Microsoft

SAP Integration Developer Workshop

Hands-on Lab Step-by-Step Guide

Dec 2022

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Lab Overview and Pre-requisites

Learning Objectives

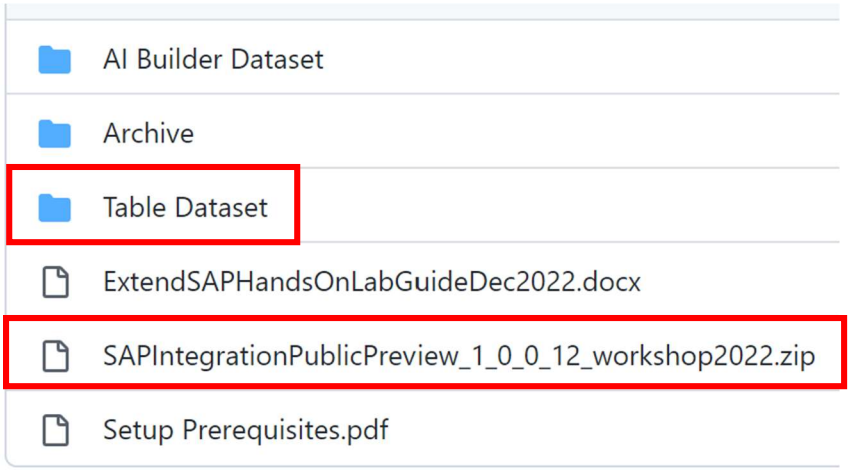
This lab is designed for the Integration Developer that will link SAP BAPI's and other services to Power Automate Flows that return and process SAP data. These Power Automate flows will be used by Application or Citizen Developers that will consume the SAP data coming out of the flow or potentially returning processed data back to SAP. This lab will help the Integration Developer understand the configuration and utilization of the SAP ERP API through hands on labs. In the labs, you will create a Canvas app and Power Automate flow to retrieve PO data from SAP. You will also learn how to shape the PO data with the Power Automate flows so your developer community can seamlessly interact with the SAP data. You will then use a pre-built solution to demonstrate the Procure to Pay process. You will create a Purchase Order app in Power Apps, configure AI Builder to intelligently process vendor invoices, and configure Power Automate to perform 3-way matching in SAP.

Pre-requisites

You will need credentials to an installed and configured SAP Data Gateway with access to an SAP server and access to a Power Apps and Power Automate environment before beginning these labs. Please see your instructor for these credentials.

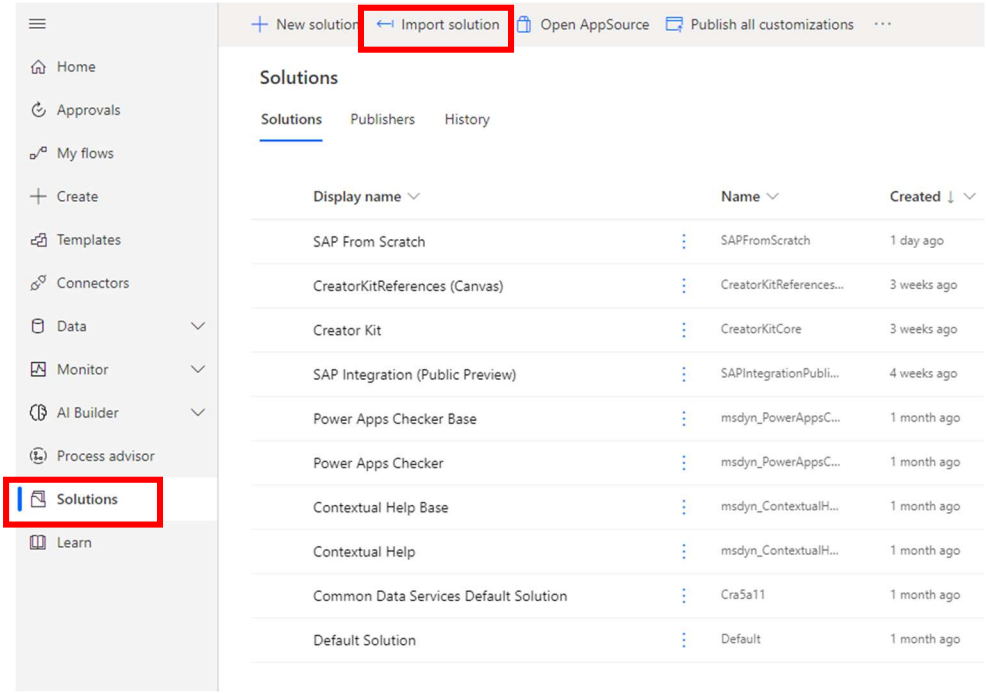
Download the following items from this GitHub Repository:

- SAPIntegrationPublicPreview_1_0_0_12_workshop2022.zip
- (3) CSV files in the Table Dataset: gilman_dropdownses.csv, gilman_menugroups.csv, gilman_menuitems.csv

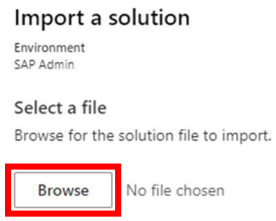


Part 1: Install Solutions

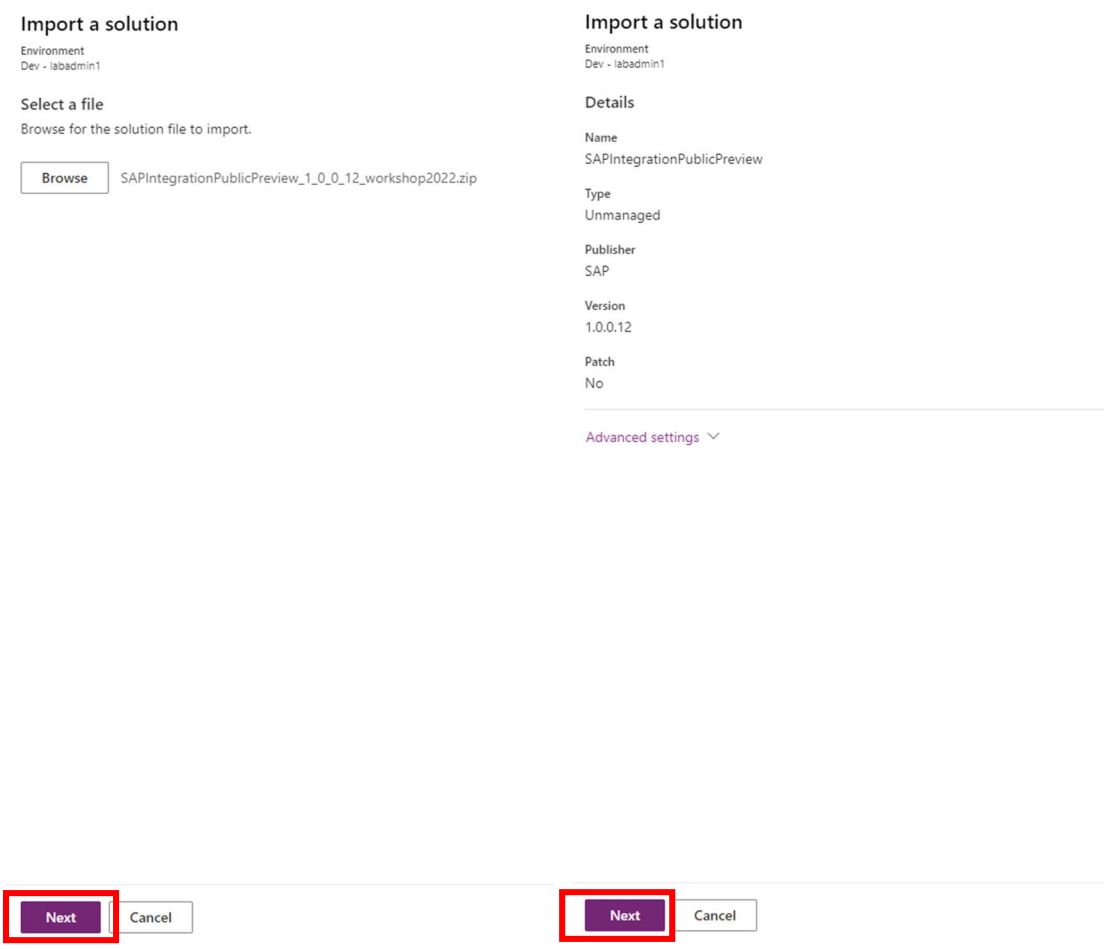
1. Browse to make.powerautomate.com and select the dedicated environment for your user. Please refer to the credentials provided to you by the instructor.
2. Select the **Solutions** Tab and click on **Import Solution**.



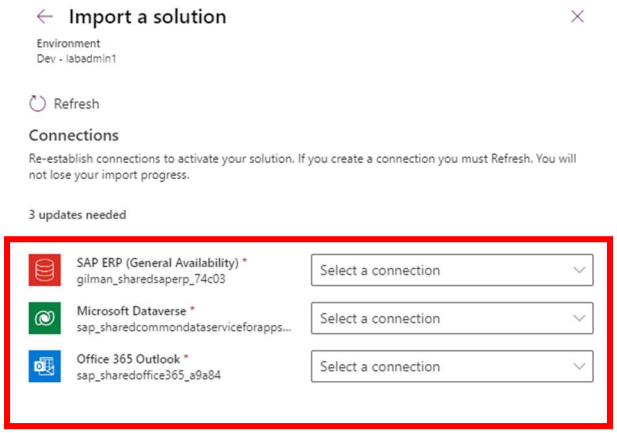
3. Click on **Browse** and select the Solution **SAPIntegrationPublicPreview_1_0_0_12_workshop2022.zip.** (You should have downloaded this file to your desktop. File is located in this GitHub Repository) After you have selected the file, click on **Next.**



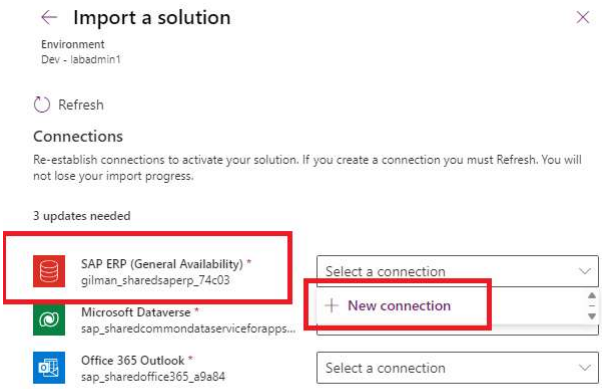
4. Then hit **Next**, and **Next** to start the import.



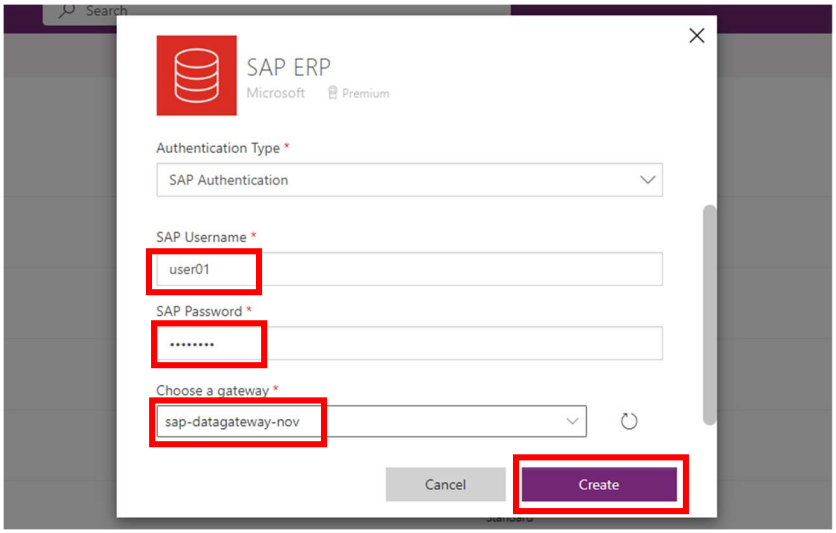
5. On the next step of the import, we need to create a Connection for each Connection Reference in our solution. You will see a list of Connection References that are in your solution.



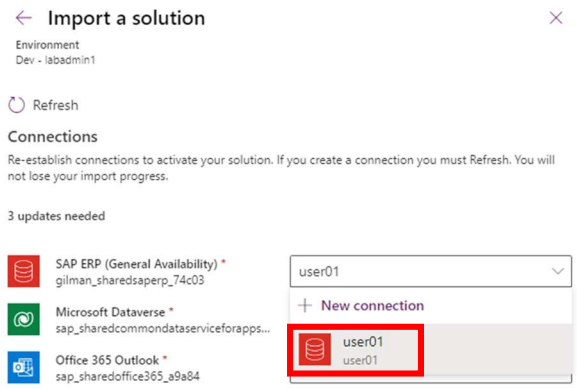
6. For the **SAP ERP Connector**, click on the **drop down** and then select **+ New Connection.**



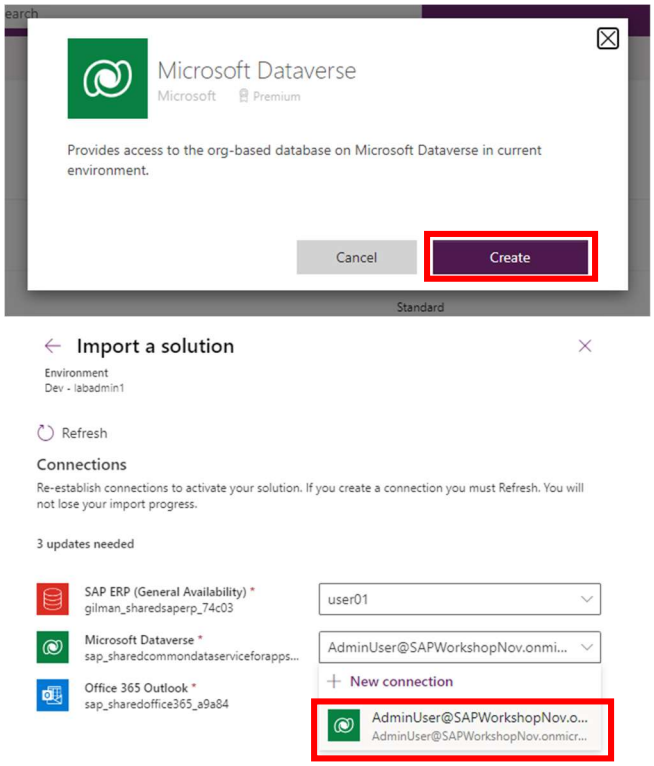
This will open a new tab to configure the connection. Use the SAP login and gateway information provided to you by the instructor and then click on **Create**.



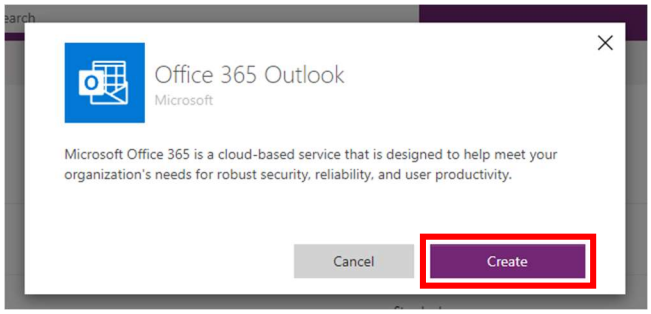
7. Once the Connection is created, go back to **Import Solution tab**, hit **refresh** and select the newly created **Connection**.



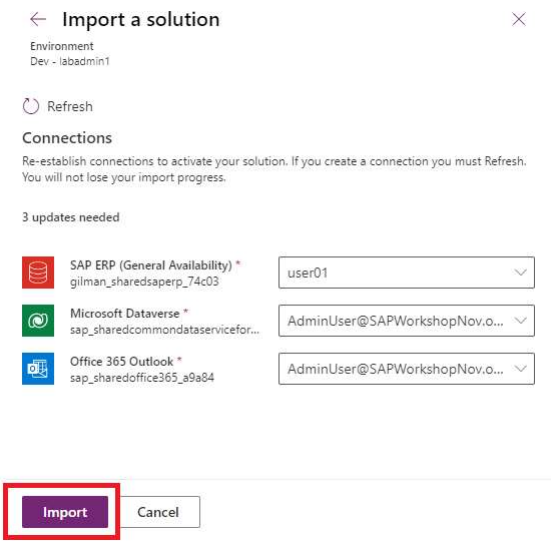
8. Repeat the last 2 steps to configure the Dataverse Connection. You might need to sign in again with your Microsoft Login Account. Use the O365 account login information provided by the instructor.



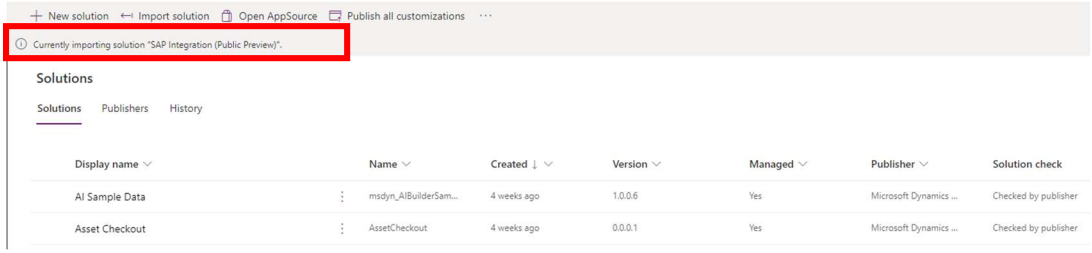
9. Repeat the last 2 steps to configure the Office 365 Outlook Connection. You might need to sign in again with your Microsoft Login Account. Use the O365 account login information provided by the instructor.



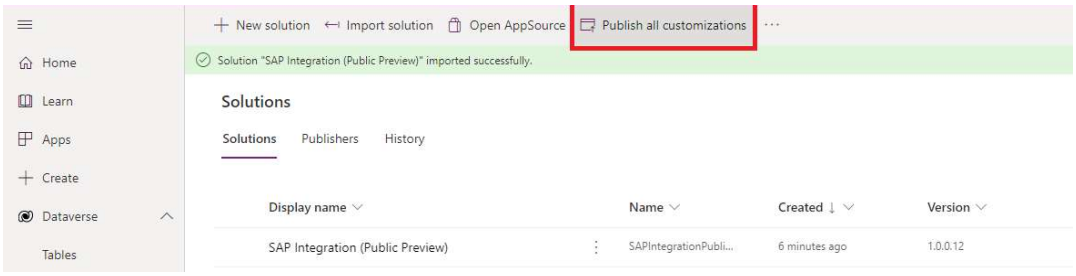
10. Once we have all Connections selected, select **Import** button to Import Solution.



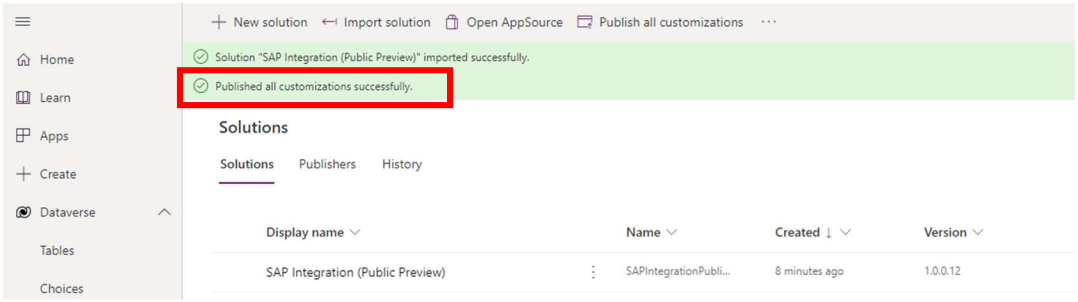
11. This notification shows that Solution is importing. This will take several minutes to complete the import.



12. When Solution has been successfully imported, then select **Publish all customizations**.



13. You should see notification that all your changes have been published successfully as below.

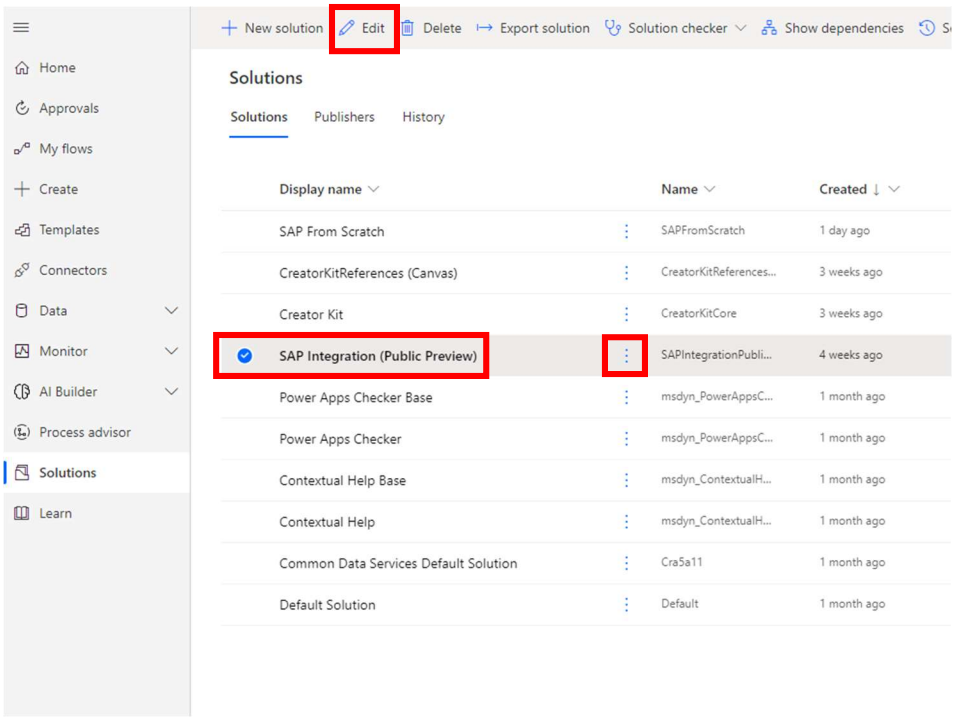


Part 2: Import Data

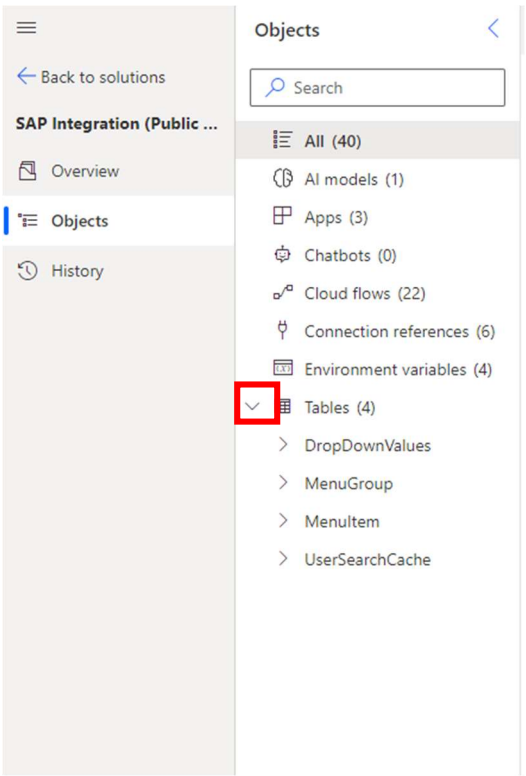
Option 1: Import Data via Excel

We have chosen to have the data tables blank for the solution. You can create your own datasets that are customized for your customer and then include them in the solution for an easier solution import.

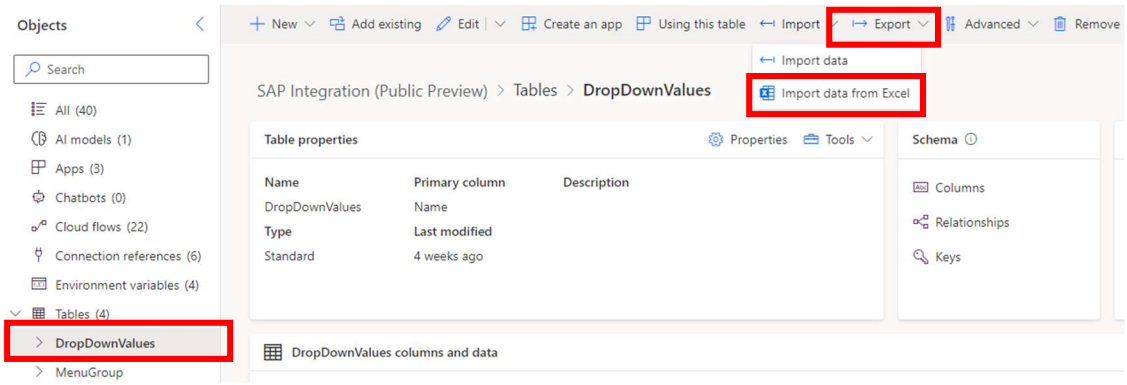
1. Open the SAP Integration (Public Preview). You can either **click on the solution name**, click on **Edit** in the top ribbon after you have selected the solution or click on the **ellipses (…)** and select **Edit**.



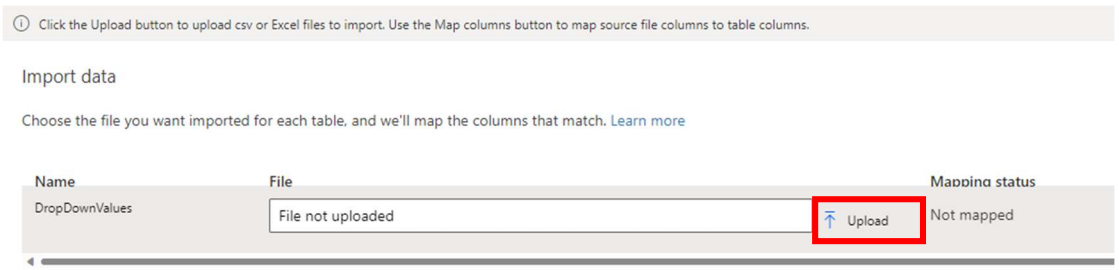
2. Click on the **Drop Down** to expand all the Tables.



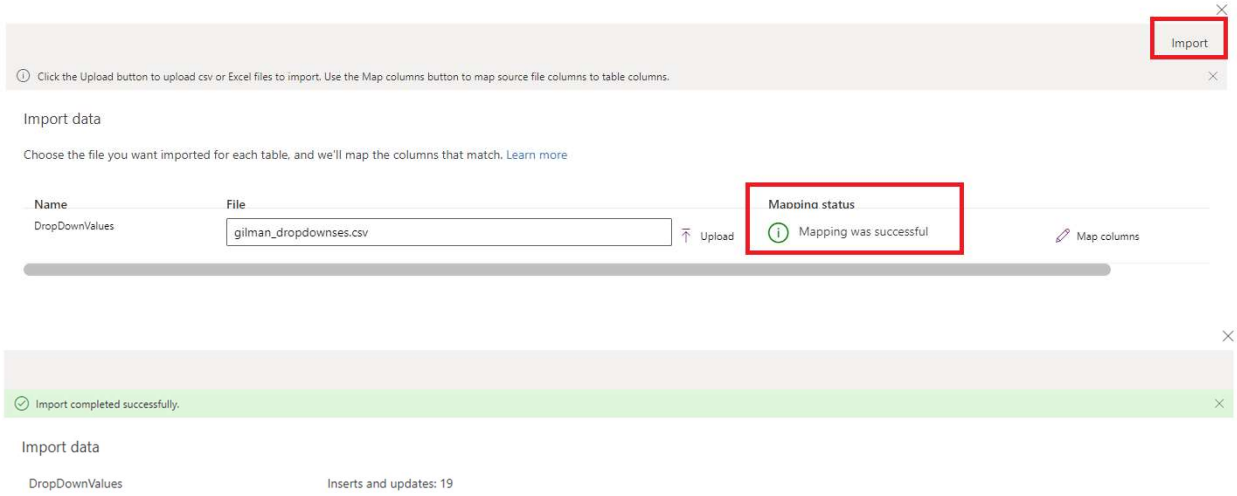
3. Import Data to DropDownValues Table. Select the **DropDownValues table** on the left-hand side. Then click on **Import** in the upper ribbon and then select **Import data from Excel**.



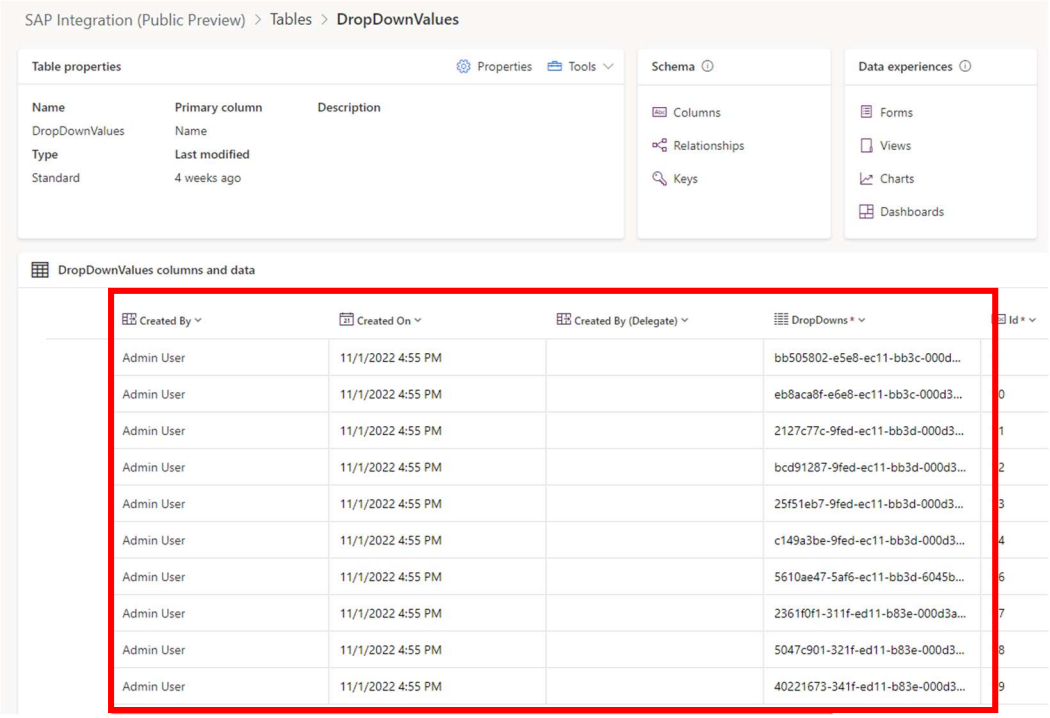
4. Click on **Upload** and select the file **gilman_dropdownses.csv** file. (You should have downloaded this file to your desktop. The file is located in the **Table Dataset Folder** in this [GitHub Repostitory](#))



5. Wait for **Mapping Status** to show mapping was successful. Then click on **Import** button on top right corner.



Refresh and ensure you are showing data in **DropDownValues** table as shown below.



6. Repeat the last 3 steps for the remaining tables using the data files indicated below.

Table Name	Data File to Import
MenuGroup	gilman_menugroup.csv
MenuItem	gilman_menuitems.csv

Option 2: Import Data using PowerShell Script

If you are comfortable using PowerShell Script, you can download the script from the same GitHub repository. Download from the **PowerShell Script for Importing Table Dataset** the following files:

- Configdata.zip
- importConfigDataSAPSolution.ps1

Execute the **importConfigDataSAPSolution.ps1** to import Data with **configdata.zip** file using following syntax:

.\importConfigDataSAPSolution.ps1 -url -configDataPath

Example:

.\importConfigDataSAPSolution.ps1 -url https://orgXXXXXXX.crm.dynamics.com/ -configDataPath C:\Downloads\configdata.zip

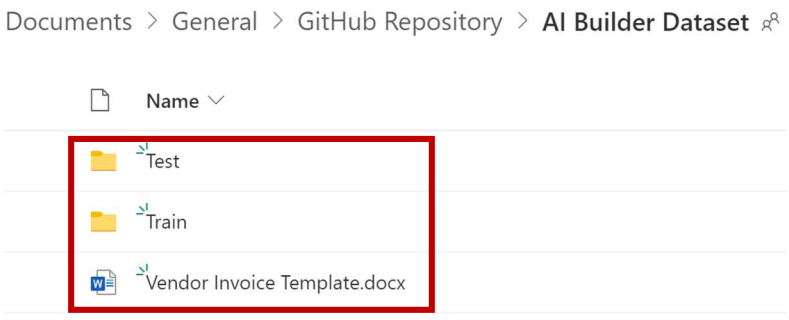
The PowerShell Script should create a new authentication profile to the environment specified and import the configuration data.

If you have any problems running PowerShell Script, check out the complete Deployment Guide here.

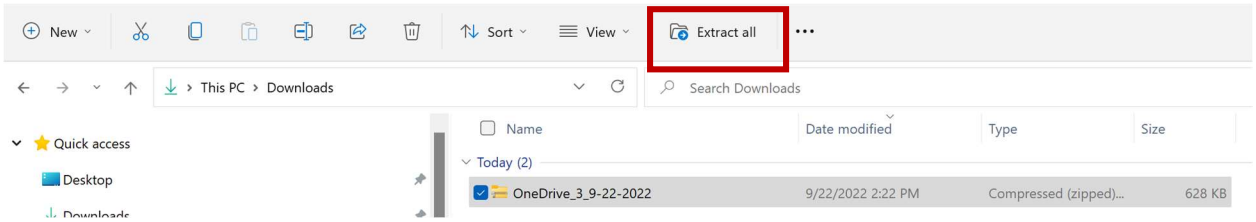
PowerPlatformSAPIntegration/deployment at main · jongilman88/PowerPlatformSAPIntegration (github.com)

Exercise 0: Copy sample invoices and templates to your desktop.

1. **Browse** to GitHub Respository for the Workshop. Download the **Test** and **Train folders** and the **Vendor Invoice Template** from the **AI Builder Dataset** folder.

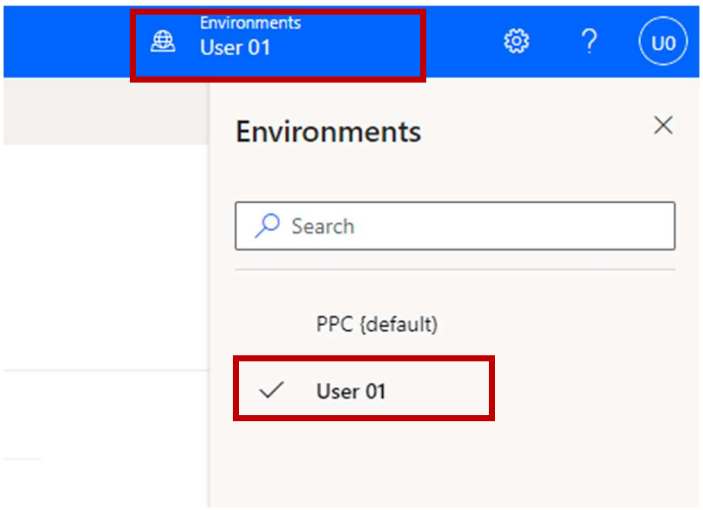


2. **Create** a new folder on your desktop and then **extract** the zip file from the downloads so you have these documents available during the lab.



Exercise 1: Open Power Automate and select your environment.

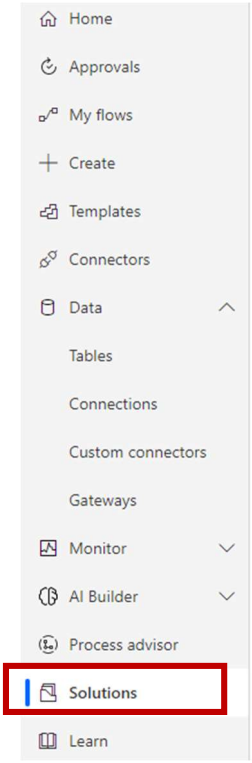
1. Open your Power Platform Maker Portal. Using an **In-Private or Incognito browser,** browse to https://make.powerautomate.com using your new credentials supplied by the instructor.
2. Select the correct environment. In the upper right-hand corner, click on the **Environment** and select the correct environment for this lab based on the information supplied by the instructor.



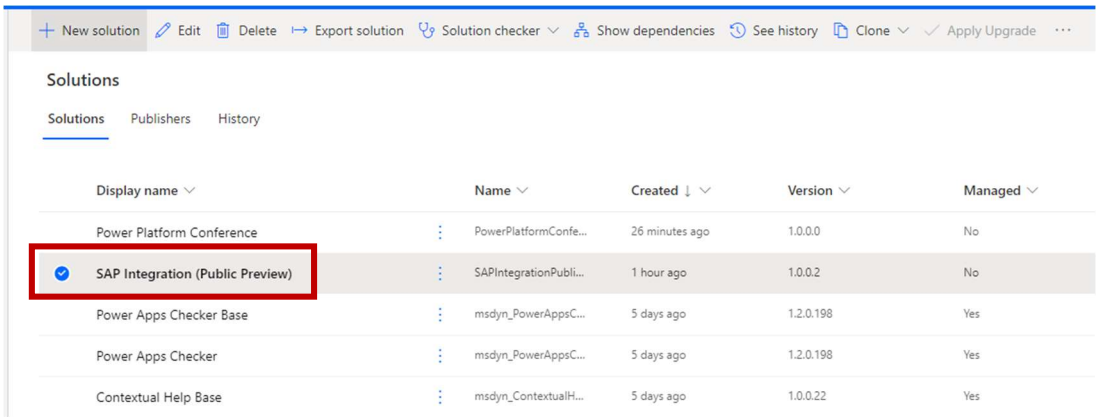
Exercise 2: Open the SAP Integration Solution and Create an Environment Variable.

It is best practice to use a solution as a container for all your apps and flows. For this workshop, we will be working in a solution that has already been created for you. We will add some new cloud flows, canvas apps and Environment Variables but use the existing Connector Reference.

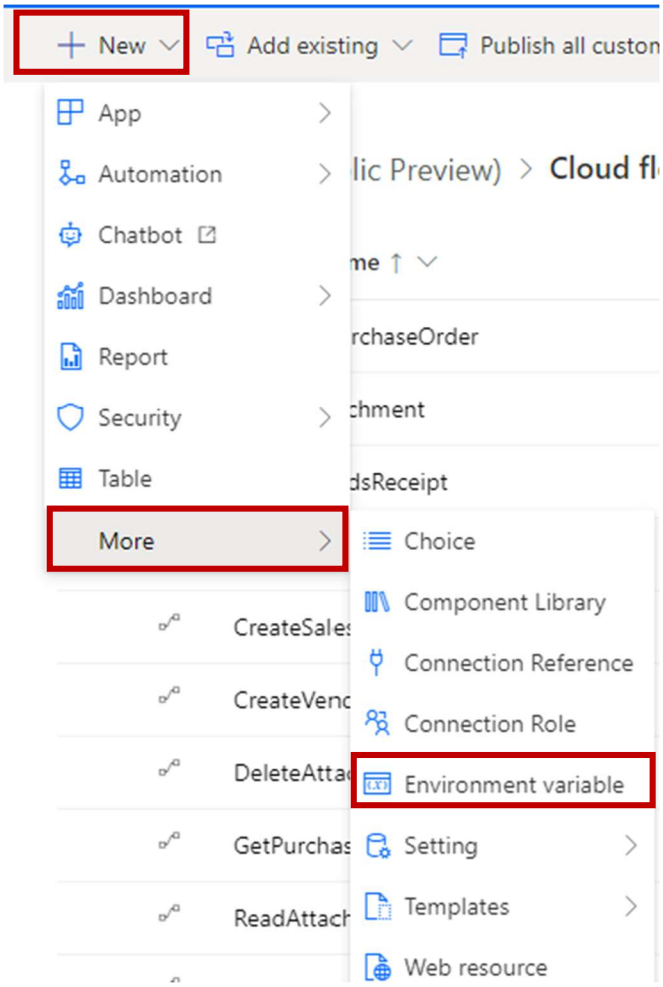
1. Open a Solution. In right left-hand panel, click on **Solutions**.



2. Select the **SAP Integration (Public Preview)** solution.



3. Create a new Environment variable. SAP has several different connection parameters, and it is cumbersome for makers to enter these for each Power Automate SAP action. Makers are now able to reuse environment variables within solution-aware flows that contain all the SAP system information. Once the environment variable is defined, makers can use the environment variable in their SAP actions without having to re-enter all the system information again.
   Click on + New, More and then Environment variable.



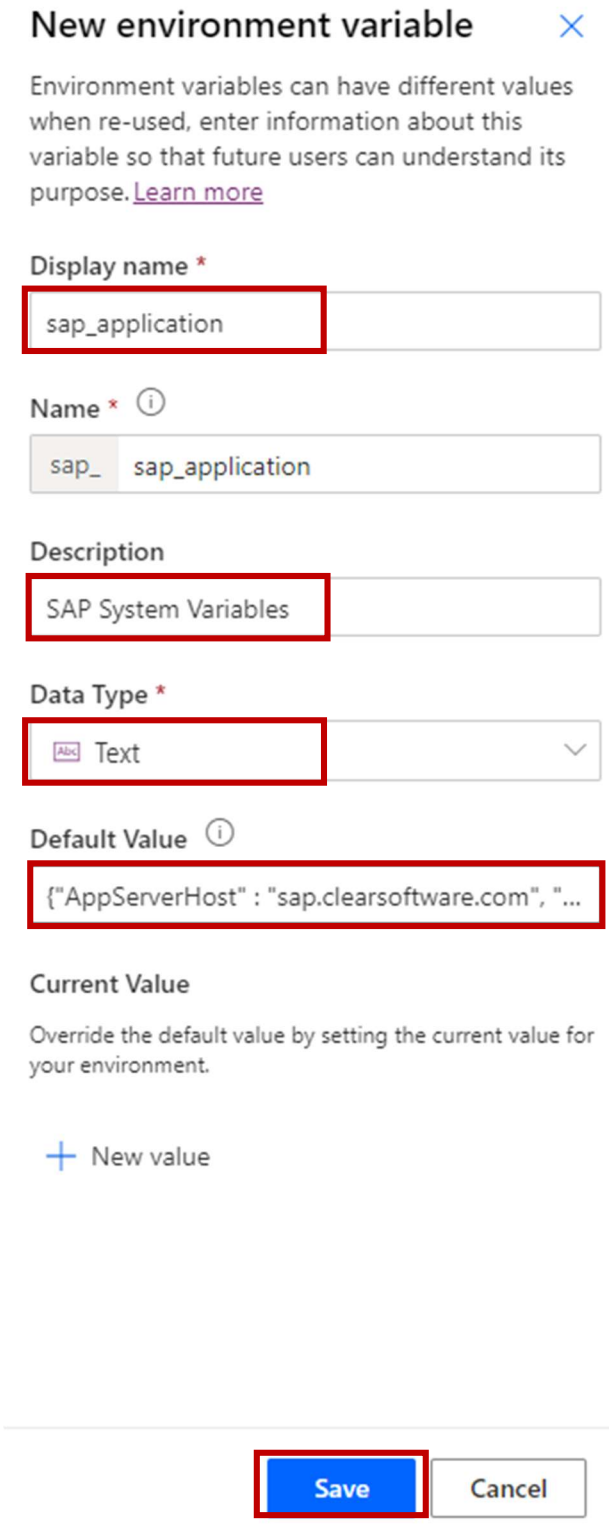
4. Configure the Environment variable. Enter the following to configure the Environment variable then click on Save.

   Display Name: sap_application
   Description: SAP System Variables
   Data Type: Text

NOTE: Even though we are entering a JSON blob, we must choose Text for the variable data type.

Default Value: Copy and paste the JSON blob below.

```
{"AppServerHost" : "sap.clearsoftware.com", "LogonType":"ApplicationServer",
"SystemNumber": "00", "Client":"100"}
```



Additional SAP Properties you may be using for environment variables for your customers:

Property	Description
AppServerHost	The hostname of the SAP Application Server.
AppServerService	The service name or port number of the specific SAP Application Server to connect to (Optional for connection type (Logon) A - Application Server).
Client	The SAP client ID to connect to the SAP system. The SAP backends' client (or 'Mandant') into which to log in. It is a number ranging from 000 to 999.
LogonGroup	The Logon Group for the SAP System, from which the Message Server shall select an Application Server (Only available if connection type (Logon) is B - Message Server (Group)).
LogonType	The type of logon to the SAP System, either Application Server Logon (Type A) or Group Logon (Type B aka Message Server). Allowed values: ApplicationServer, Group
MessageServerHost	The hostname of the SAP System's Message Server (central instance) aka R3 System Name (Mandatory if connection type (Logon) is B - Message Server (Group)).
MessageServerService	The Service Name (as defined in etc/services) or the Port Number under which the Message Server is listening for load-balancing requests (Mandatory if connection type (Logon) is B - Message Server (Group) and System ID is not present).
SncCertificate	X.509 certificate in Base64 encoded form, without the begin or end certificate tags.
SncMyName	The installed SNC solution usually knows its own SNC name. Only for solutions supporting 'multiple identities', you may need to specify the identity to be used for this destination/server (optional).
SncLibraryPath	Name or path of the SNC library to be used. With the On-Premises Data Gateway, the path can be an absolute or relative to the NCo library.
SncPartnerName	The backends' SNC name (Required when Logon Type is Application Server).
SncQop	Quality of Service to be used for SNC communication of this destination/server. Allowed values: Authentication, Integrity, Privacy, Default, Maximum
SncSso	The SNC SSO specifies whether to use SNC identity or credentials provided on RFC level.

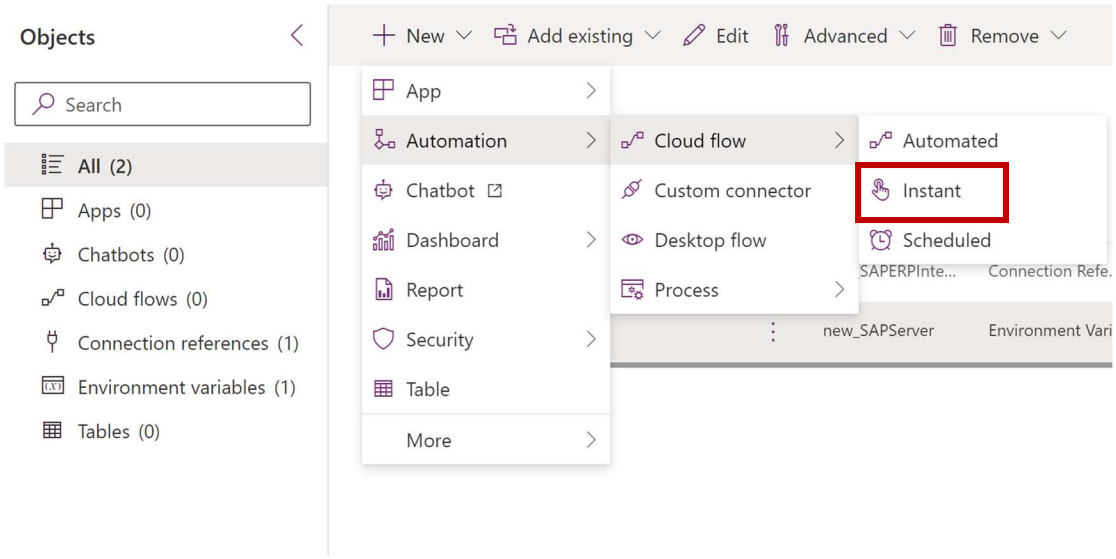
SystemId	The SAP system's three-letter system ID (Mandatory if connection type (Logon) is B - Message Server (Group) and Message Server Service is not present).
SystemNumber	The SAP System's System Number. It is a number ranging from 00 to 99 (Mandatory if connection type (Logon) is A - Application Server).
UseSnc	When selected, the connections will be secured with SNC. **Allowed values:** Yes

Exercise 3: Build a flow that accesses the Purchase Order Table in SAP.

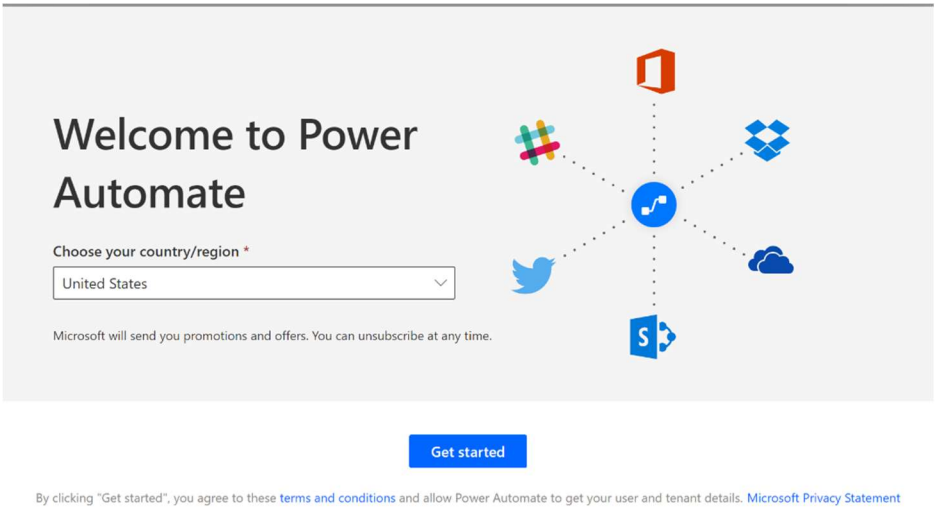
There are two primary ways to access SAP data:

- Using an SAP Business API - also known as a BAPI. This returns a set of fields in JSON format that you can manipulate in your flow. BAPI's can also update SAP by calling an Update BAPI and passing the expected JSON formatted fields and values. Microsoft provides examples of hundreds of common BAPI calls as part of the sample applications we provide with the SAP connector. To help you understand how those were constructed in case you need to update or modify them we'll build a simple example of using a BAPI.
- Performing an SAP ReadTable action. Reading tables - especially with hundreds or thousands of rows - is much faster and more efficient by using the ReadTable action. Unlike a BAPI, however, ReadTable returns a set of fixed length records which you have to map into variables before you can manipulate the individual fields. Microsoft provides samples of several common ReadTable actions against various SAP Tables. To help you understand how those were constructed in case you need to update or modify them we'll build a simple request.

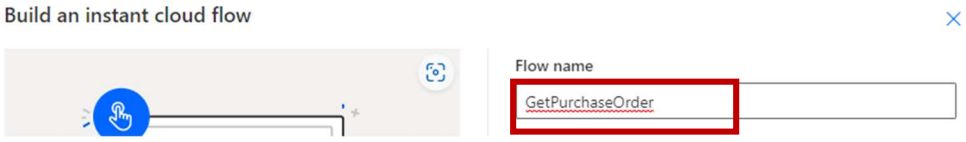
1. Create a new Cloud Flow. In the SAP Integration (Public Preview) solution, click on **+ New**, then **Automation**, then **Cloud flow** and finally **Instant**.



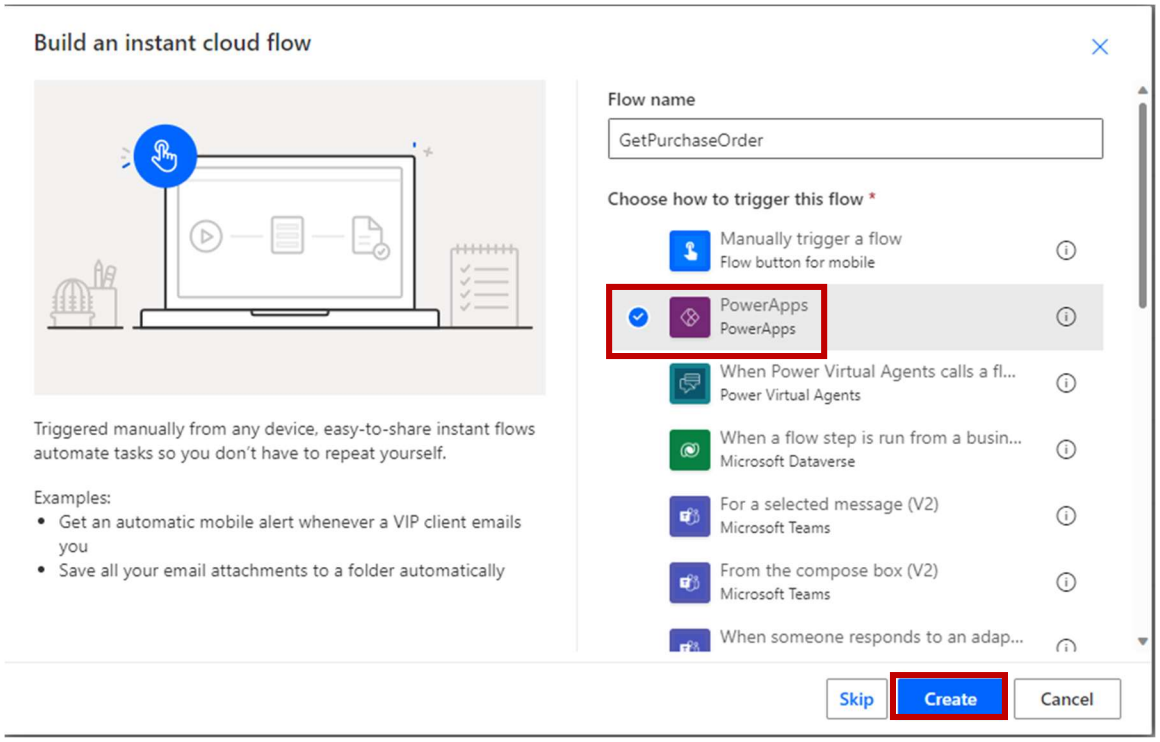
2. Select Region for Power Automate. You may be prompted to select your region for Power Automate. Please select **United States** and then **Get Started**.



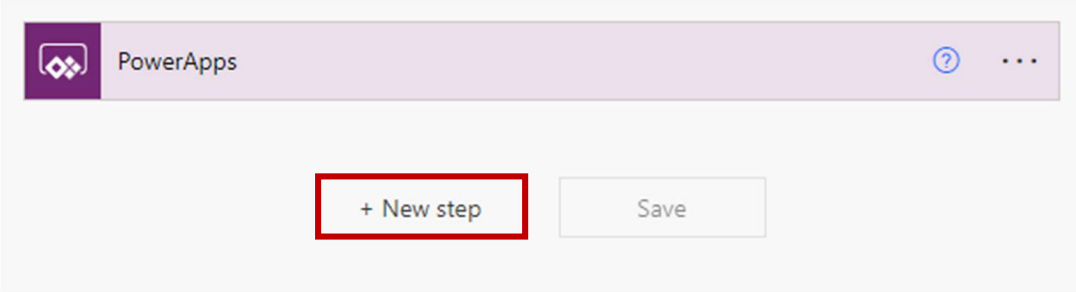
3. Name the flow. Type **GetPurchaseOrder** for the Flow name.



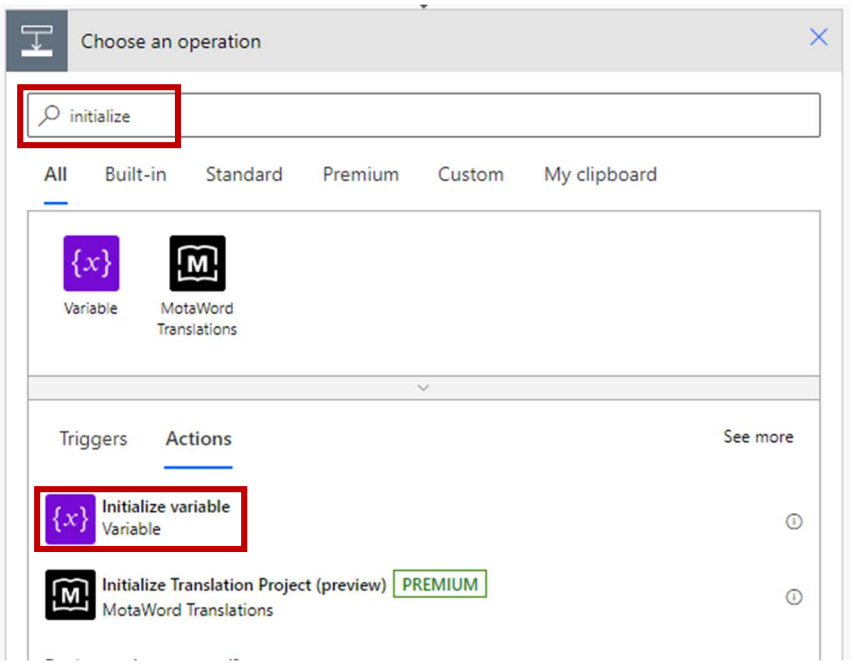
4. Select the trigger and create the flow. Select the **PowerApps** trigger. Then click on **Create**.



5. Add a new step to create a Variable to hold the Purchase Order being passed in from Power Apps. Click on + New Step.

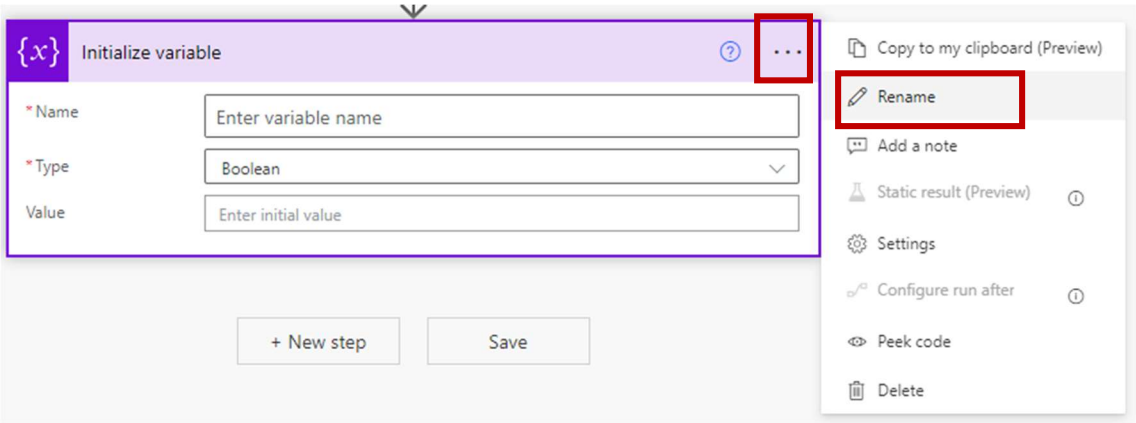


6. Search for Initialize and select the Initialize Variable action.

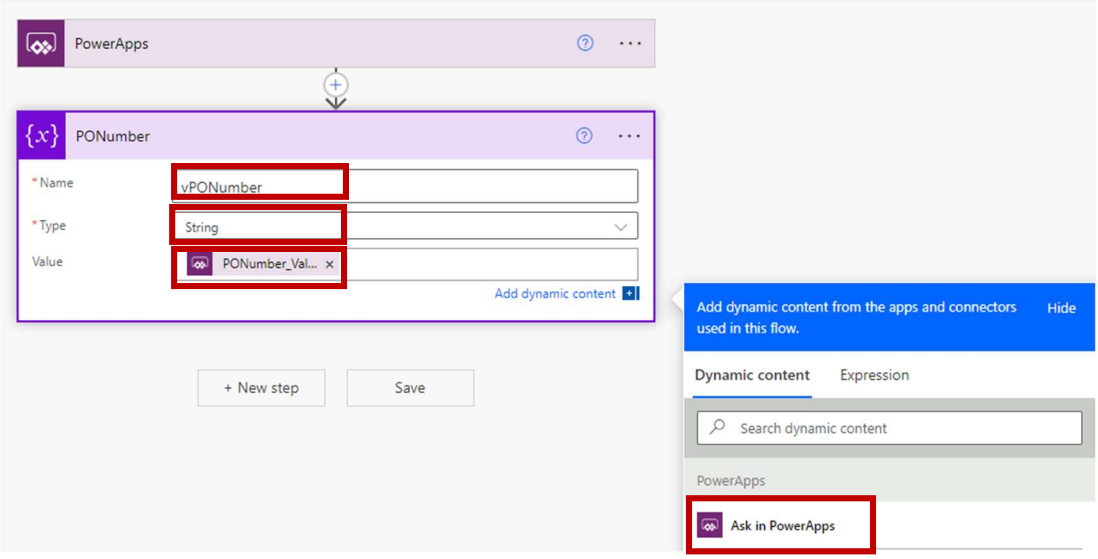


7. Rename the action. Click on the **ellipses (…)** and then **Rename**. Rename to **PONumber.**

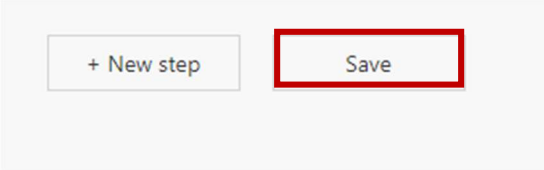
   NOTE: The name of the variable is used in the Power App, so naming to something logical will help when using the variable in Power Apps.



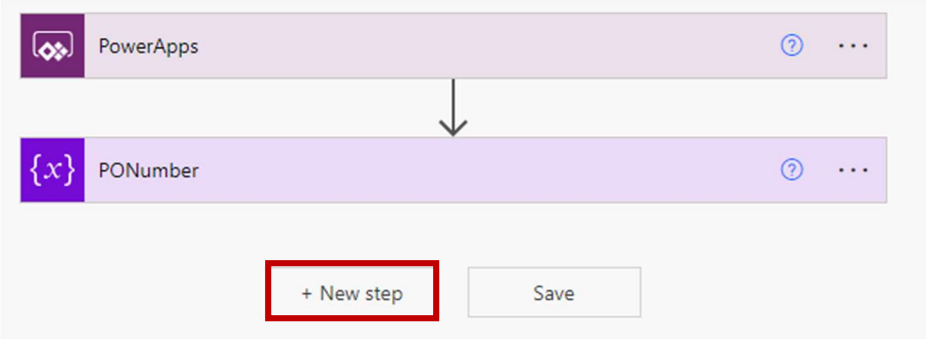
8. Configure the action. Fill out the Initialize Variable with the following:
   - Name of Variable – **vPONumber**
     - **Best Practice** – use a small *v* in front of name to indicate it is a variable.
   - Type – **String**
   - Value – **Using Dynamic Content and select Ask in Power Apps**
     - NOTE: The value changes to the Action Name.



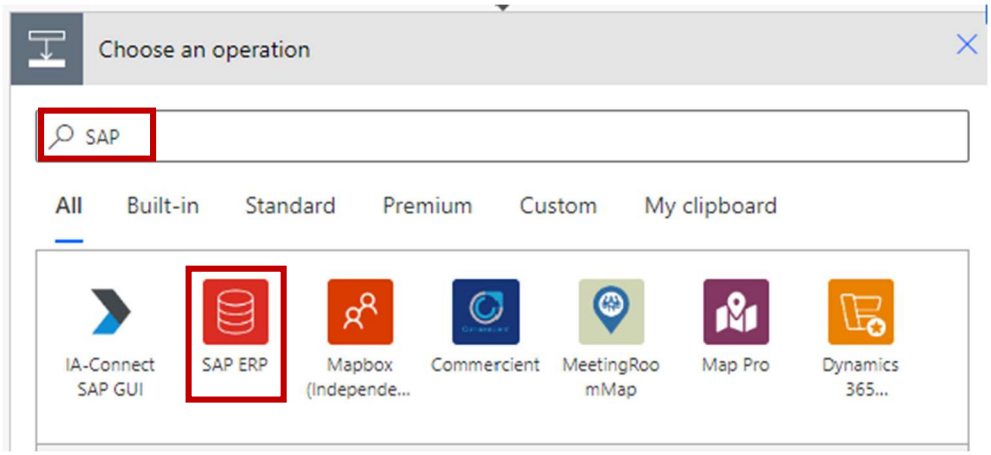
9. Save the flow. Click on **Save.**



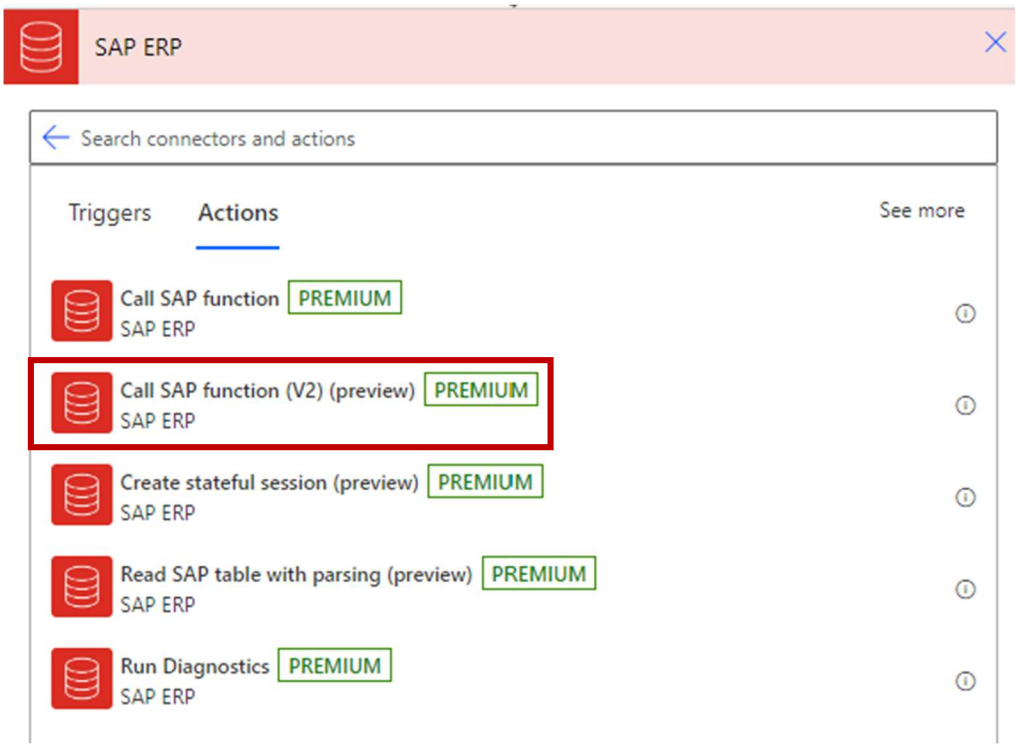
10. Add a new step to call the SAP Function. Click on **+ New Step.**



11. Select SAP ERP Connection. Type in **SAP** in search bar and select **SAP ERP.**

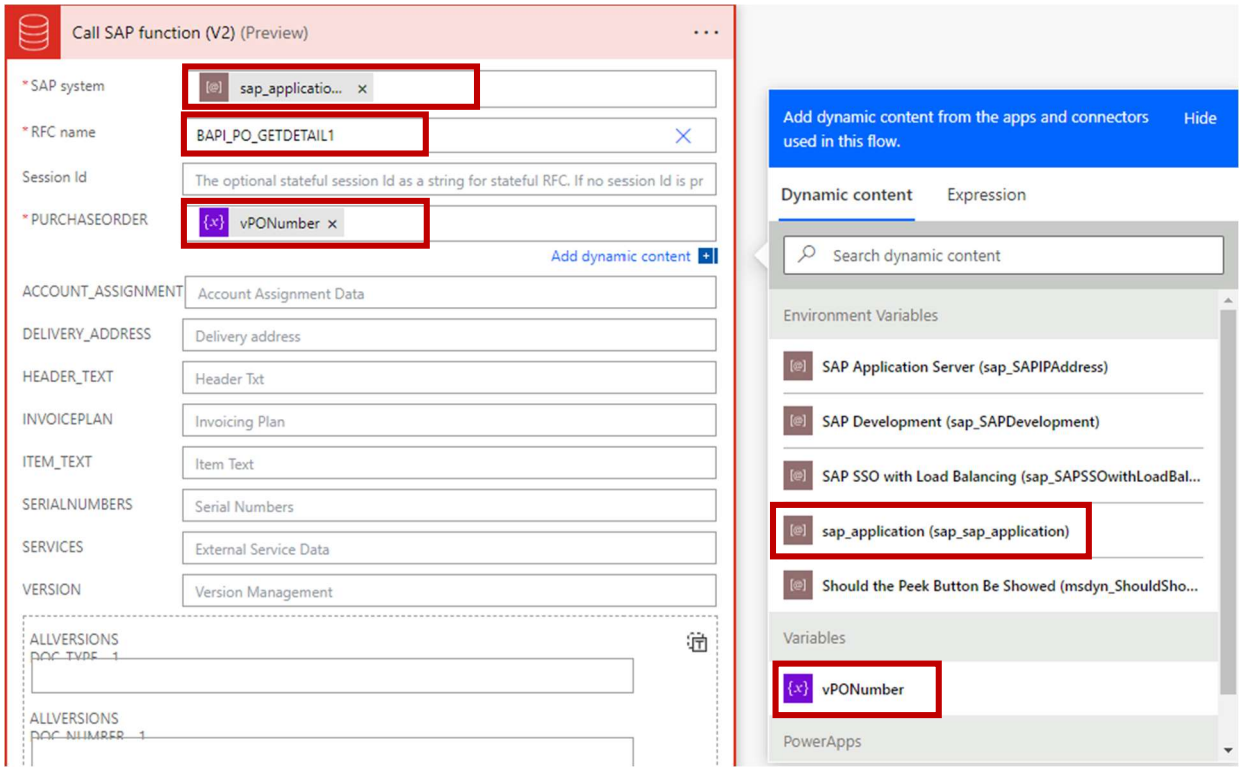


12. Select the Action. Click on the Call SAP function (V2) (preview)



13. Configure the action.
    - SAP System – Select the Environment variable we created – sap_application from Dynamic Content.

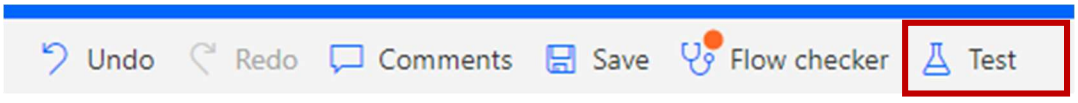
- RFC Name – Type in **BAPI_PO_GETDETAIL1**
- PURCHASEORDER – Select the Variable we created - **vPONumber –** from Dynamic Content.



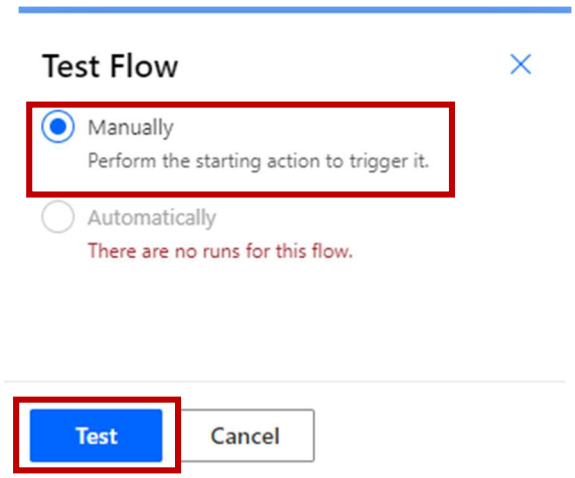
14. Save the flow. Click on **Save**.

    NOTE: You may have to scroll down through all the parameters to find the save button.

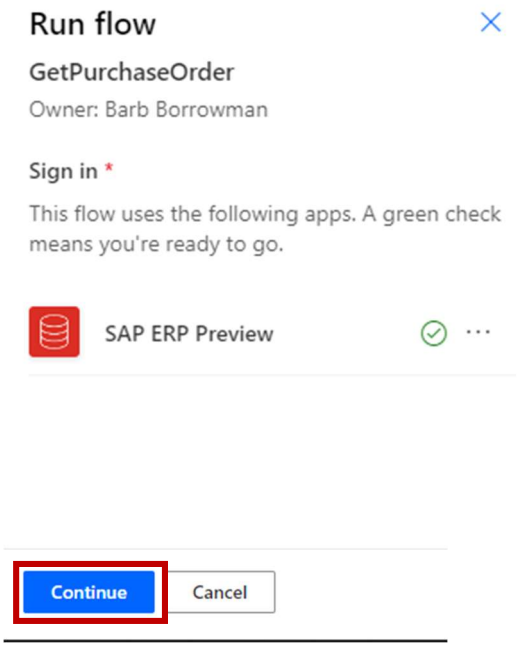
15. Test our SAP Function. We can test the SAP Function inside the flow. Click on **Test** in the Upper Ribbon.



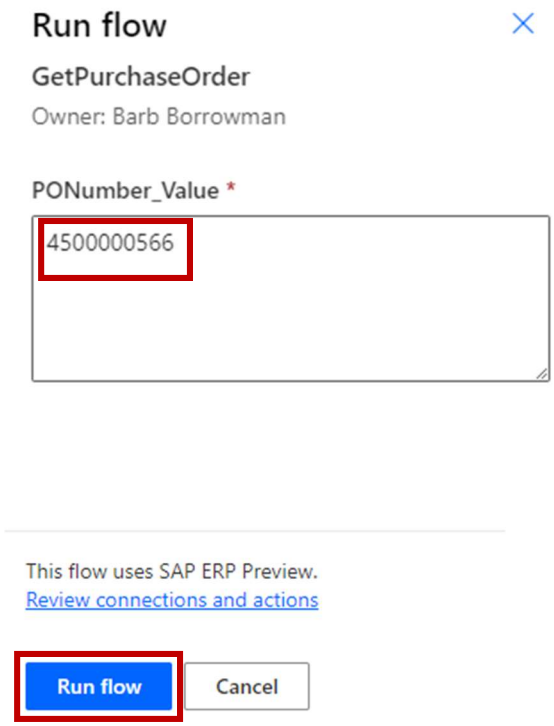
16. Select **Manually** to test the flow and then **Test.**



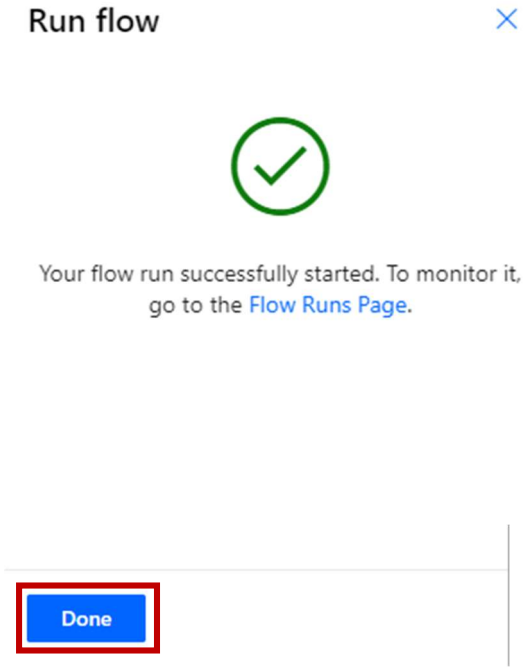
17. First, the flow will confirm we have the right privileges to connect to the SAP System. Click **Continue.**



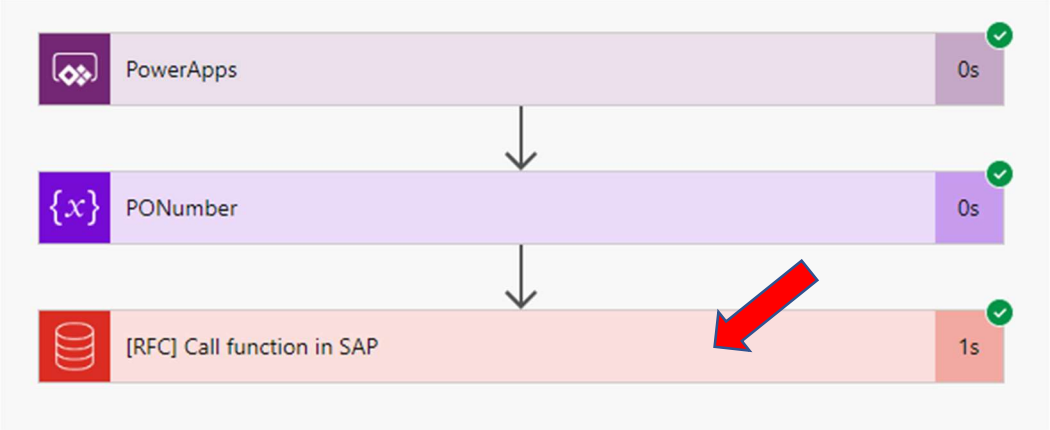
18. Next, we will enter a PO Number that we want to return data. Enter **4500000566**



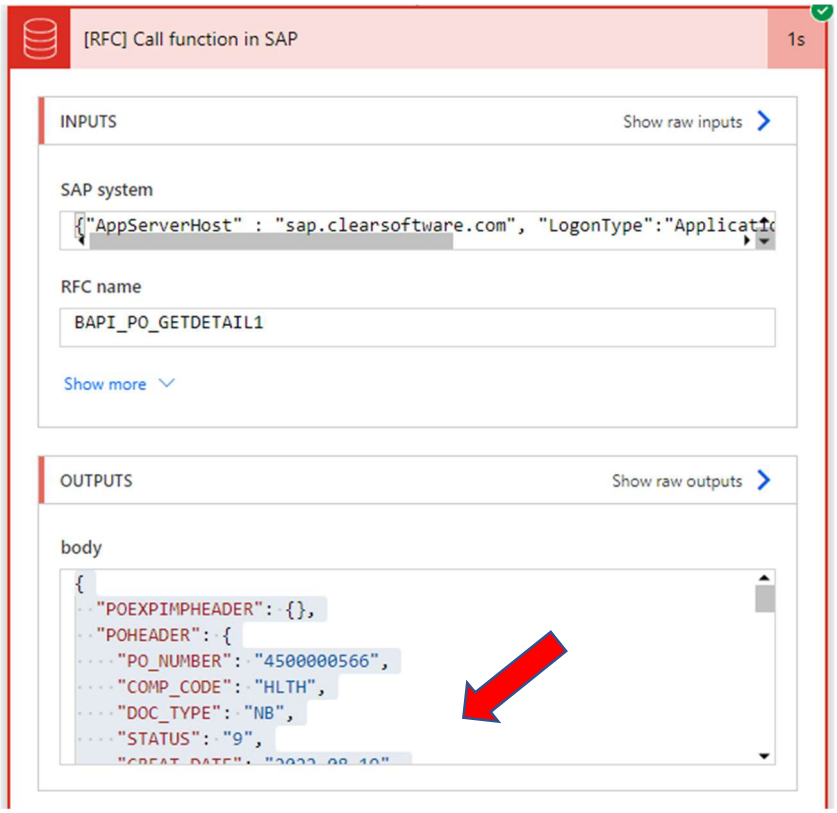
19. View the flow run. Click on **Done** and it will bring you to the Flow Runs Page.



20. Expand the SAP Call Function. Click on the Call Function in SAP to expand the flow.



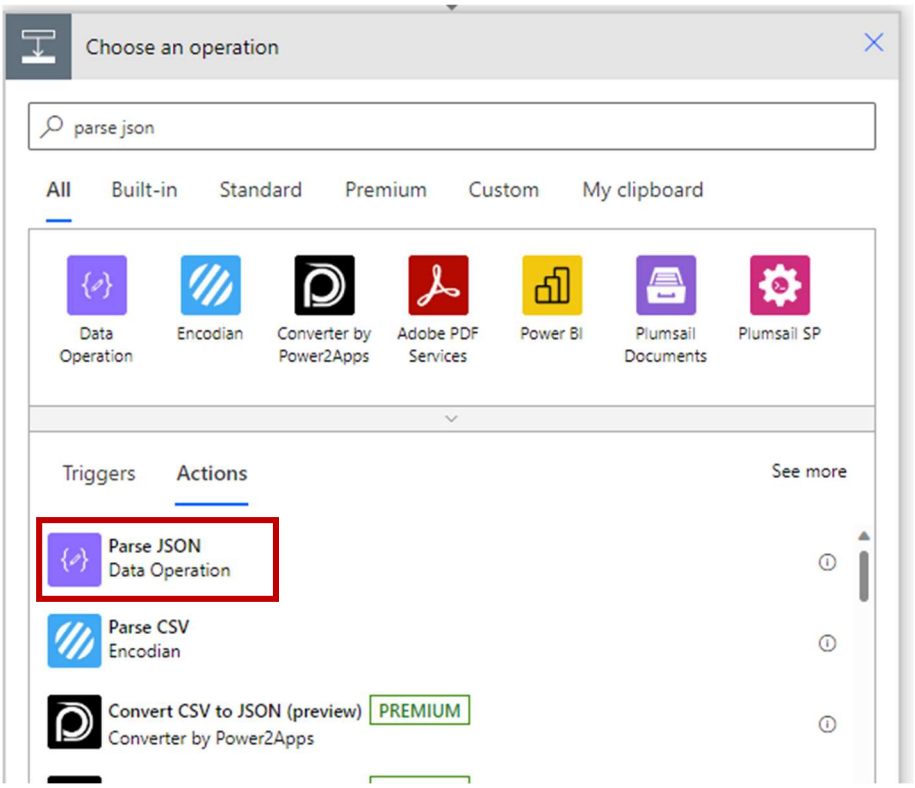
21. Copy Output Section. You can see all the data that was returned from the flow in the Outputs section. We want to copy this data so we can insert into a Parse JSON action to layout the data in the editor so we can view it. We will use this multiple times to allow the sample to generate the schema rather than typing it in.
To select all the text in the Output section, click in the body and then Ctrl-A.
To copy all the text in the Output section, click Ctrl-C



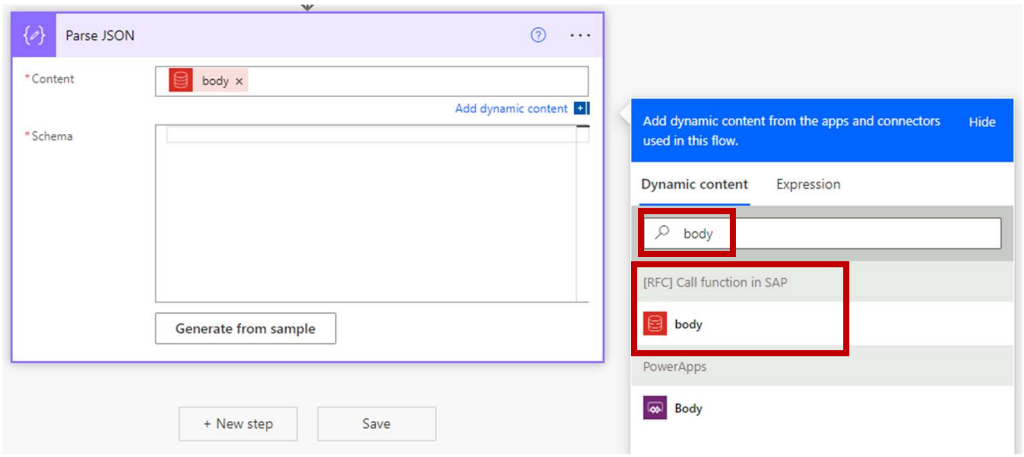
22. Edit the flow. Click on **Edit** in the upper right-hand corner to go back to editing the flow.

23. Add a new step. Click on **+ New Step**.

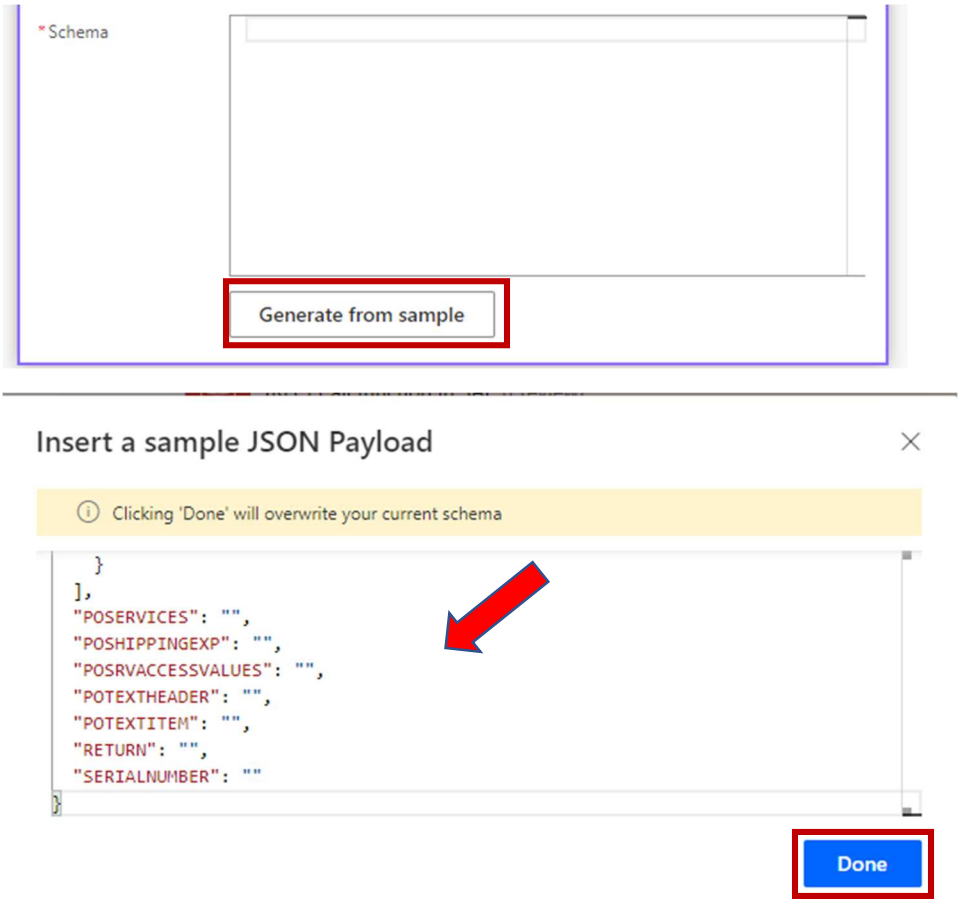
24. Search for **Parse JSON** in the Operation and select **Parse JSON** as the action.



25. Configure the Action. The content will be pulled from our previous SAP action, so from the **Dynamic Content**, search for body and select **Body** from the **[RFC] Call function for SAP**.

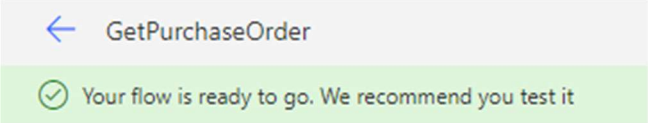


26. The Schema will be what we copied from the Output of the flow. Click **Generate from Sample** and then **paste (Ctrl-V)** into the JSON Payload and click **Done**.

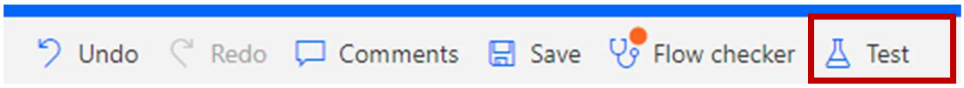


27. Save the flow. Click on **Save.**

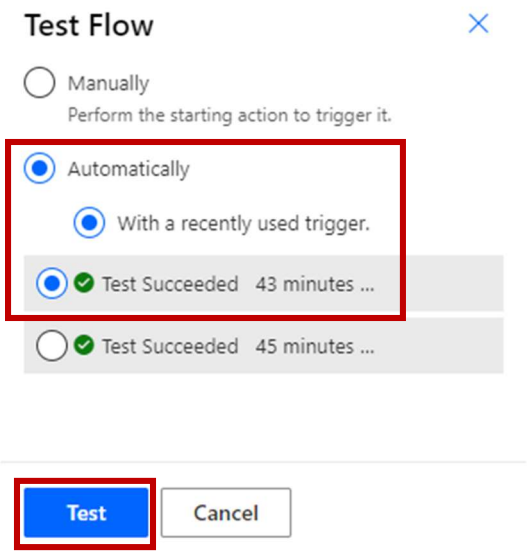
It may take a few minutes to save and you can look for the completed action at the top of the screen,



28. Test the flow again. We will now test the flow again. Click on **Test** in the upper right-hand corner.

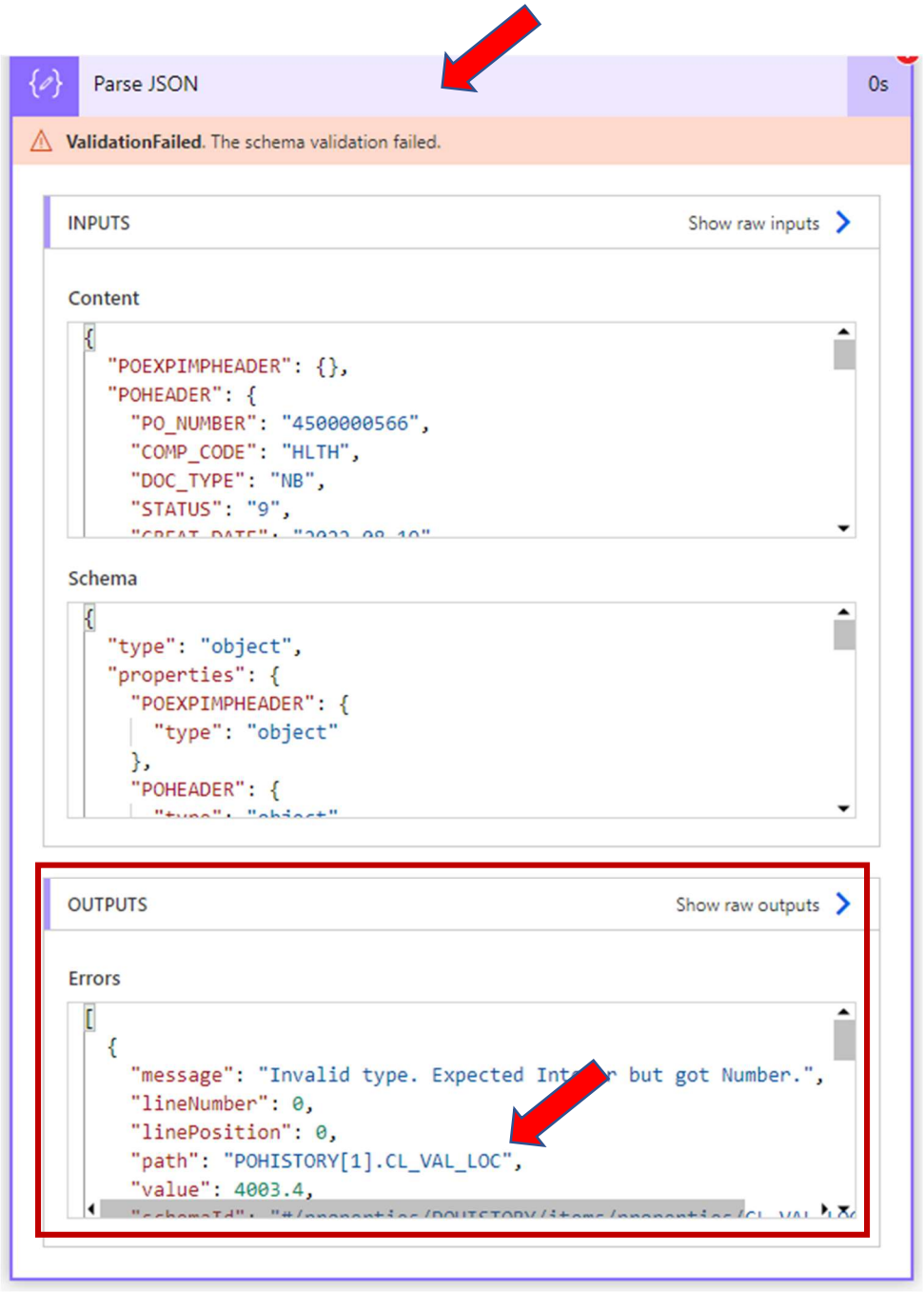


29. Select **Automatically** and then **With a recently used trigger**. Select the **most recent run** and then **Test**. If you need to test manually, use PO # 4500000566 for the test.

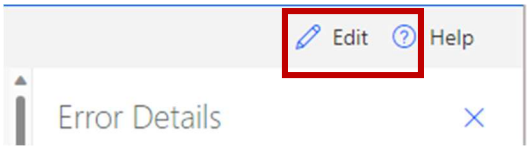


30. Test Failed. We are moved over to the Run History and can see that our Parse JSON call has failed. The sample we inserted had different types than our schema was expecting. We can use the error output to update our schema.

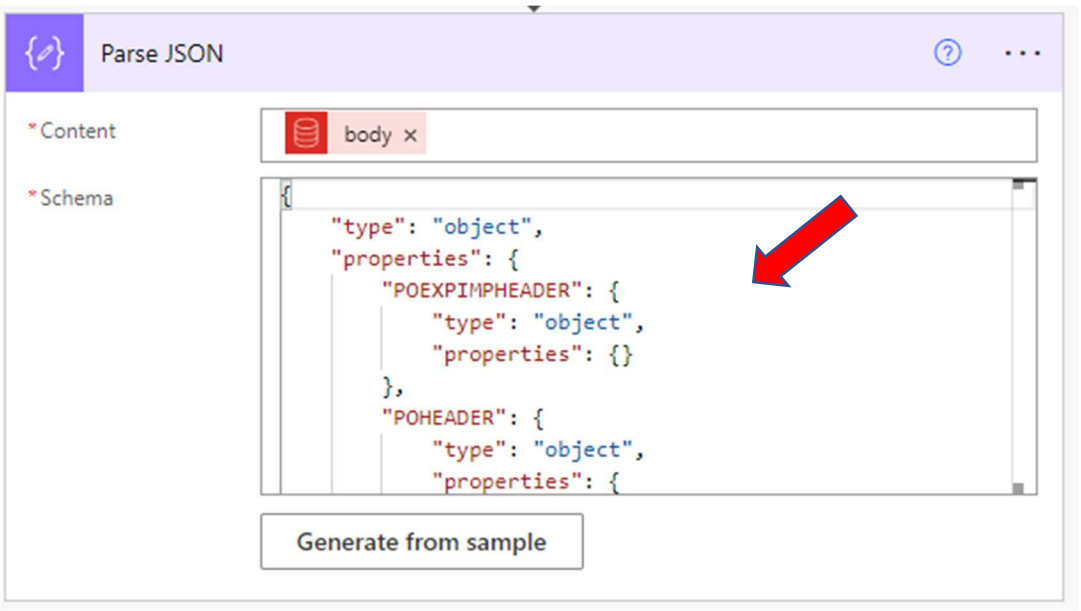
Expand the Parse JSON action and look at the Errors section in Outputs. You can see there are (3) values that have an error – CL_VAL_LOC, IVVAL_LOC and IVVAL_FOR. All these were expecting an integer but received back a number.



31. Update the Schema. We can update the schema to change from Integer to Number. Click on Edit in the upper right-hand corner to edit the flow again.

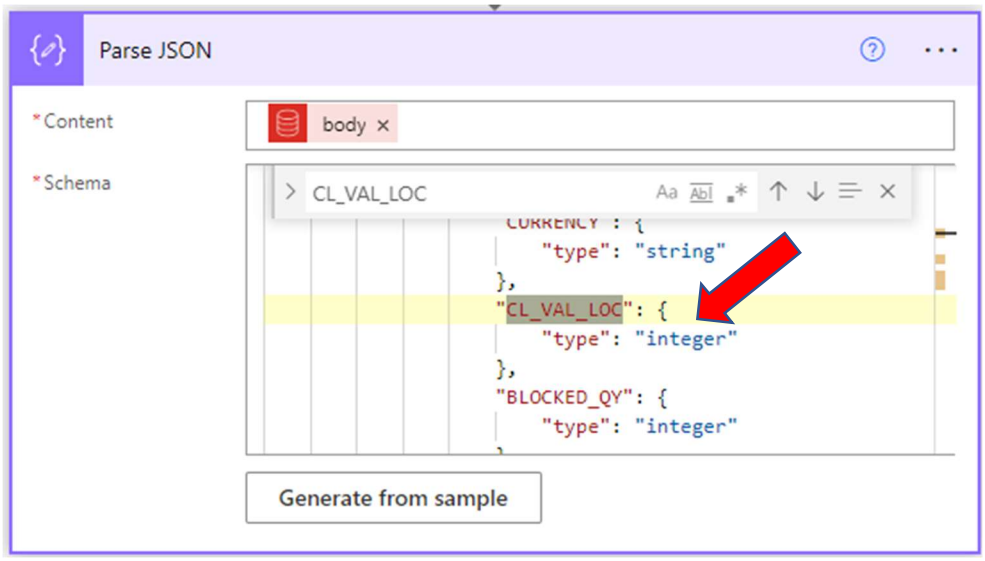


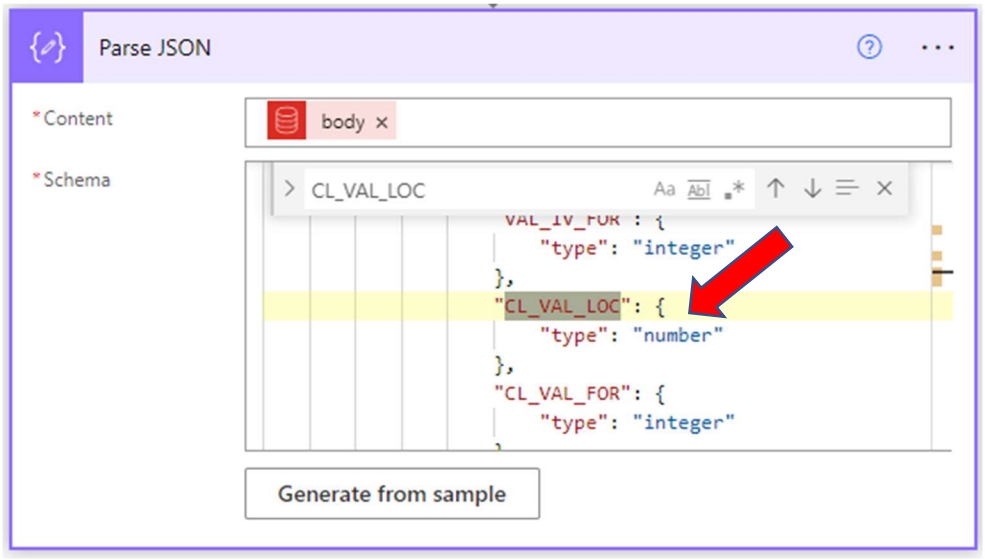
32. Click inside the **Schema** of the Parse JSON action.



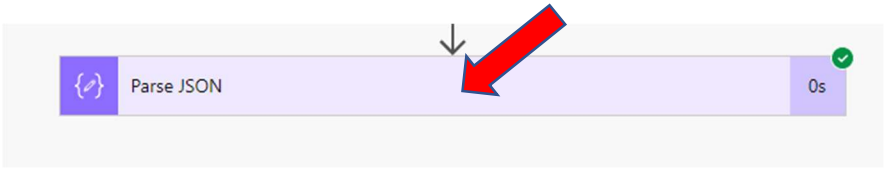
33. Find and replace the values that have incorrect data types. You have the Find and Replace functionality inside the schema. Hit **Ctrl-F** to find the values below and replace with the correct data type. Each value needs to be replaced in 2 spots. Use the down arrow in the search bar to find the next instance.

    CL_VAL_LOC – Replace "integer" with **"number"**
    IVVAL_LOC – Replace "integer" with **"number"**
    IVVAL_FOR – Replace "integer" with **"number"**





34. Save the flow. Click on **Save.**
35. Re-Test the flow. Click on **Test** to retest the flow using the same steps above and select the recent run that was successful.
36. Review the Output of the flow. The flow should run successfully and take you to the Flow Run History. **Expand** the Parse JSON action by clicking in the box.

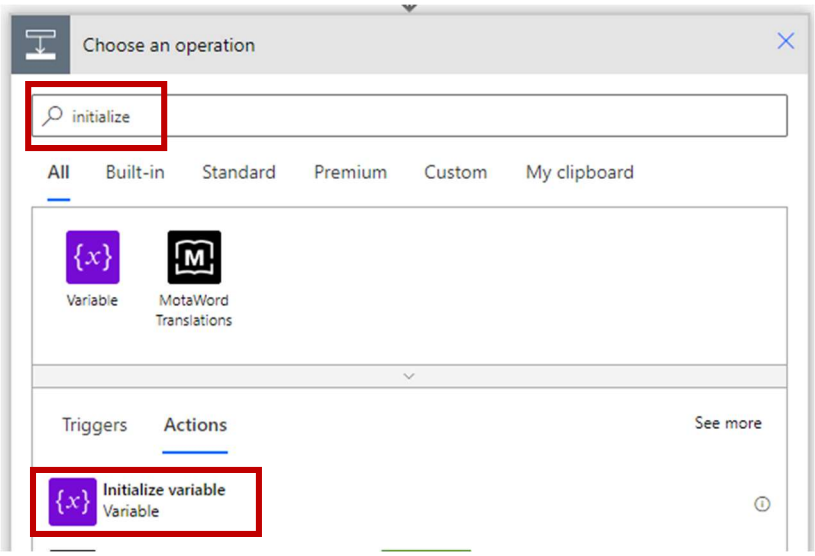


37. Examine the Body of the Outputs. You can scroll through the body of the outputs section and see all the data that was returned from SAP. In many cases, the field name does not give a good description of the data. For example, if you scroll down to POItem, you see the Short_Text field is actually the name of the item. We also see there is a lot of data returned that the user may not need. When we are delivering this data to Power Apps, we want to deliver data that is more user friendly and only the data they require. We will do that in the next exercise.

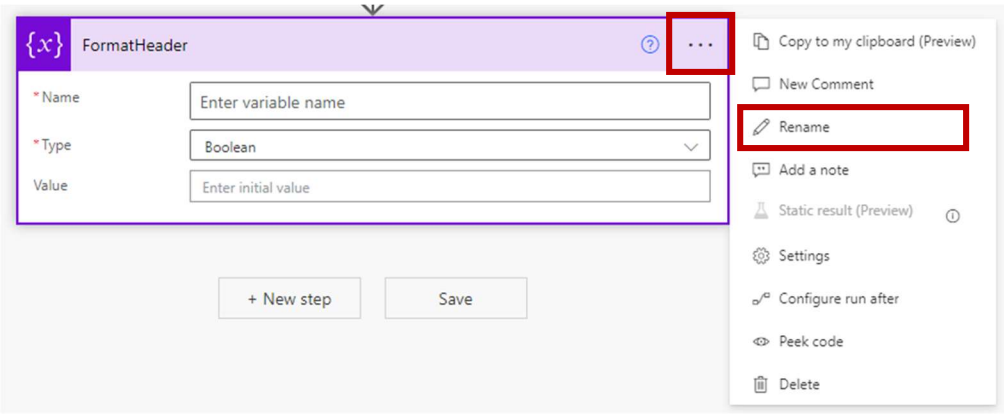
Exercise 4: Configure the flow to modify the PO data.

We will now create some variables to hold our data and then modify the data so it is ready to be consumed in a Power App.

1. Click on **Edit** in the upper right-hand corner.
2. Create a variable to hold the PO Header information. Click on **+ New Step** and then search for **Initialize** and select **Initialize variable**.



3. Rename the Action. Click on the **ellipse (....)** and select **Rename**. Rename the action to **FormatHeader.**



4. Configure the variable. Type in the following information for the variable:

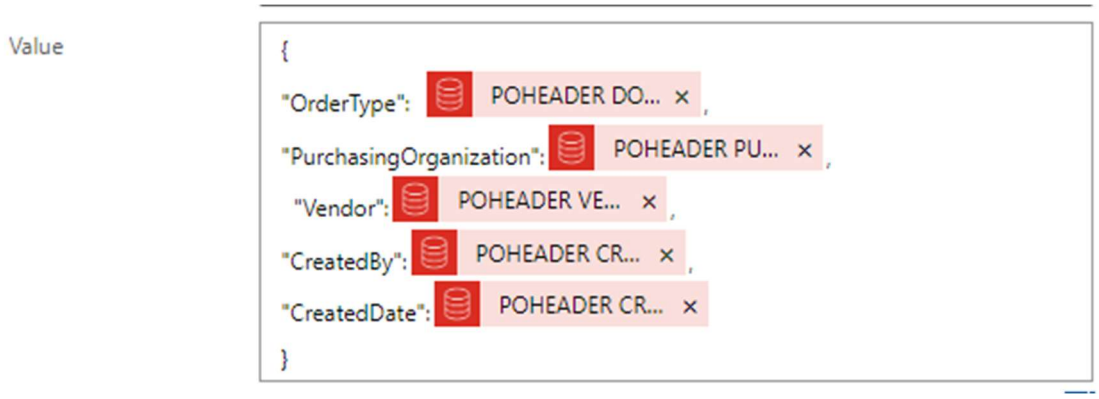
   Name: **vFormatHeader** (Best Practice - small v in front indicates variable)

   Type: **Object**

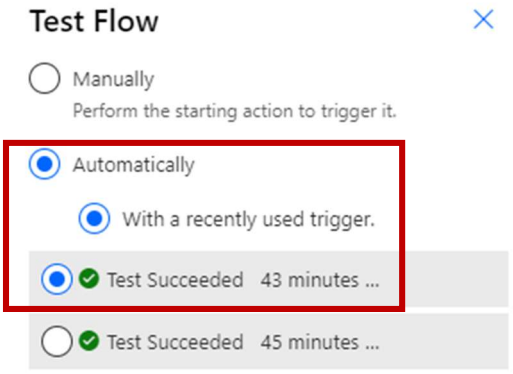
   Value: Enter the data below using dynamic content for the highlighted items. Type the highlighted text in search to get you to the correct area of Dynamic Content. Start and end the object with curly brackets. The name has double quotes, put a colon between the name and the dynamic content and a comma after each name/value pair except the last one.

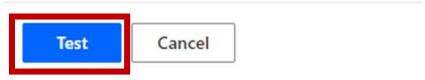
```
{
        "OrderType":POHEADER DOC_TYPE,
        "PurchasingOrganization":POHEADER PURCH_ORG,
        "Vendor":POHEADER VENDOR,
        "CreatedBy":POHEADER CREATED_BY,
        "CreatedDate":POHEADER_CREAT_DATE
}
```

Make sure you pull the data from the SAP call which has the red object in front.

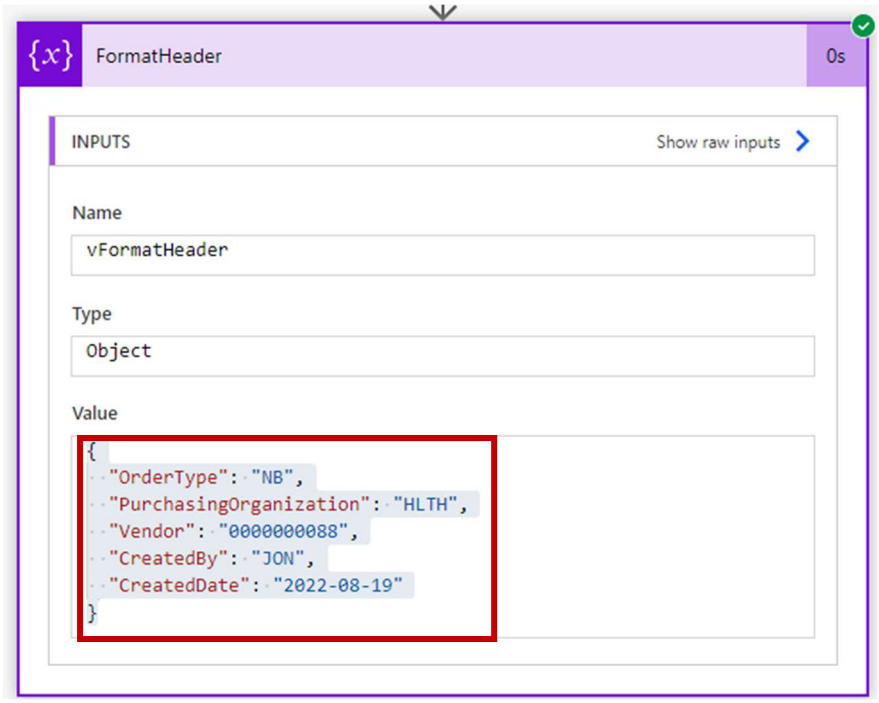


5. **Save** the Flow.
6. **Test** the flow using the same method as before – Automatically with the most recent successful trigger.



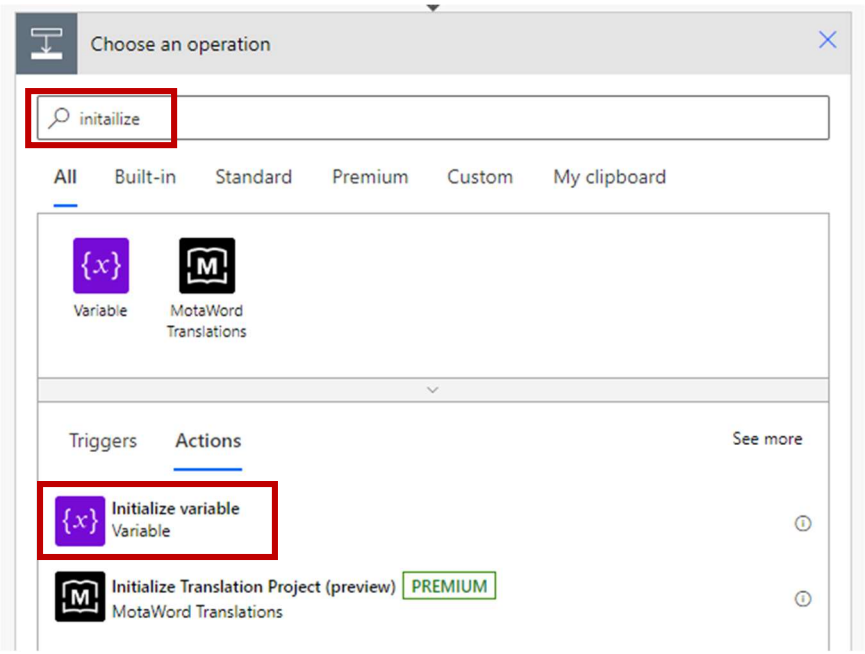


7. Review the data in the Value. Expand the **FormatHeader** action confirm the data coming back is valid.

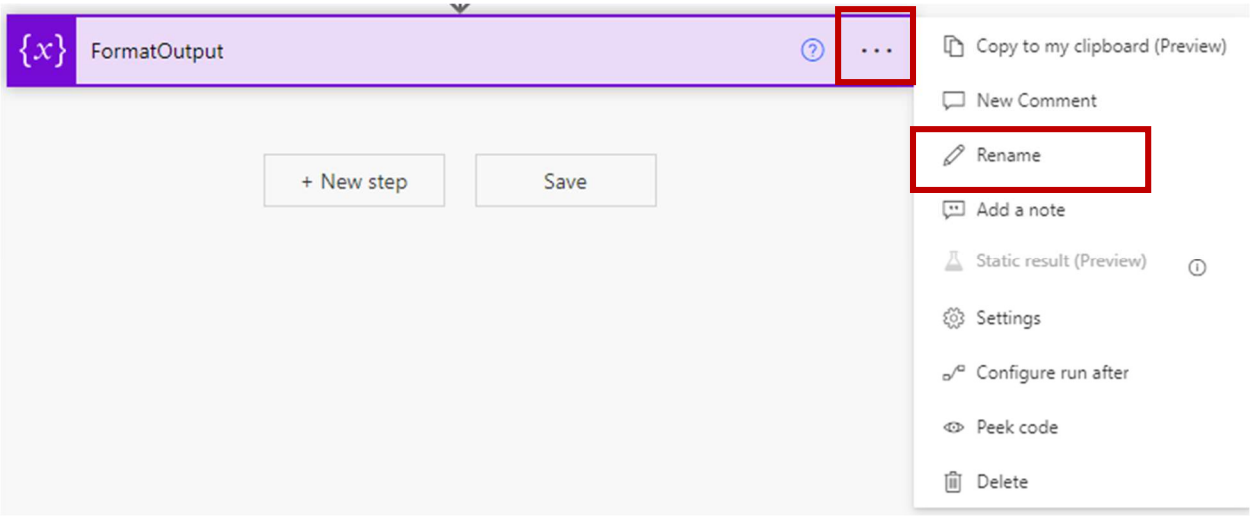


8. Click on **Edit** in the upper right-hand corner.

9. Next, we will create a variable for the PO Header information that we can use to verify the data is being returned properly before we send it to Power Apps. Click on **+ New Step** and search for **Initialize** and select **Initialize Variable** action.



10. Rename the Action. Click on the **ellipse (...)** and select **Rename**. Rename the action to **FormatOutput.**



11. Configure Action. Type in the following information for the action.

Name: **vFormatOutput**

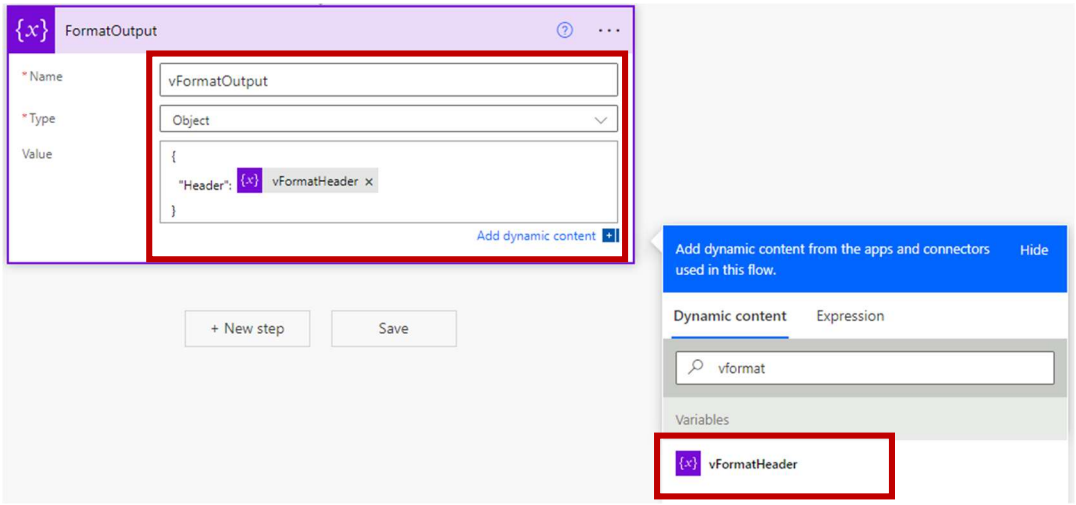
Type: **Object**

Value: Type in the information below with the highlighted text being selected from Dynamic Content.

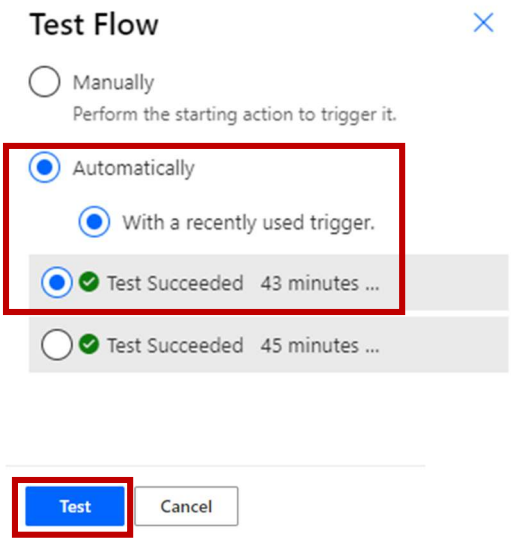
{

"Header": vFormatHeader

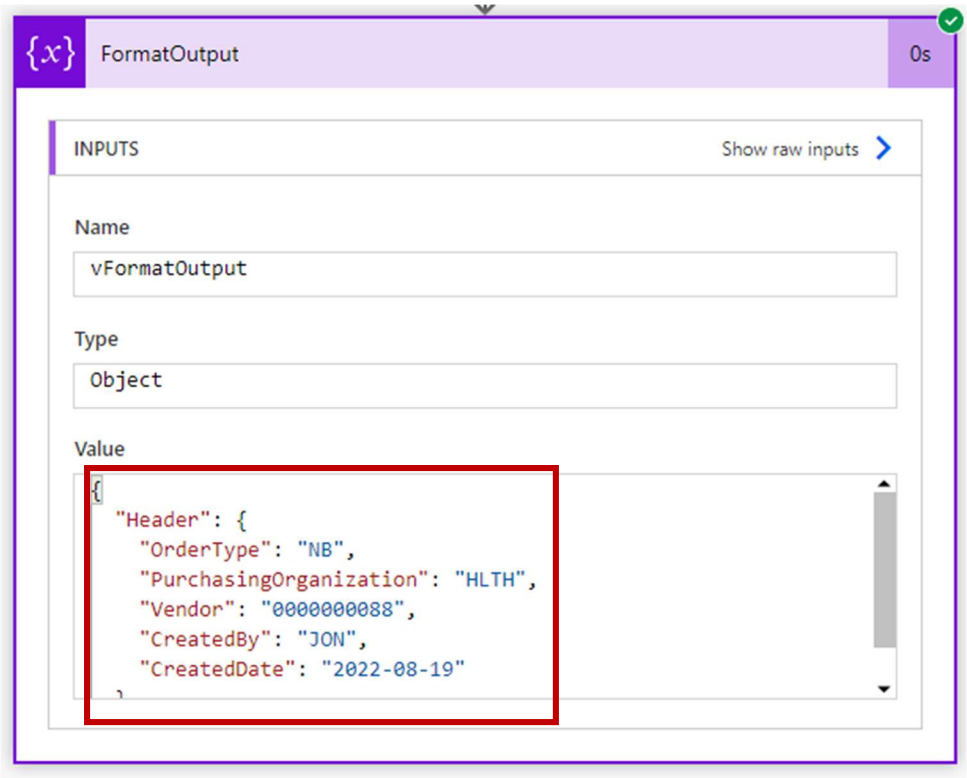
}



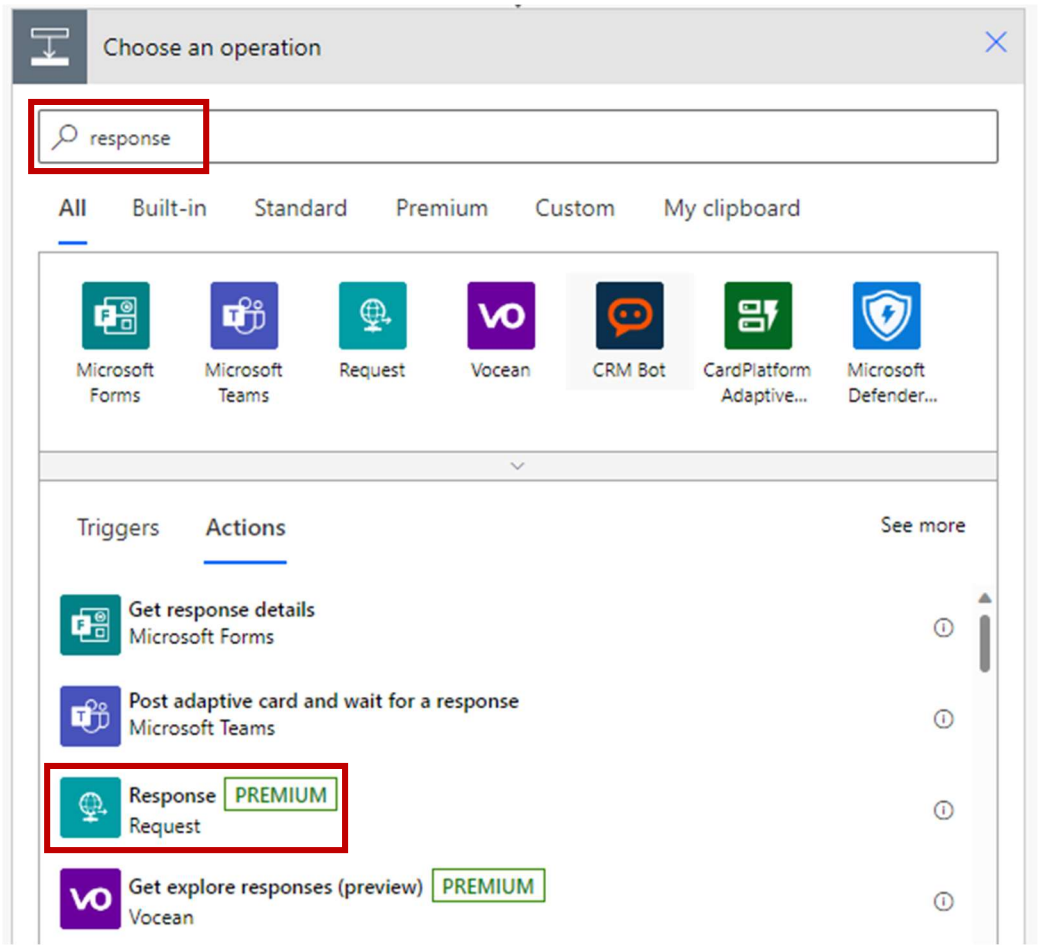
12. Save and then test the flow using the same method as before – Automatically with the most recent successful trigger.



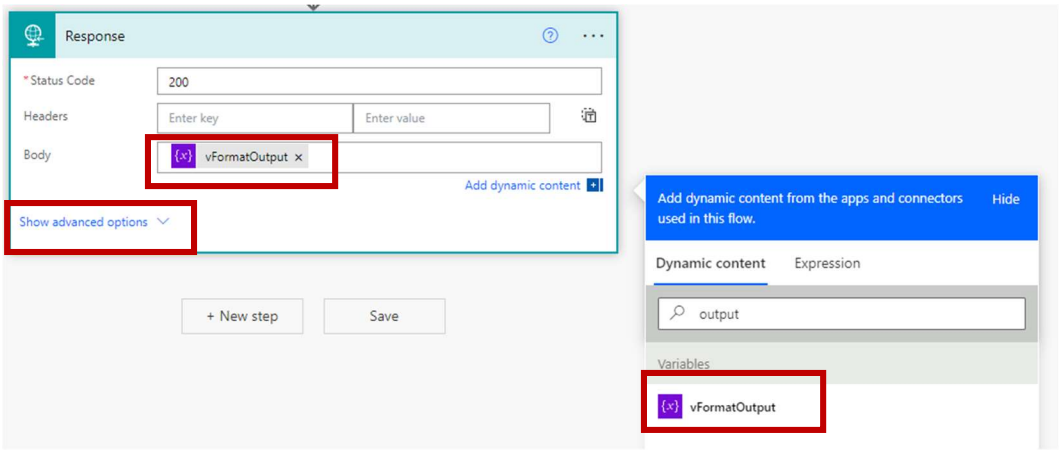
13. Expand the FormatOutput action and type Ctrl-A to select all the data and then Ctrl-C to copy the data from the Value field.



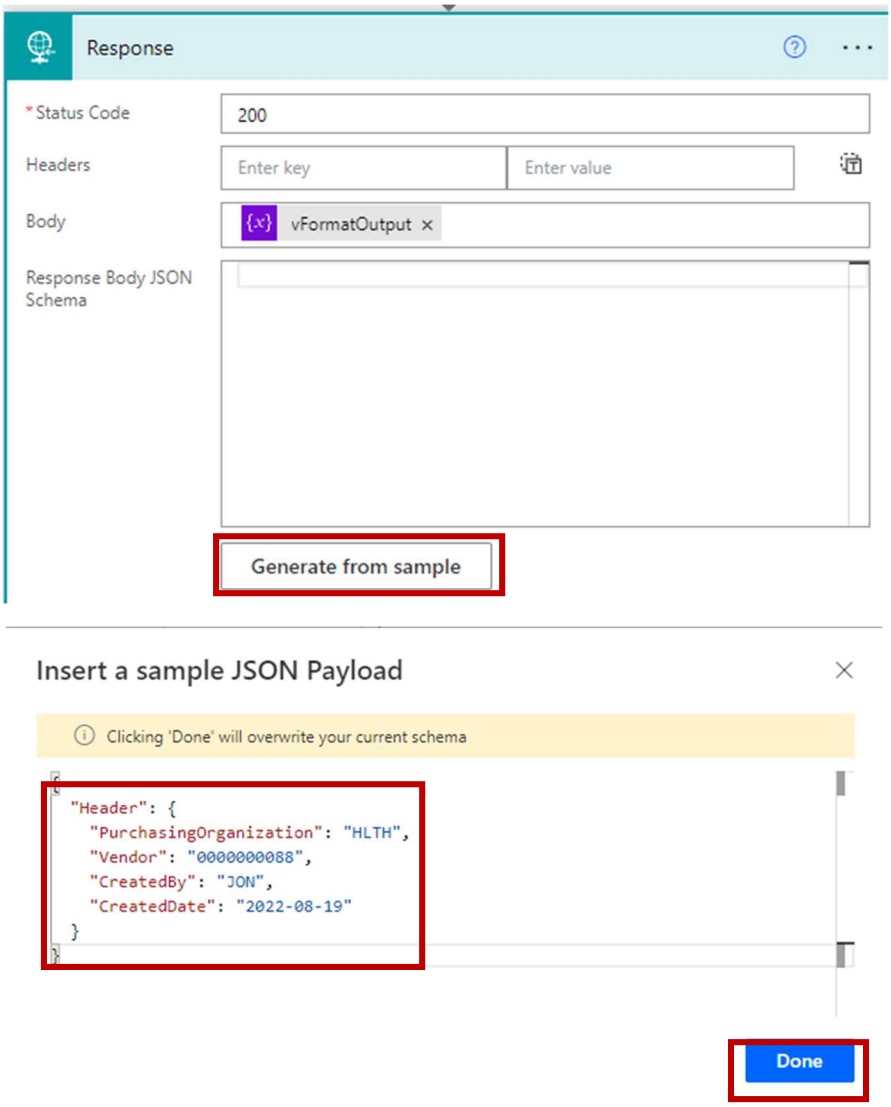
14. Add a new action to build out the data format to be returned to Power Apps . Click on Edit and + New Step. Search for Response and select Response (Request).



15. Configure the Response. For the **Body**, search for output in Dynamic Content and select **vFormatOutput** and then click on **Show advanced options.**



16. After clicking on Show advanced options, click on **Generate from Sample** and **paste** what we just copied - the data from the value of the FormatOutput - into the Response Body JSON Schema. Click on **Done**.



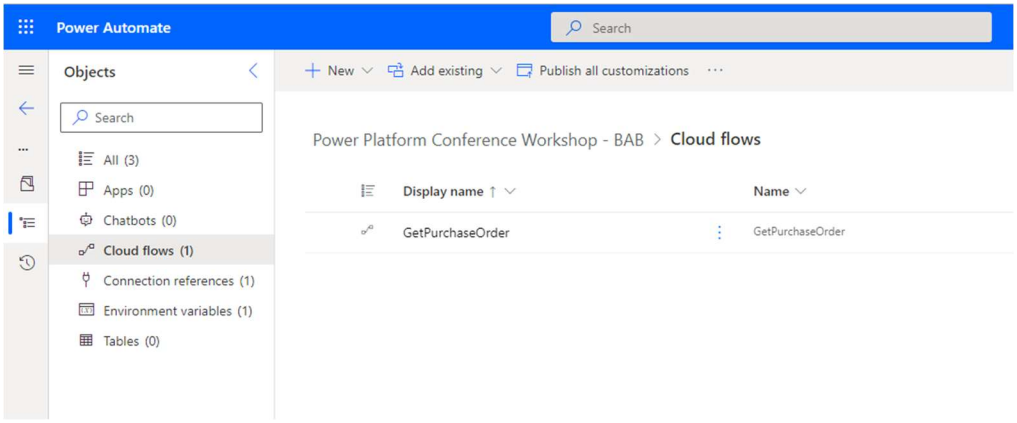
17. Click on **Save**.

We have completed a flow that will return a set of fields from the Header PO Data that we can call from Power Apps.

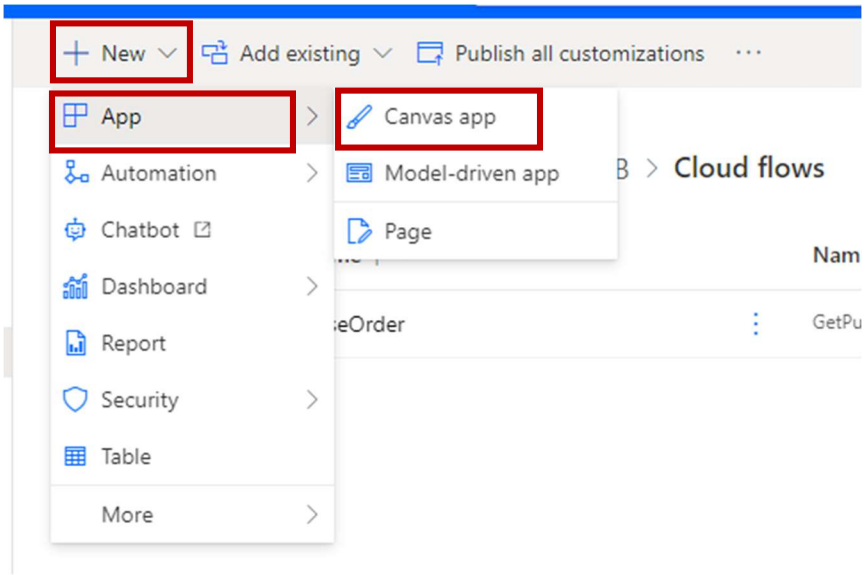
Exercise 5: Create a Power App to Display PO data

We are now ready to create our Power App that can consume the PO Data from SAP. We want to create the Power App inside our existing solution.

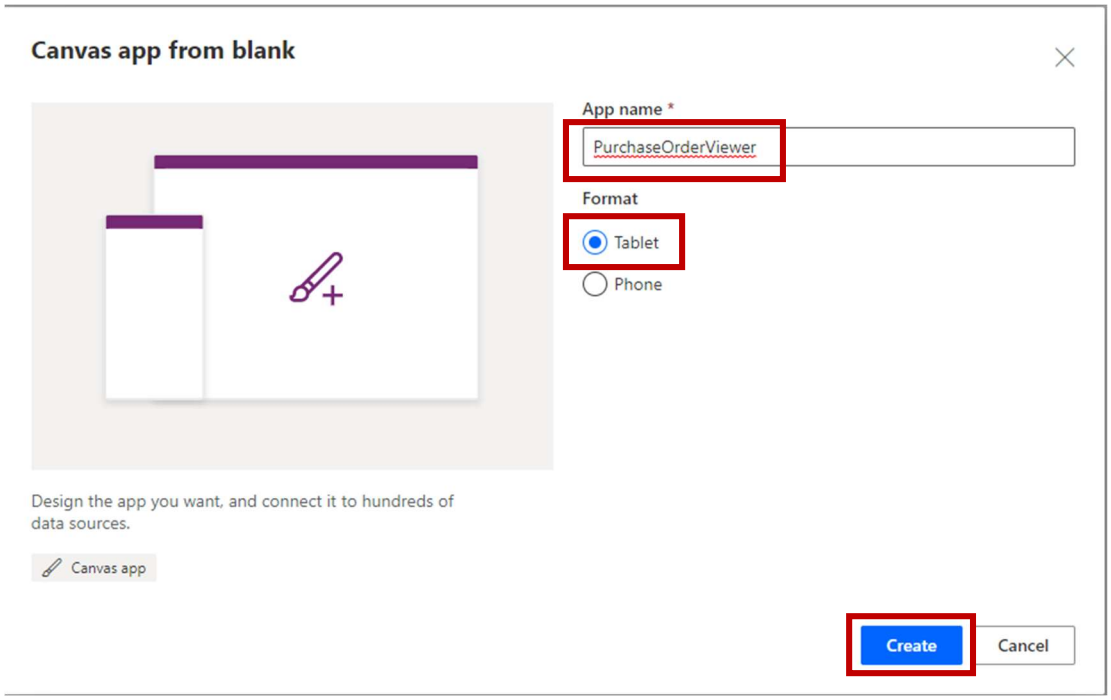
1. Click on back arrow to close your flow and stay in your current solution. Or if you are just picking up the labs again, browse to https://make.powerautomate.com and login with your workshop credentials, choose the correct environment and then click on Solutions. Edit the SAP Integration (Public Preview) solution.



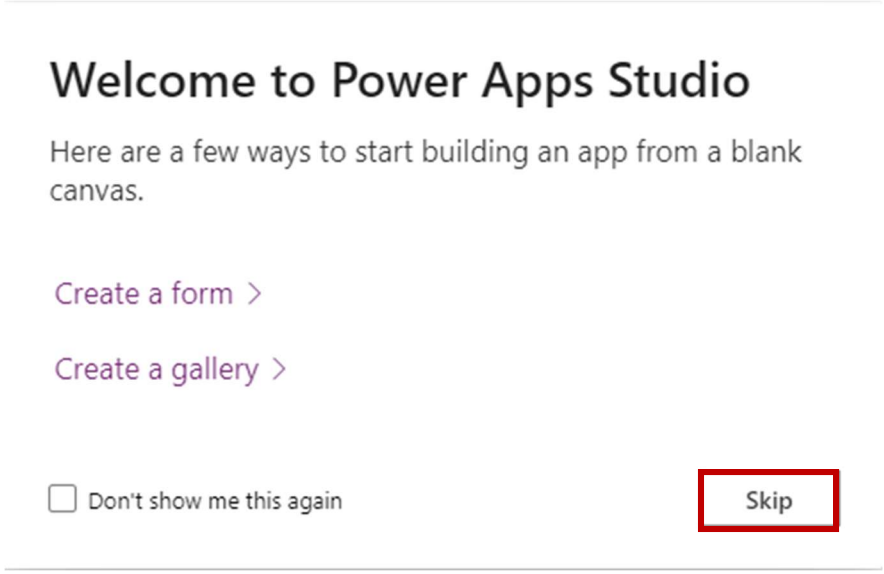
2. Create a Canvas App. Click on + New, App, then Canvas App.



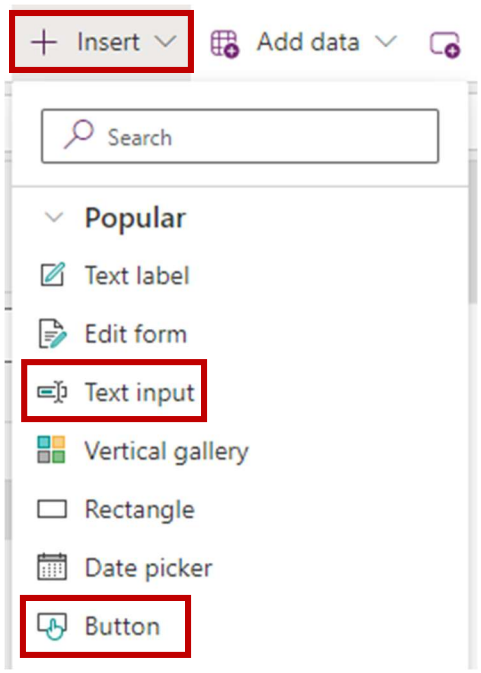
3. Type in PurchaseOrderViewer for the App Name, keep Tablet for the format and then click on Create.



4. Click on **Skip** if you get the Welcome to Power Apps Studio message.

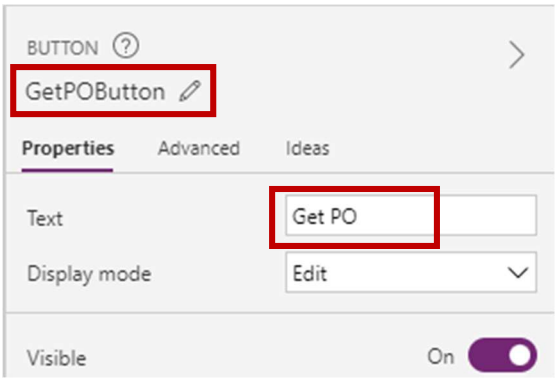


5. We need to create a Button and Text Input for initiating the flow based on a PO entered by the user. In the upper ribbon, click on **Insert** and then **Button**. Click on **Insert** again and select the **Text Input**.

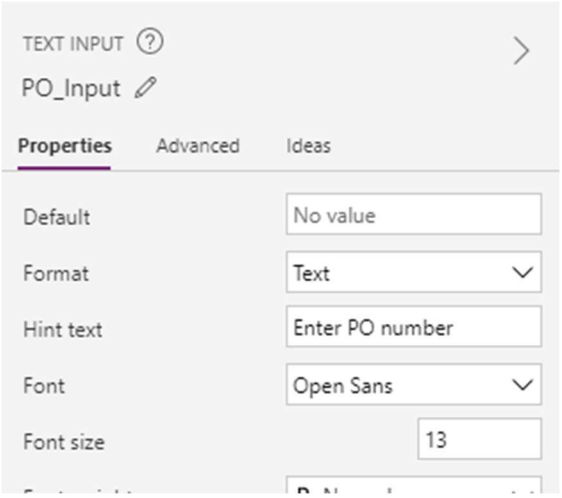


6. Drag and Drop the button and the Text Input so they are lined up horizontally in the upper left-hand corner of the screen to match the screen shot below.

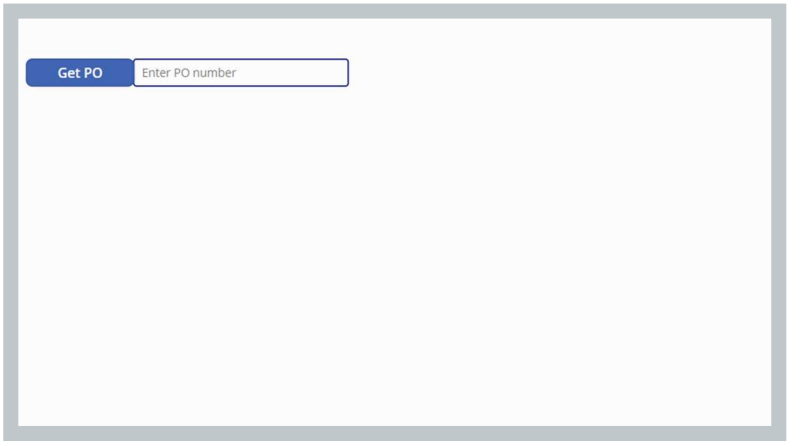
7. Change properties of the Button. Click on the Button on the canvas to select it. On the right-hand side, mouse over the name Button1 and then click on the pencil icon to rename to GetPOButton. In the Text Box, type Get PO.



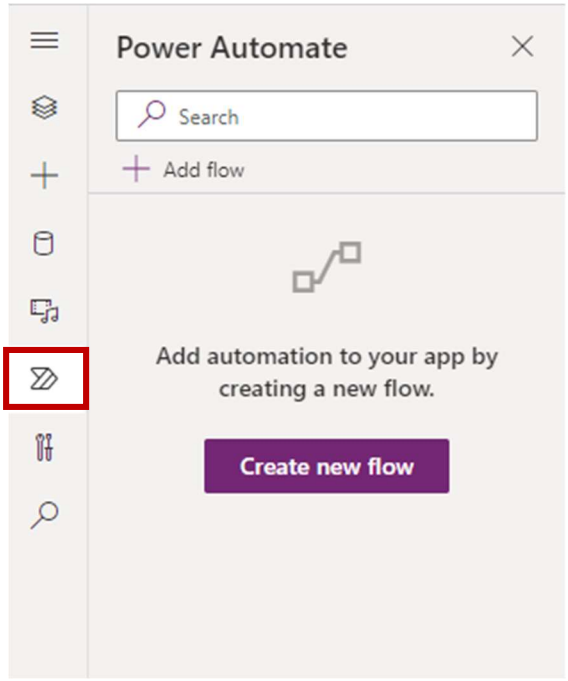
8. Change properties of the Text Input. Click on the **Text Input box** on the canvas to **select** it. On the right-hand side, click on the **pencil icon** to rename to **PO_Input**. **Delete** the value in the **Default**. Type **Enter PO number** in the **Hint text**.



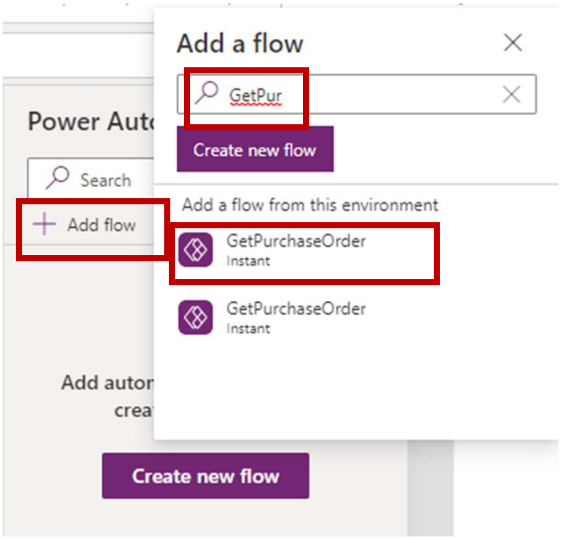
Your canvas should now look like the screen shot below.



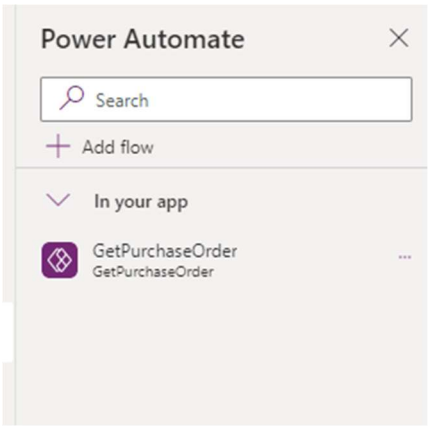
9. Connect the Flow we created in the last exercises to this Power App. On the left-hand **tree view**, click on the **Power Automate icon**.



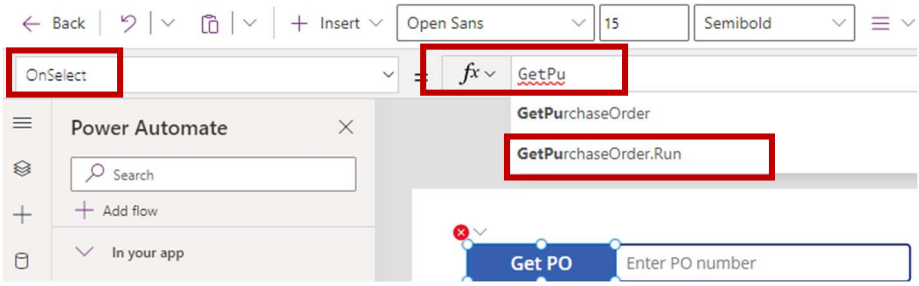
10. Click on **+ Add Flow**. **Search** for **GetPurchase** and then **select GetPurchaseOrder flow**.



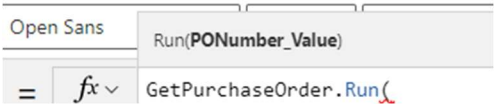
The flow is now in your application and is ready to use.



11. Configure the button to call the flow with the text input. On the canvas, click on the button to select it. In the upper ribbon, the **OnSelect** property is selected. **Delete False** from the **Formula bar** and start typing **GetPurchase**. You will see **Intellisense** pop up the **Run Command**.

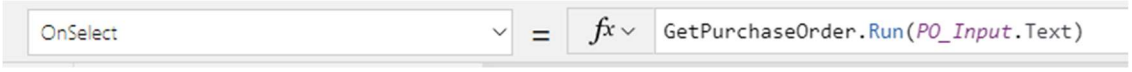


Select that command. You will see information above the formula bar to guide you on what variables the flow is expecting.



We want to pass the PO number that was typed in by the user in the Text Input box, so type **PO_Input.Text** as the variable and then **close the parenthesis**.

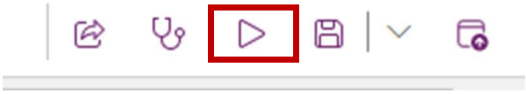
You will see Intellisense helping out again as you start typing.



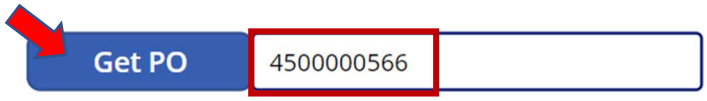
12. Create a variable to store the PO information. We will be modifying the OnSelect formula for the button. Click on the Home key to bring the cursor back to the front of the formula. Hit the space bar to unselect GetPurchaseOrder. Type in **Set(PODat**a, in

the front of your formula and then a **final close parenthesis** at the end. Final formula should look like the screen shot below. This will create a variable called POData to store all the information that comes back from our flow.

13. Test the App. Click on the **Play button** in the upper right of the ribbon.

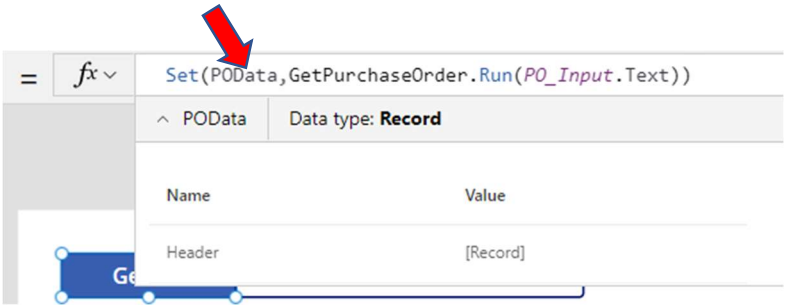


14. Type our sample PO number into the text box – **4500000566 –** and click on the **Get PO Button.**

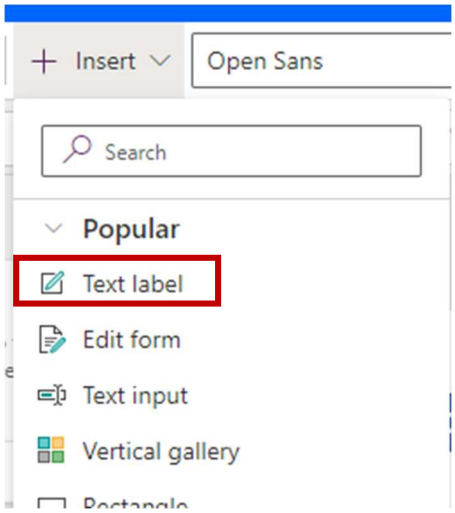


Click the **X** in the upper right-hand corner to close the app.

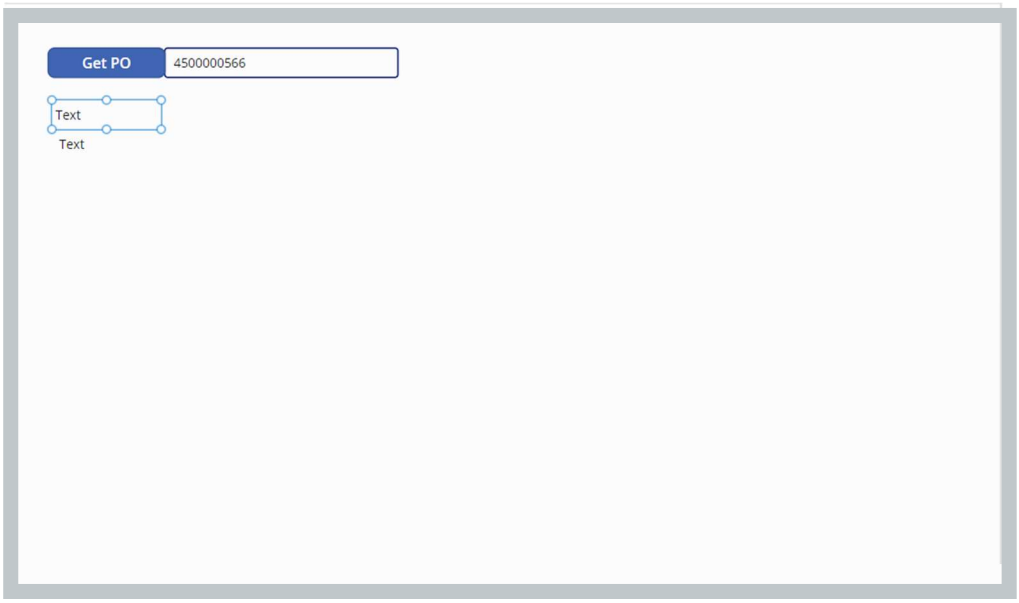
15. Verify there is data in our POData Variable. Click on the **GetPO Button** to select and then double click on the **POData** variable in our formula bar. We see that we now have a record associated called Header.



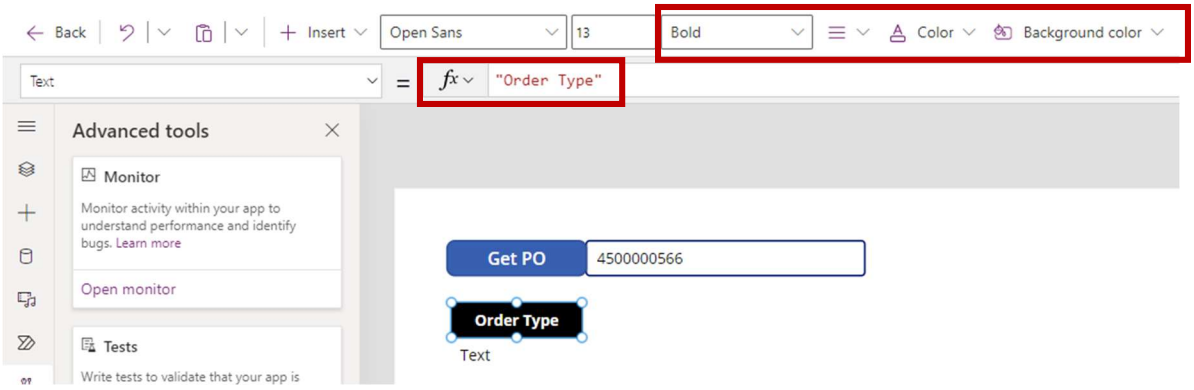
16. We will now modify the app to create places for the SAP PO Data to show up in the app. Click **Insert** and select **Text label**. **Repeat** this so there are (2) new Text labels on the canvas.



17. Configure the Text Labels. **Drag and drop the labels** so they are lined up vertically on the left-hand side of the canvas under the GetPO Button. Your canvas should look like the screen shot below.

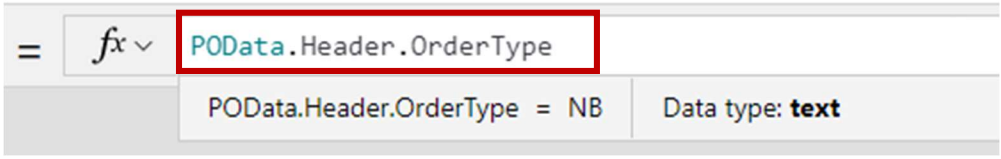


18. Configure the Text Labels. We will make some property changes to the text labels to beautify the app. Select the **top Text Label** and make the following changes to the properties.
    Text – **"Order Type"**
    Font Weight- **Bold**
    Alignment – **Center**
    Font Color – **White**
    Background Color – **Black**



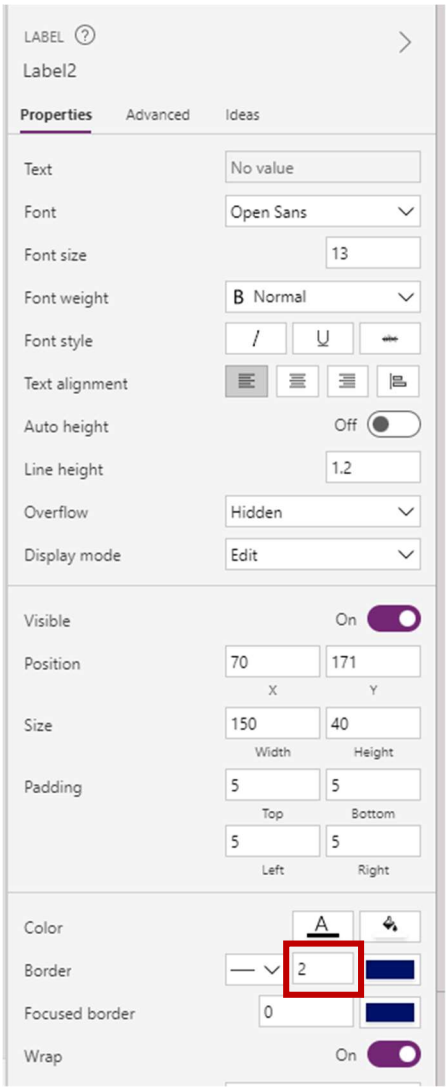
19. Select the bottom Text label and make the following changes to the properties.

    Text – PODataHeader.OrderType

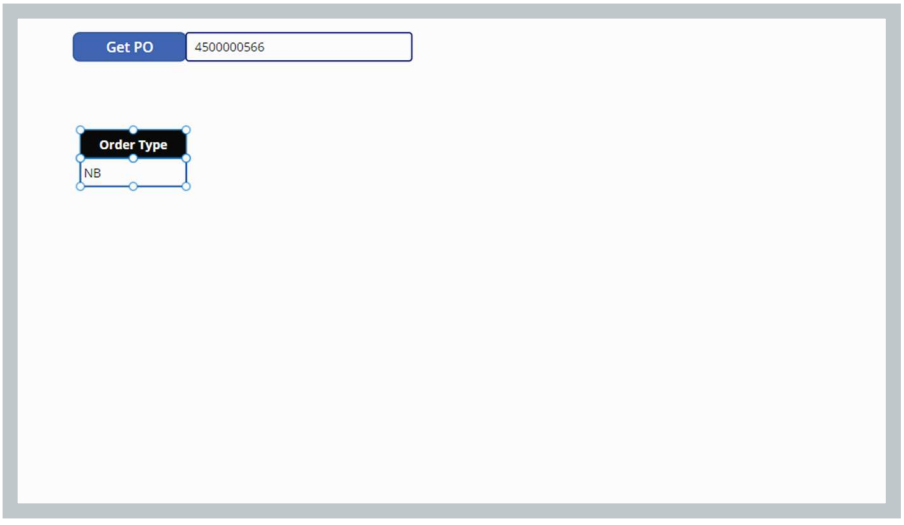


    NOTE: This is our variable data from SAP. When you click on the period after Header, Intellisense will list the other data that is being brought back from SAP. You will also see the value of the data – "NB".

    In the right-hand properties, change Border Thickness to 2.

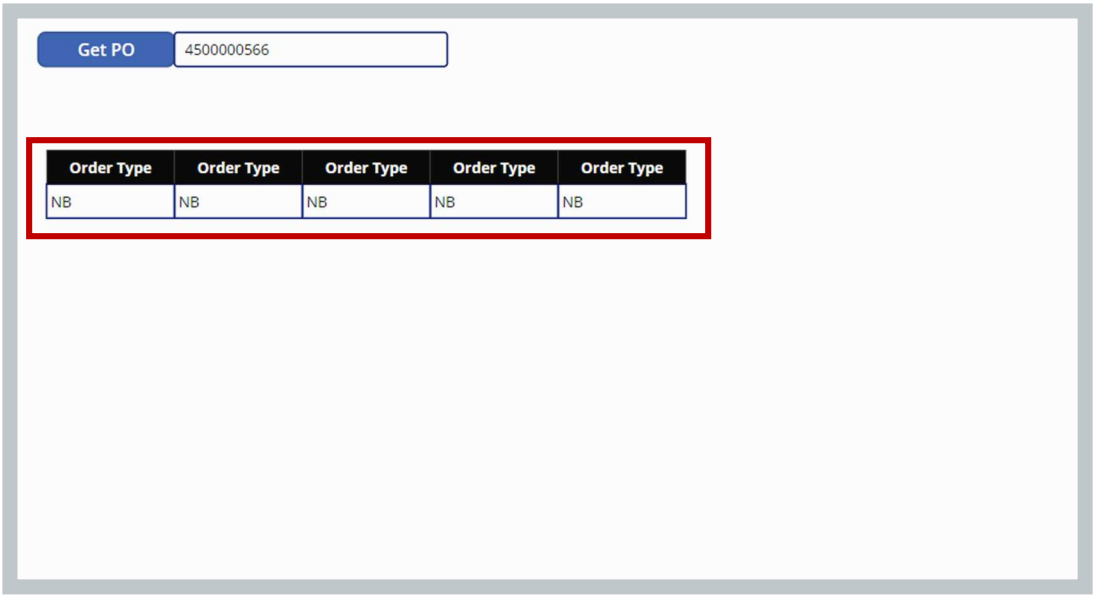


Once you have the border around the 2nd Text Label, line them up using the grid lines. Your canvas should now look like the screen shot below.

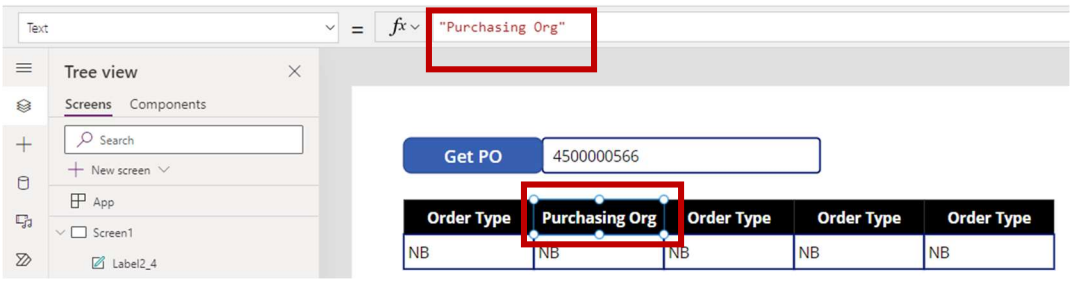


20. Create 4 more columns of Text Labels for the rest of the date. Select **both** Text Labels and **Ctrl-C** to copy and then **Ctrl-V** to paste. Once you have copied the pair of labels, move them as a group so they line up horizontally on the canvas.

21. Type Ctrl-V **3 more times** so you have 5 sets of labels. Move the labels as pairs to the canvas looks like the screen shot below.



22. Change the data of the columns to pull in the other PO Header data. Now we need to change that data for the other columns to reflect the other data fields coming back from the PO Header in SAP. **Click** on the **2nd header label** to select it and change the **Text** to **Purchasing Org**.



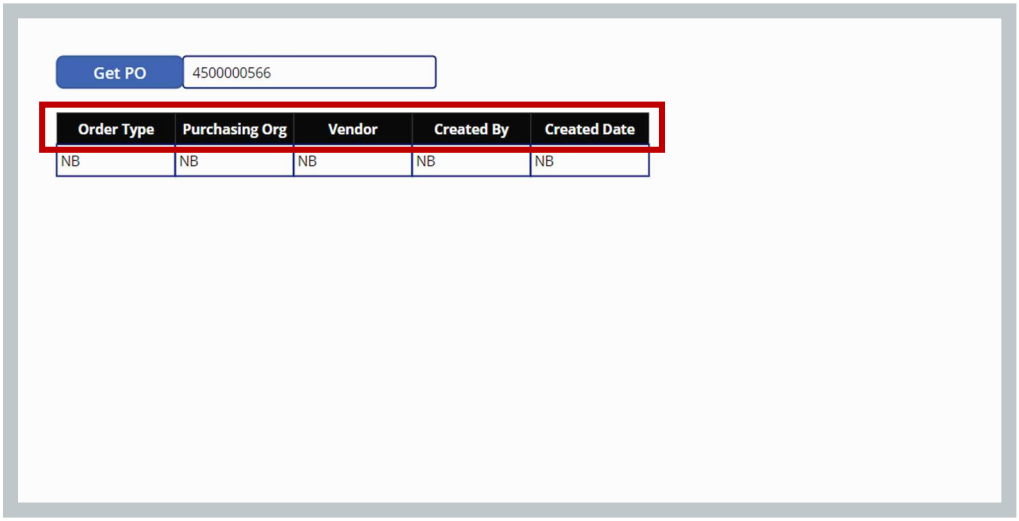
Follow the same steps for the other column headers using the text below:

Column 3 – "Vendor"

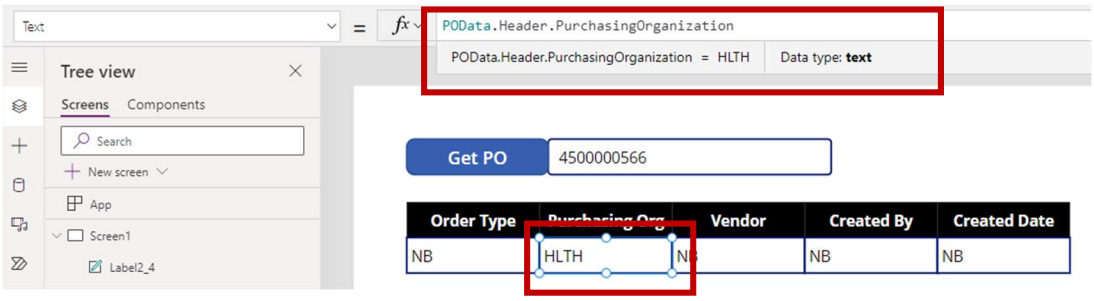
Column 4 – "Created By"

Column 5 – "Created Date"

Your canvas should now look like the screen shot below.



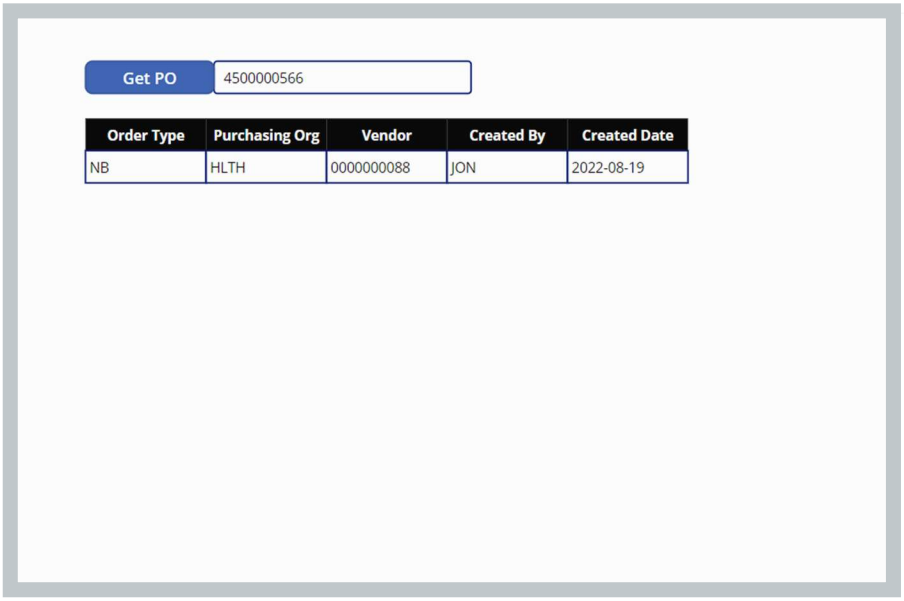
23. Change the data fields. Currently all the data fields are set to OrderType, so we need to change that to reflect the correct data field for that column. Click on the Purchasing Org data field to select it. Change the text to PODData.Header.PurchasingOrganization.



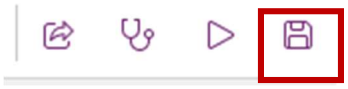
Follow the same steps to change the other data fields using the text below:

Vendor – **PODData.Header.Vendor**
Created By – **PODData.Header.CreatedBy**
Created Date – **PODData.Header.CreatedDate**

Your canvas should now look like the screen shot below.



24. Save the App. Click on the **Save icon** in the upper-right hand corner.



Exercise 6: Shape the data returned from SAP

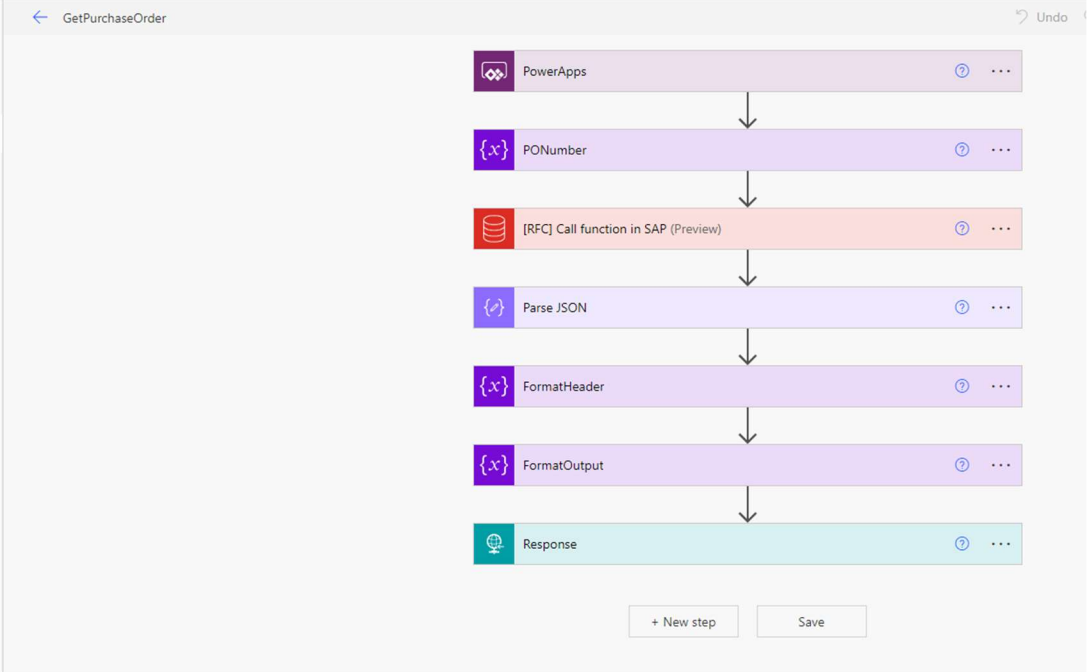
We are now going to shape the data being returned from SAP. Many times, the data is not in the format we need to use or there is too much data, and we need to only pass a limited set of data.

Below is a table of the most common Data Operations that you may be using to manipulate data from SAP.

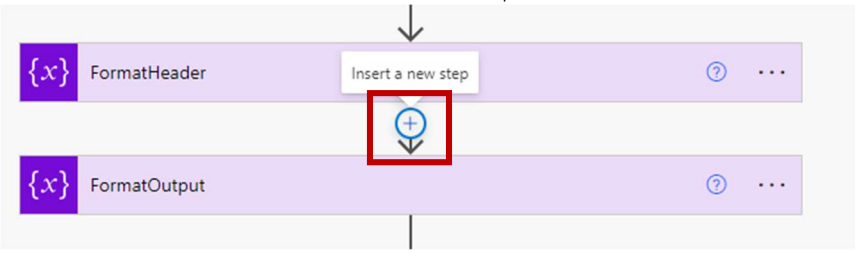
Action Name	Description
Compose	Use the Compose action when you need to enter data multiple times in a cloud flow – for example creating an array. Use with another operation like Join to access the contents.
Join	Use the Join action to delimit an array with the separator of your choice. For example, change an array separated by commas to be separated by semicolons.
Select	Use the Select action to transform the shaped of objects in an array. For example, you can add, remove, or rename elements in each object in an array.
Filter Array	Use the Filter array action to reduce the number of objects in an array to a subset that matches the criteria you provide.
Create CSV Table	Use the Create CSV table action to change a JSON array input into a comma-separated value (CSV) table.
Create HTML Table	Use the Create HTML table action to change a JSON array input into an HTML table.

For more detailed information on the Data Operations and specific examples, please refer to this document - Use data operations in Power Automate (contains video) - Power Automate | Microsoft Docs

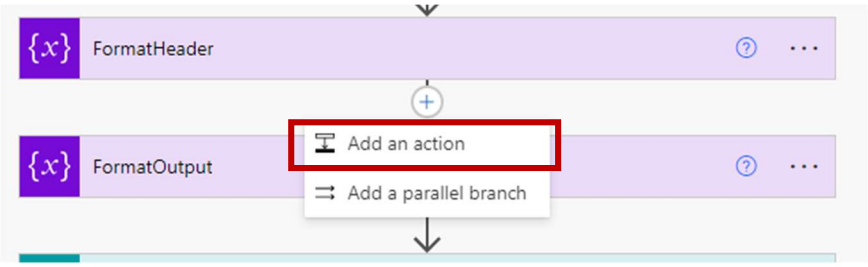
1. Pass back the PO line item details from SAP. We will now manipulate the line item details into an array so we can name the data to something that makes sense and only pass back the limited amount of data we need. Click back on the tab that is editing your Power Automate flow – GetPurchaseOrder. You may need to click Edit again.



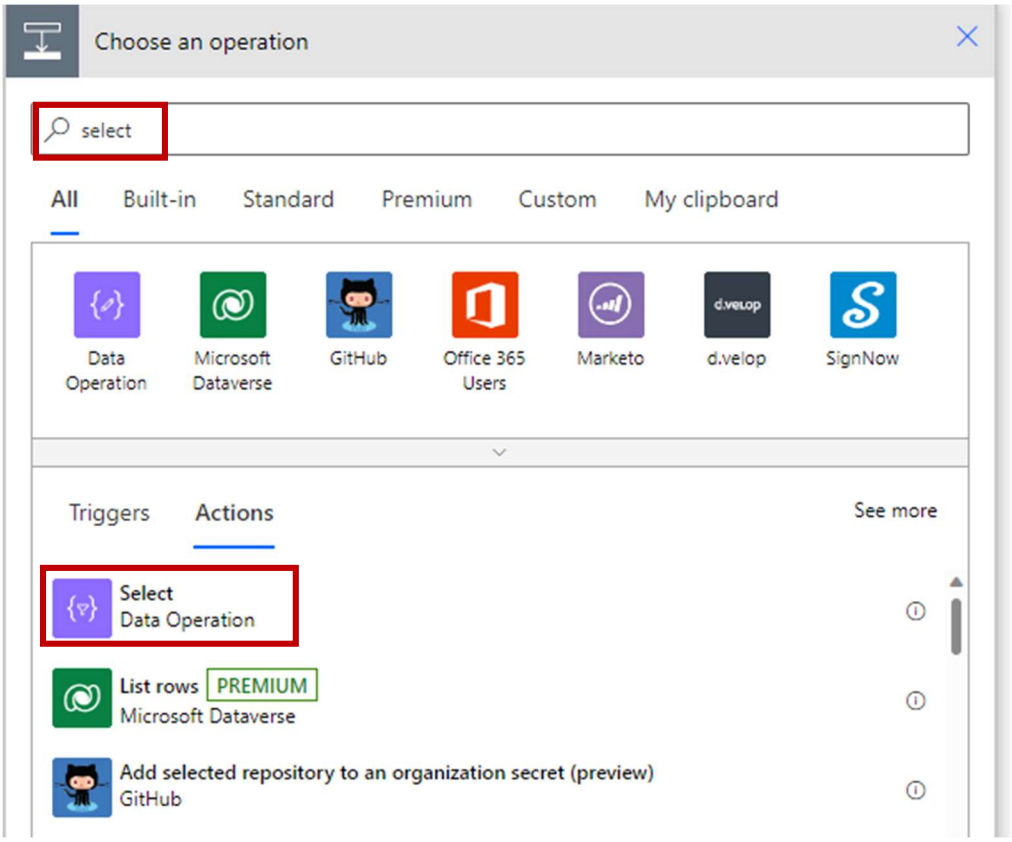
2. Add a new step after the FormatHeader action. Mouse over the arrow between the FormatHeader action and the FormatOutput action to add a new step.



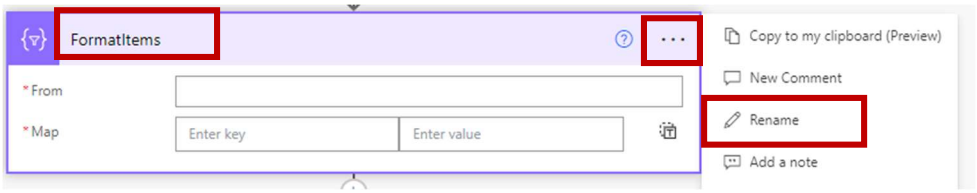
3. Click on the **+** to add a new step and then **Add an action**.



4. We will use the Select action to format the elements of the array. Type in **Select** in the **search box** in Operations and select **Select – Data Operations** action.

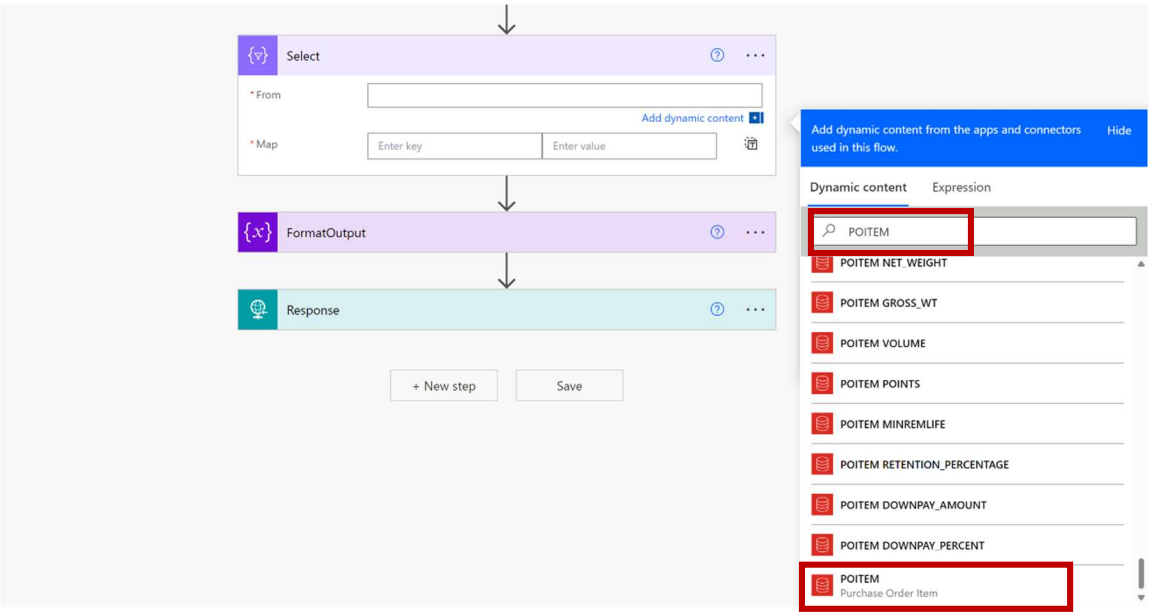


5. Rename the Select Action. Click on the **ellipse (...)** and then **Rename**. Rename the action **FormatItems.**



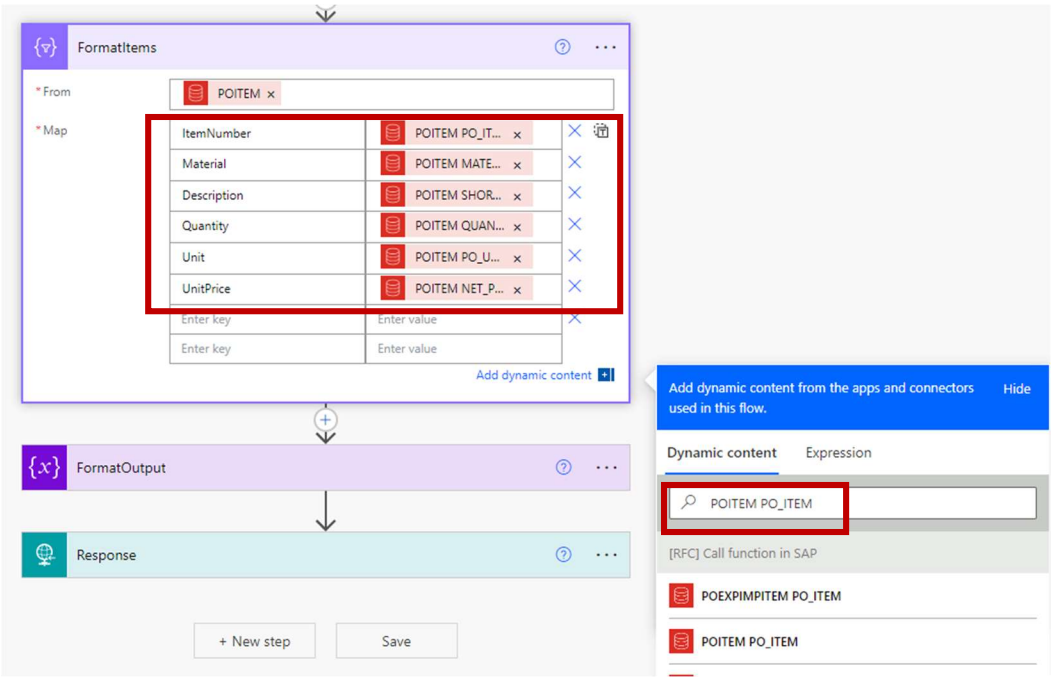
6. Configure the Select Action. Click in the **From** box. Search for POITEM in the Dynamic Content and select **POITEM (Purchase Order Item)** from the [RFC] Call function in SAP section.

You will have to scroll all the way down to the bottom to get the correct PO ITEM (Purchase Order Item)



7. We will now create a map to bring back only the data we need and with a data key that will be more recognizable in Power Apps. Click in the **Map** section and enter the following **Key** and **Value** pairs for the map using Dynamic Content for the Value. Use search to find the values more easily and pull from the [RFC] Call function SAP section.

Key	Value
ItemNumber	POITEM PO_ITEM
Material	POITEM MATERIAL
Description	POITEM SHORT_TEXT
Quantity	POITEM QUANTITY
Unit	POITEM PO_UNIT
UnitPrice	POITEM NET_PRICE



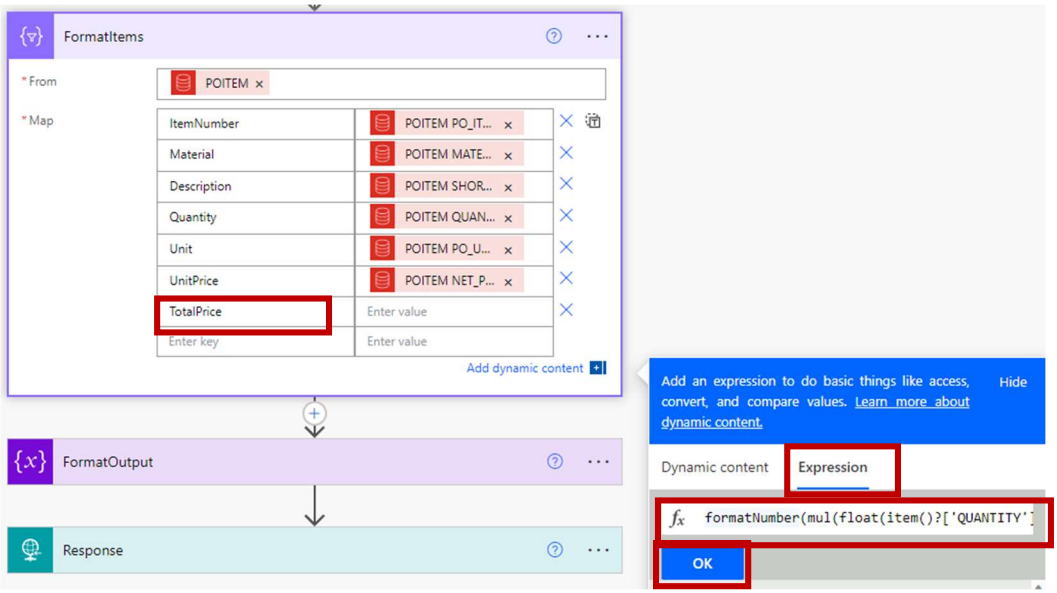
8. Create a calculated field for the Total Price field. We will now use an Expression to create a calculated field that adds up total of this line item. We will calculate this by multiplying the NetPrice by the Quantity. Since SAP values are coming back as Text values, we will need to convert them to numeric values.

   Back in our Map Table, type in **TotalPrice** in the **Key Field**. Click in the **Value field** and select **Expression** from the Dynamic Content. **Paste** the formula below into the formula bar and then click on **Okay.**

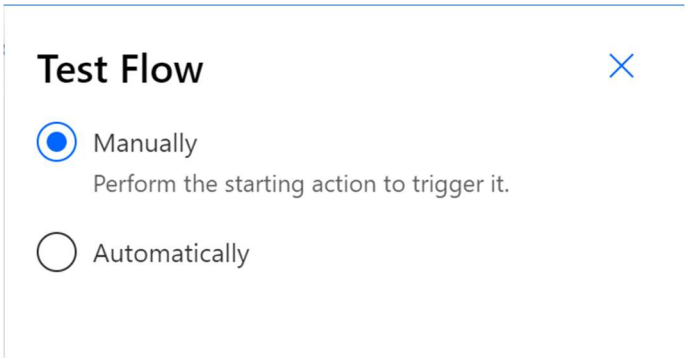
   formatNumber(mul(float(item()?['QUANTITY']),float(item()?['NET_PRICE'])), 'F2')

   This expression multiples Quantity by NetPrice. Float converts the string to a number and FormatNumber at the beginning of the formula and F2 at the end of the formula format

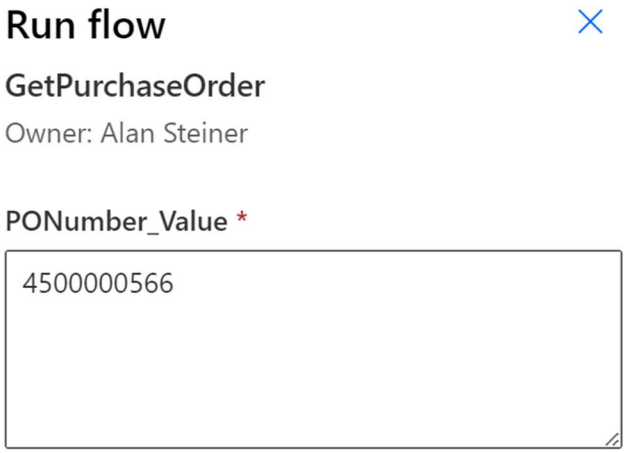
the TotalPrice to have 2 decimals.



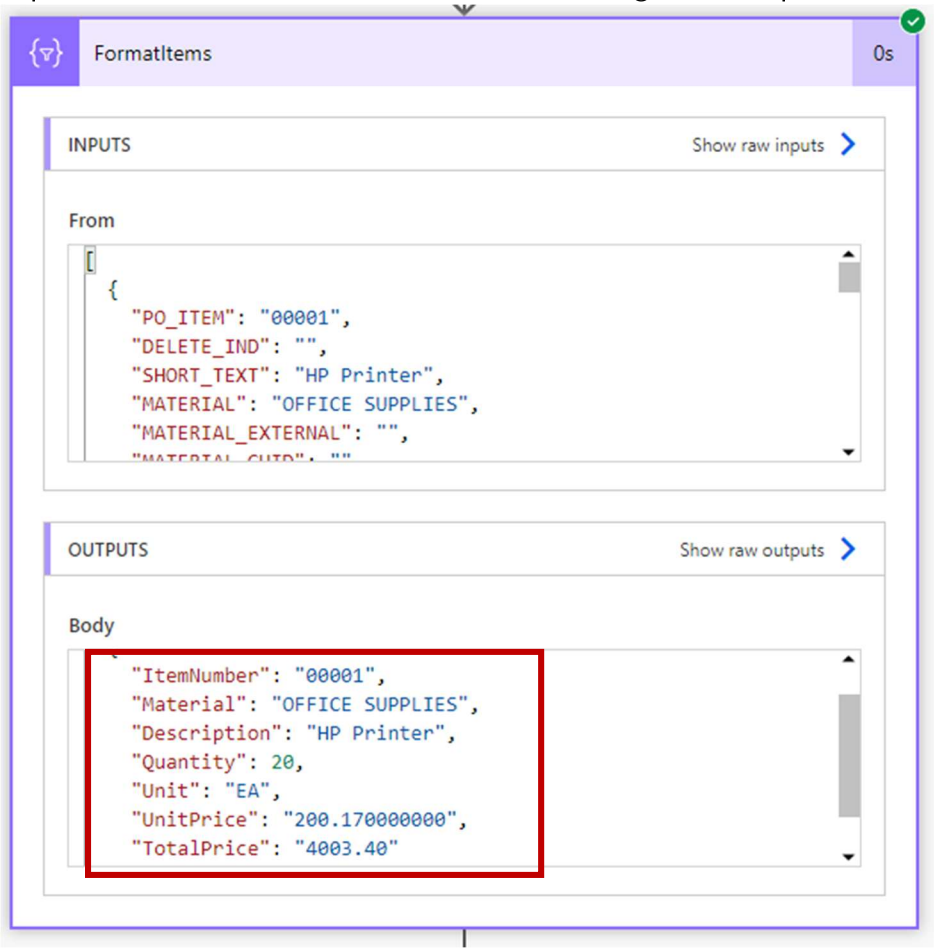
9. Save the Flow and Test with a Manual Trigger.



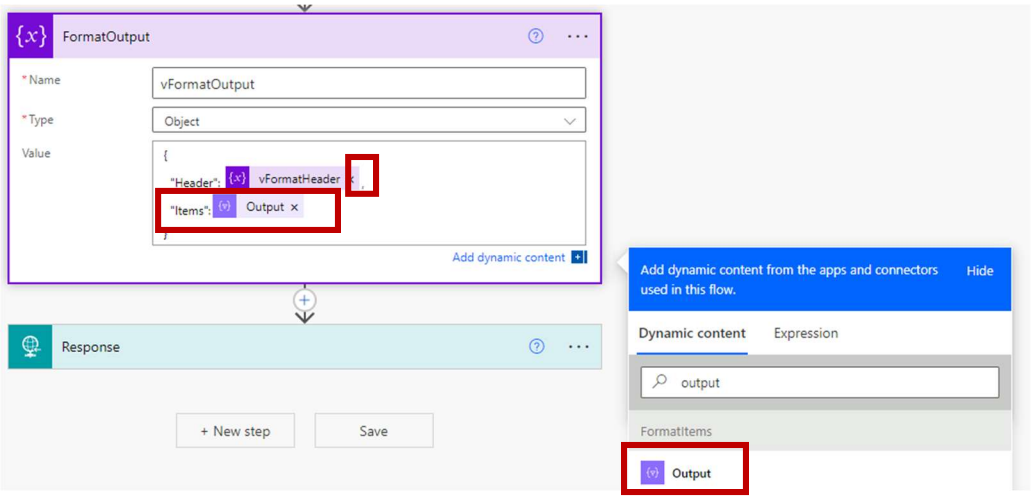
Enter 4500000566 for the PO number.



10. Verify the data is being pulled back properly and our calculated field is correct. **Expand** the **FormatItems** action and scroll through the **Outputs** section.

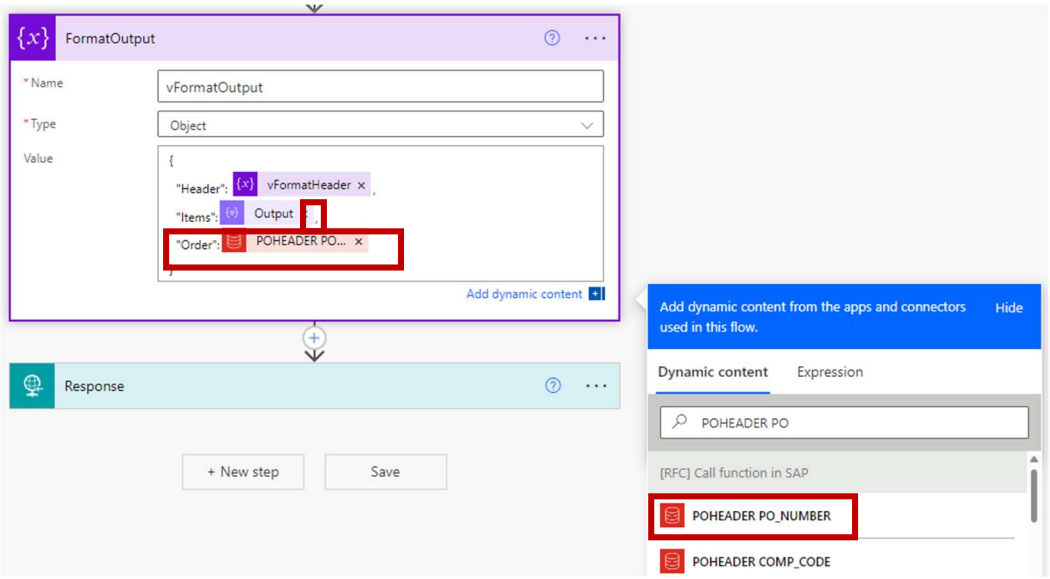


11. Update the schema for the FormatOutput section to include the Format Items data. Click on **Edit**. Expand the **FormatOutput** action. In the **value** section, make the following changes.
    - Add a **comma** behind the name/value pair and then enter
    - On the next line type **"Items": Output** – where Output is from Dynamic Content under FormatItems



12. Add data directly from SAP in the FormatOutput Section. Add the PO Number directly from the SAP by adding a simple name/value pair. In the **Value** section, add a **comma** behind the **Items name/value** pair to add another set of data and hit **enter**. On the next line, add the following text:

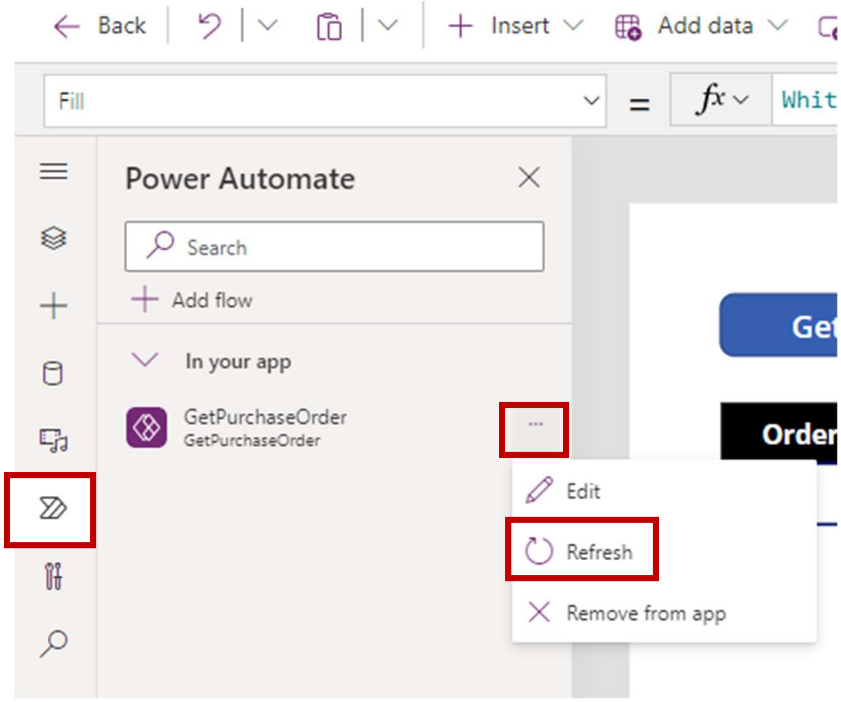
"Order": POHEADER PO_NUMBER – where POHEADER PO_NUMBER is from Dynamic Content under [RFC] Call function in SAP.



13. Update the Response Section. We now need to get the new schema from the FormatOutput action and generate from sample to create the new schema like we have done several times already.
    - **Save** and **Test** the flow using an automatic trigger.
    - **Expand** the **FormatOutput** action and **copy** the **entire Value section.**

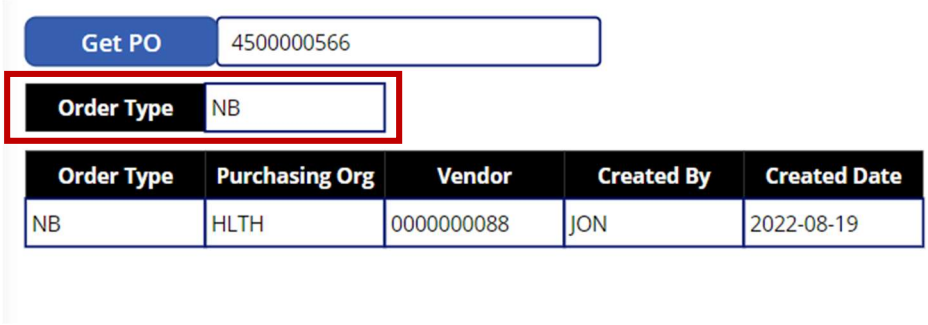
- Edit the flow.
- Expand the Response action.
- Click on Advanced Options.
- Click on Generate from sample
- Paste the new schema
- Save the flow

14. Update the Power App to show our item list and PO number. Click back to your tab where you are editing your Power App. First, we need to update our Power Automate flow since we have made changes. Click on the Power Automate tab in the tree on the left-hand side. Click on the ellipse (...) and then Refresh.

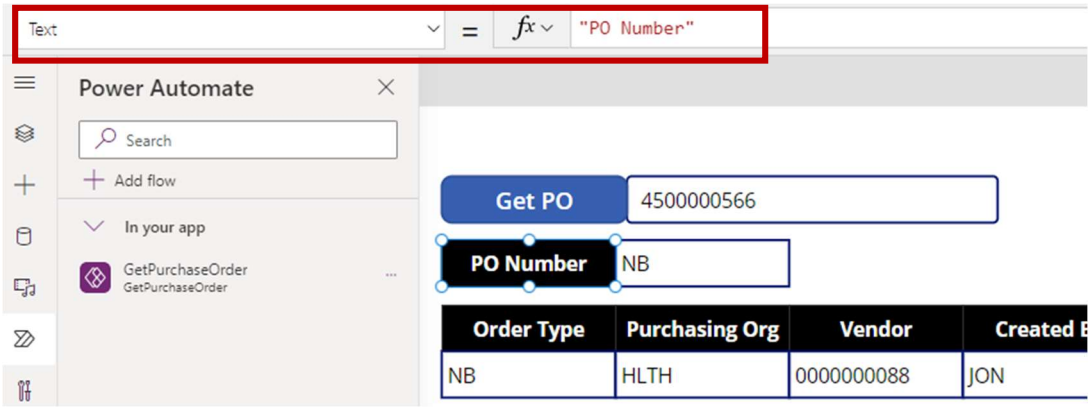


15. Play the app to load in the new data. Another way to play the app inside the canvas is to hold down the Alt-key and then click on the GetPO Button. This will cause the cloud flow to get the new line item and PO number values.
If needed, use PO # 4500000566

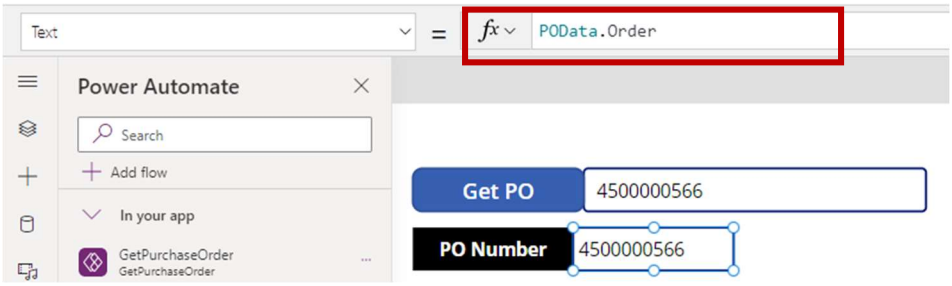
16. Add the PO Number to the App. We will use Ctrl-C to copy the OrderType Text label and OrderType Value field to make things easier. Ctrl-V to paste them on the canvas. Drap and Drop them above the POHeader information.



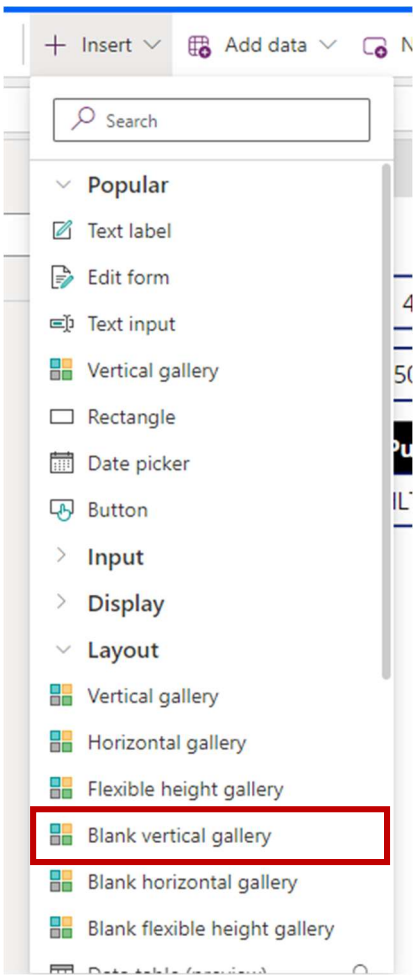
17. Update the fields to display the PO number data. Click on the new **OrderType Header** to **select** it. Update the **Text** to **"PO Number"**



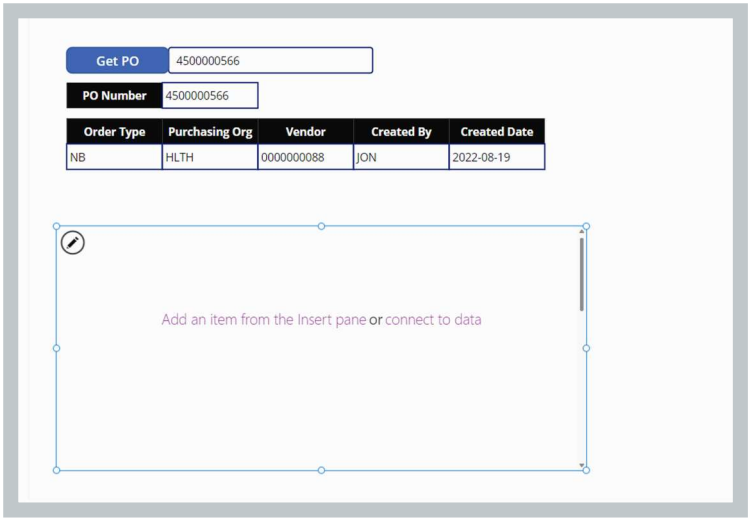
Click on the new Text Order Type value field to select it. Change the **Text** formula to **PAData.Order.** We don't need to have Header in the formula.



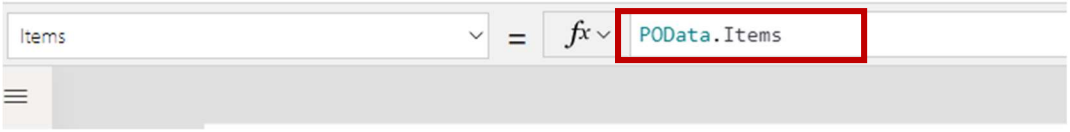
18. Insert the Line Items into the Canvas App. Click on **Insert** and select **Blank Vertical Gallery**. *You may have to expand the Layout section to find it.*



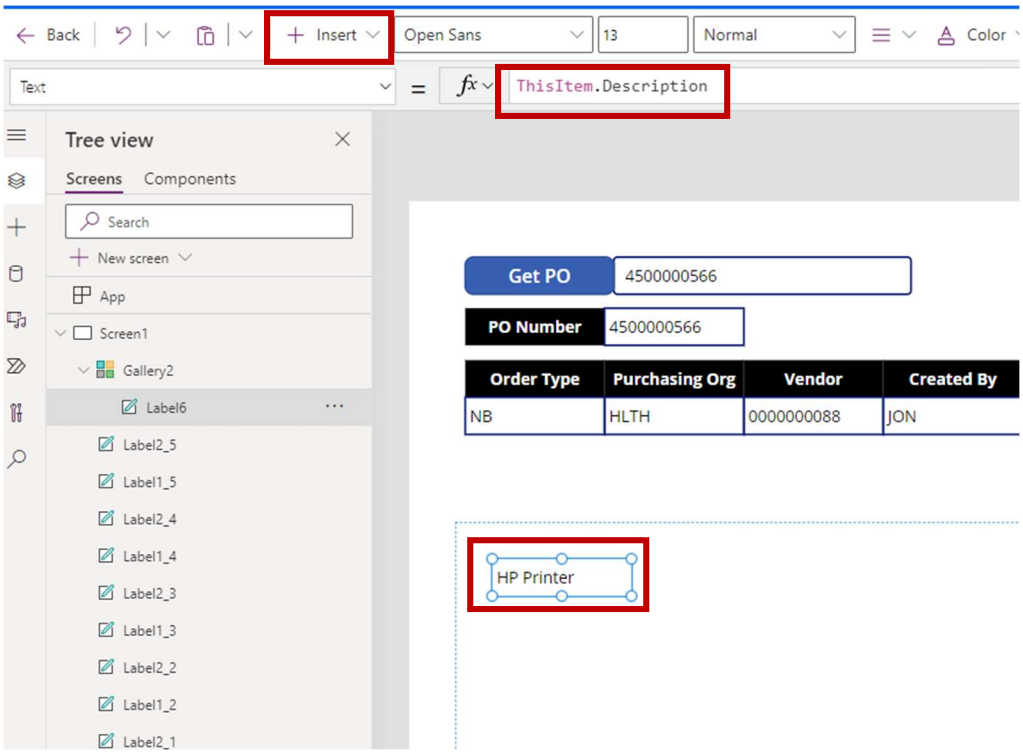
Drag and drop the gallery below your PO Header information and leave room for column labels above.



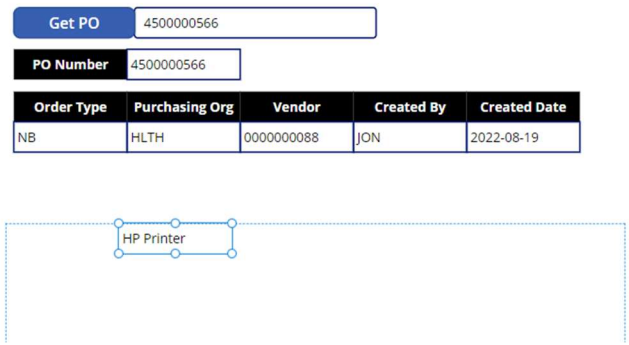
19. Change the Items formula to point to the **Line Items** data by changing the text to **PData.Items**



20. Configure the Gallery. We need to add the fields we want to display in the gallery. With the Gallery still selected, click on **Insert** and then **Text Label**. Power Apps will bring in what it thinks you may want for the first item. It brought in the Description field.



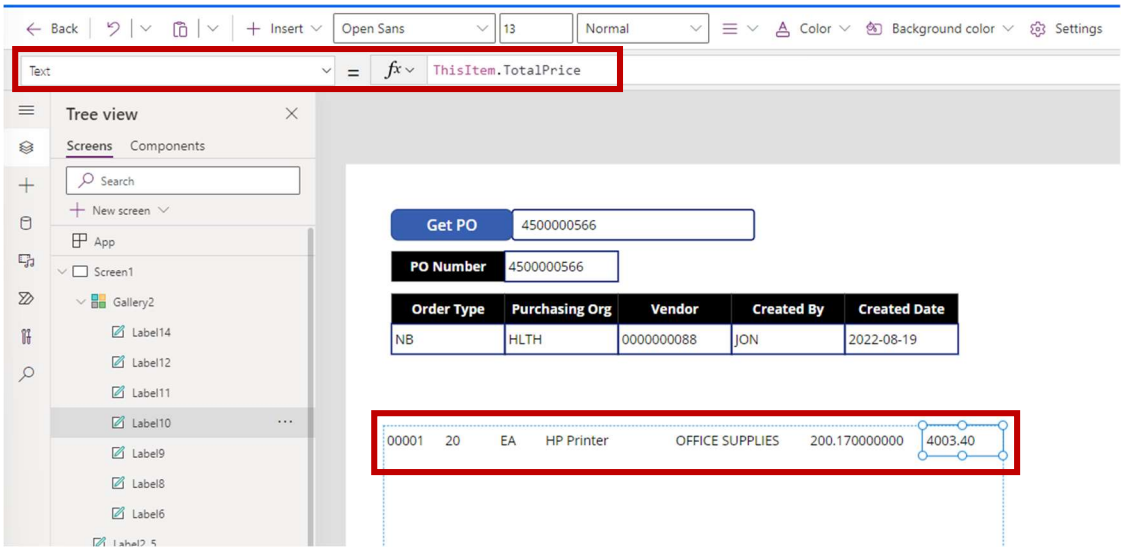
Drop and drag to the middle of the gallery.



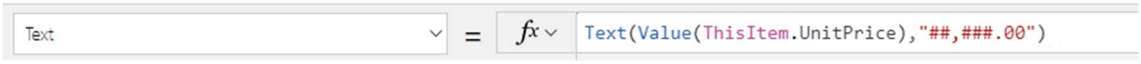
21. Repeat the previous step until you have brought in all the data fields listed in the table below and have the columns in the same order of the screen shot below.

If the short cut does not bring in all the fields for you like Quantity, select the Text Label and then set the Text formula to match the table below. You can reduce the size of the Quantity and Unit fields.

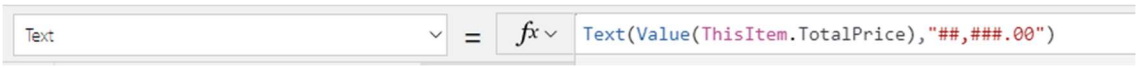
Item	Text Formula
Item Number	ThisItem.ItemNumber
Quantity	ThisItem.Quantity
Unit	ThisItem.Unit
Description	ThisItem.Description
Material	ThisItem.Material
Unit Price	ThisItem.UnitPrice
Total Price	ThisItem.TotalPrice



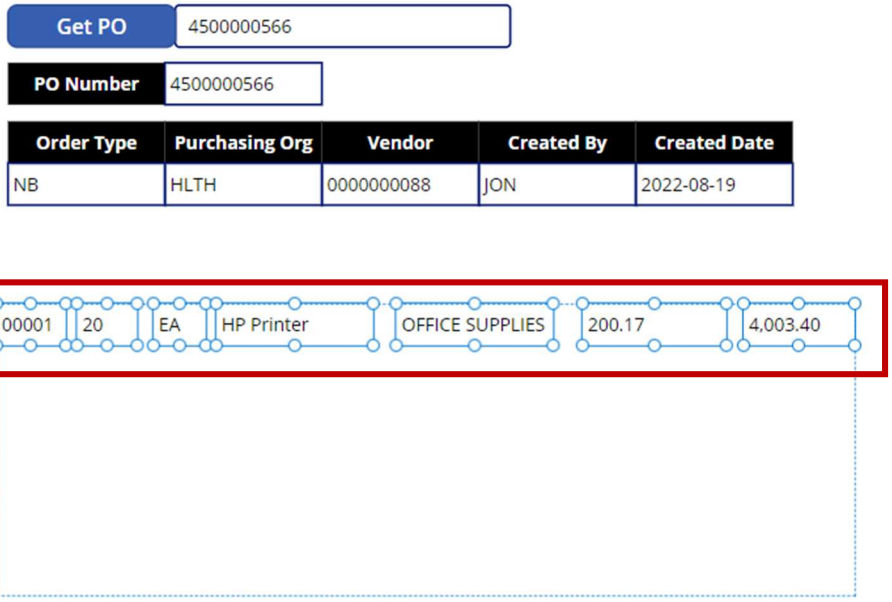
22. Format the Unit Price and Total Price fields. Change the format of the unit price field to only have 2 decimals. Select the **Unit Price field** and then change the **Text formula** to:
    Text(Value(ThisItem.UnitPrice),"##,###.00")



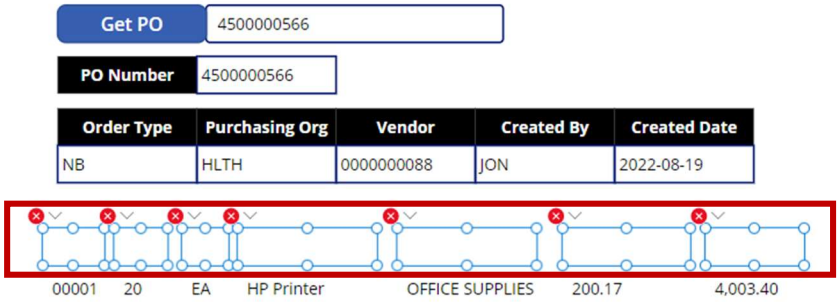
Repeat the same process for Total Price field.
Text(Value(ThisItem.TotalPrice),"##,###.00")



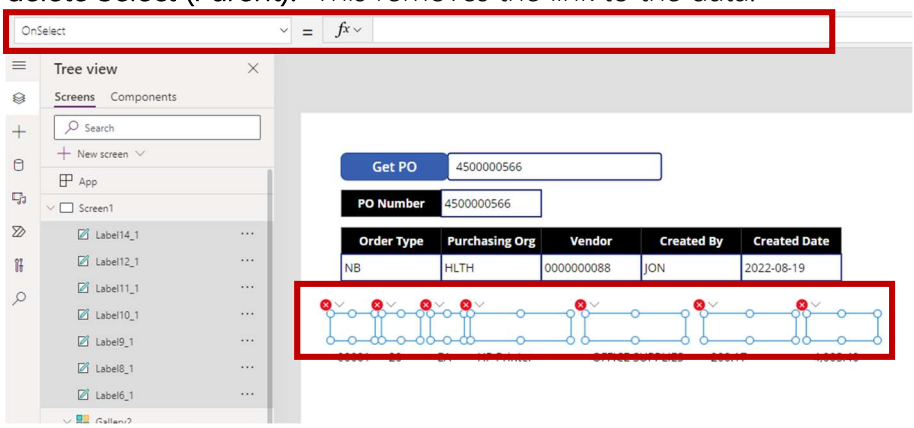
23. Create Headers for our Line Item Gallery. A quick way to create headers for all the columns in the gallery is to **select all the labels in the gallery** and then **Ctrl-C** to copy them.



24. Paste the labels. **Click outside the gallery**, click **Ctrl-V** to paste and then **drag and drop** them as a group to line up above the line item gallery.

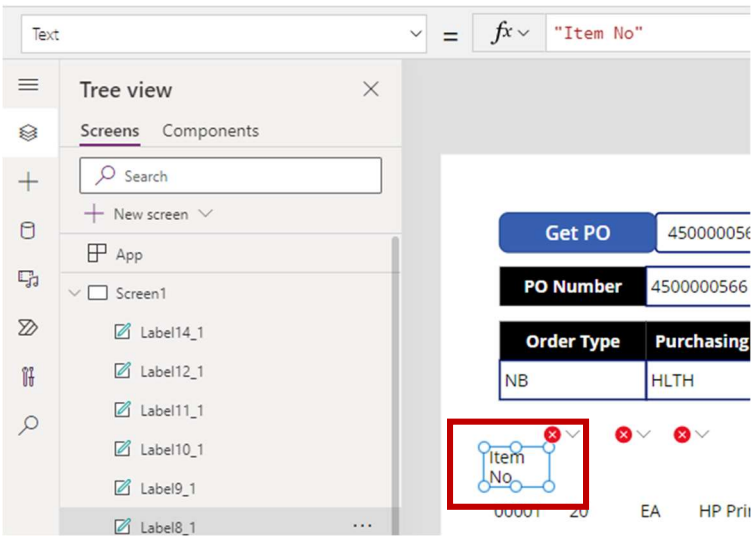


25. Configure the Header Labels. Clear out the OnSelect formula. **Keeping all the labels selected**, scroll down to the **On-Select** property in the property drop down list and **delete Select (Parent).** This removes the link to the data.



26. Individually **select each header label** and set the **Text Property** based on the table below:

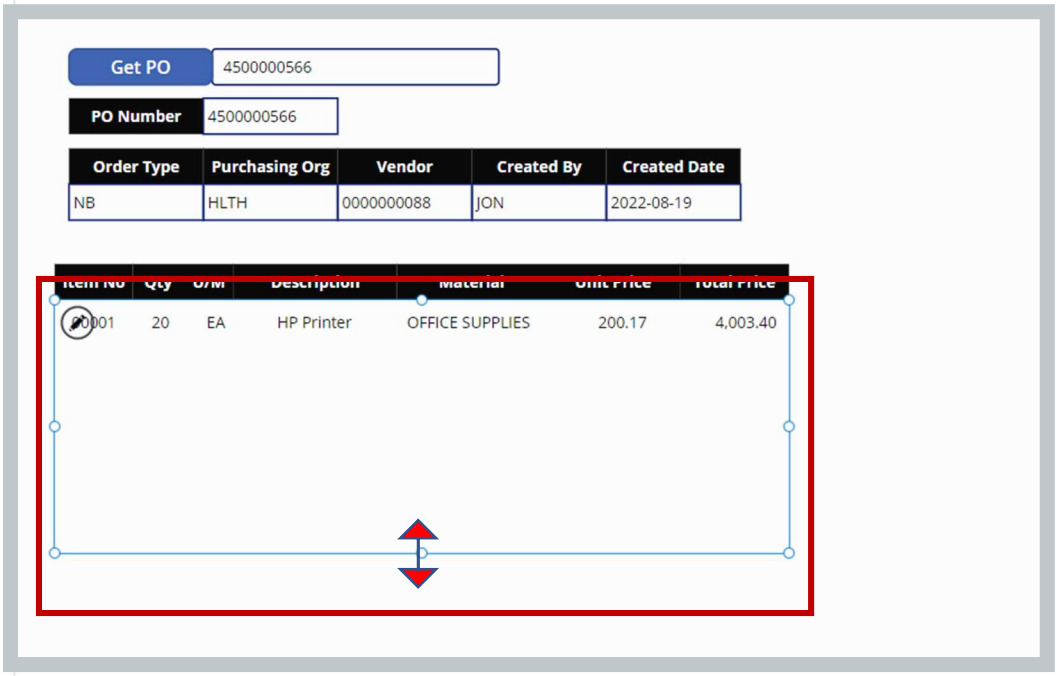
Header Name	Text Property
Item Number	"Item No"
Quantity	"Qty"
Unit	"U/M"
Description	"Description"
Material	"Material"
Unit Price	"Unit Price"
Total Price	"Total Price"



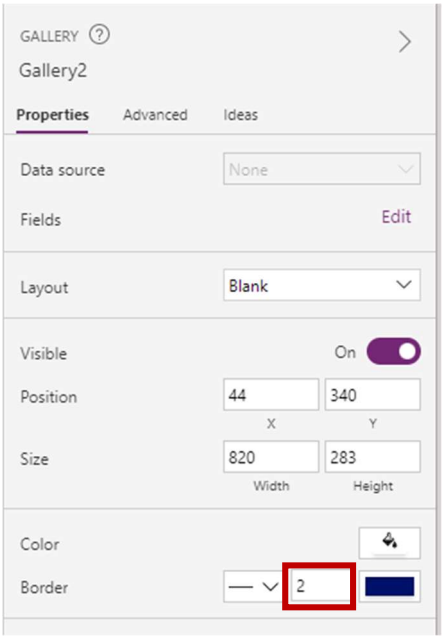
27. Select all the header labels again and change the following properties:

    Font Weight – **Bold**
    Text Alignment – **Center**
    Text Color – **White**
    Text Fill – **Black**

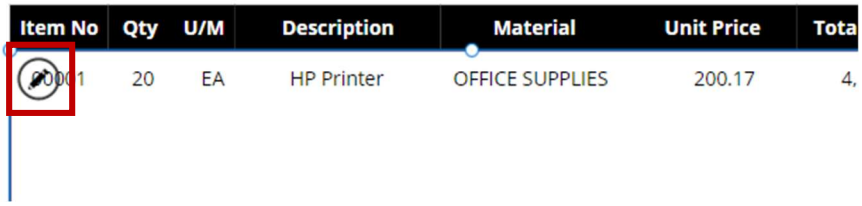
28. Configure the Gallery. Select the gallery and reduce the size of the gallery so we can add another text label for total at the bottom of the screen.



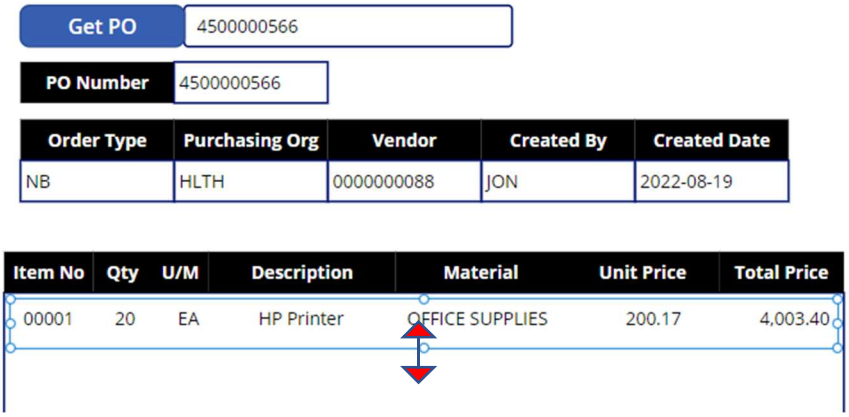
29. Add a border around the gallery. On the **properties** on the right-hand side, change **border** to **2.**



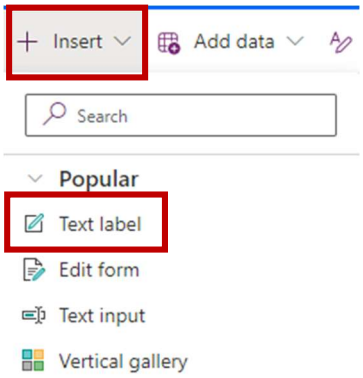
30. Reduce the size of the template cell. Click on the **pencil icon** in the gallery to edit the template cell.



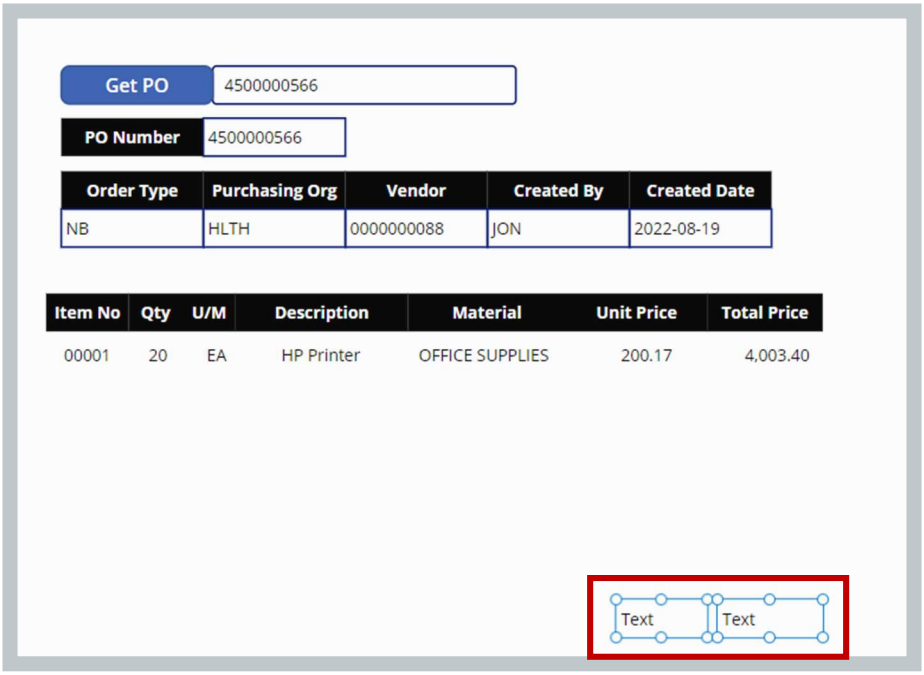
Reduce the size of the template cell. This will be the size of each row in the gallery so we can have multiple rows showing on the screen.



31. Add Text Labels for Total Price of Invoice. Click outside the **gallery to unselect** it. Click on **Insert** then **Text label**. Repeat so you have (2) new text labels.



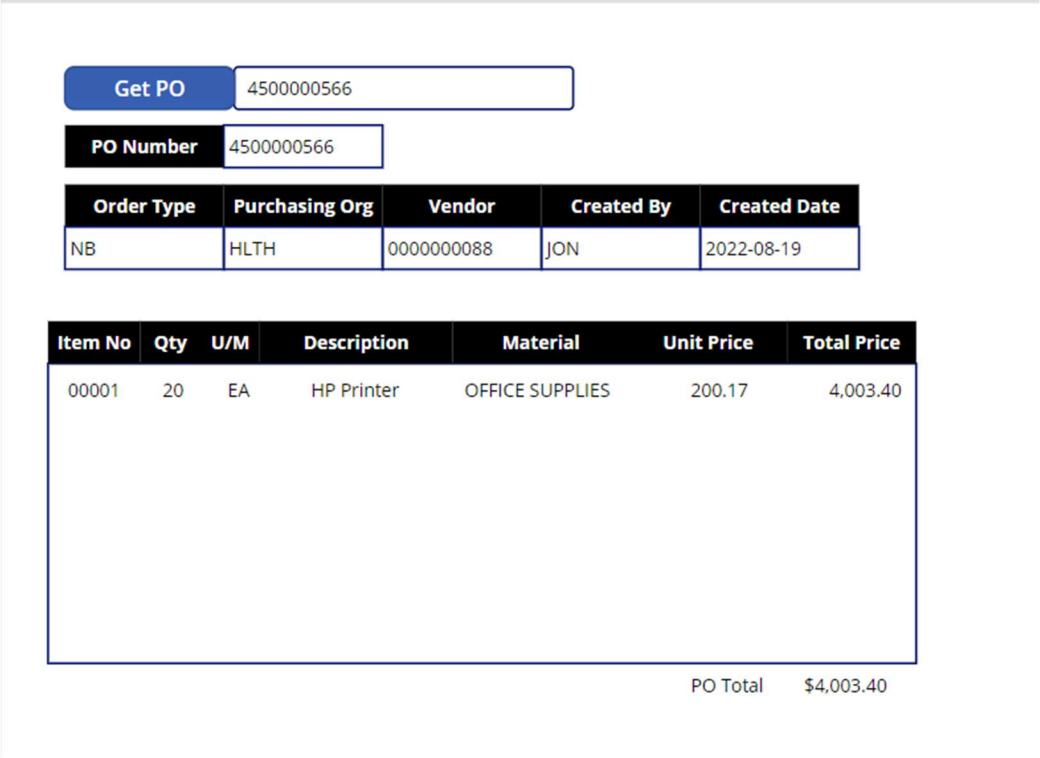
32. **Drag and drop** the new text labels under the gallery on the right-hand side.



33. Configure the text labels. Change the **Text Property** for the new labels as follows:
    Text Box 1 – **"PO Total:"**

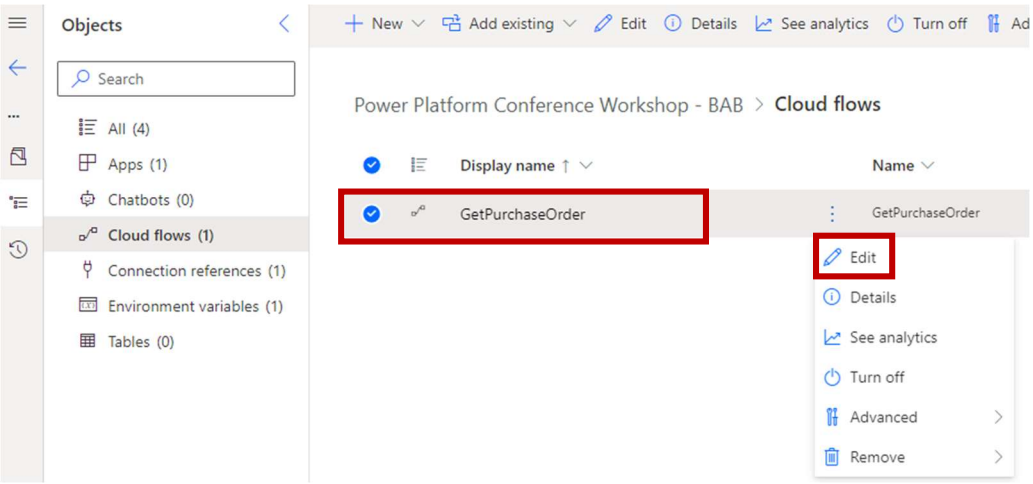
    Text Box 2 – **Text((Sum(Gallery1.AllItems,TotalPrice)),"$##,###.##")**

If you get an error message when you paste, try typing in the formula using Intellisense.

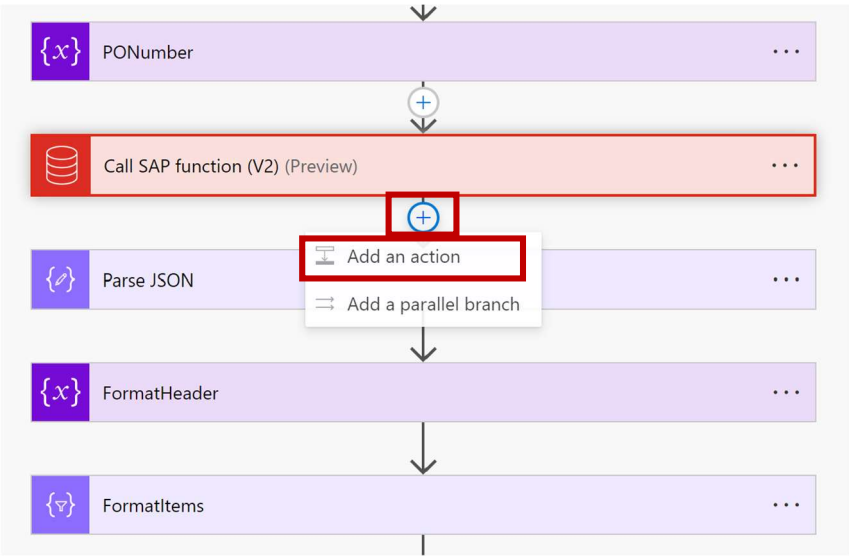


34. Save your app.

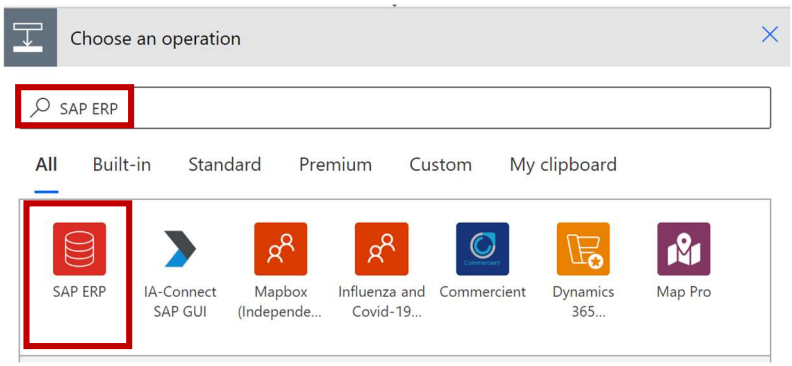
35. Modify our cloud flow to use SAP Read Table action to bring back the vendor name rather than the vendor number. Click over to your tab that has your solution open. Select the GetPurchaseOrder cloud flow, click on the ellipse (...) and then Edit.



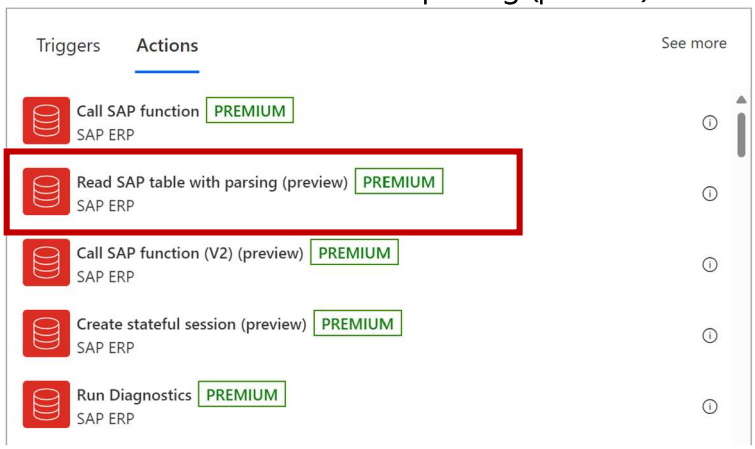
36. Add an action. Hover over the **arrow** after the [RFC] Call function in SAP and click on the **+** to add a new action. Click on **Add an Action**.



37. Search for SAP ERP and select the **SAP ERP** action.



38. Select the **Read SAP Table with parsing (preview)** action.

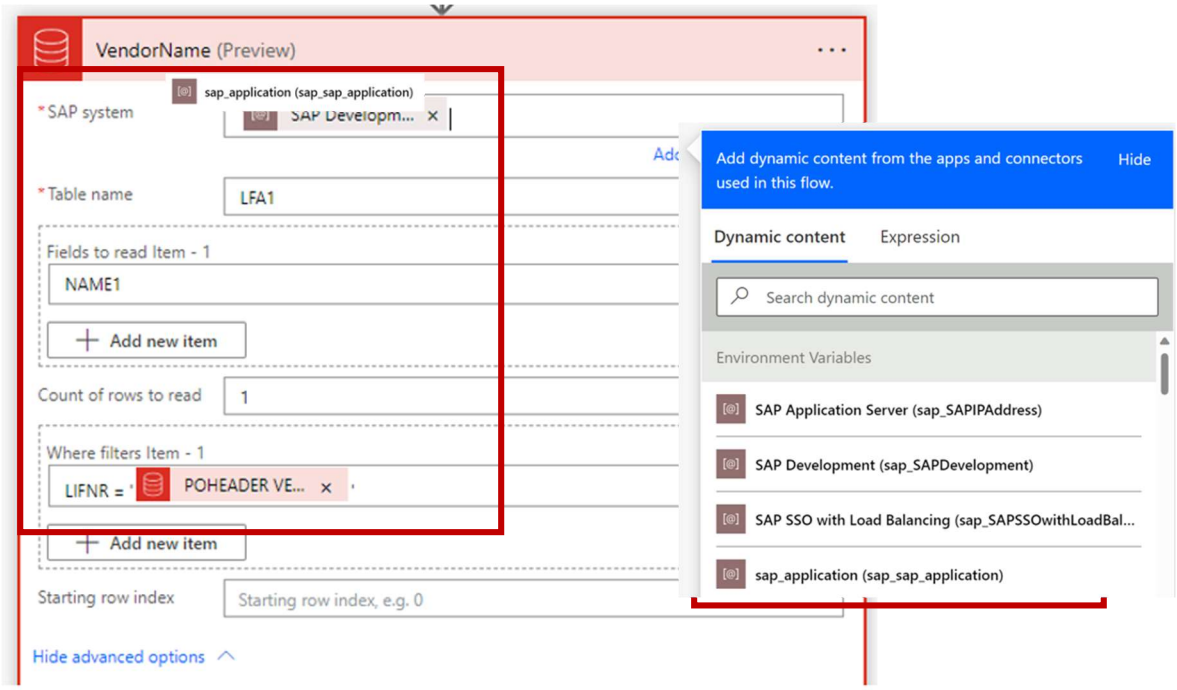


39. Rename the action. Click on the **ellipse (...)** and select **Rename**. Rename the action **VendorName.**

40. Configure the action:
    - SAP system - use the environment variable we created in an earlier exercise from Dynamic Content – **sap_sap_application**
    - Table name, type in **LFA1**
    - Fields to read – Item – 1 – **NAME1**
    - Count of rows to read – **1**
    - Filter – copy and paste where highlighted text is from Dynamic Content.

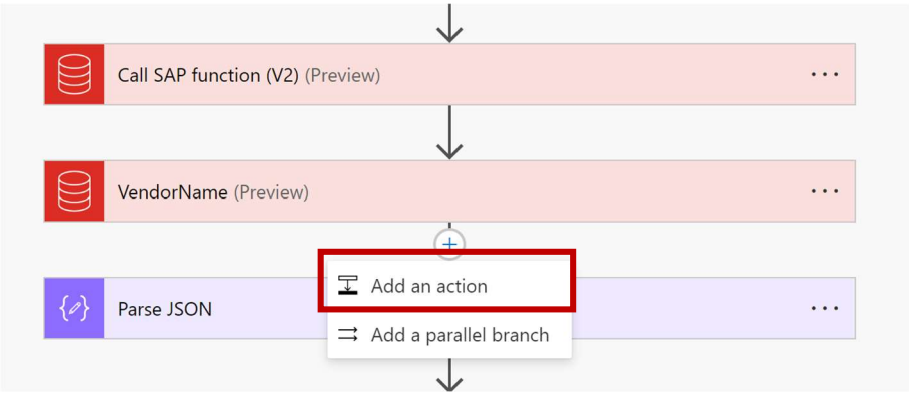
      LIFNR = '**POHEADER VENDOR**'

      NOTE: You must have a space before and after the = for the filter and single quotes outside the Dynamic Content.

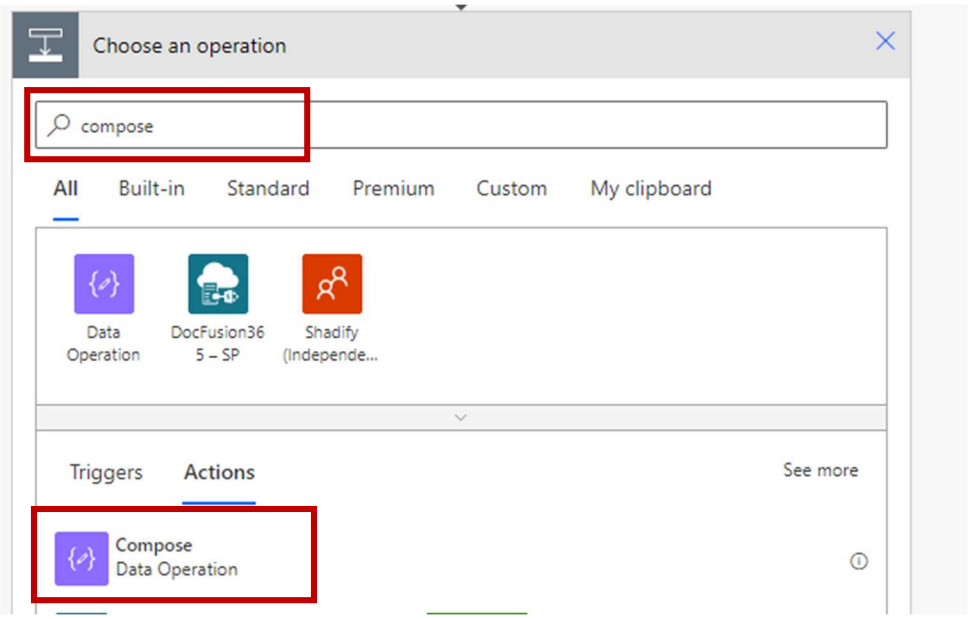


41. Save the flow. Click on **Save**.
42. Test the flow. Use Automatically with a recently used trigger.
43. Expand the **VendorName** action and look at what is being returned in the **Outputs** section. An object called rows which is an array with a single name/value pair.

44. Create new action. Click on **Edit** to add a new action.
45. **Add a new action** below **VendorName** action.

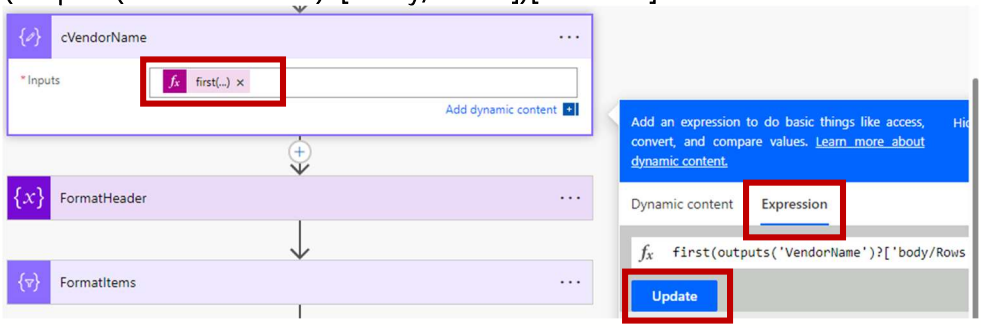


46. Add the Compose Action. Another Data Operation we can use is called Compose. The Compose action allows you to give it a formula and it will evaluate the formula and return the result in the output. Search for **Compose** and select the **Compose Data Operation**.

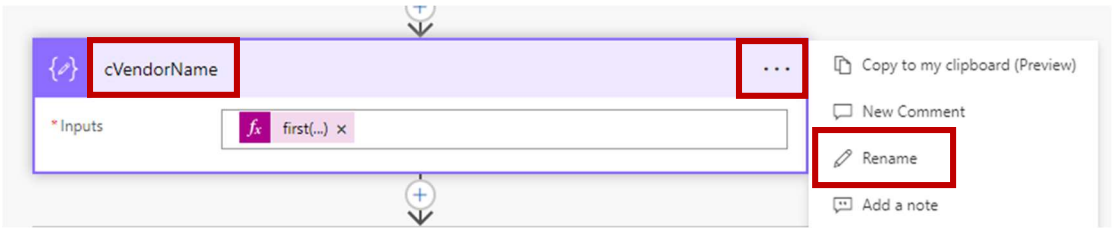


47. Click in **Inputs** and paste in the following **Dynamic Expression** and click on **Update**.

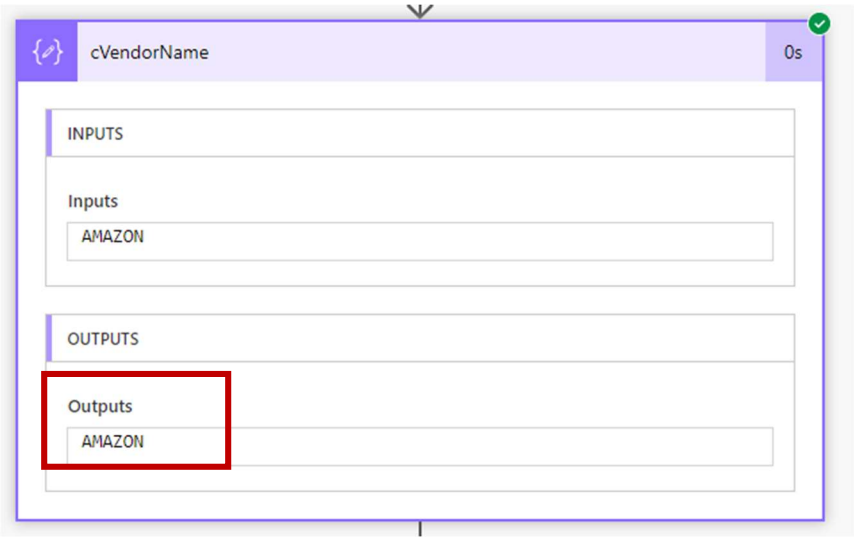
first(outputs('VendorName')?['body/Rows'])['NAME1']



48. Rename the action. Click on the **ellipse (...)** and then **Rename**. Rename to **cVendorName.**



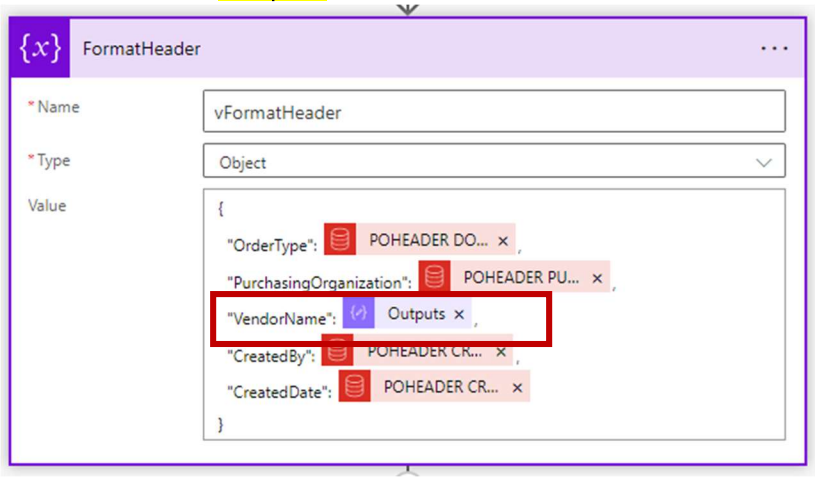
49. Test the flow again using Automatic with recently used Trigger.
50. Expand the **cVendorName** action and verify that the **Output** has the name of the vendor – Amazon.



51. Update FormatHeader action. We are currently returning the Vendor number and we need to change to the Vendor Name which is coming from the output of our Compose action. Click on **Edit** to edit the Flow. **Expand** the **FormatHeader**.

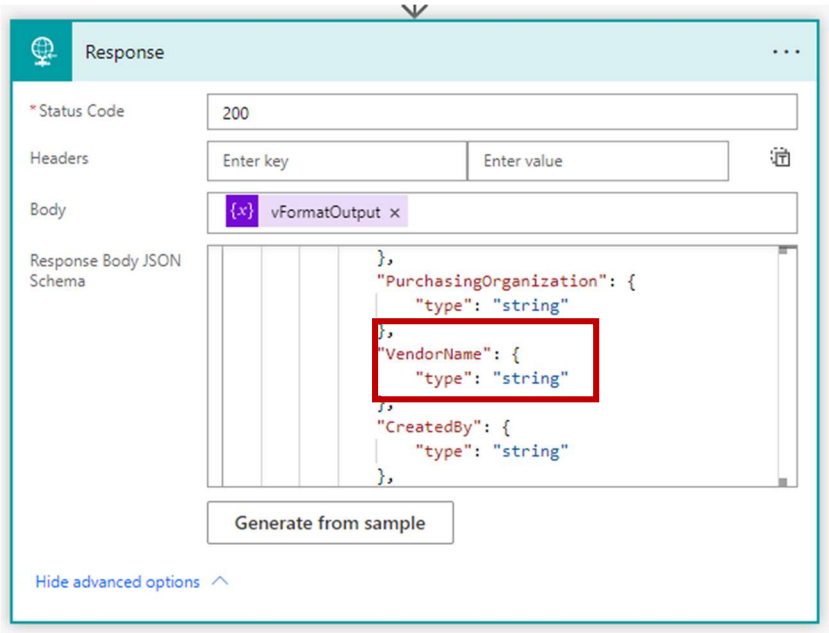
    Update the value section to now have the following name/value pair where the highlighted text is from Dynamic Content so we no longer have the Vendor field.

    "VendorName": Outputs



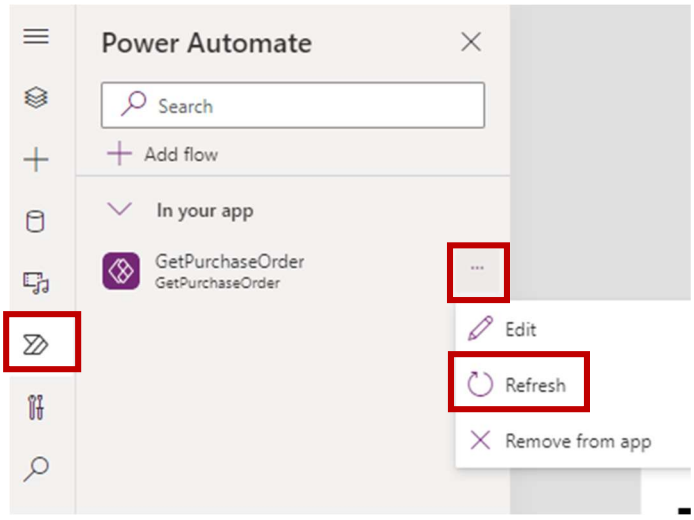
52. Update the Response action. Now we need to update the schema in the Response action to include the new VendorName in the Header section.

In the **Response Body JSON schema**, scroll down to the **Header Section**. Update the schema to remove the Vendor field and change to **VendorName.**

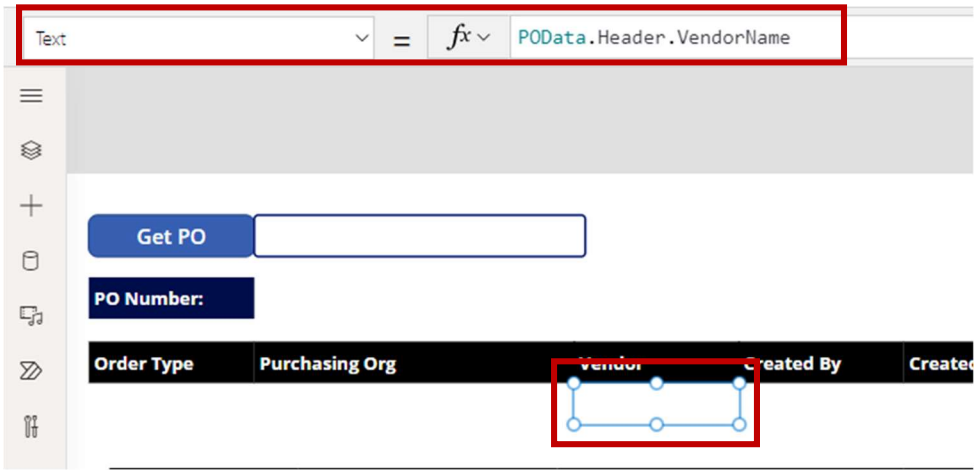


53. Save your cloud flow.
54. Click back to your tab with your Power App – Purchase Order Viewer.

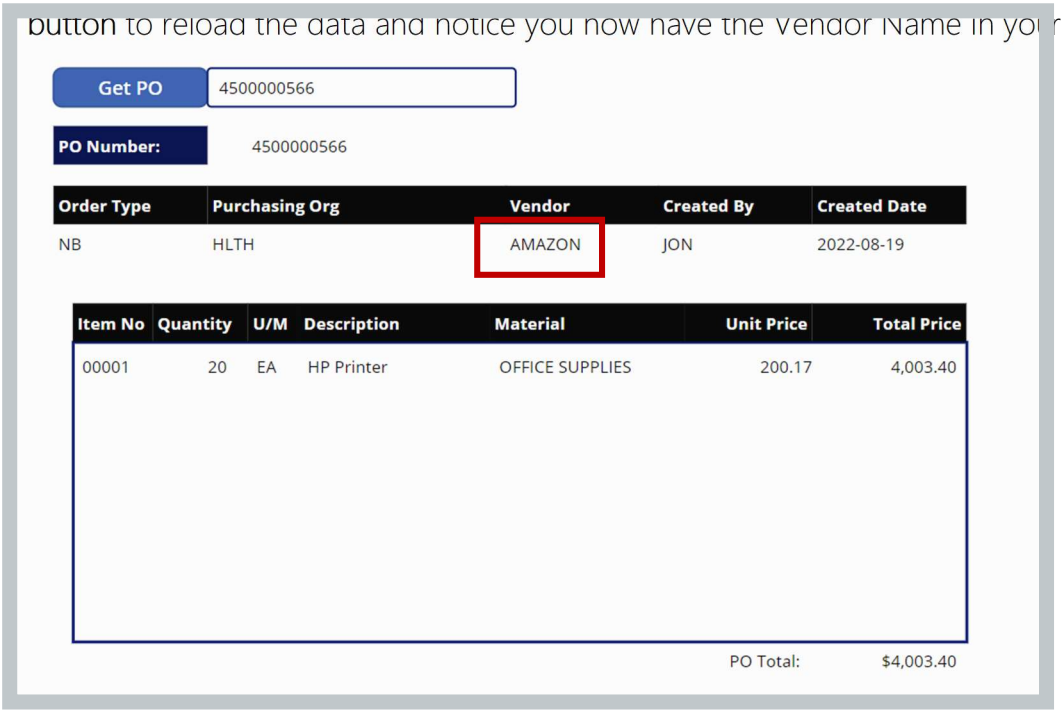
55. Refresh your cloud flow. Click on the Power Automate tab on the left-hand side ribbon, click on the ellipse (…) for GetPurchaseOrder cloud flow and then click on Refresh.



56. Edit the Vendor Text field. We now need to update the Vendor text field to reflect our new variable – VendorName. Select the Vendor Text field. Change the text property field to PODataHeader.VendorName.



57. Play the app to reload the data. Hold down the **Alt key** and click on the **GetPO** button to reload the data and notice you now have the Vendor Name in your app.

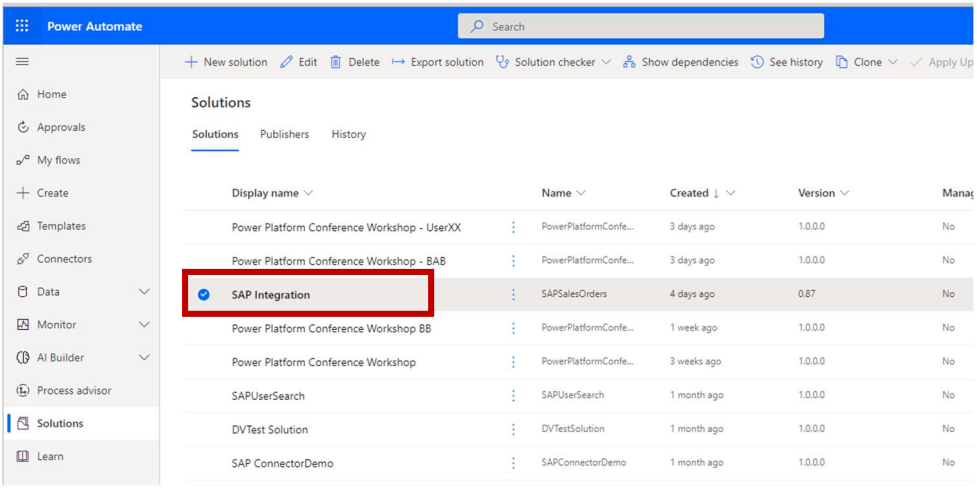


Congratulations on completing this app that retrieves PO information from SAP!

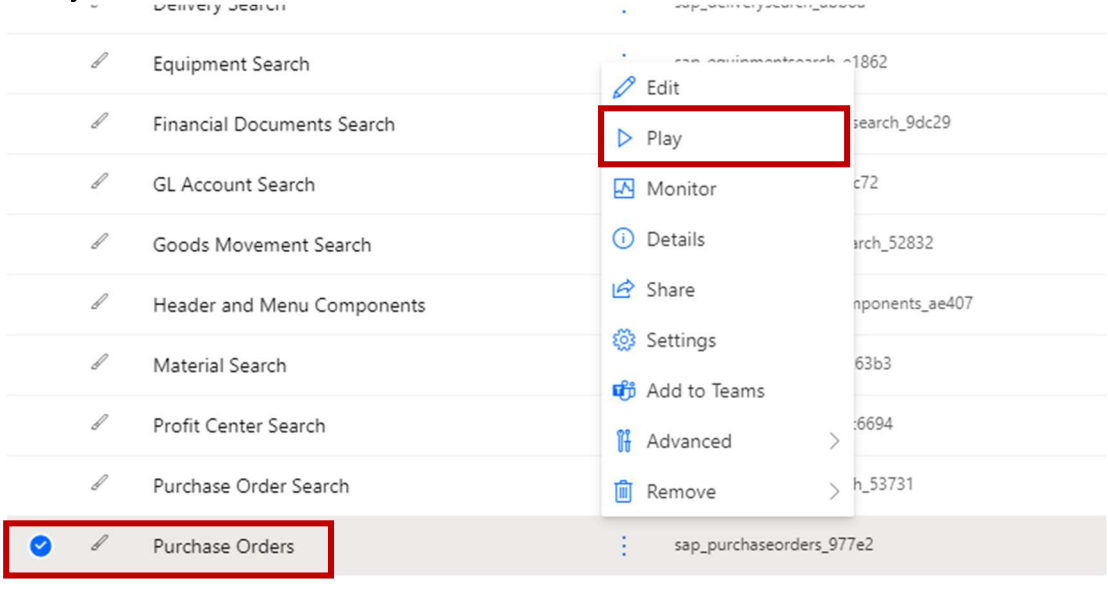
Exercise 7: Procure to Pay Example

In this next group of exercises, we will be working in some of the existing canvas app and cloud flows in the SAP Integration (Public Preview) solution that were built to create purchase orders in SAP. We will walk through the procure to pay steps that are accomplished with this solution.

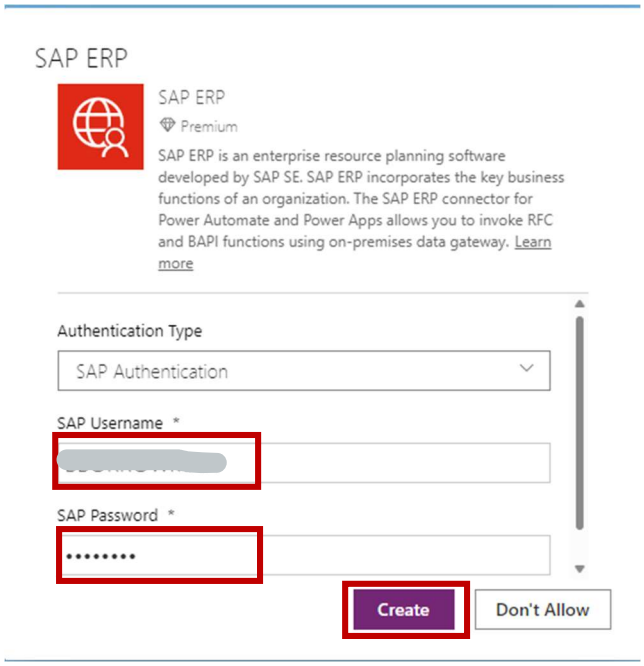
1. Explore the solution. In your existing environment, **select** the **SAP Integration (Public Preview)** solution, select the solution to **edit.** You can see there are many objects inside the solution.



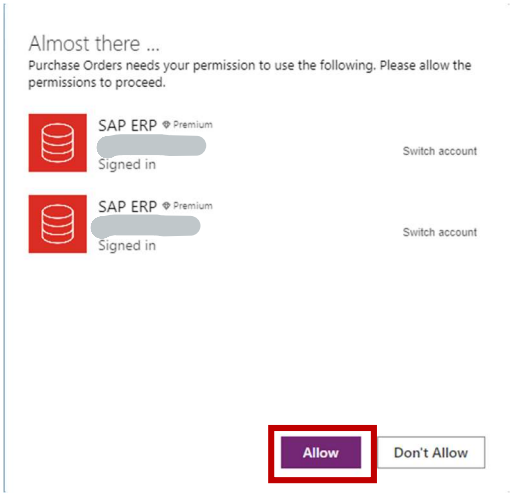
2. Create a new Purchase Order in SAP. We will use the canvas app Purchase Orders to create a new purchase order. Click on the **ellipse (…)** for the **Purchase Order App** and click on **Play.**



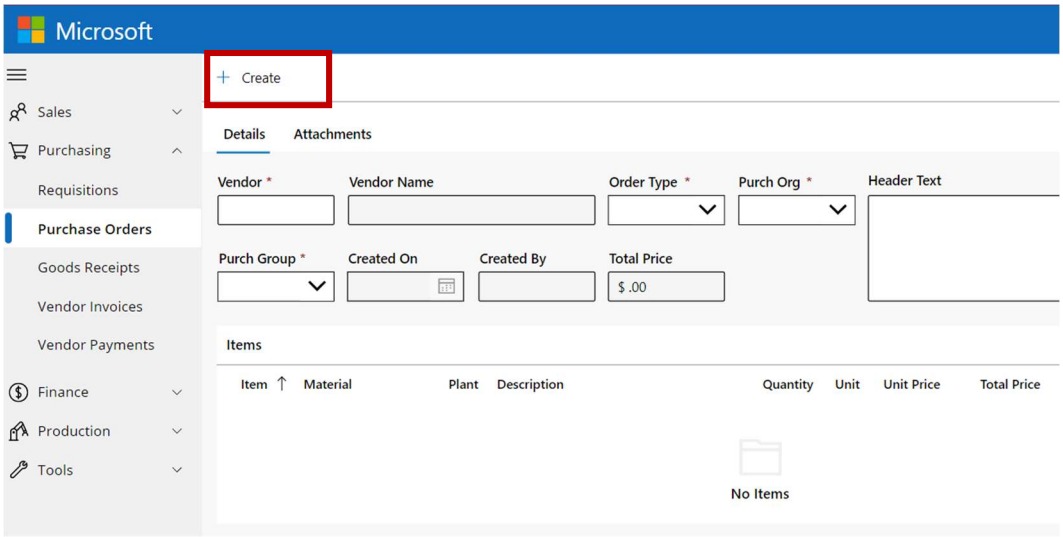
3. You may be prompted to enter your SAP credentials. Use the **SAP username and password** supplied by the instructor and then click on **Create**.



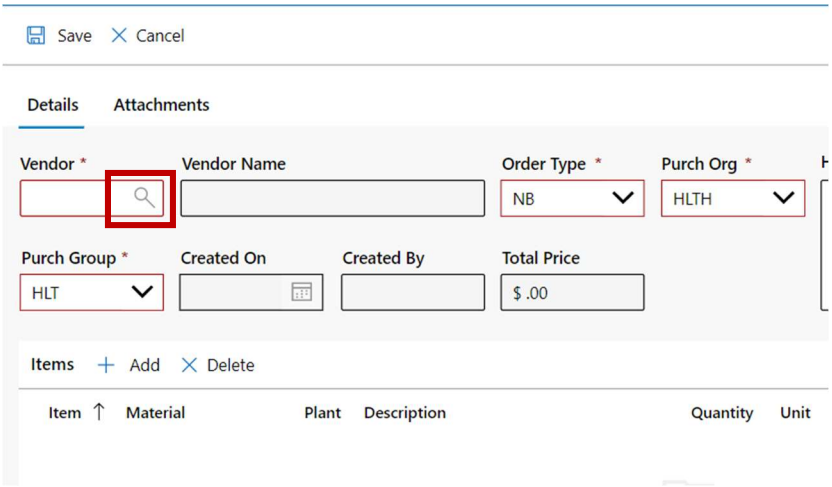
4. Once you have been authenticated in the SAP System, you need to allow Purchase Orders to use the SAP ERP Connector. Click on **Allow.**



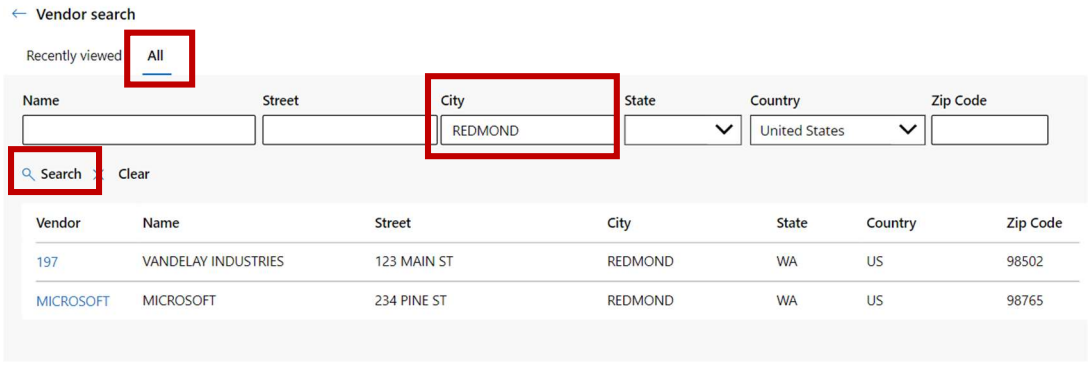
5. Create a new purchase order. Click on **+ Create** in the upper left-hand corner.



6. Search for the vendor. In the **Vendor** field, click on the **magnifying glass** to search for a vendor.



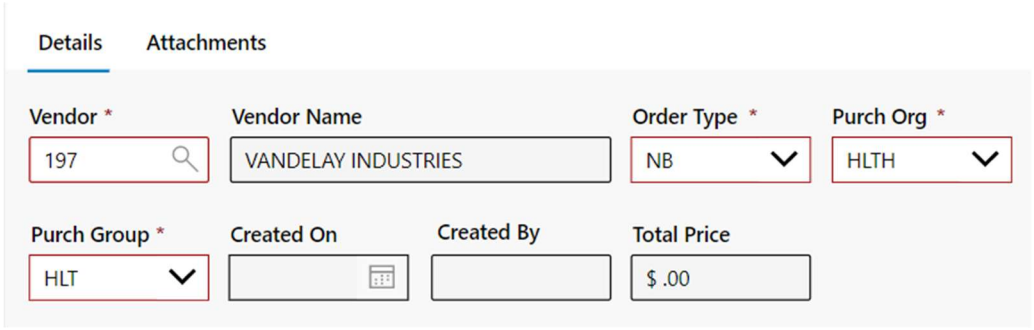
7. Click on **All** to search through all the vendors and then in the **City** field, type **REDMOND (all capital letters – SAP is case sensitive)** and then click on **Search** to search for vendors in Redmond.



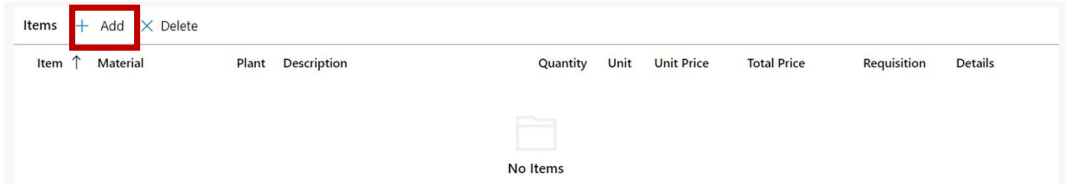
8. Select your vendor. Select the vendor **197 Vandelay Industries** by clicking on the vendor number.

Vendor	Name	Street	City	State	Country	Zip Code
197	VANDELAY INDUSTRIES	123 MAIN ST	REDMOND	WA	US	98502
MICROSOFT	MICROSOFT	234 PINE ST	REDMOND	WA	US	98765

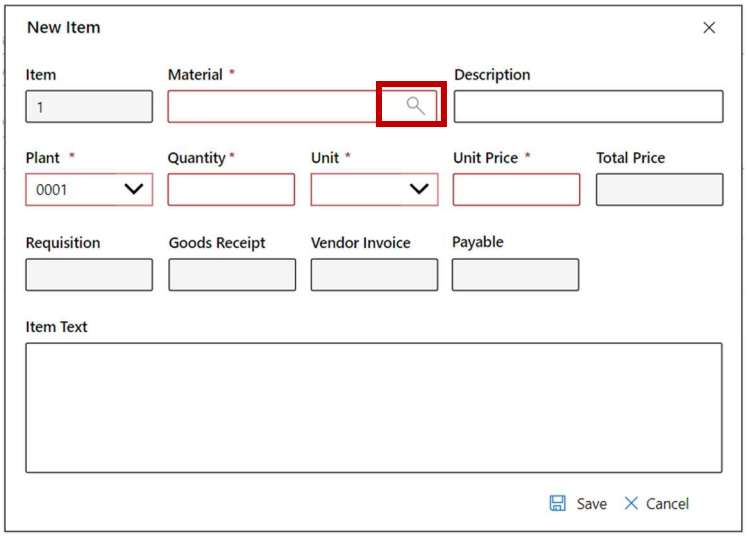
9. In our sample app, we only have 1 order type, purchasing org and purchasing group. You can configure this to have the drop downs reflect the different options for each customer's SAP system.



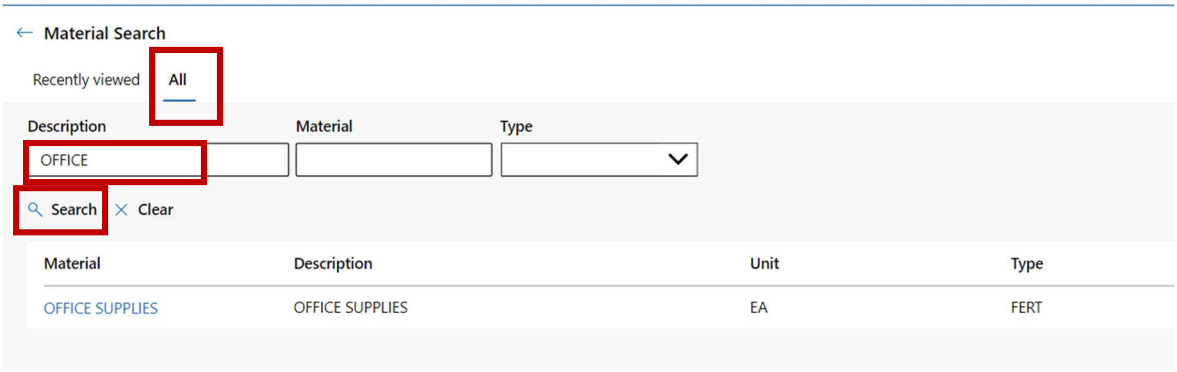
10. Add some line items to the PO. Click on **+ Add**



11. Click on the **magnifying glass** in the **Material** field to search for materials.

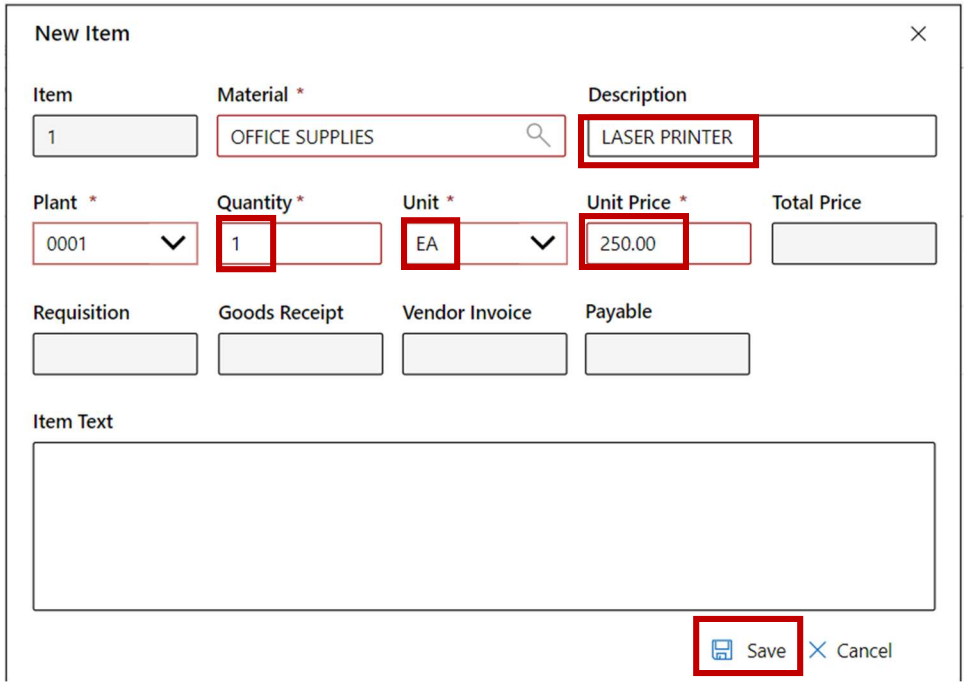


12. Click on the **All** tab to search through all the materials. In the **description** field, type **OFFICE (all capital letters – SAP is case sensitive)** and then click on the **Search**.



13. Click on **Office Supplies** in the Material list.

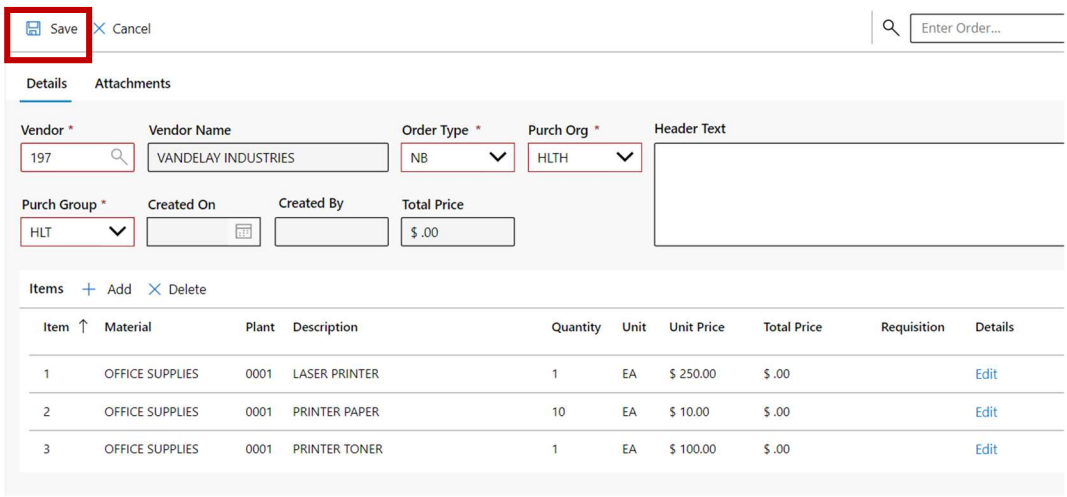
14. Fill out the information for the first line item. Change the **Description** field to **LASER PRINTER**, enter **1** for **Quantity**, select **EA** for **Unit** and type **250.00** for **Unit Price**. Finally, click on **Save**.



15. Follow steps 10 – 14 again to add the remining items to the purchase order based with the information in the table below. *You don't have to do steps 11-13 since we will be using the Office Supplies material for the rest of the line items.*

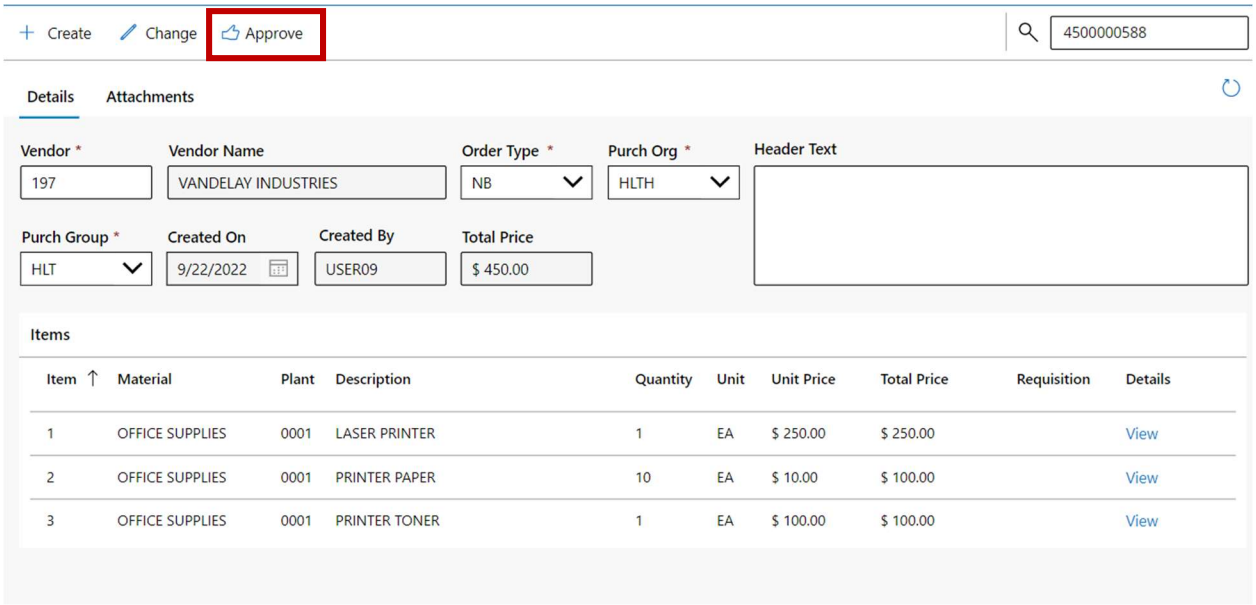
Description	Quantity	Unit	Unit Price
PRINTER PAPER	10	EA	10.00
PRINTER TONER	1	EA	100.00

16. Save the entire purchase order. Click on **Save.**

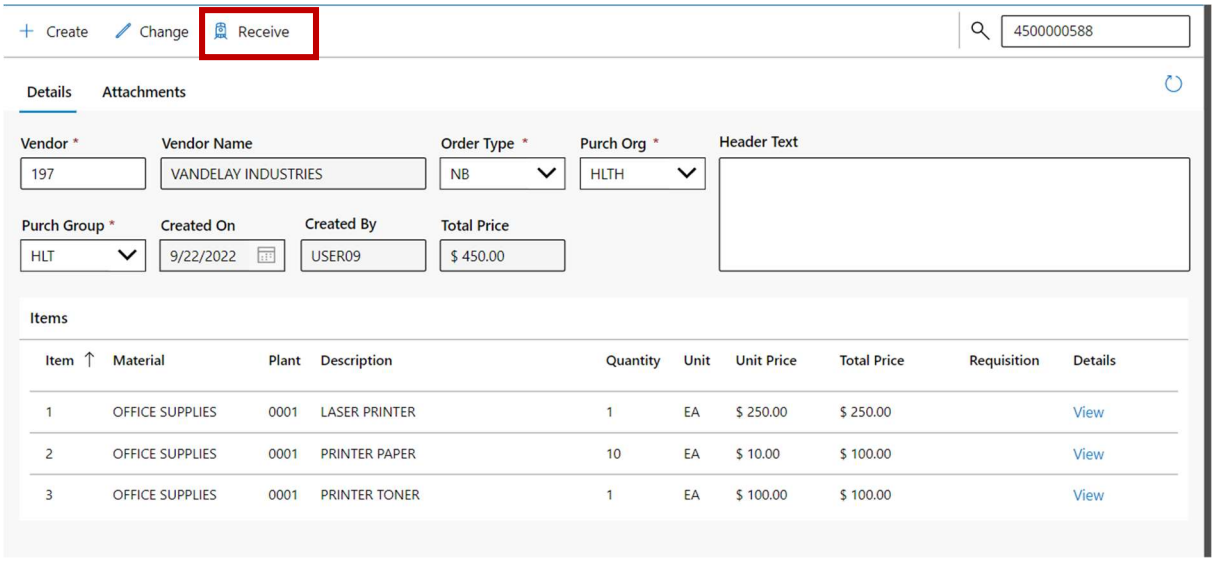


17. When you click on the Save button, this kicks-off a cloud flow, CreatePurchaseOrder, to send the purchase order information to SAP and then return to the PO number assigned in SAP which you will see in the success message in the green bar at the top and be populated in the Search bar at the top right hand of the screen.

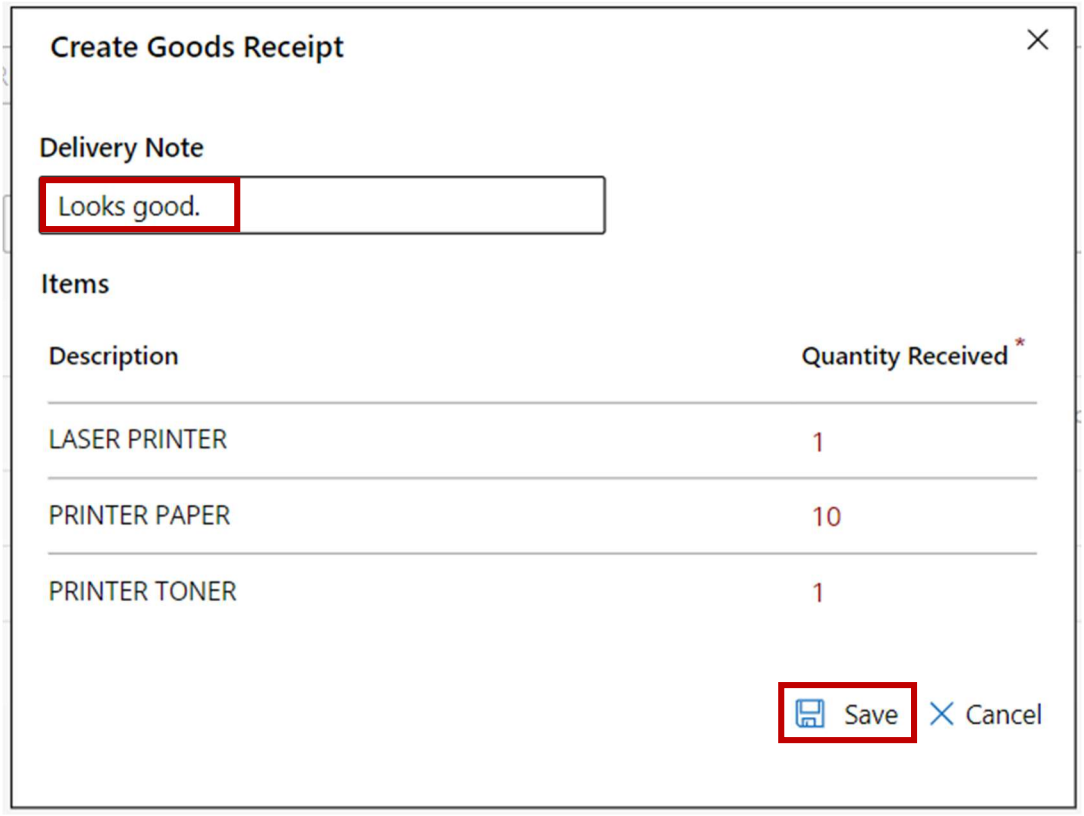
18. Approve the Purchase Order. The second step in the process is to have someone approve the purchase order. Once the purchase order has been created in SAP, you can see we have a new option at the top of our screen – Approve. For our example, we can approve any purchase orders under $ 500, so click on Approve.



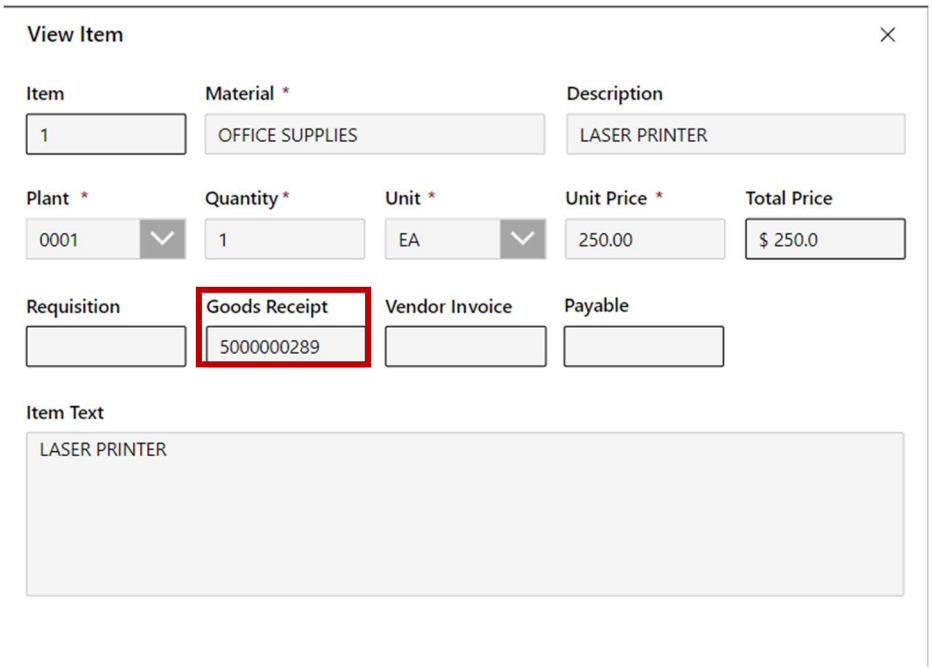
19. Receive the Goods. Behind the scenes, SAP releases that purchase order to the vendor. The vendor will then ship the goods to us and then we will receive the goods. You can see once the purchase order was approved; we now have a new button on the top of our app – Receive. Click on Receive.



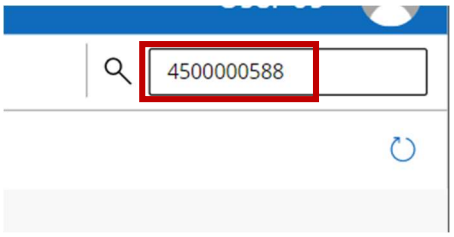
20. Fill out the Goods Receipt. The Goods Receipt is pre-populated with the items and quantities from our purchase order. We can type in a **delivery note** and then click on **Save**. This will cause a Goods Receipt to be created in SAP.



You can click on **View** for one of the line items of the PO to see the Goods Receipt number.

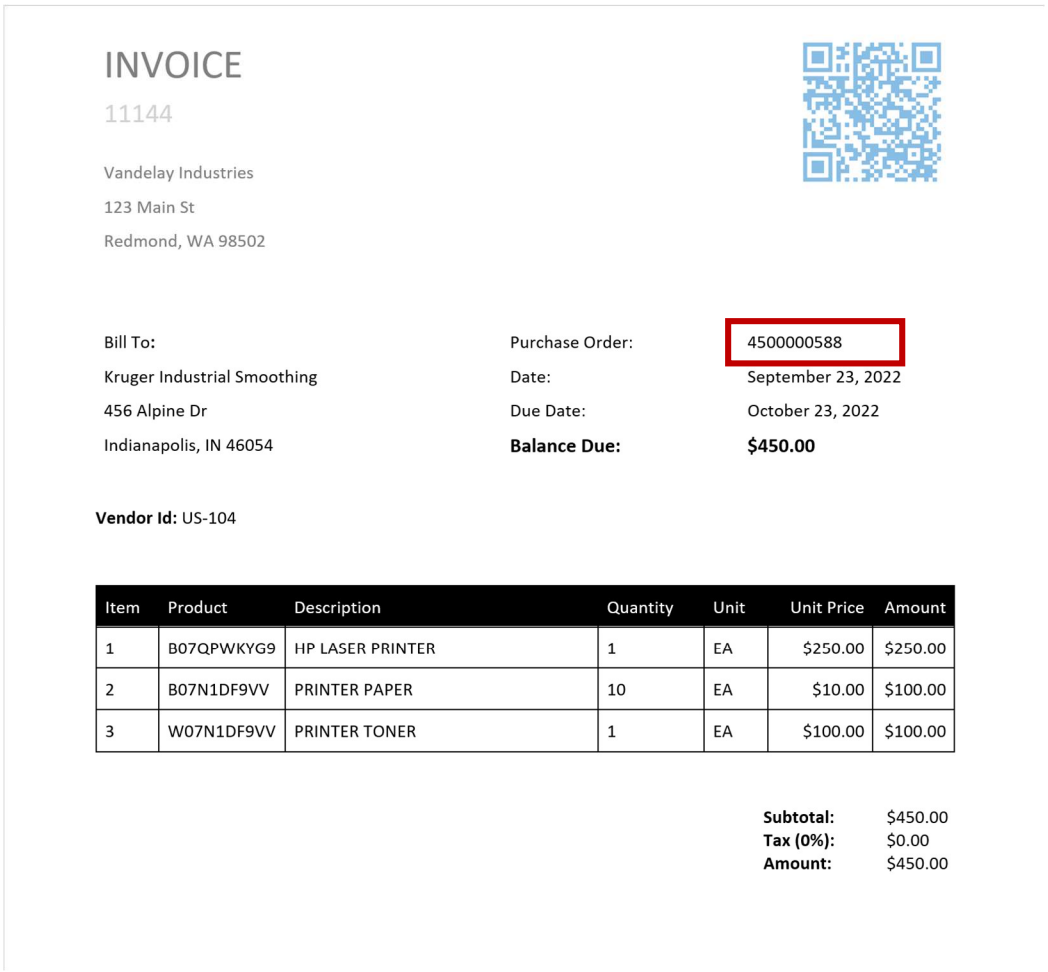


21. Create our invoice for this purchase order. We need to create a vendor invoice with our new purchase order number for one of our next exercises. Copy the PO number in the search box in the upper right-hand corner of the screen.



NOTE: Make a note of this purchase order number on your credentials sheet or you will have to open up your vendor invoice for a later exercise.

22. Open the vendor invoice template stored in the Files on the SAP Workshop Teams site. See exercise 0 on how to access this site. This was also emailed to you a few days before the workshop. Replace the purchase order number with your newly created purchase order number. Click on File, Save and save as a .pdf on your desktop for one of the next exercises.



INVOICE

11144

Vandelay Industries
123 Main St
Redmond, WA 98502

Bill To:	Purchase Order:	4500000588
Kruger Industrial Smoothing	Date:	September 23, 2022
456 Alpine Dr	Due Date:	October 23, 2022
Indianapolis, IN 46054	**Balance Due:**	**$450.00**

Vendor Id: US-104

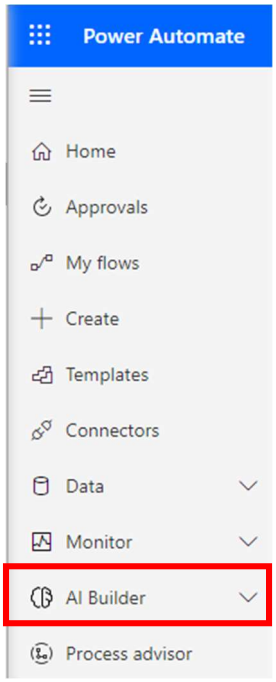
Item	Product	Description	Quantity	Unit	Unit Price	Amount
1	B07QPWKYG9	HP LASER PRINTER	1	EA	$250.00	$250.00
2	B07N1DF9VV	PRINTER PAPER	10	EA	$10.00	$100.00
3	W07N1DF9VV	PRINTER TONER	1	EA	$100.00	$100.00

Subtotal:	$450.00
Tax (0%):	$0.00
Amount:	$450.00

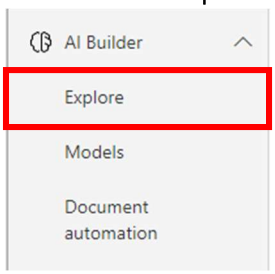
Exercise 8: Create and Add AI Builder Model

In the next exercise, we will create and train an AI Builder model to capture information from our vendor invoices.

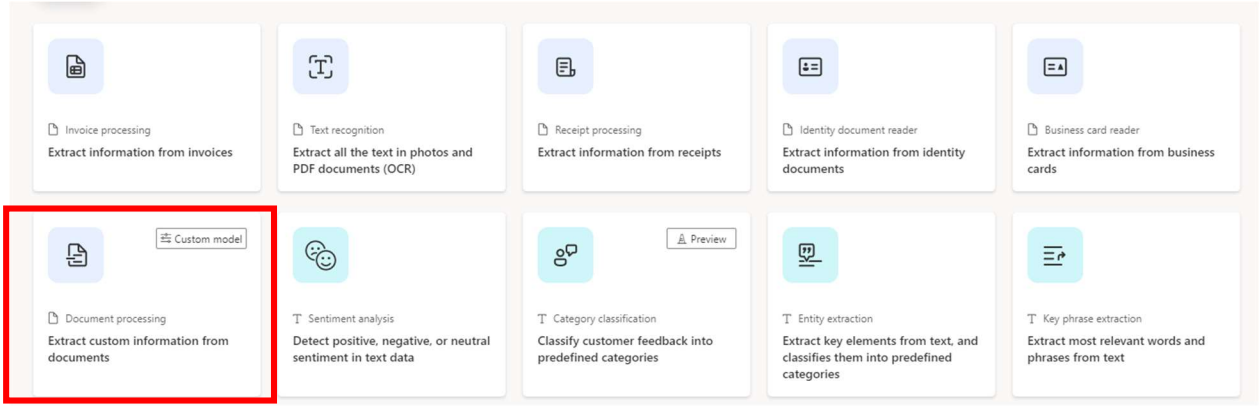
1. Browse to https://make.powerautomate.com and confirm you are still signed in with the credentials supplied by the instructor and you are in the correct environment.
2. On the left-hand side, expand the AI Builder section.



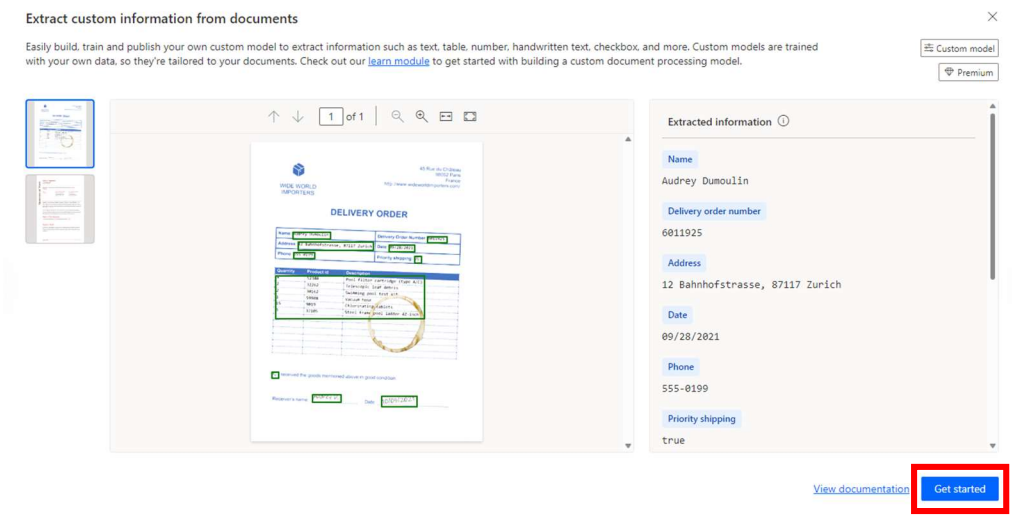
3. Click on the **Explore** section.



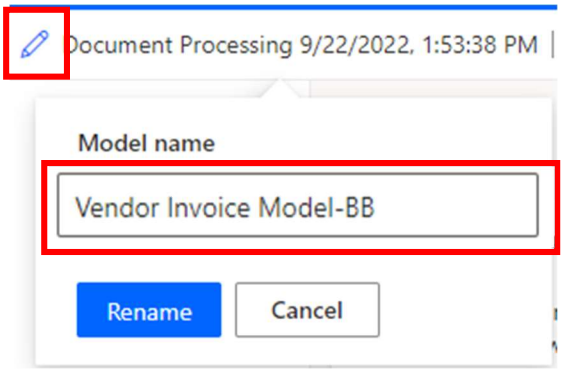
4. Select the **Document Processing Model**.



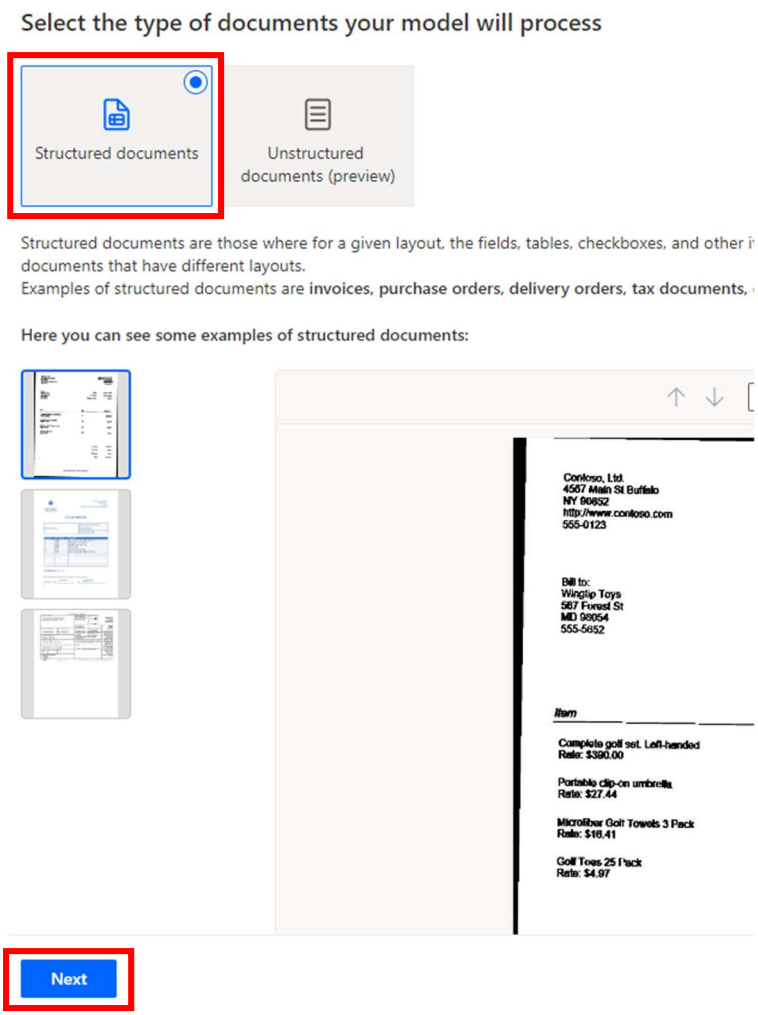
5. Click on **Get Started**.



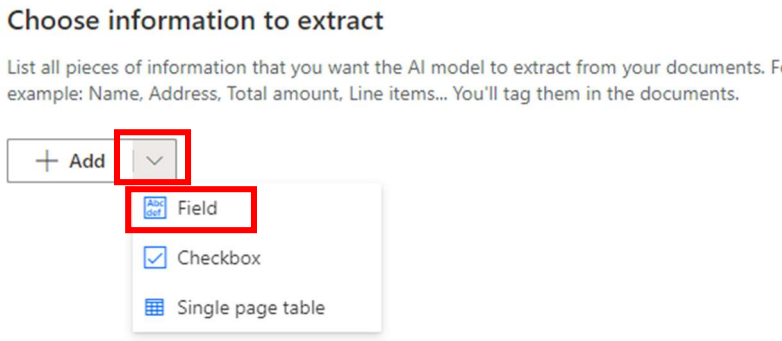
6. Rename the model. In the upper right-hand corner click on the **pencil icon** to rename the model. **Rename** the model **Vendor Invoice Model-XX** where XX is your initials. Click on **Rename**.



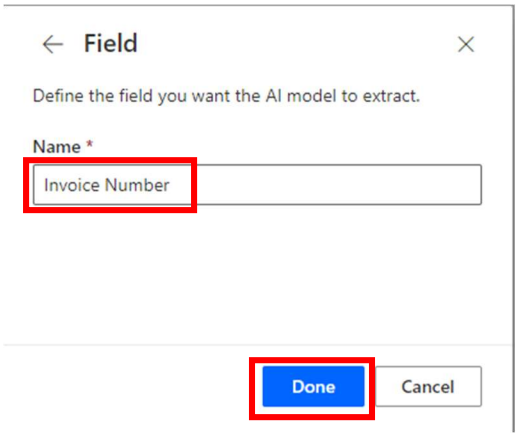
7. Choose the **Structured Documents** for extracting information and click on **Next**.



8. Add the Fields for Extraction. We will now add the fields we want to extract from the documents we are processing. Click on the drop-down menu in the + Add box and select Field.



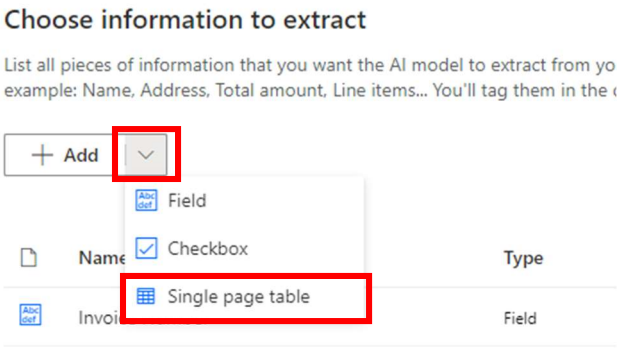
9. Type Invoice Number as the Name for the first field and click Done.



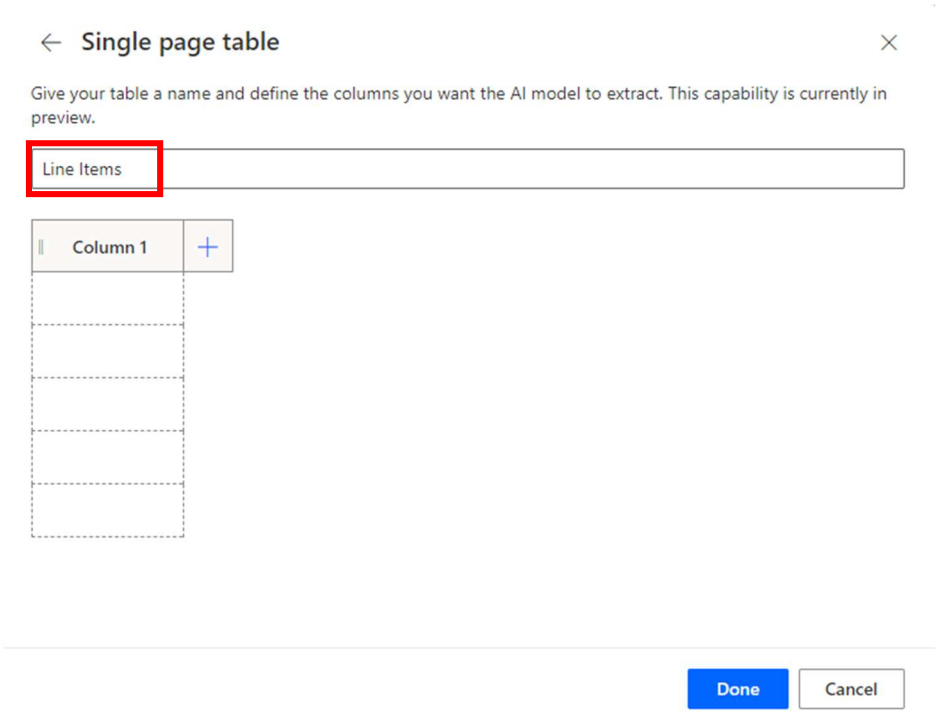
10. Repeat the last 2 steps to add the rest of the fields we want to extract from the invoice.

Name	Type
Purchase Order	Field
Invoice Date	Field
Total Amount	Field
Vendor Name	Field

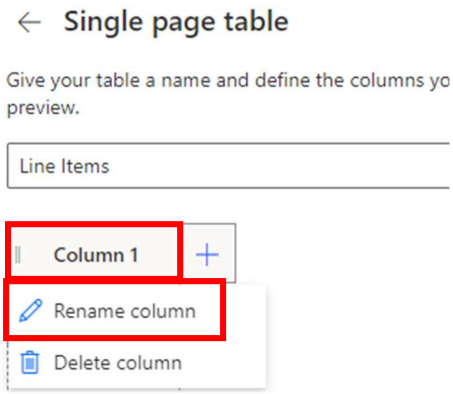
11. Add the table for the line items. Click on the drop-down in the +Add box and select Single page table.



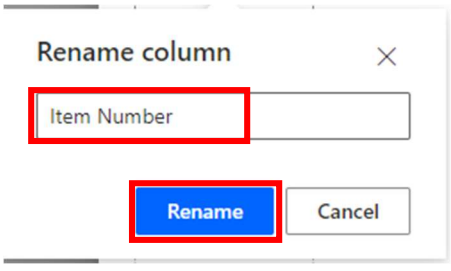
12. Name the table Line Items



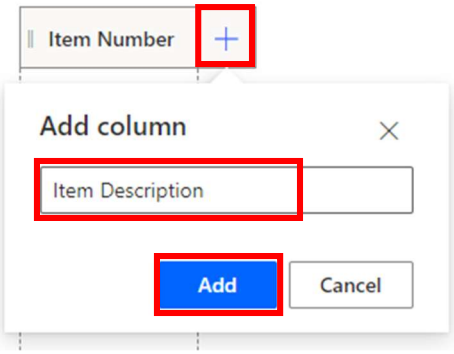
13. Rename the columns. Click on **Column 1** and **Rename column**.



14. Type **Item Number** for the name and then click on **Rename**.



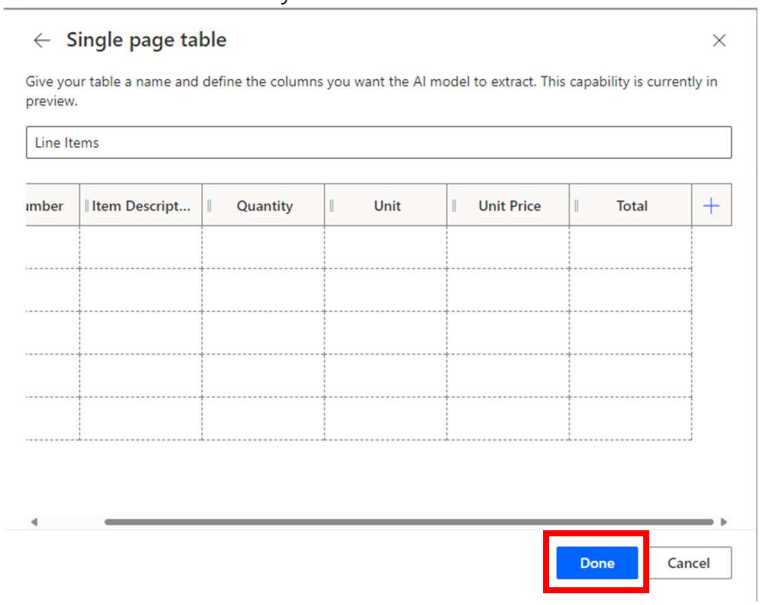
15. Add another column. Click on the **+** and name the column **Item Description**. Click on **Add**.



16. Repeat the last step to add the following columns to our table.

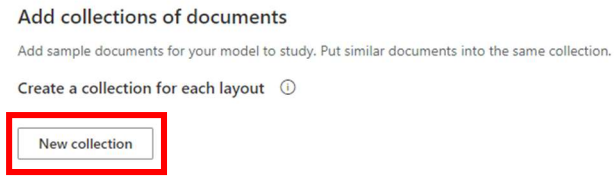
Name
Quantity
Unit
Unit Price
Total

Click on Done when you have added all the columns.

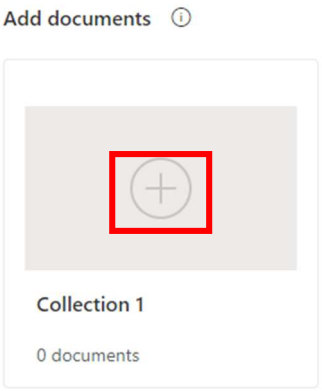


17. Click on Next.

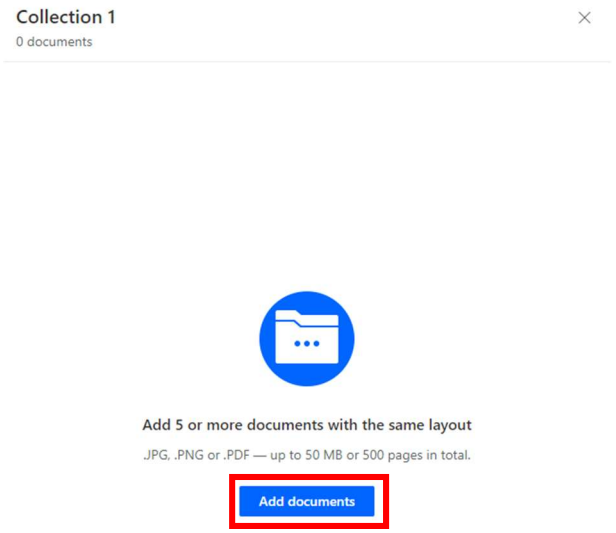
18. Train the model. We are now ready to train the mode with some sample invoices. Click on New collection.



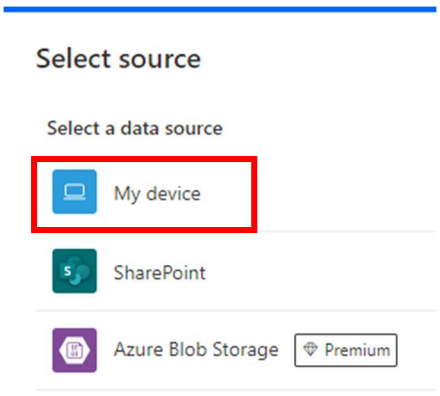
19. Click on + to add your invoices.



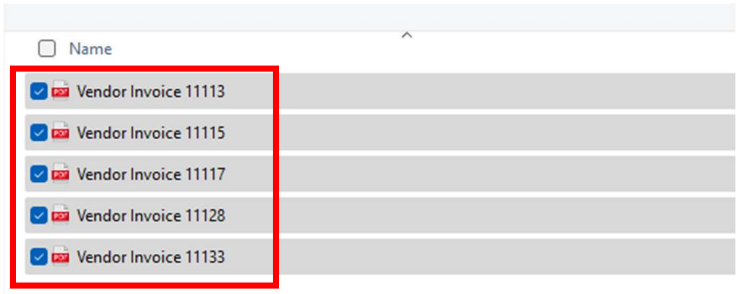
20. Click on Add documents.



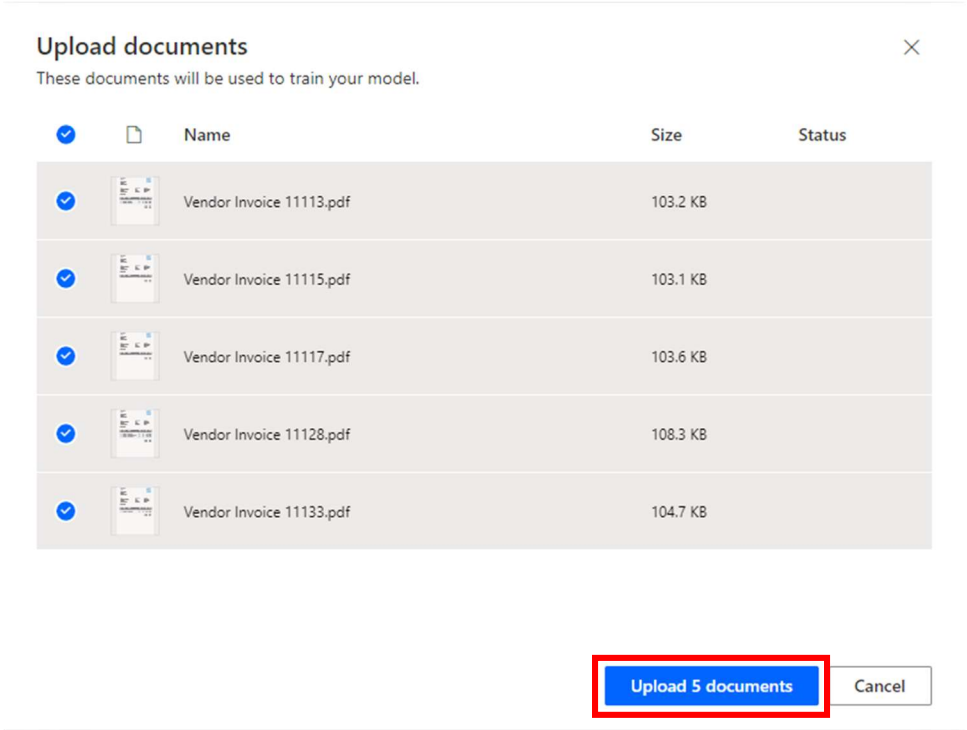
21. Select the source for your documents. Click on My device and browse to where you downloaded the documents at the beginning of the workshop.



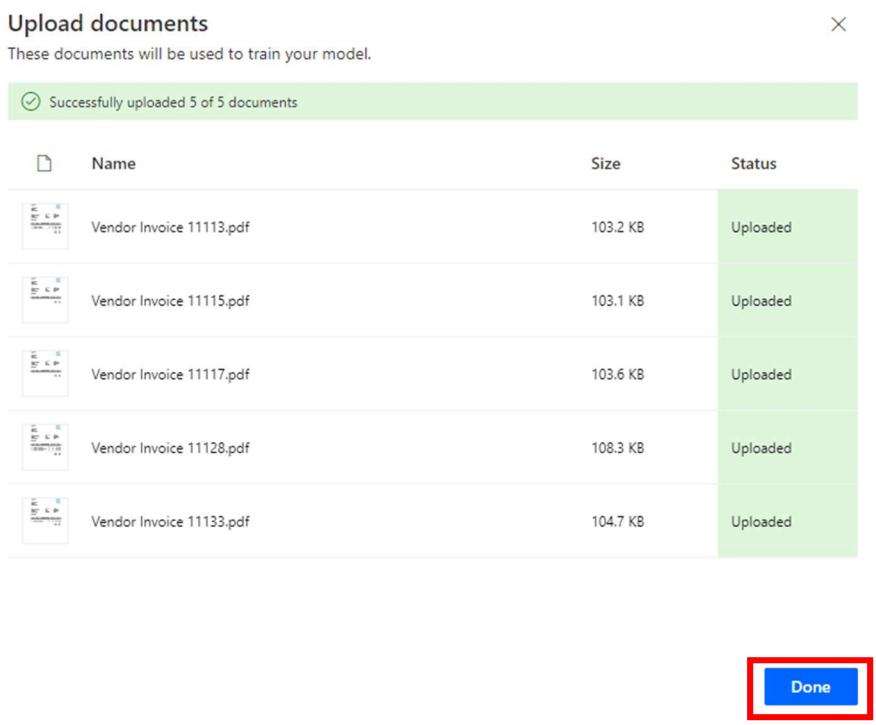
22. Select all **5 Vendor Invoices** from the **Train** folder.



23. Click on **Upload 5 documents**.

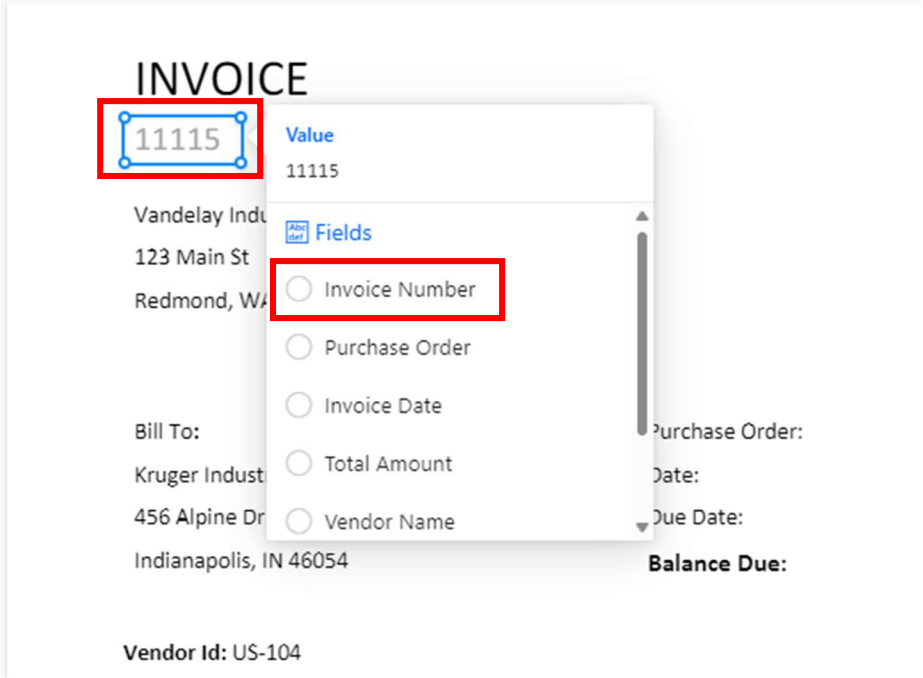


24. Click on **Done**.

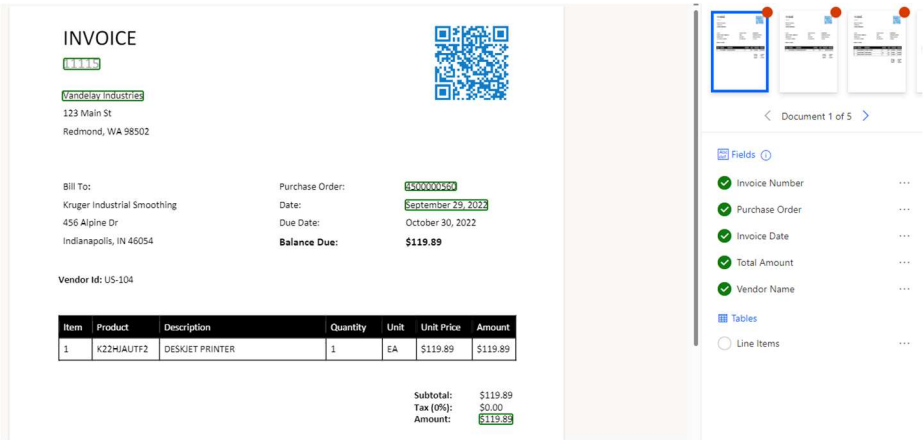


25. Click on **Next**.

26. Tag the Documents. Next, we will tag the areas on the invoice and associate them with our fields. The first document has been selected. Right-Click and select the area around the invoice number and then map to the **Invoice Number** field. *You can see the value of the invoice number to confirm it has been selected properly.*

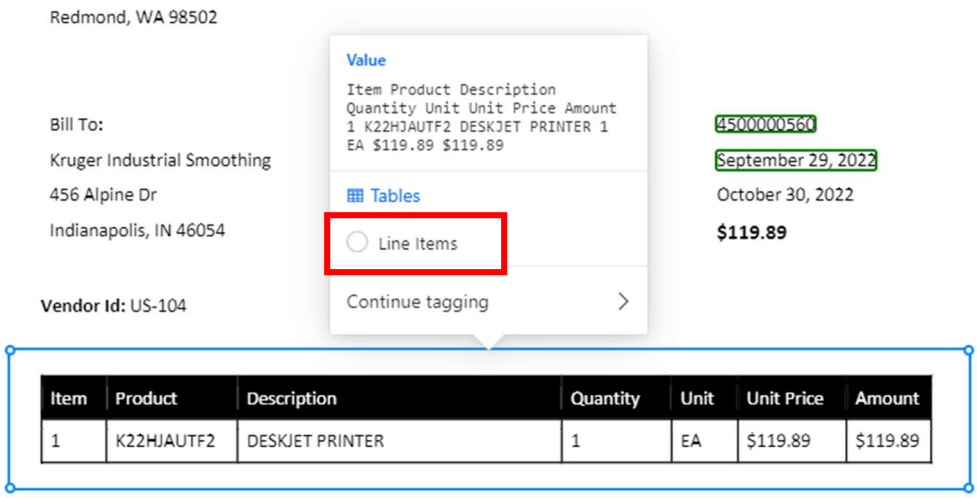


27. Repeat step 26 to tag the rest of the fields. When complete, you should have green boxes around all the areas in the invoice we have tagged and green check marks showing all the fields have been tagged.

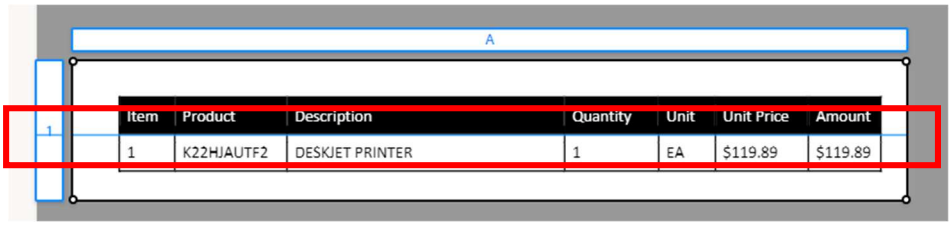


28. Tag the Line-Item table. Right-click and drag the cursor over the whole Line Items table to select it.

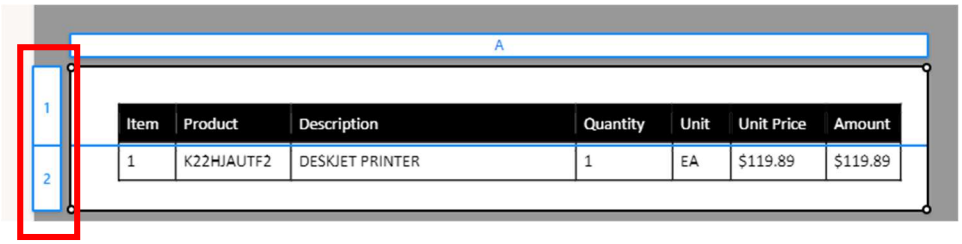
29. Select the Line Items table.



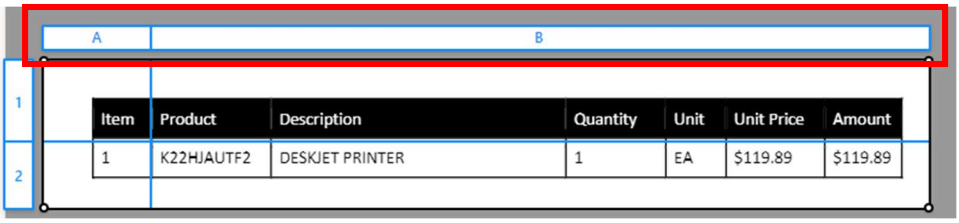
30. Map out the rows of the table. There are great pop up instructions for this step you can click through the first time. To map where the rows are, move the cursor so the blue line is between the first and second row and then click your mouse.



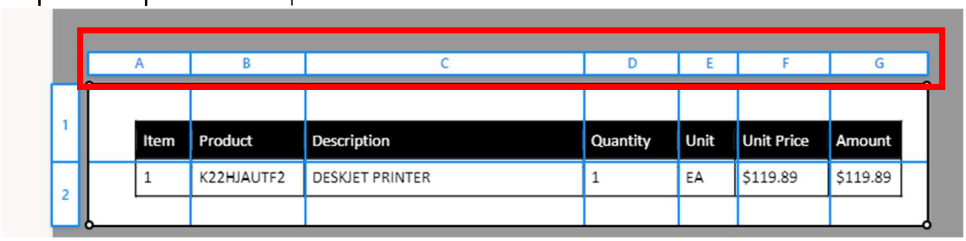
31. You should now see 2 rows identified in the outside blue box.



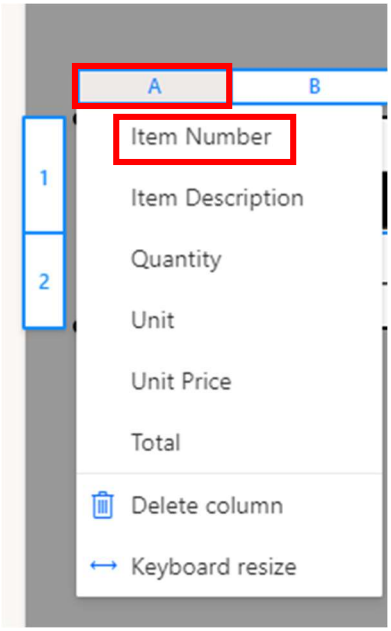
32. Map out the columns of the table. We will now follow a similar process to map out the columns. Hold down the Ctrl key and move the cursor between the first and second column and then click your mouse. You should see 2 columns identified in the outside blue box.



33. Repeat step 32 to map the rest of the columns.



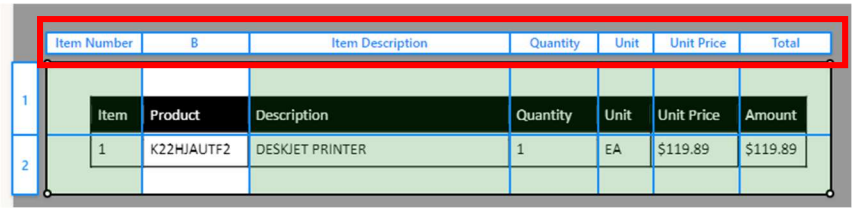
34. Map the column headings to the columns we identified in the beginning. Click in the blue box for column A and select Item Number to map.



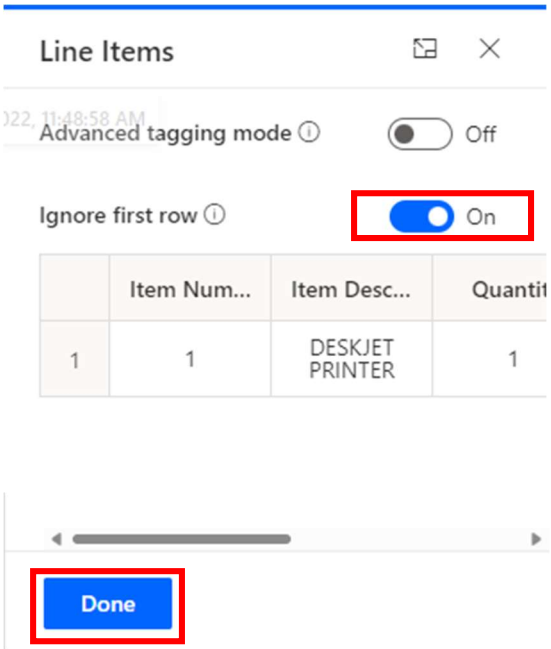
35. Map the rest of the columns. Repeat step 33 and map the rest of the columns according to the table below. *Note, we will be skipping column B as we are not mapping the product number.*

Column	Mapping
Column C	Item Description
Column D	Quantity
Column E	Unit

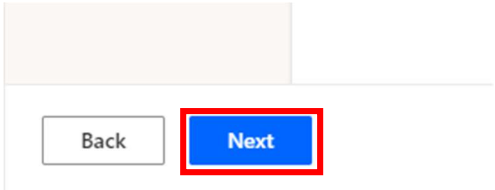
Column F	Unit Price
Column G	Total



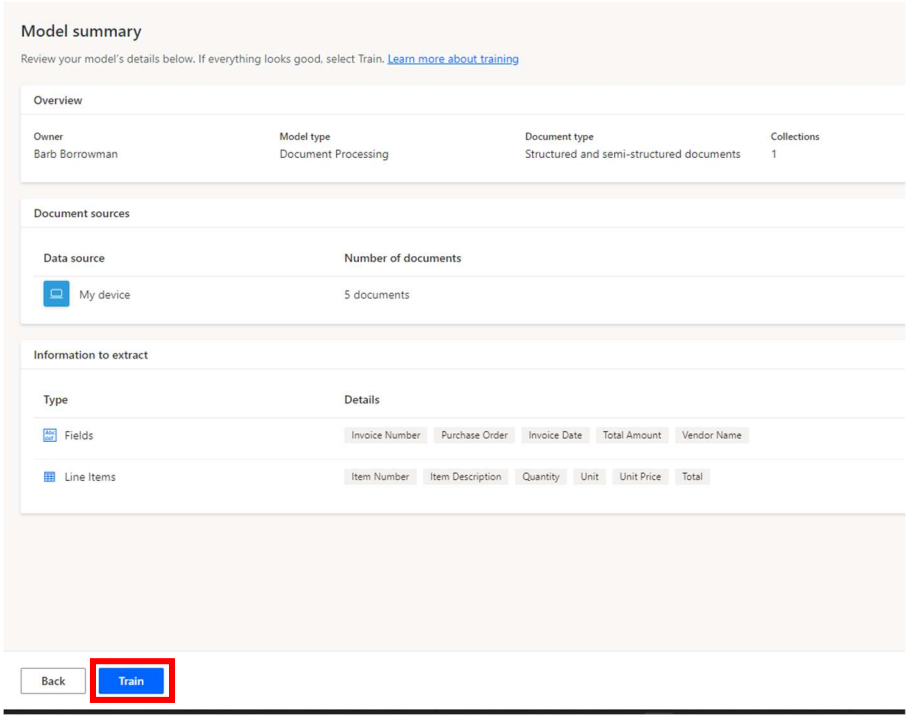
36. Verify data. You can see on the right-hand side that data that is being pulled from the document based on our tagging of the table. We want to turn on Ignore the first row since that is our header information. Click on Done.



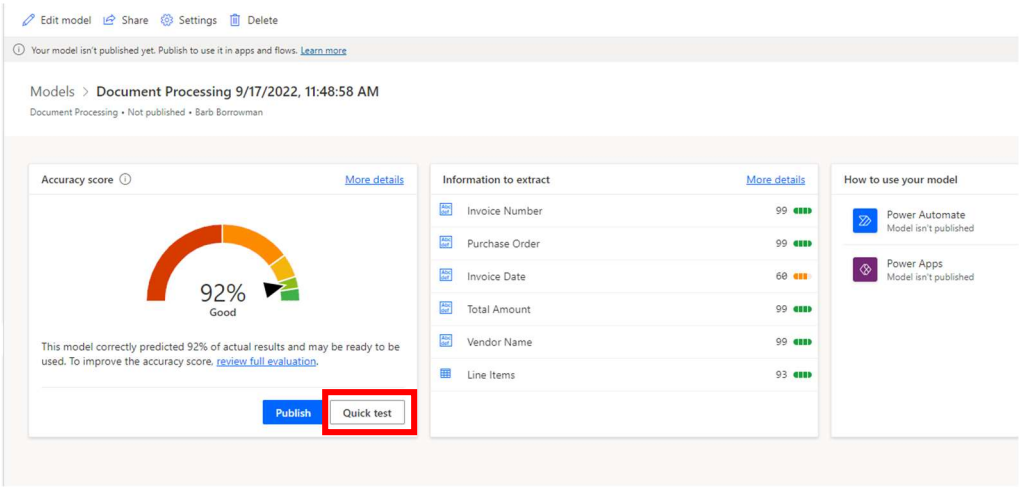
37. Repeat steps 26-36 for the remaining 4 documents. Click on Next when finished tagging all the documents.



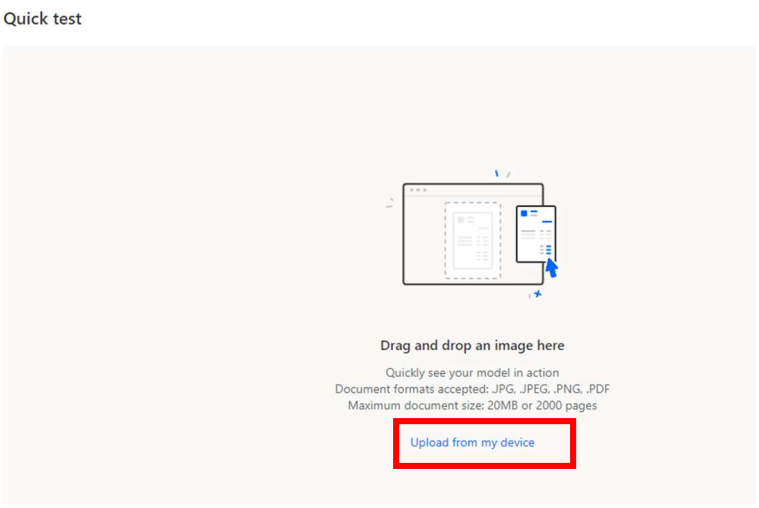
38. Train the model. We are now ready to train the model. Click on Train. It may take a few minutes to finish training.



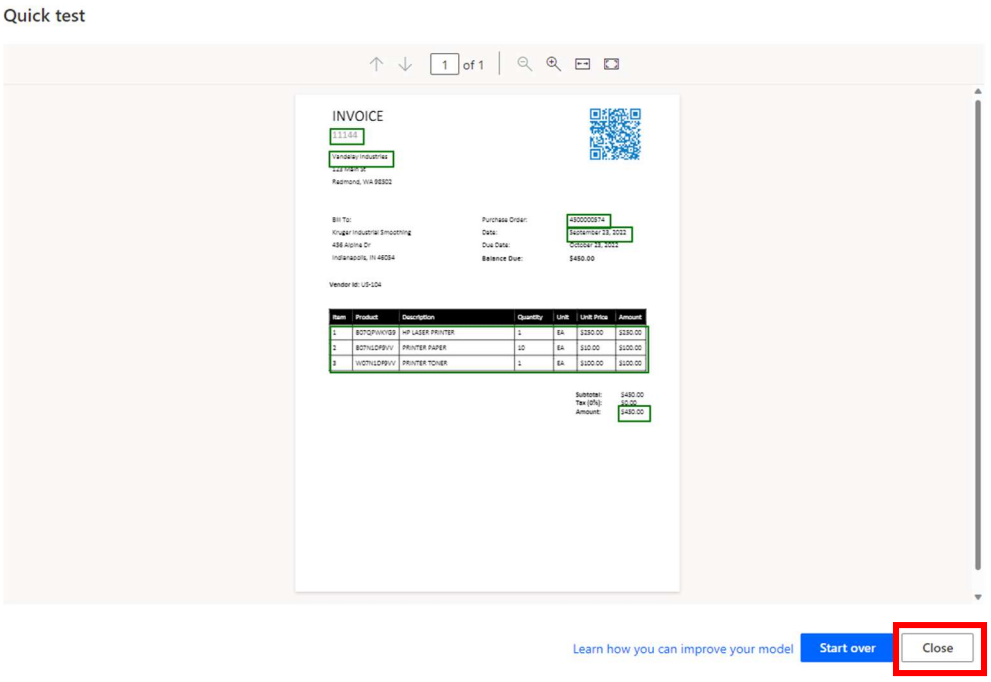
39. Test your model. When the model is finished training, you can see the results of accuracy with more details on the specific items we are extracting. Click on **Quick Test.**



40 Click on **Upload** from my device and select the **invoice** that is in your **Test folder**.

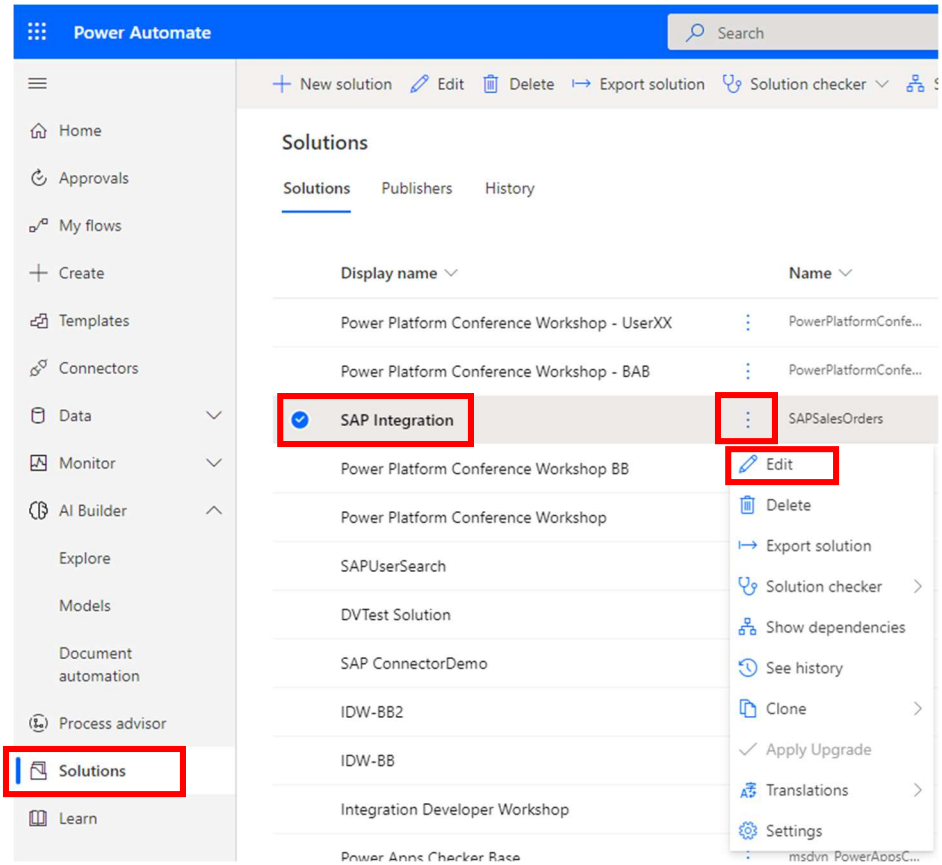


40. Verify the test. You can mouse over the green boxes and confirm the data is correct. Click on **Close.**

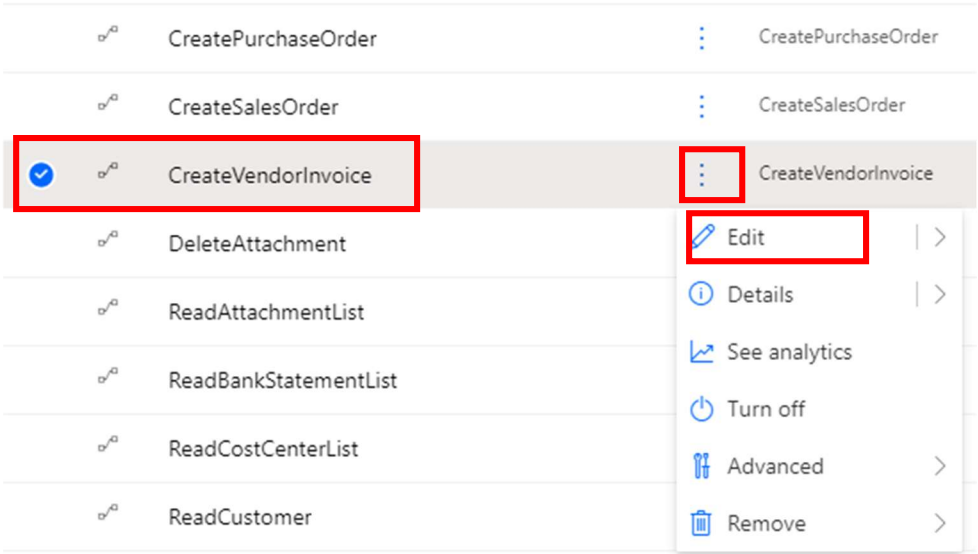


41. Publish the model. We are now ready to publish the model. Click on **Publish**.

42. Add AI Builder Model to our solution. Click on **Solutions**, select the **SAP Integration** solution, click on the **ellipse (…)** and click on **Edit.**



43 Edit the cloud flow. Click on the **CreateVendorInvoice** cloud flow, the **ellipse (...)** and then **Edit.**

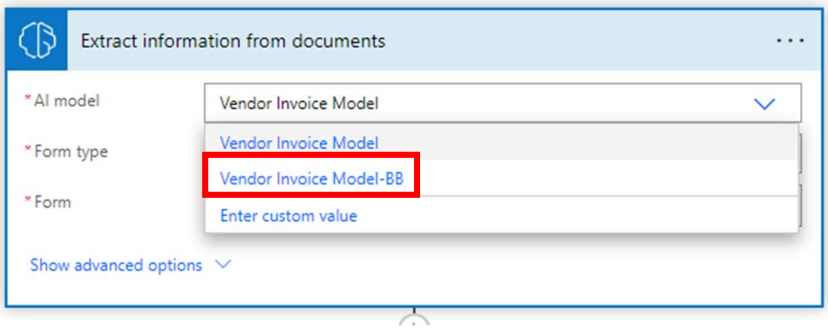


Overview of Cloud Flow. This flow is triggered when an email arrives in the Inbox. We use variables to capture information about each invoice that comes from the data

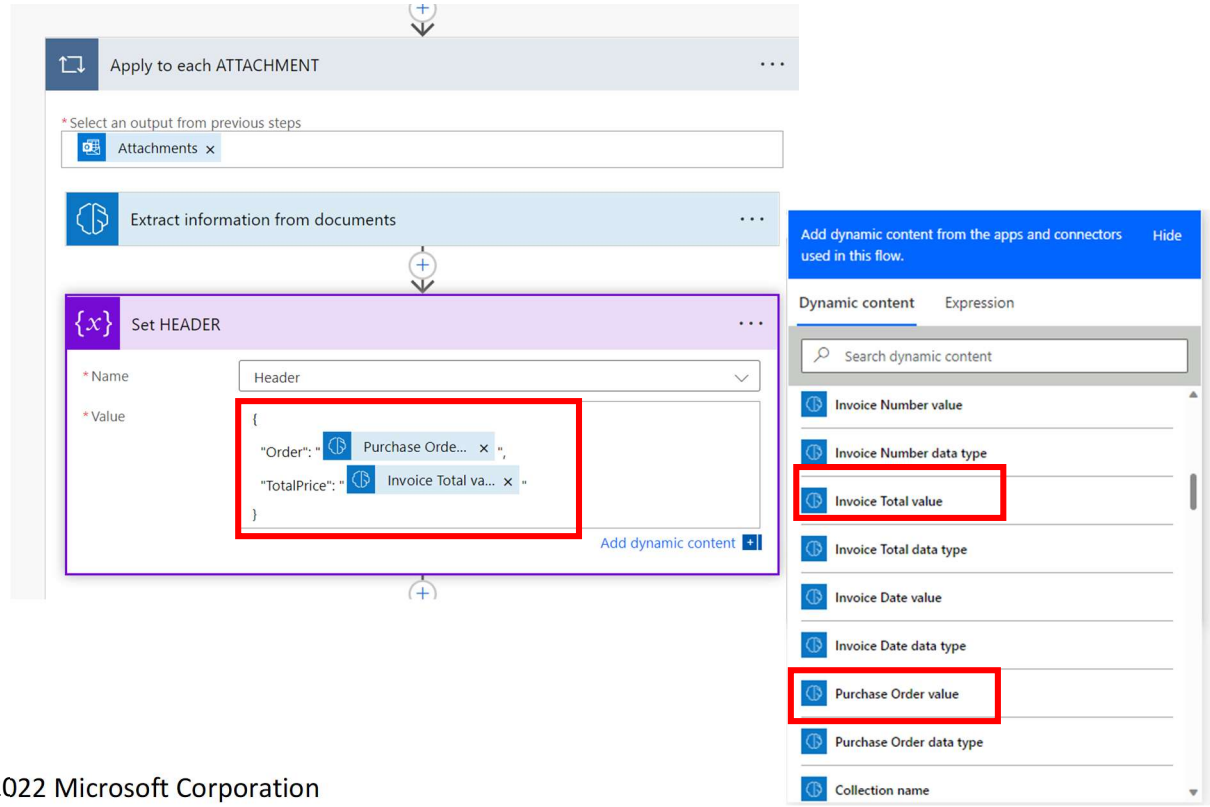
extracted with our AI Builder Model. In the interest of time, we will update certain parts of this flow.

43. Expand the **Apply to each ATTACHMENT** action. Add your new AI Model into the Extract Information from documents action. In the **AI Model field**, select the **Vendor Invoice Model-XX** you just created.

    NOTE: We have a completed AI Builder Model in the solution for you to use if you were unsuccessful in building your model. Please choose **Vendor Invoice Model** if needed.

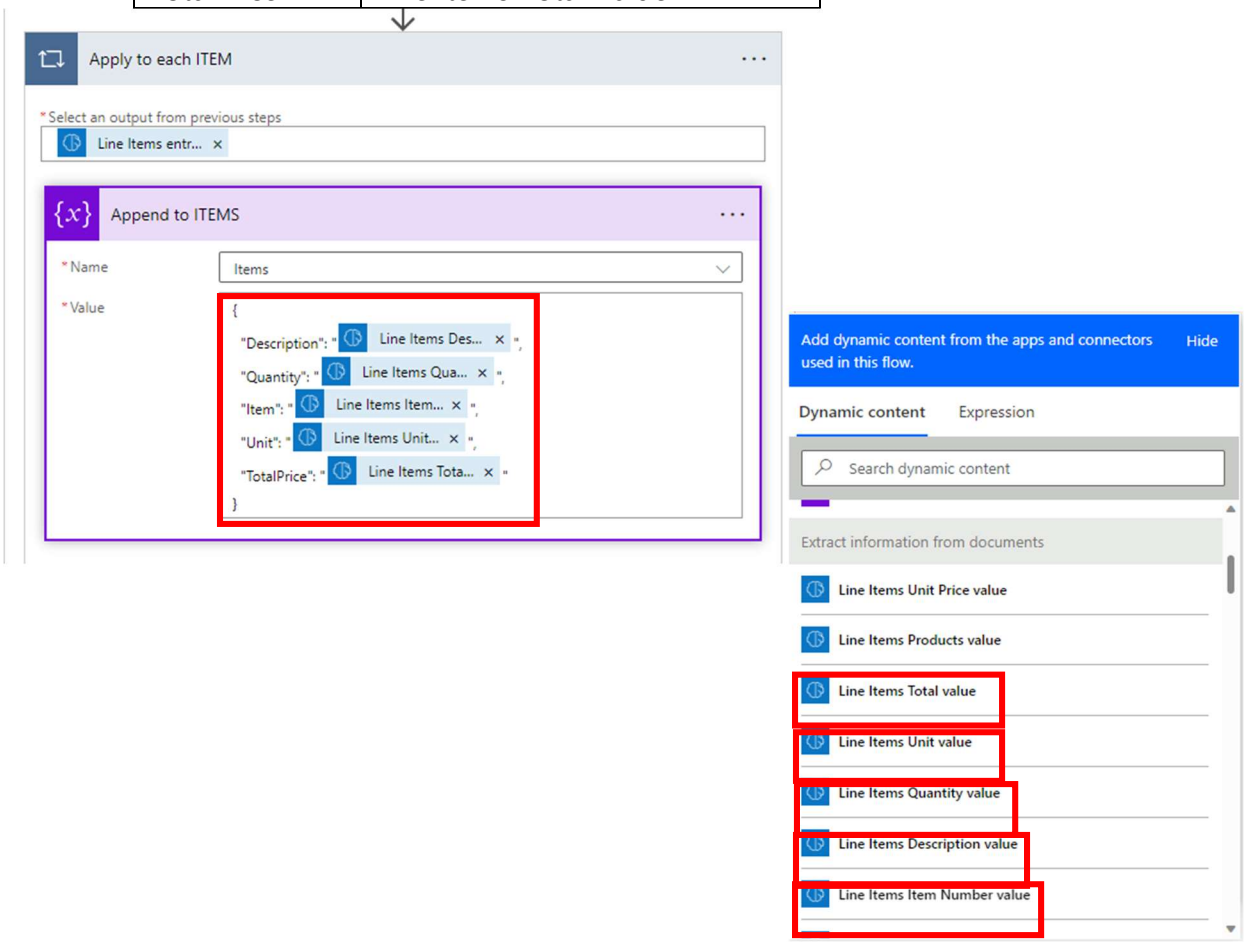


44. Scroll down to the **Apply to each Attachment** action and expand. Expand the **Set Header** Action. Update the schema in the Value section to pull data from our AI model. In the **Order** name/value pair, insert **Purchase Order Value** from Dynamic Content. In the **Total Price** name/value pair, insert **Invoice Total Value** from Dynamic Content.



45. Expand the **Apply to each item** action and then expand the **Append to ITEMS** action. We will update the name/value pair the same way as the step above. Using the table below, update values with the following Dynamic Content from the AI Model.

Name	Dynamic Content
Description	Line Items Description Value
Quantity	Line Items Quantity Value
Item	Line Items Item Number Value
Unit	Line Items Unit Value
TotalPrice	Line Items Total Value



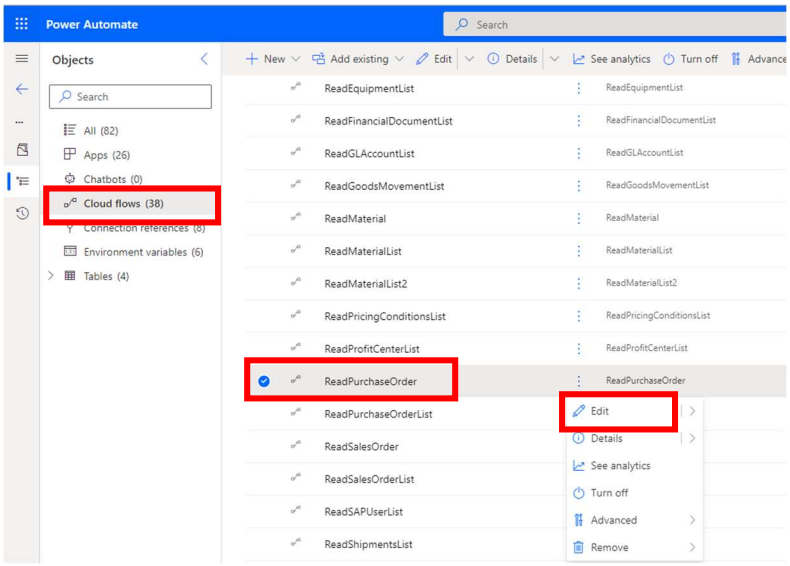
46. Save the Cloud flow. Click on **Save**.

We have now finished updating the cloud flow that will use the AI Builder model to extract data from invoice that are received via email

Exercise 9: Update purchase order cloud flow to extract more information.

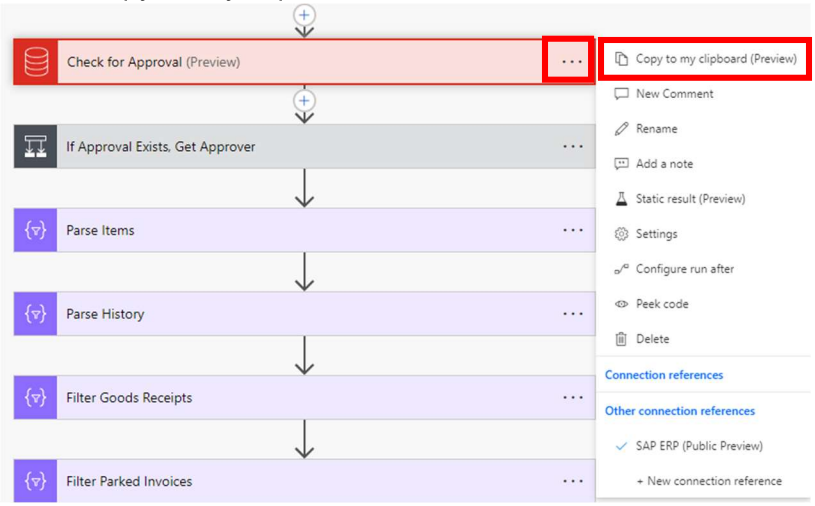
We are now going to update the ReadPurchaseOrder cloud flow to extract the name of the person who approved the Purchase Order.

1. In the **SAP Integration solution**, filter on **Cloud Flows** and select the **ReadPurchaseOrder** cloud flow. Click on the **ellipse (...)** and then **Edit.**

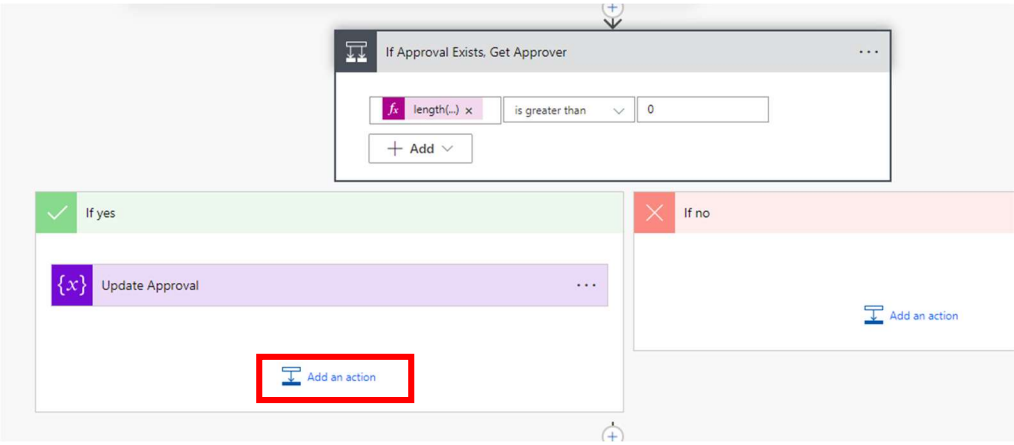


2. Overview - This cloud flow has 2 variables that will capture information if a purchase order has been approved. The Check for Approval action connects to SAP to check if the PO has been approved based on the value for the field being greater than 0. If it is, then we update the Approval variable. We are now going to add a step to get the name of the Approver and update that variable.
3. Copy the Check for Approval Action. We will modify this action that we have already created that read a database table in SAP. Scroll down through the cloud flow to find the

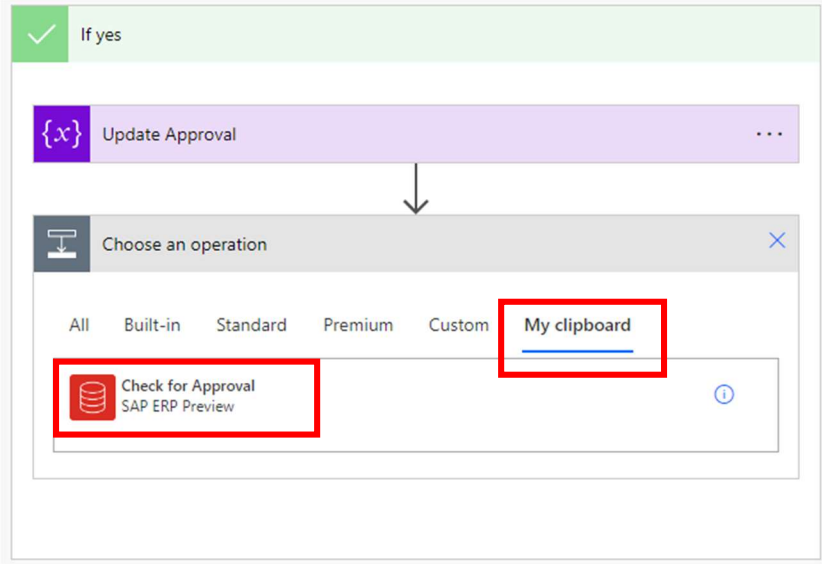
Check for Approval action. Click on the **ellipse (...)** for the **Check for Approval action** and select **Copy to my clipboard**.



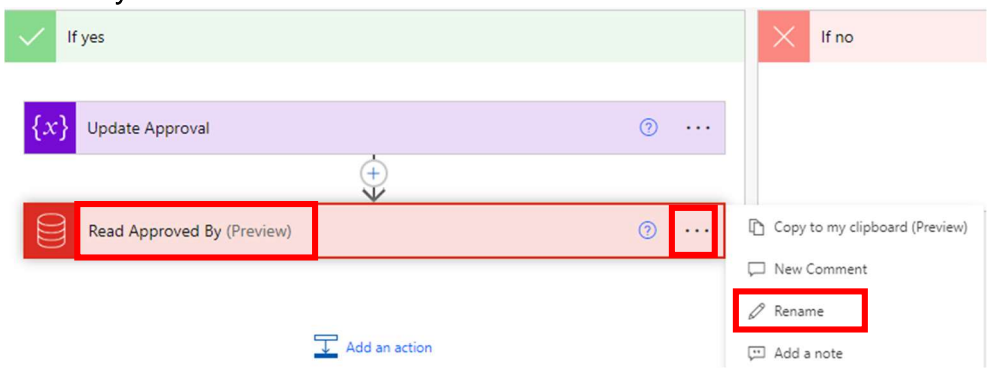
4. Expand the **If Approval Exists, Get Approver** action. Click on the **Add an Action** under the **If Yes** condition.



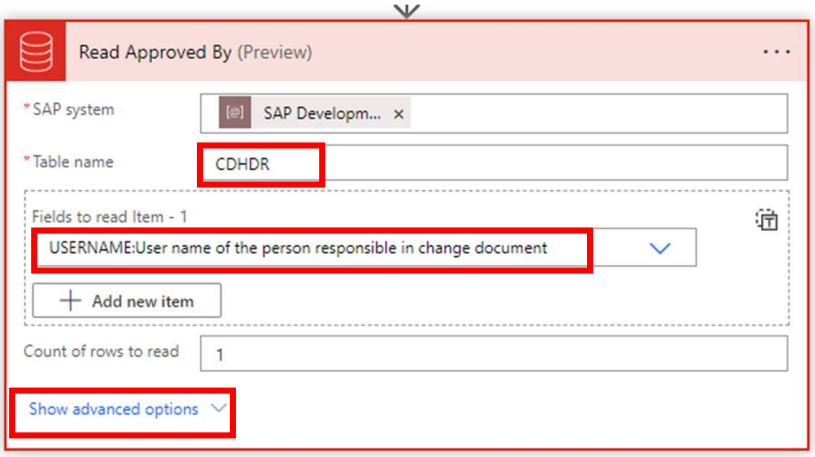
5. Select **My Clipboard** and then select the **Check for Approval** action that was copied to the clipboard.



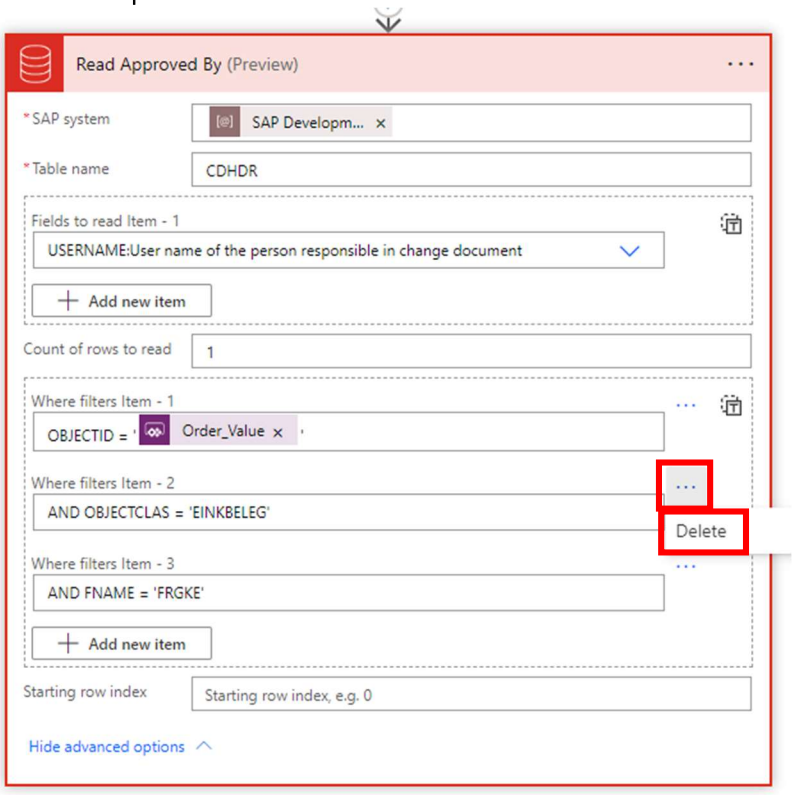
6. Rename the Action. Click on the **ellipse (...)** and then **Rename**. Rename to **Read Approved By**.



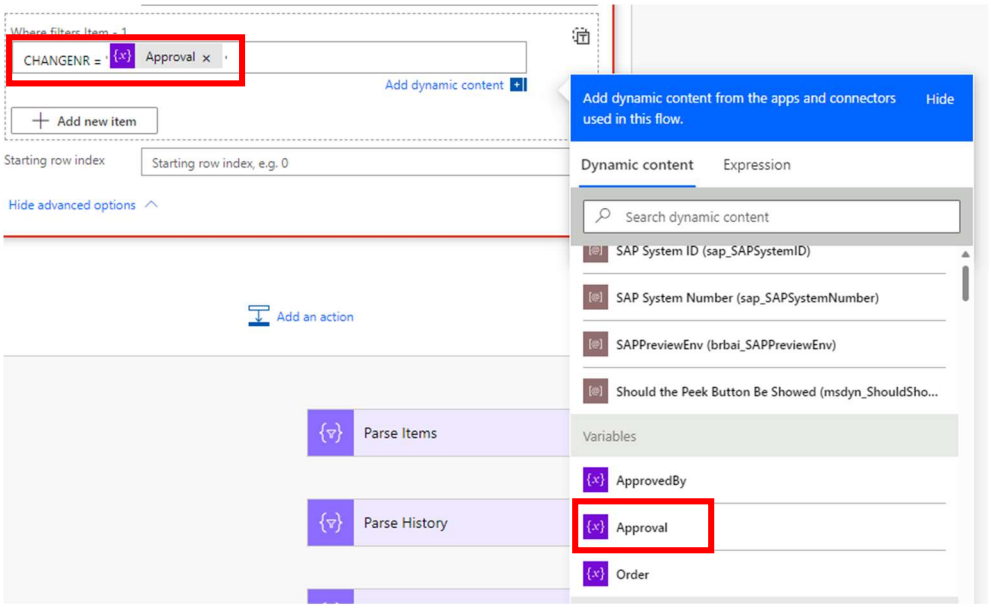
7. Configure the action. Expand the Action and update the fields to the content below:
    a. Change the **Table name** to **CDHDR** (Change Header Table in SAP)
    b. Change the **Fields to Read Item – 1** to **USERNAME**
    c. Click on **Show advanced options**.



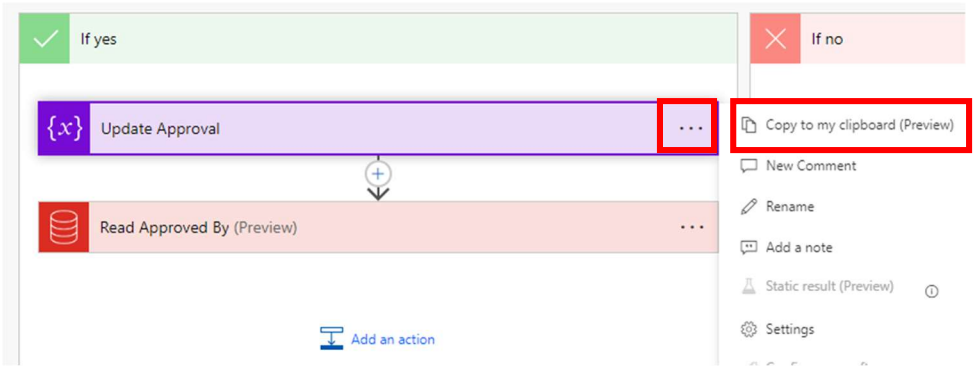
8. Delete additional criteria. Click on the **ellipse (...)** for the **Where filters Item - 2** and then **Delete**. **Repeat** for **Where filters Item – 3**.



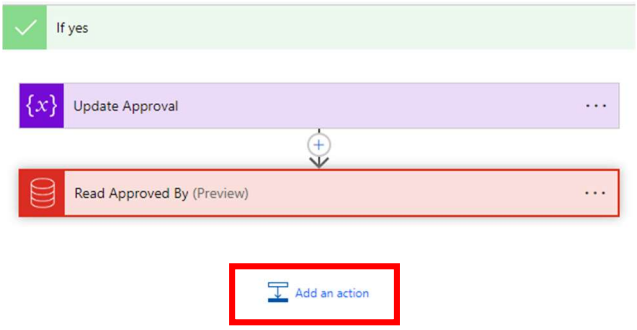
9. Update main criteria. Type in the following for the **Where filters Item -1.**
   CHANGENR = 'Approval' where Approval is coming from Variables in Dynamic Content.



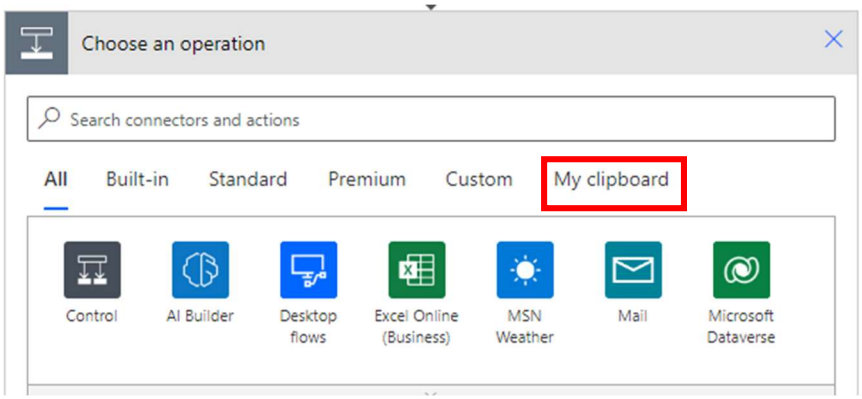
10. Add new action to update Approved By variable. We can copy the Update Approval action and modify. Click on the **ellipse (...)** for **Update Approval** and click on **Copy to my clipboard.**



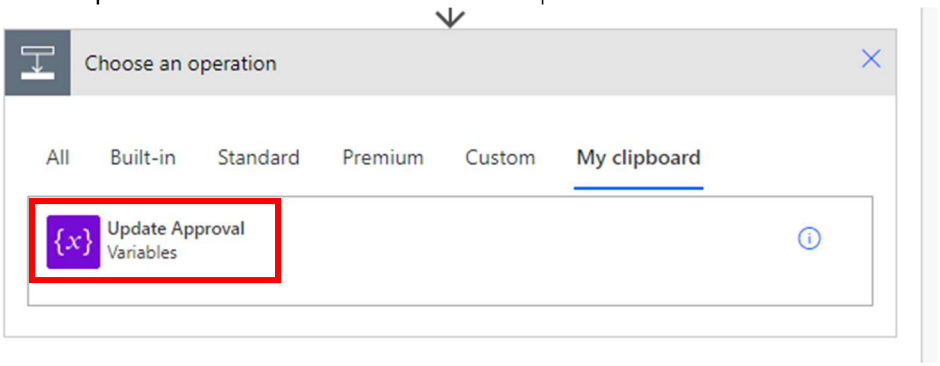
11. Click on **Add an Action**.



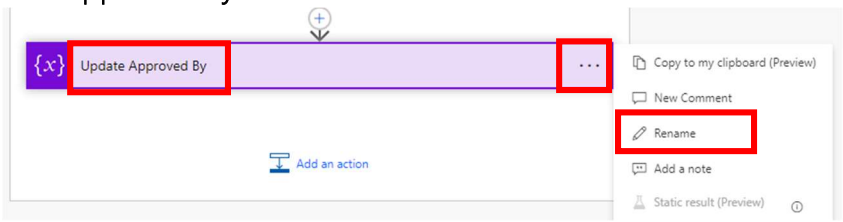
12. Click on **My clipboard**



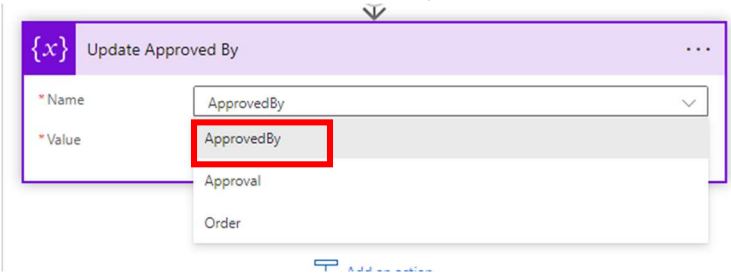
13. Select the **Update Variable** action from the clipboard.



14. Rename the action. Click on the **ellipse (…)** and then **Rename**. Rename the action **Update Approved By**.



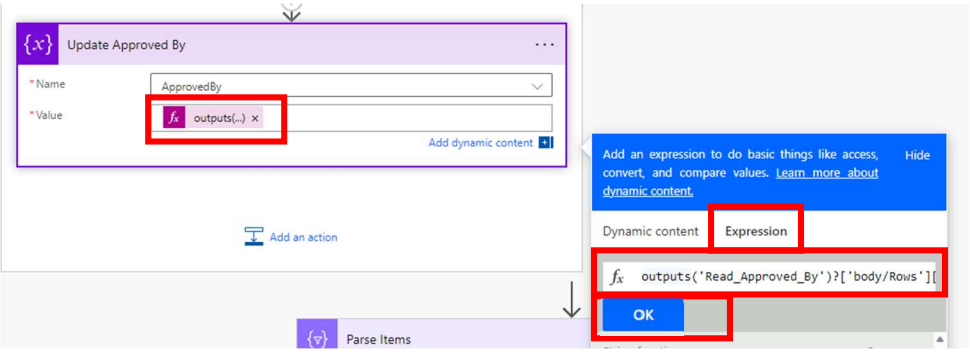
15. **Expand** the **Update Approved By** action. Choose Approved By from the drop down.



16. Modify the Expression for Value. Click on the current **Outputs formula** to pull up the Expression. **Delete** the current expression and **Type in** the expression below and then click on **OK.**

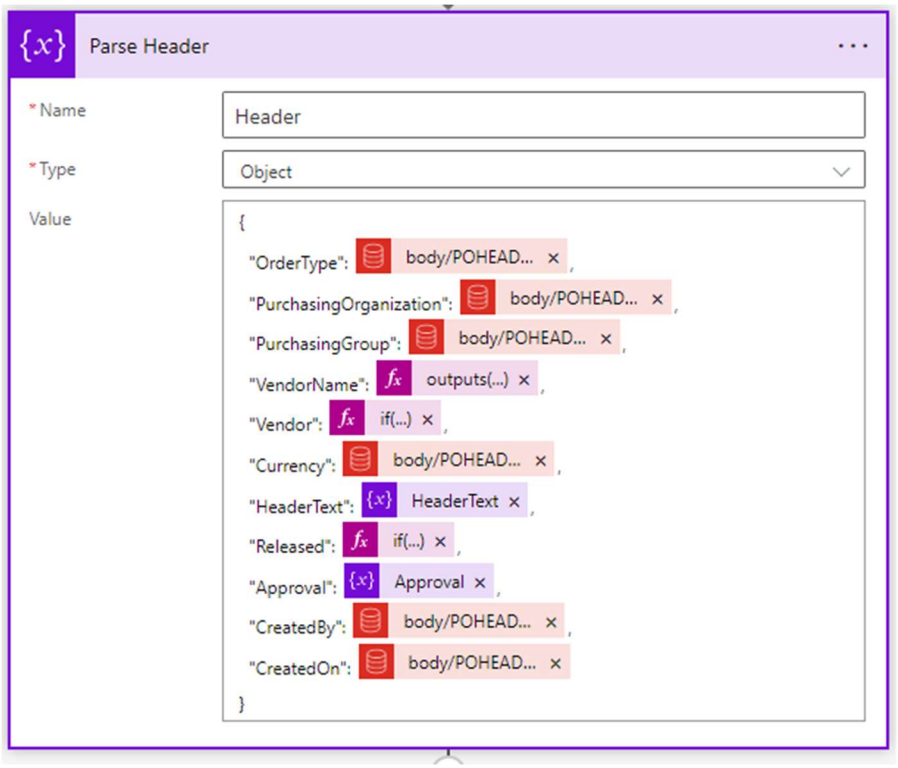
    outputs('Read_Approved_By')?['body/Rows'][0]['USERNAME']

    We updated the expression to match information in our Read Approved By action.

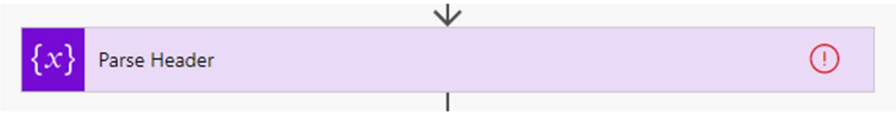


17. Save the Flow. Click on **Save.**

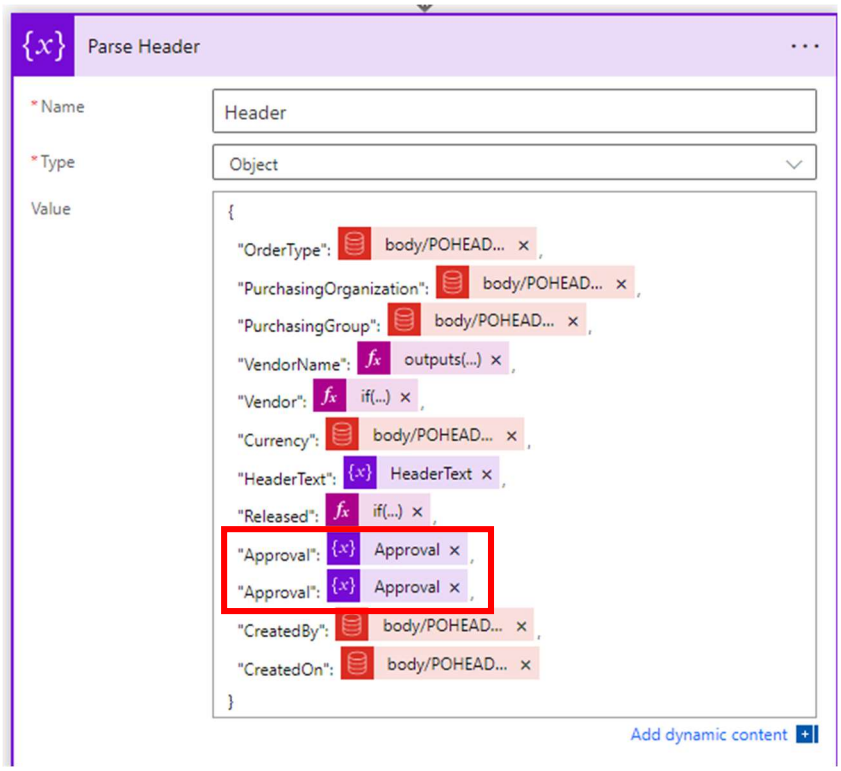
18. Update the Parse Header Schema to include Approved By. Now we need to update the Parse Header Schema to include our Approved By variable. Scroll down in the cloud flow and **Expand** the **Parse Header** action.



NOTE: If you get an error message in the Parse Header, refresh your browser to reload the components. You may have to get back into your SAP Integration solution and ReadPurchaseOrder cloud flow.

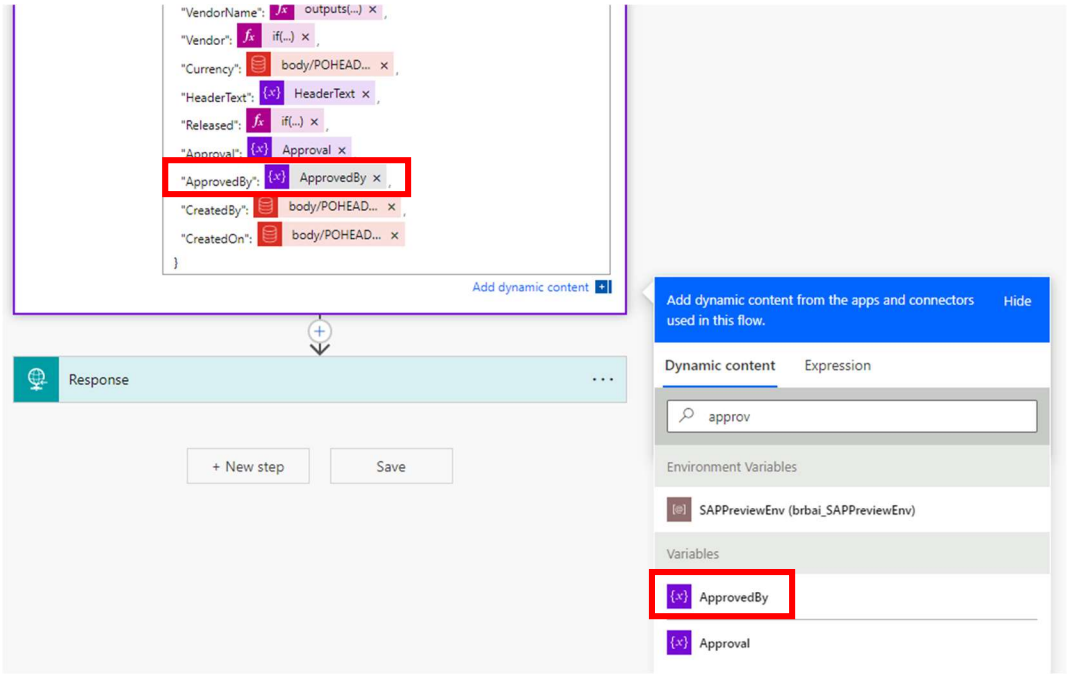


19. Copy the **Approval name/value pair** and paste below the existing Approval.



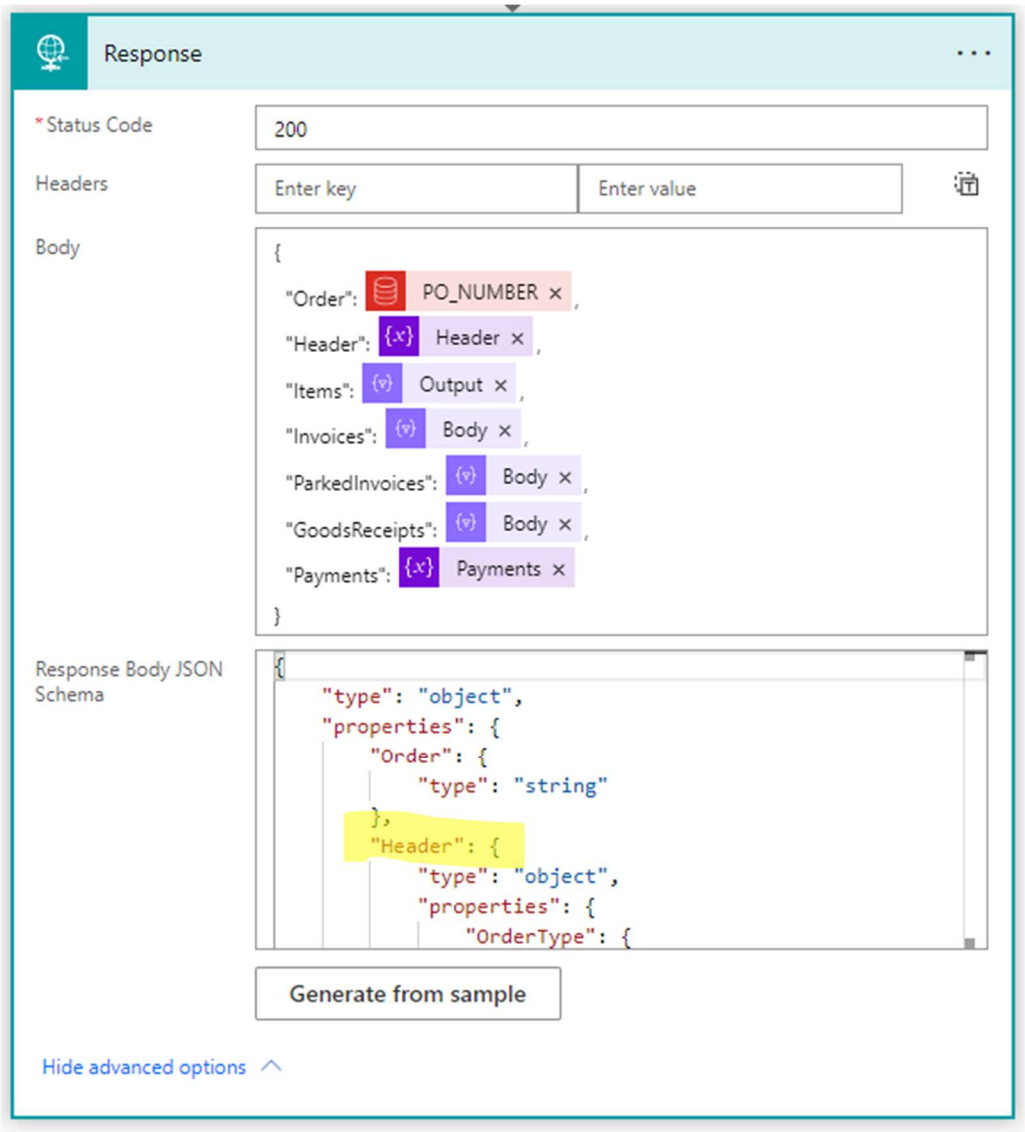
20. Update the copied name/value pair to the following where the highlighted text is coming from Dynamic Content.

"ApprovedBy": ApprovedBy,



NOTE: Reminder format is **"Name": Value,**
Make sure you have a comma after the new name/value pair.

21. Update the Response action. The response section is what Power Apps will receive, so we need to update the schema to include our ApprovedBy variable. Expand the **Response** section and click on **Show Advanced Options.**



22. Update the Response Body JSON Schema. We need to update the Header section of the schema to add the Approved by information. Click in the **Response Body JSON Schema** and scroll down to the bottom of the **header section** and copy **the CreatedBy section** based on the screen shot below.

23. **Paste** below CreatedBy

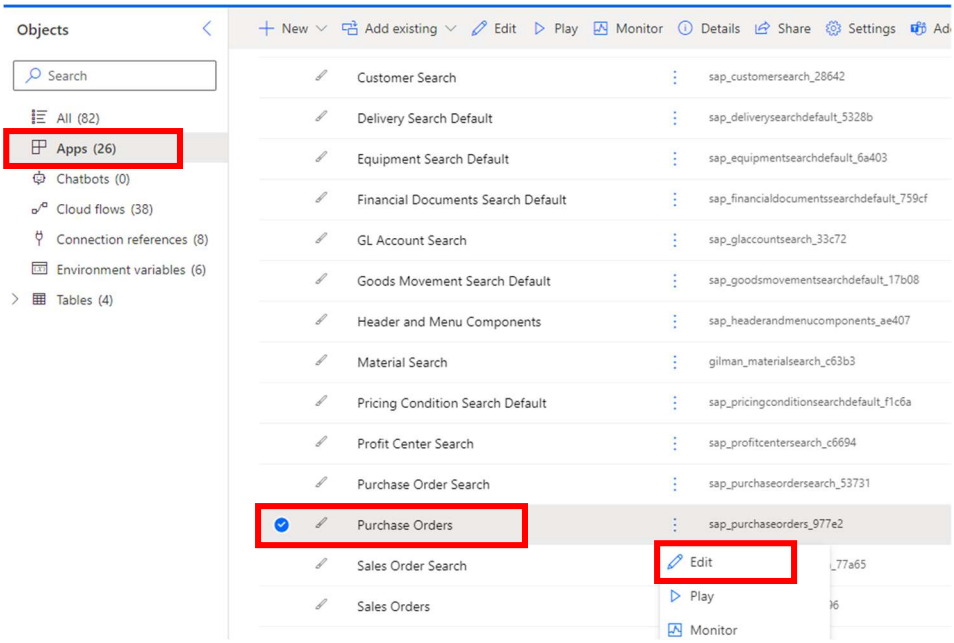
24. Update the section. Change the name to **ApprovedBy.**

25. Save the cloud flow. Click on **Save**.

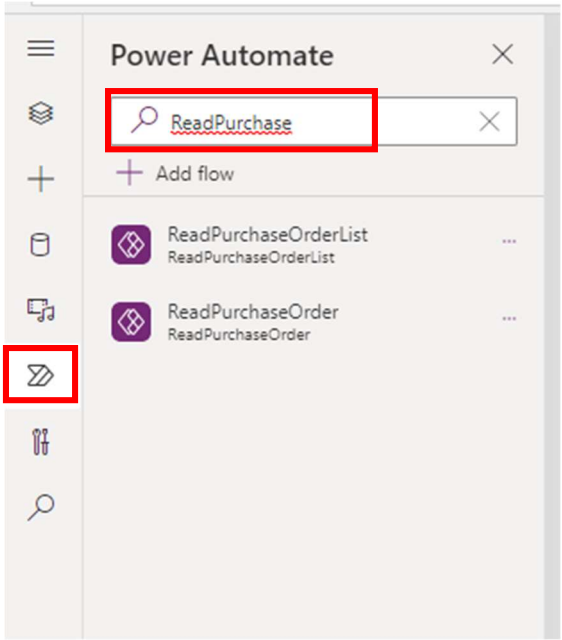
Exercise 10: Update Power App

We are now going to update the Purchase Orders canvas app to include the Approved By field.

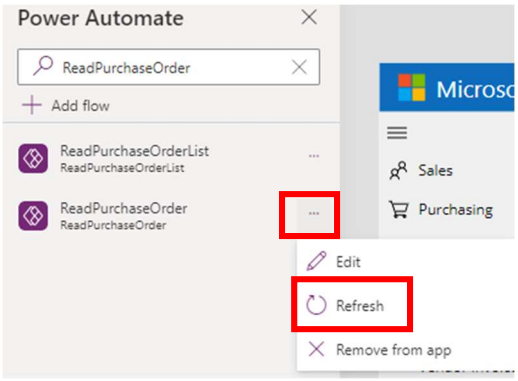
1. Go back to your **SAP Integration** solution. Filter on **Apps**, select the **Purchase Orders** canvas app and click on **edit**.



2. Refresh Power Automate flow. Anytime you have updated a flow, you need to refresh it in your Power App. Click on **Power Automate icon** on the left-hand side and search for **ReadPurchaseOrder.**

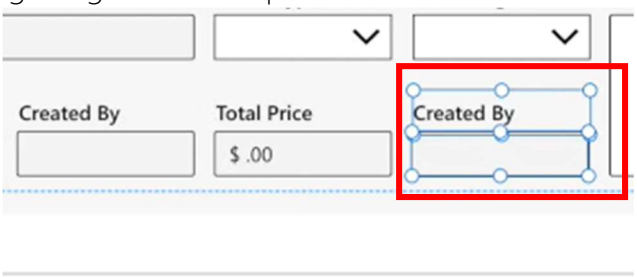


3. Click on the **ellipse (…)** and then **Refresh**.

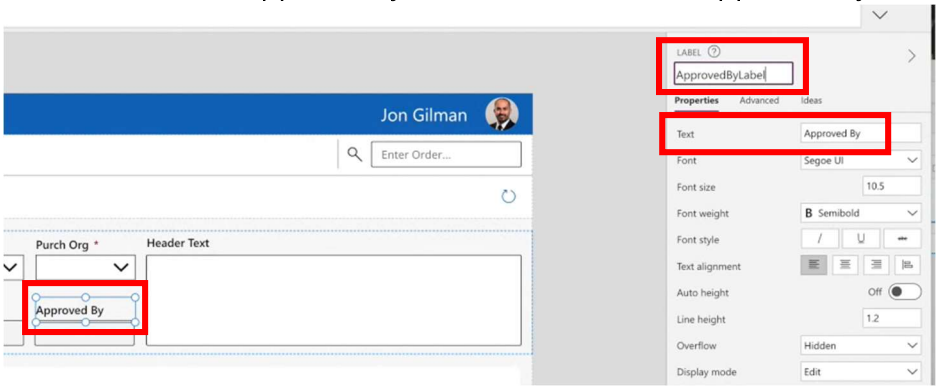


4. Add a new set of labels for the Approved By information. Select both the **CreatedBy label** and **CreatedBy Text Input box** and **copy** them (Ctrl-C).

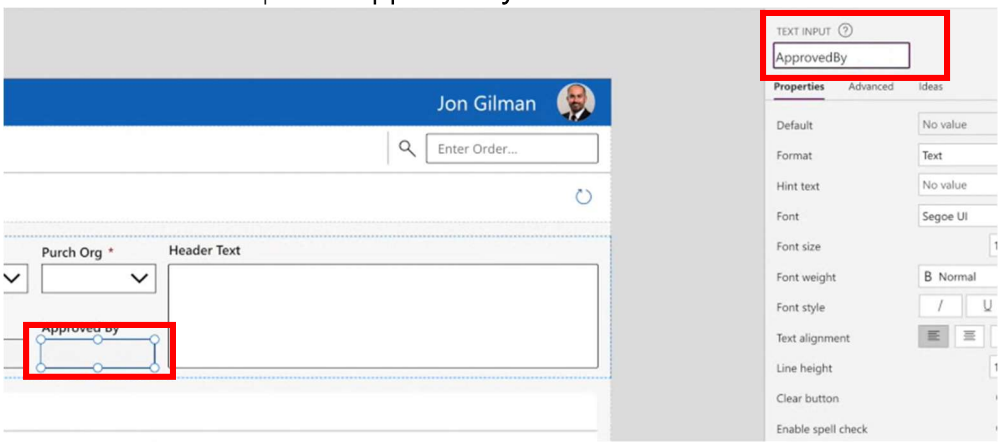
5. **Paste** (Ctrl-V) them and then **drag and drop** both items to the right of the Total Price using the guidelines to position in-line with the rest of the fields.



6. **Select** the copied **CreatedBy label**. In the right-hand properties section, change the **Name** of the label to **ApprovedByLabel** and the **Text** to **Approved By**.

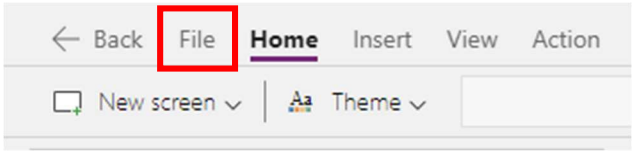


7. Select the copied CreatedBy Text Input. In the right-hand properties section, change the Name of the text input to ApprovedBy.

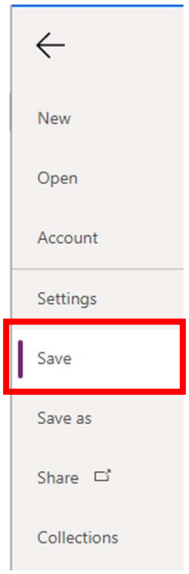


8. With the CreatedBy Text Input still selected, update the Default formula to ApprovedBy as indicated in the screen shot below.

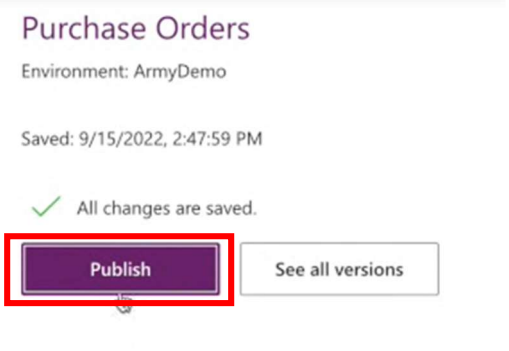
9. Save the canvas app. Click on File in the top ribbon.



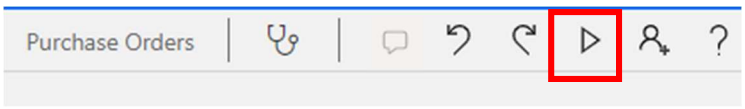
Then click on Save.



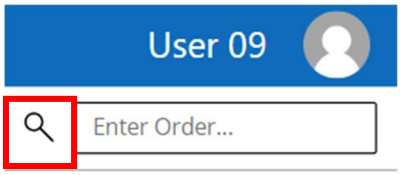
10. Publish the canvas app. Click on **Publish**.



11. Play the canvas app. Click on the **Play** button to test the app.



12. Select the Purchase Order and verify the Approved By field is filled in. You can click on the **Magnifying Glass** to find the PO number you created in the previous exercise.



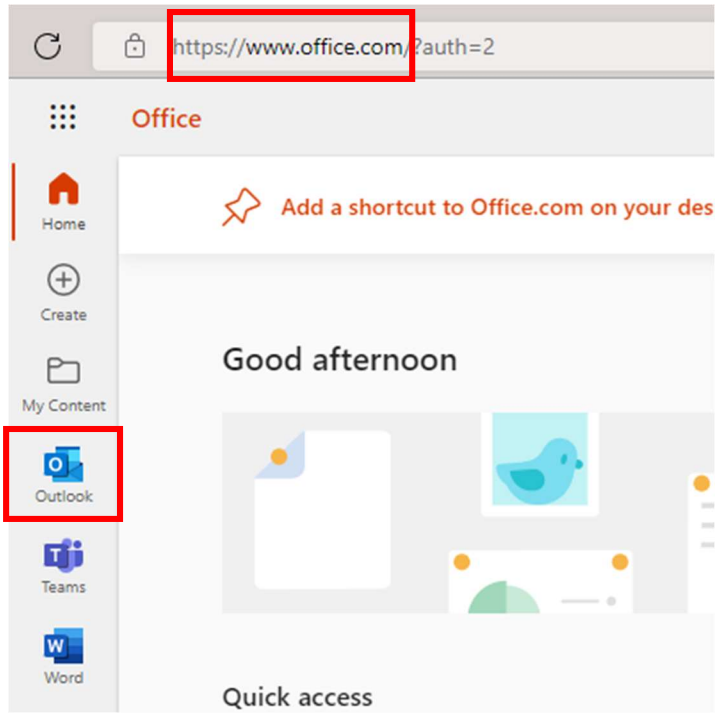
Select the purchase order from Vandelay Industries that you created in the earlier exercise..

13. Confirm the Approved By field is filled out with your SAP user name.

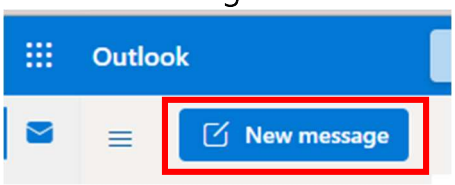
Exercise 11: Finish the Procure to Pay journey

We are now going to finish the Pay to Procure journey by simulating the vendor sending us an email with the invoice as an attachment. This will kick off our cloud flow to run our AI Builder Model to pull the information from the invoice. This information is returned to SAP and a vendor invoice is created in SAP. We will then go back into our Power App and refresh the screen to see a new button is available to confirm the vendor invoice against the purchase order and the goods receipt.

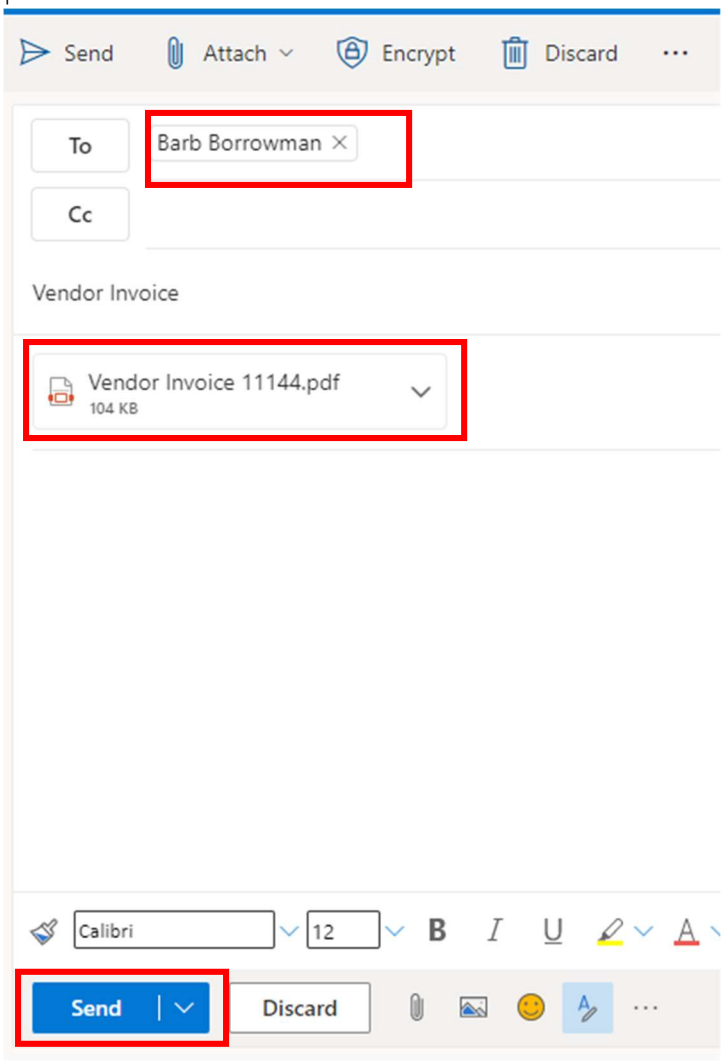
1. Open the O365 portal to access Outlook. Using an InPrivate or Incognito session, browse to https://www.office.com. Ensure you are still using the credentials supplied by the instructor. Click on Outlook.



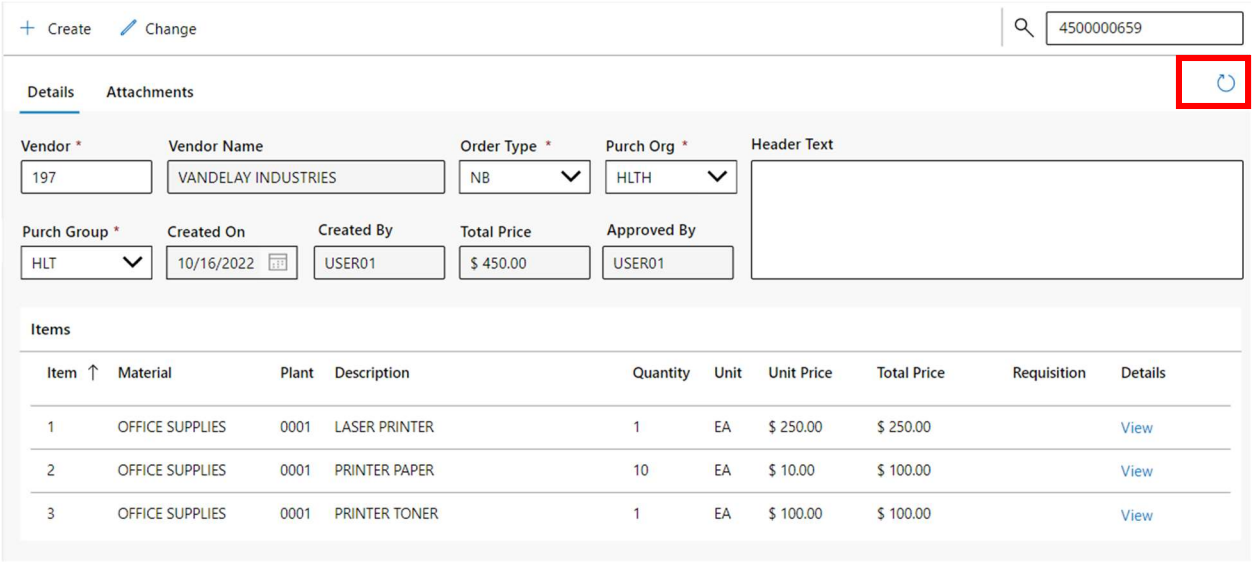
2. Click on New Message.



3. Compose email message. Send the message to yourself using the credentials supplied by the instructor, fill out the subject line and attach the vendor invoice we created in the previous exercise. Click on **Send.**



4. Go back to the Power App. Click on the tab that has the Purchase Order canvas app open. Click on the **Refresh** button in the upper right-hand corner.



5. Click on the **Confirm** button.

6. This pulls up the screen that shows the information from the purchase order, goods receipt and vendor invoice. We verify that all quantities match and click on **Approve**.

You have now completed the Using Power Automate End-to-End: Procure to Pay in SAP hands on lab. Congratulations!