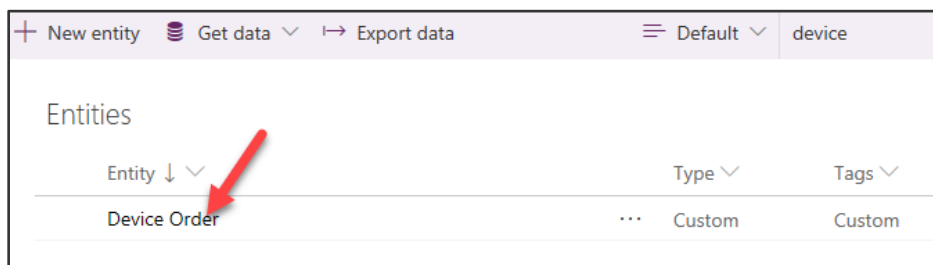


## Task 11: Verify a new item was added to the Device Order entity

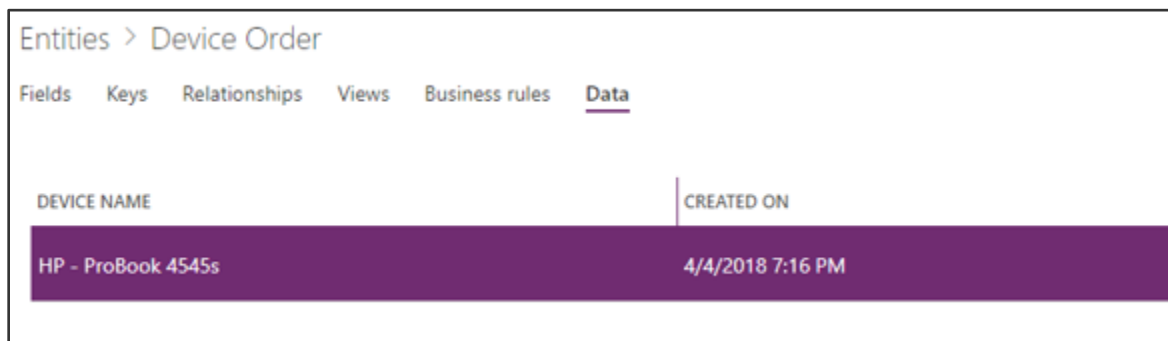
1. Browse a browser window, go to <http://web.powerapps.com>.
2. Click on **Data** -> **Entities**.



3. Select the **Device Order** entity.



4. Select the Data tab.
5. You should see a newly added row with your device order details. This may take a few seconds to load.

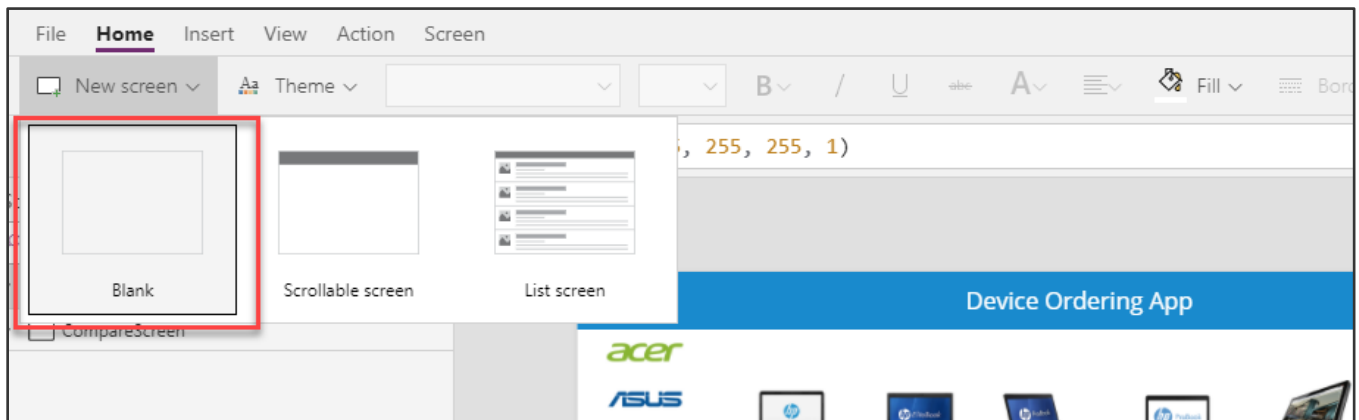


## Task 12: [Optional] Navigate to confirmation screen after the Form submit is successful

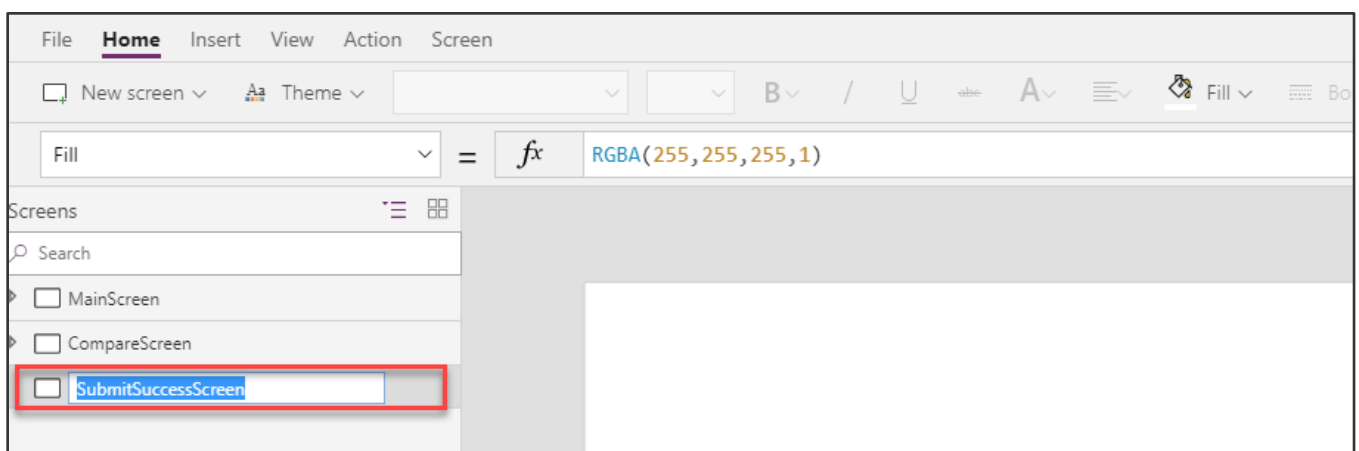
This step is optional, if you're short on time you may skip it and continue to the next module.

Once the Form has been successfully submitted, it's a good idea to show a confirmation screen and allow the user to navigate back to the main screen.

1. Select **Home** -> **New screen** -> **Blank**

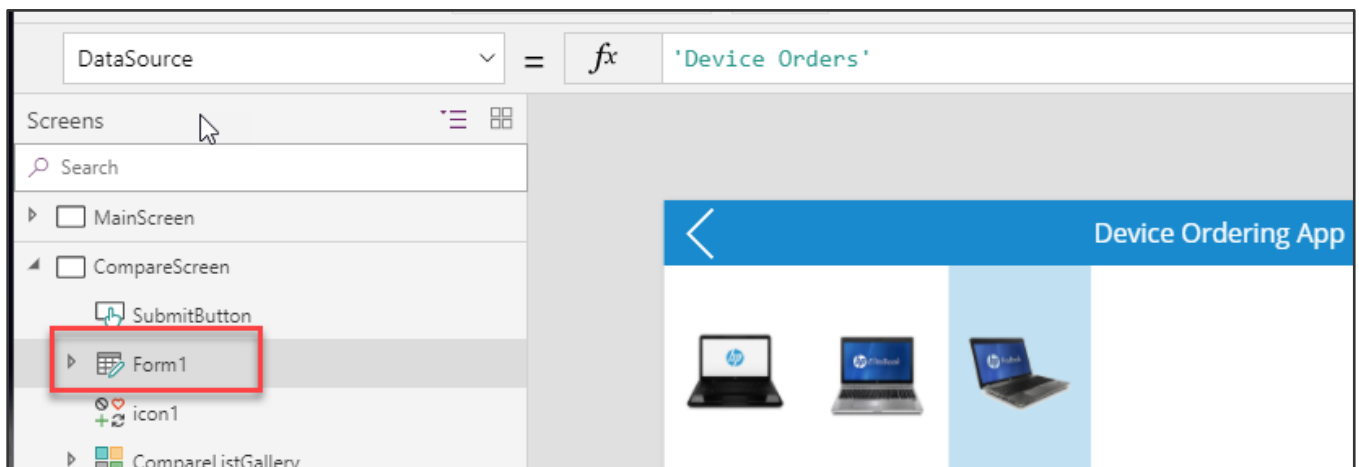


2. Rename the screen to **SubmitSuccessScreen**



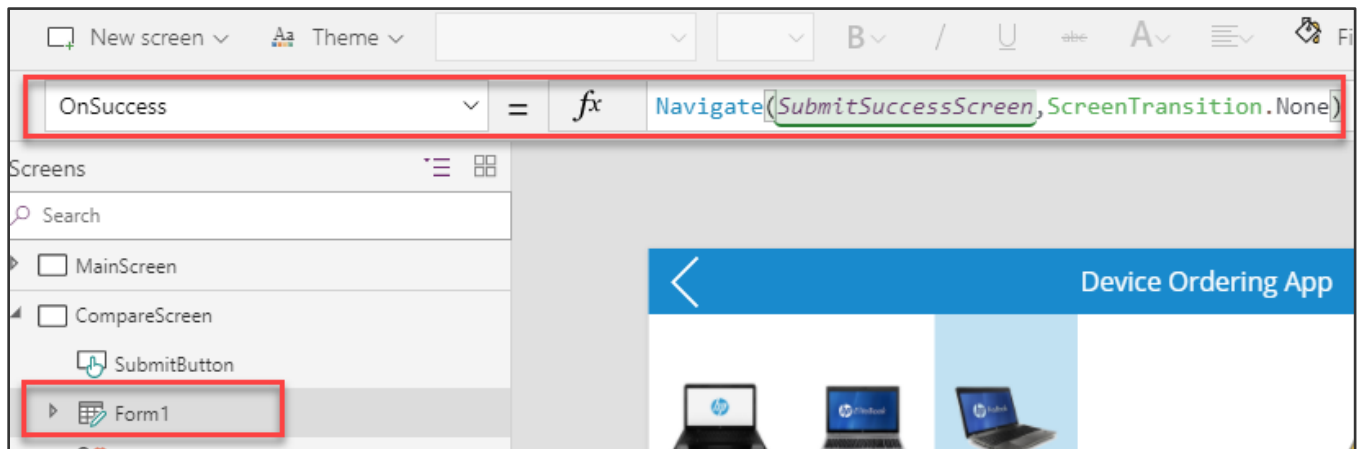
3. Expand the **CompareScreen**.

4. Select the Form – you can use the tree view on the left to select **Form1**.

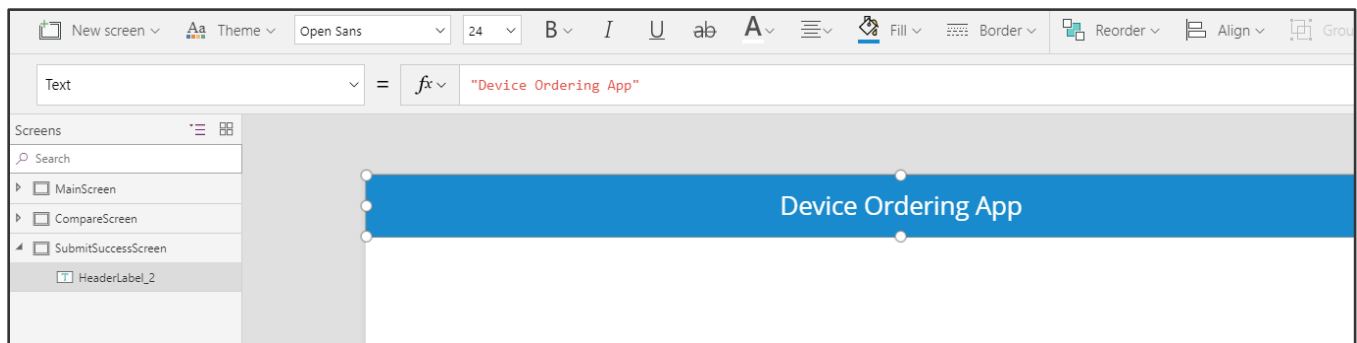


6. Set the **OnSuccess** property to: `Navigate(SubmitSuccessScreen,ScreenTransition.None)`

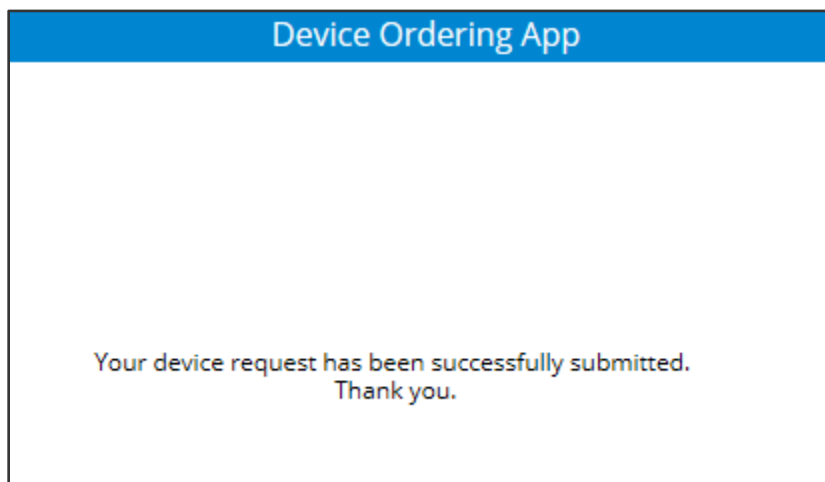




7. Copy (Ctrl-C) the **header label** from the CompareScreen.
8. Go to the to the **SubmitSuccessScreen** and paste the header label.



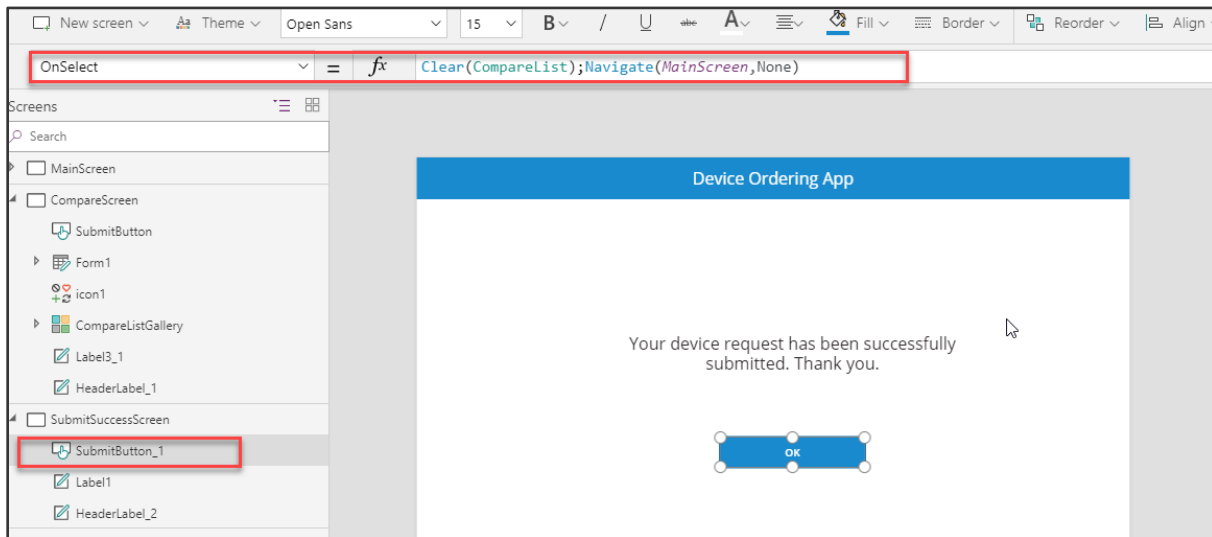
9. Add another **label** in the middle of the screen and set the **Text** to: **"Your device request has been successfully submitted. Thank you."**
10. Increase the font size, the size of the label and center the text.



11. Add a **button** and set its **Text** to: **"OK"**.
12. When the button is pressed, let us remove all the items from the CompareList collection and navigate to the first screen.

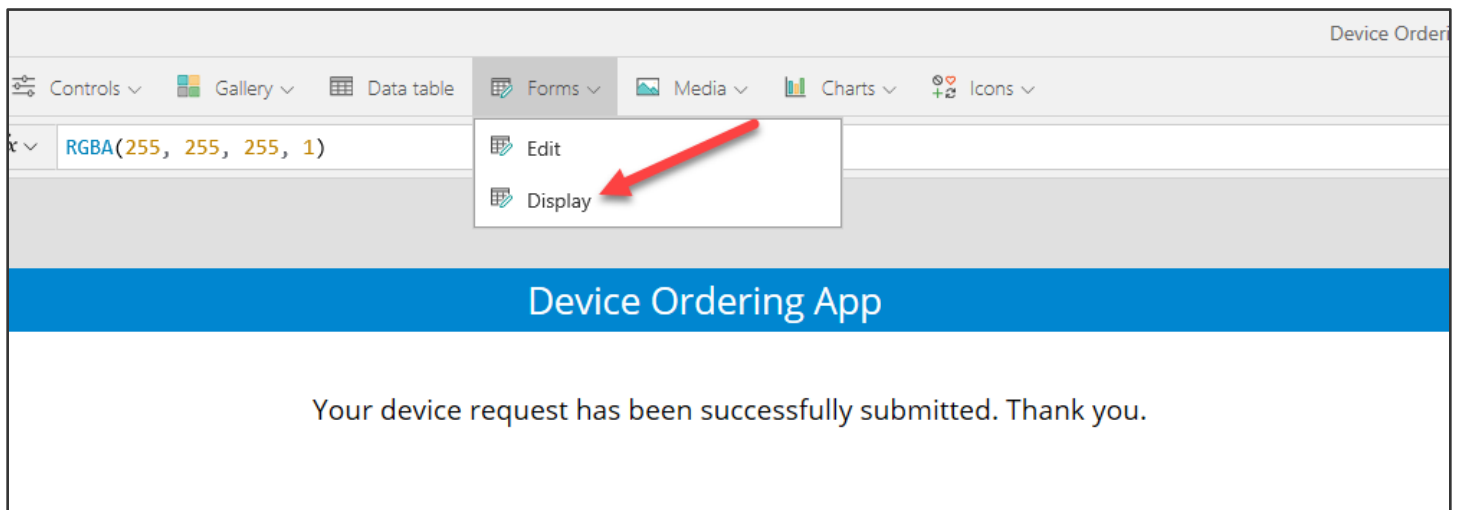
13. Set the **OnSelect** property of the button to:

```
Clear(CompareList);Navigate(MainScreen,ScreenTransition.None)
```

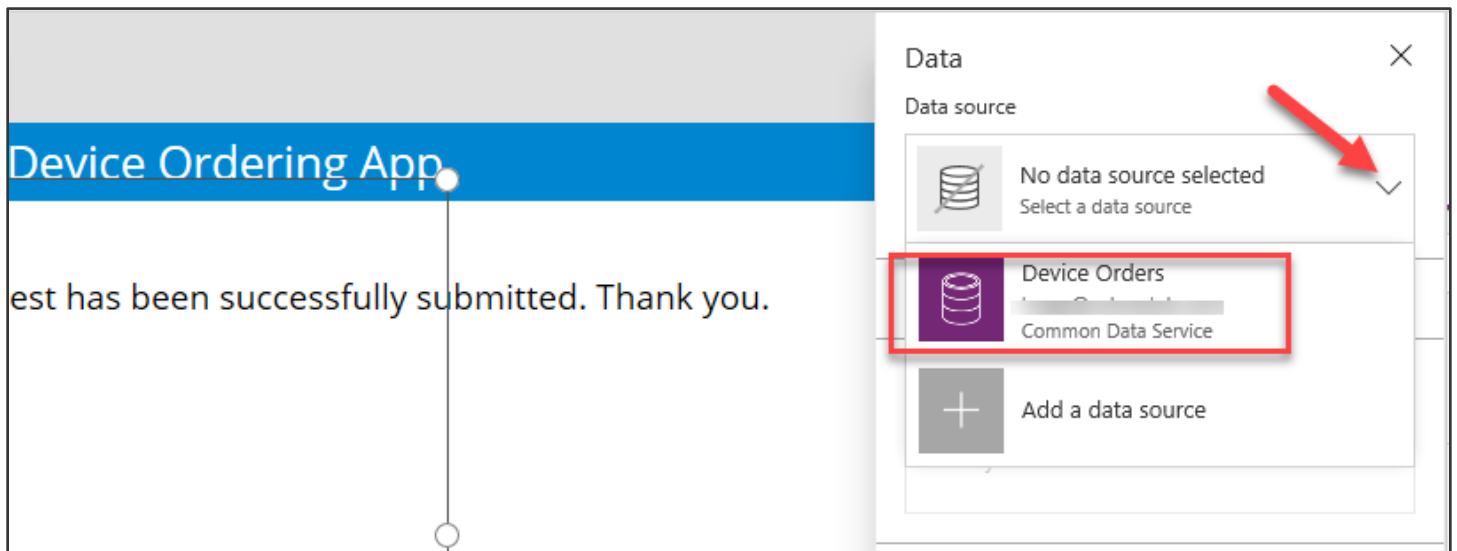


**Note:** ';' is used as a separator when multiple functions are called one after the other. If you are in a locale where ';' is used as a comma-separator, then use a double ';' here (without the single-quotes).

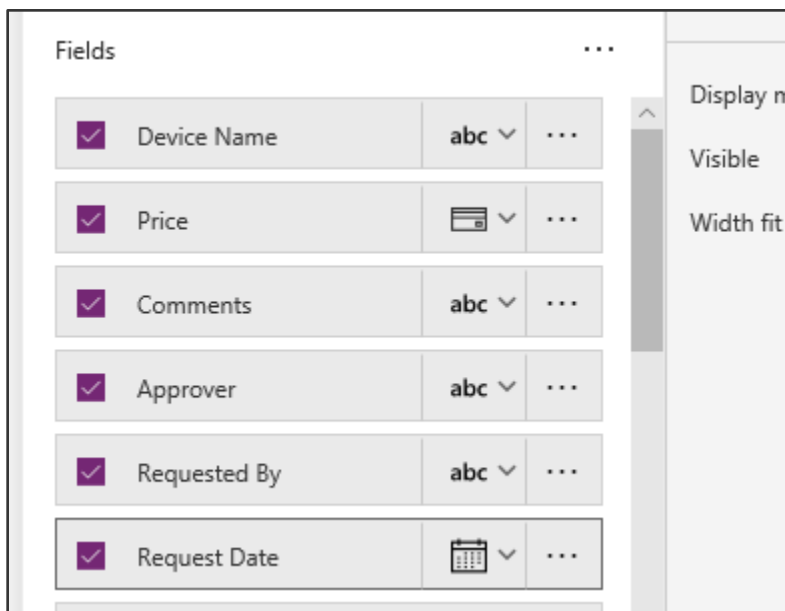
14. Move the label up and add a Display Form: **Insert** -> **Form** -> **Display**.



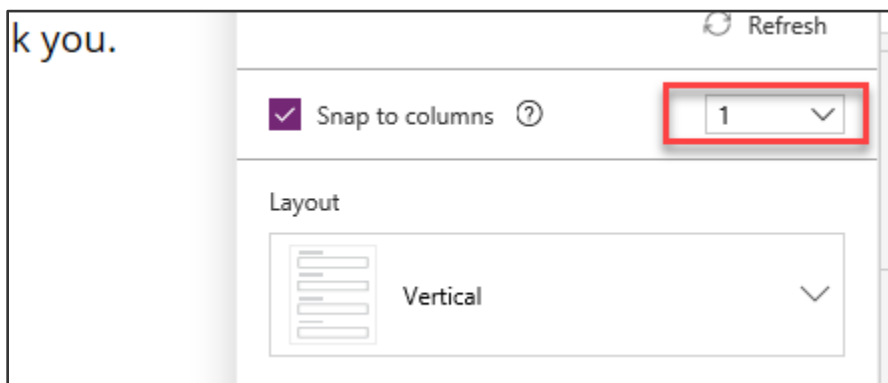
15. Configure its **data source** to point to the '**Device Order**' entity.



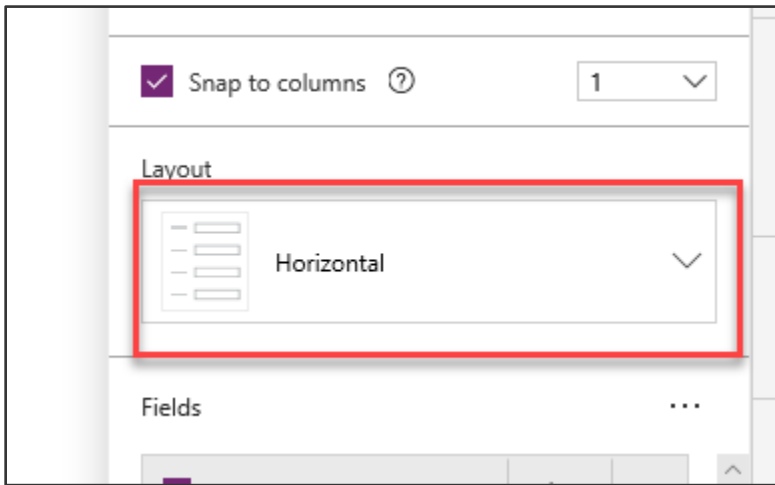
16. Select the fields to display: Device Name, Price, Comments, Approver, Requested By, Request Date.



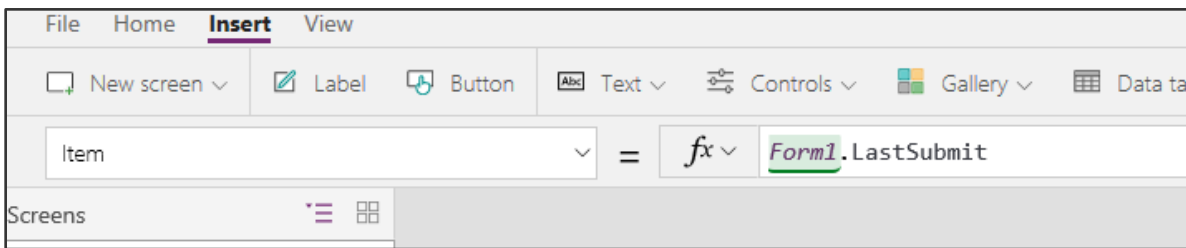
17. Change the **Snap to columns** value from 3 to 1.



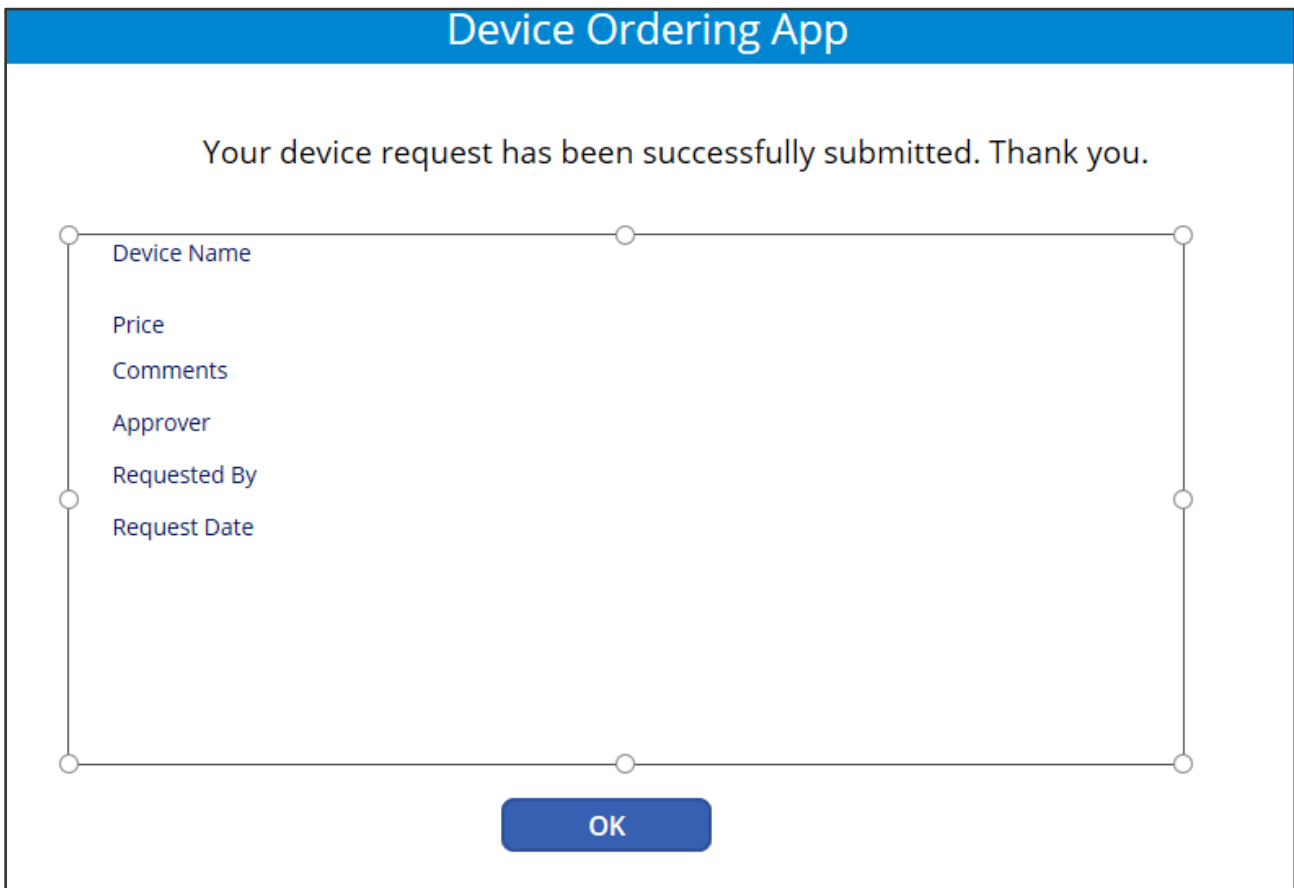
18. Change the **Layout** from Vertical to Horizontal.



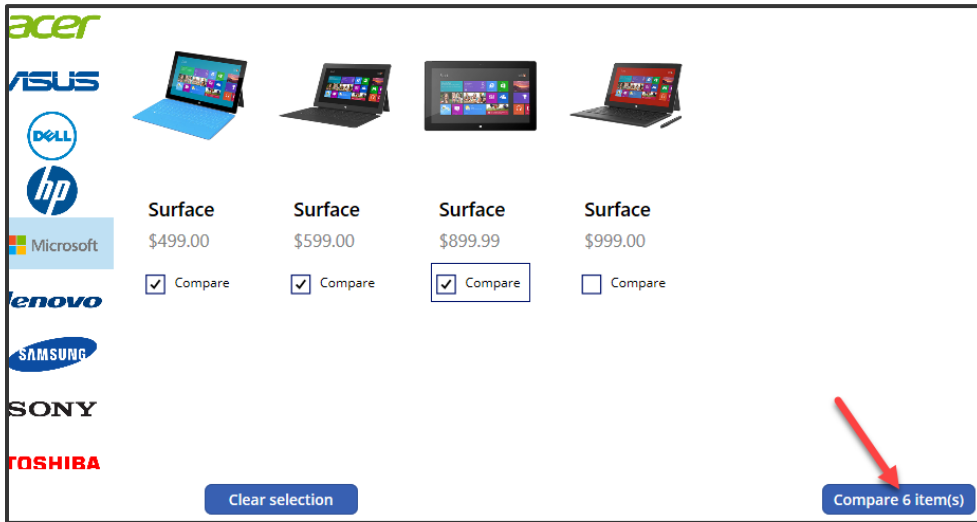
19. Set form **Item** property to `Form1.LastSubmit`.



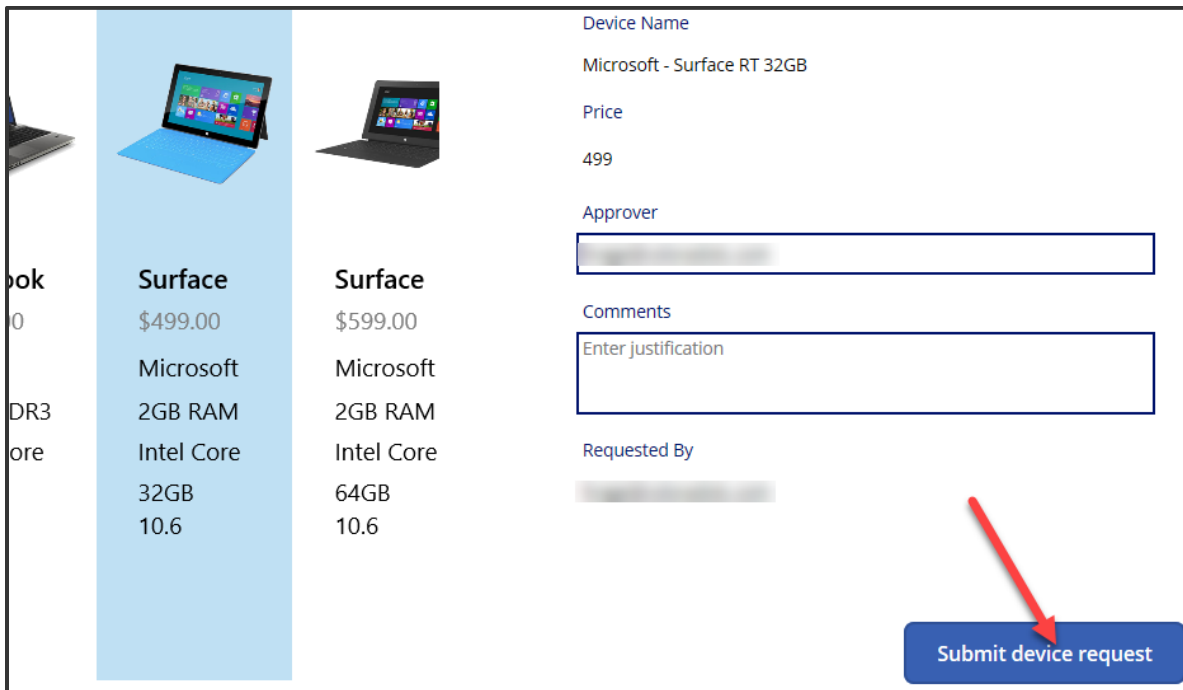
20. Reposition/Resize the for until it looks like the image below.



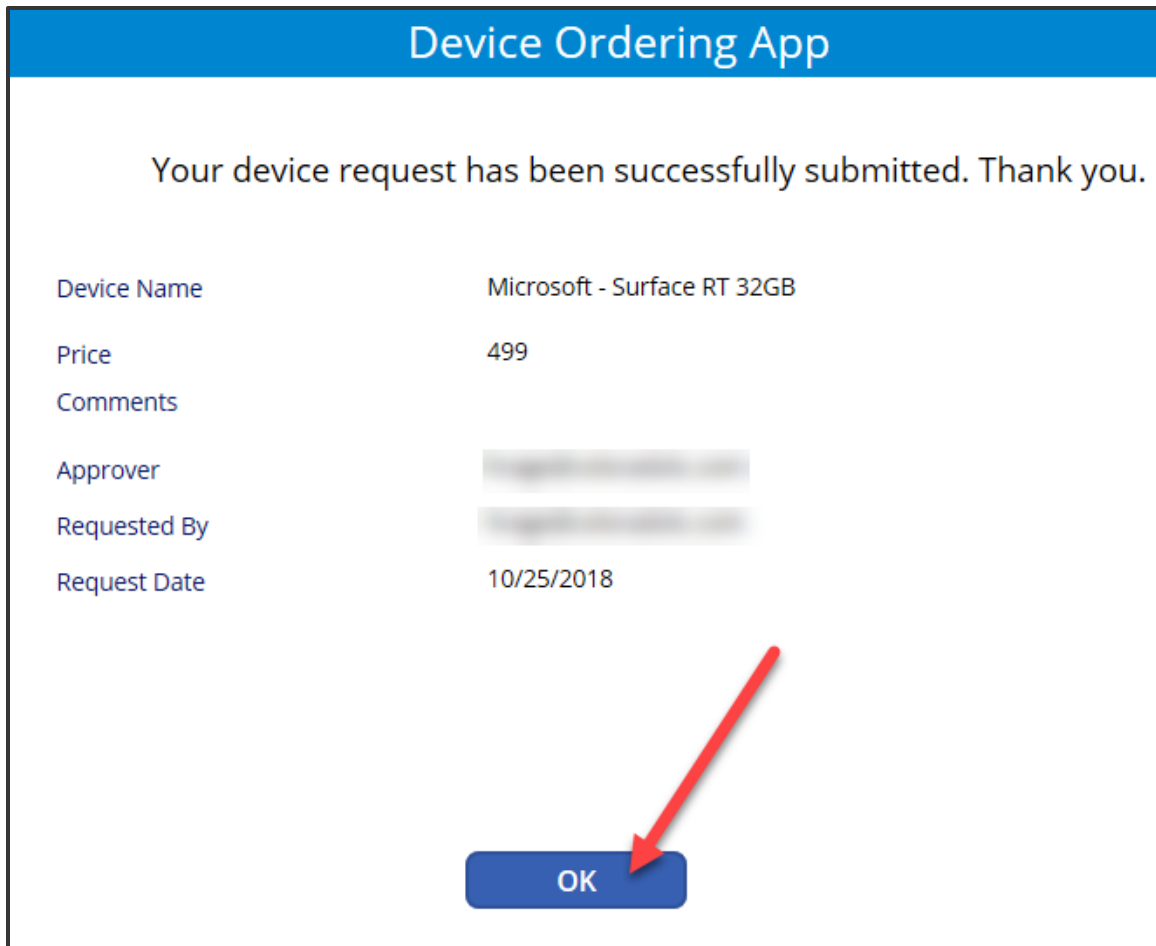
- 21. Save your Changes and Publish.
- 22. Select the MainScreen and click Play.
- 23. Select few more devices and click Compare



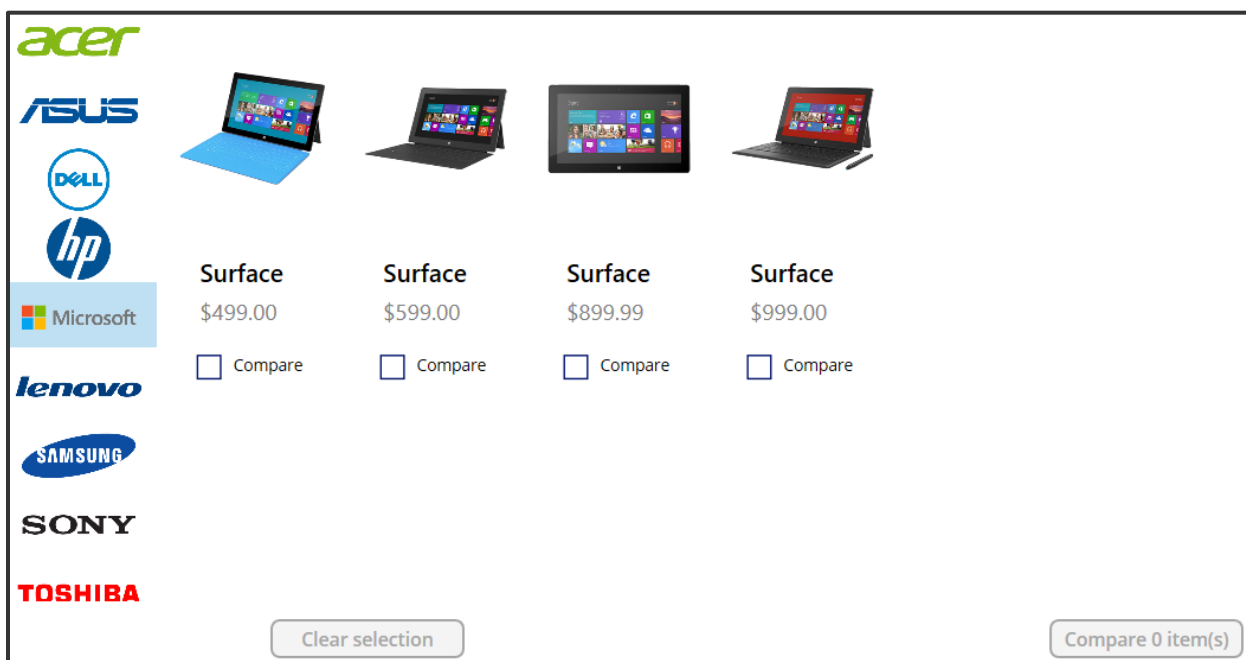
- 24. Select one of the new devices, provide a comment and click Submit.



- 25. Verify that the confirmation screen shows the order details. Click OK.



26. The application will navigate back to the main screen and the compare list will be cleared.



27. Close the application.

## Lab survey

We would appreciate your feedback on the Power 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 functionalities available in PowerApps, Microsoft Flow, Power BI and the Common Data Service. For an up to date list of learning references, see <http://aka.ms/powerapps-resources> and <http://aka.ms/flow-resources> and <http://powerbi.com>.

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