

Power Platform Fusion Development

If you don't already have one, get a Power Apps account at [Business Apps | Microsoft Power Apps](#). This is a 30 day licence which allows you to use premium features such as Dataverse, environments and custom connectors.

Sign on to Azure.

Create an APIM instance if you don't already have one:

The screenshot shows the Microsoft Azure portal interface. On the left, there is a sidebar with various service categories like Home, Dashboard, All services, and Resource groups. The main area is a search results page with the query 'apim' entered into the search bar. The results are categorized into Services, Resources, Resource Groups, and Marketplace. Under Services, there are API Connections, API Playground, Face APIs, and API Management services. Under Resources, there are apim-contoso, jolgukapim, and jolgukapim-apis. Under Resource Groups, there is jolgukapim. Under Marketplace, there are API App, Kubeapps APIs packaged by Bitnami, and Azure Healthcare APIs (Preview). At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Monitoring >'. The status bar at the bottom right shows the date and time as 04/03/2022 10:29.

The screenshot shows the Microsoft Azure portal interface. On the left, there is a sidebar with various service icons and links. The main area is titled "Install API Management gateway" under "API Management service". It contains several configuration fields:

- Subscription:** Microsoft Azure Internal Consumption
- Resource group:** jolgukapim (highlighted in purple)
- Instance details:**
 - Region:** (Europe) UK South
 - Resource name:** apimnaug
 - Organization name:** Microsoft
 - Administrator email:** johealy@microsoft.com
- Pricing tier:** Developer (no SLA) (highlighted in orange)

A warning message in an orange box states: "⚠️ The Developer tier of API Management does not include SLA and should not be used for production purposes. Your service may experience intermittent outages, for example during upgrades. [Learn more](#)".

At the bottom, there are buttons for "Review + create" and "Next: Monitoring >".

You can use the free developer tier for this but be warned that this takes quite a while to provision.
Press Review And Create.

Go to your APIM instance, and click APIs on the left:

The screenshot shows the Microsoft Azure API Management service overview page for a resource named 'jolgukapim'. The left sidebar lists various Azure services. The main pane displays the 'Essentials' section with details like Resource group (jolgukapimrg), Status (Online), Location (UK South), and Subscription (Microsoft Azure Internal Consumption). It also shows developer portal URLs and Virtual IP (VIP) addresses. Below this is the 'Advisor recommendations' section, which provides personalized suggestions for cost reduction, security, reliability, performance, and operational excellence.

Click the HTTP section:

The screenshot shows the Microsoft Azure API Management service APIs page for the 'jolgukapim' service. The left sidebar lists various Azure services. The main pane shows a list of existing APIs: 'Basic Calculator', 'Color API', 'Echo API', and 'jo Star wars'. On the right, there's a 'Define a new API' section with options for 'HTTP' (selected), 'WebSocket', and 'GraphQL'. Below this is a 'Create from definition' section with options for 'OpenAPI', 'WADL', and 'WSDL'.

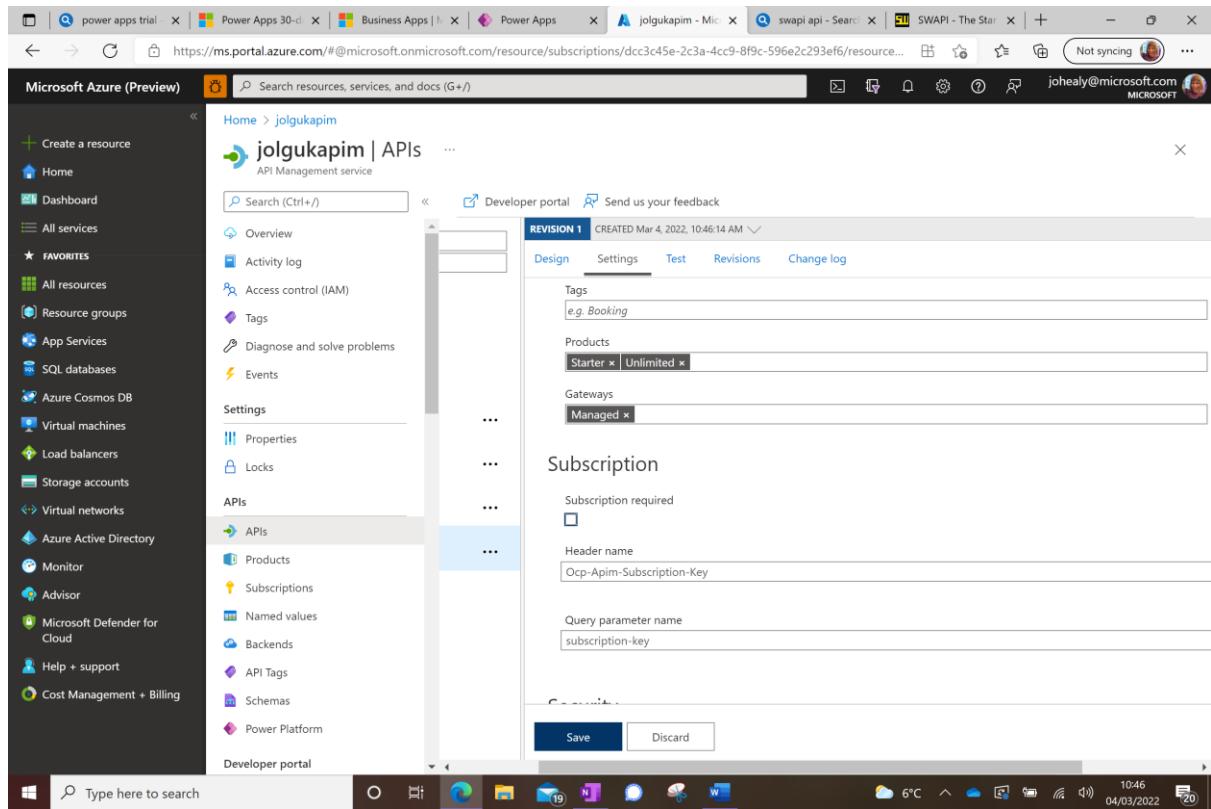
Select Full rather than Basic and fill out the details, using the Star Wars API <https://swapi.dev/api/> as the web service

The screenshot shows the Microsoft Azure API Management service interface. On the left, there's a sidebar with various service icons like Power Apps, Business Apps, and Power Apps. The main area shows the 'jolgukapim | APIs' API Management service. A modal window titled 'Create an HTTP API' is open. In the modal, the 'Full' tab is selected instead of 'Basic'. The 'Display name' field contains 'Star Wars API'. The 'Name' field contains 'star-wars-api'. The 'Description' field is empty. The 'Web service URL' field contains 'https://swapi.dev/api/'. The 'URL scheme' radio button is selected for 'HTTPS'. The 'API URL suffix' field contains 'e.g. httpbin'. The 'Base URL' field contains 'https://jolgukapim.azure-api.net'. Under 'Products', both 'Starter' and 'Unlimited' are selected. Under 'Gateways', 'Managed' is selected. There's a checkbox for 'Version this API?' which is currently unchecked. At the bottom of the modal are 'Create' and 'Cancel' buttons.

In the Products box select both Starter and Unlimited and leave Gateways at Managed. Press Create.

The screenshot shows the same Microsoft Azure API Management service interface as before, but now the 'Create' button at the bottom of the modal is highlighted in blue, indicating it's ready to be clicked to save the configuration.

Once created, go to Settings and untick Subscription required and set the API URL suffix to 'star', then press Save.



Click on Design and click Add Operation

The screenshot shows the Microsoft Azure API Management service interface. On the left, the navigation menu includes options like 'Create a resource', 'Home', 'Dashboard', and various service categories. The main area displays the 'jolgukapim | APIs' API definition. The 'Frontend' section is currently active, showing two operations: 'GetPeople' and 'GetPeopleById'. To the right, there are sections for 'Inbound processing' and 'Outbound processing', both of which have a 'base' policy applied. The status bar at the bottom indicates the date and time as 04/03/2022 10:52.

Fill out the GetPeople API as here:

The screenshot shows the Microsoft Azure API Management service interface for the 'jofusiondevapim | APIs' API. The 'Frontend' section is active, displaying configuration for the 'GetPeople' operation. The 'Display name' is set to 'GetPeople', 'Name' to 'getpeople', and 'URL' to 'GET /people/'. The 'Description' field contains the text 'Get characters from the Star Wars universe'. Below the main configuration, there is a 'Template parameters' section with a note to 'Define required URL template parameters.' At the bottom, there are 'Save' and 'Discard' buttons. The status bar at the bottom indicates the date and time as 04/03/2022 10:54.

Press Save

Press Test and Send

The screenshot shows the Microsoft Azure API Management service interface. On the left, the navigation menu includes options like 'Create a resource', 'Home', 'Dashboard', and various service categories. The main area displays the 'jolgukapim | APIs' API definition. The 'Test' tab is active, showing a successful 200 response for the 'GetPeople' operation. The response details include the request URL (`https://jolgukapim.azure-api.net/star/people/`) and the raw response message:

```
HTTP/1.1 200 OK
allow: GET,HEAD,OPTIONS
content-type: application/json
date: Fri, 04 Mar 2022 10:56:15 GMT
etag: "a493126da505a6fec015ec116fec193"
ocp-apim-apid: star-wars-api
ocp-apim-operationid: getpeople
ocp-apim-subscriptionid: master
ocp-apim-trace-location: https://apimst9ybptqk9lmfg80y7.blob.core.windows.net/r/0fhjdFqhd0av5a42ubWFJZ2-1?sv=2019-07-07&sr=b&sig=jlxhI2N1VZRZ78a013DUX0ppu%2F&se=2022-03-05T10%3A56%3A15Z&sp=r&tracedId=5b3c429809b04801acd0f4815f6b69373
request-context: appId=cid-v1:88681bc-26a8-489a-ba58-c4571cf7db7
strict-transport-security: max-age=15768000
transfer-encoding: chunked
vary: Accept,Cookie,Origin
x-frame-options: SAMEORIGIN
{
  "count": 82,
  "next": "https://swapi.dev/api/people/?page=2",
  "previous": null,
```

You should get a successful 200 response

The screenshot shows the Microsoft Azure API Management service interface, similar to the previous one but with a different API definition ('jolgukapim | APIs'). The 'Test' tab is active, showing a successful 200 response for the 'GetPeople' operation. The response details include the request URL (`https://jolgukapim.azure-api.net/star/people/`) and the raw response message:

```
HTTP/1.1 200 OK
allow: GET,HEAD,OPTIONS
content-type: application/json
date: Fri, 04 Mar 2022 10:56:15 GMT
etag: "a493126da505a6fec015ec116fec193"
ocp-apim-apid: star-wars-api
ocp-apim-operationid: getpeople
ocp-apim-subscriptionid: master
ocp-apim-trace-location: https://apimst9ybptqk9lmfg80y7.blob.core.windows.net/r/0fhjdFqhd0av5a42ubWFJZ2-1?sv=2019-07-07&sr=b&sig=jlxhI2N1VZRZ78a013DUX0ppu%2F&se=2022-03-05T10%3A56%3A15Z&sp=r&tracedId=5b3c429809b04801acd0f4815f6b69373
request-context: appId=cid-v1:88681bc-26a8-489a-ba58-c4571cf7db7
strict-transport-security: max-age=15768000
transfer-encoding: chunked
vary: Accept,Cookie,Origin
x-frame-options: SAMEORIGIN
{
  "count": 82,
  "next": "https://swapi.dev/api/people/?page=2",
  "previous": null,
```

Now export the API to Power Platform;

Scroll to the left so your API is visible again and then select the Ellipsis (3 dots) next to it, and then select Export. (If you are using Azure within the same tenant as Power Platform you could use the Create Power Connector method instead).

The screenshot shows the Microsoft Azure API Management service interface. On the left, the navigation menu includes options like 'Create a resource', 'Home', 'Dashboard', 'All services', 'FAVORITES', 'All resources', 'Resource groups', 'App Services', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', 'Virtual networks', 'Azure Active Directory', 'Monitor', 'Advisor', 'Microsoft Defender for Cloud', 'Help + support', and 'Cost Management + Billing'. The 'APIs' section is currently selected. In the center, the 'jolgukapim | APIs' page is displayed. A context menu is open over the 'Star Wars API' entry, with 'Export' highlighted. The right side of the screen shows the API's details, including its revision (REVISION 1, CREATED Mar 4, 2022, 10:46:14 AM), design, settings, test, revisions, and change log tabs. Below these tabs, there are sections for 'Frontend' and 'Backend' operations, and policy definitions for inbound and outbound processes.

Choose OpenAPIv2 (JSON)

The screenshot shows the Microsoft Azure API Management service interface. On the left, the navigation menu includes 'Create a resource', 'Home', 'Dashboard', 'All services', 'FAVORITES' (with 'Star Wars API' selected), 'All resources', 'Resource groups', 'App Services', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', 'Virtual networks', 'Azure Active Directory', 'Monitor', 'Advisor', 'Microsoft Defender for Cloud', 'Help + support', and 'Cost Management + Billing'. The main area displays the 'jolgukapim | APIs' API Management service. Under 'APIs', 'Star Wars API' is selected. To the right, there's a 'Export API' section with three options: 'OpenAPI v3 (YAML)', 'OpenAPI v3 (JSON)', and 'OpenAPI v2 (JSON)'. Below these is a purple box labeled 'WSDL' with the text 'Standard XML representation of your SOAP API'. The status bar at the bottom shows the URL <https://apimanagement.hosting.portal.azure.net/apimanagement/Content/1.490.0.0/apimap/apimap-apis/index.html?clientOptimizations=undefined&l=en.en-us&trustedAuthority=https%3A%2F%2Fms.portal.azure.com&shellVersion=undefined#>.

Now sign onto Power Platform at make.powerapps.com

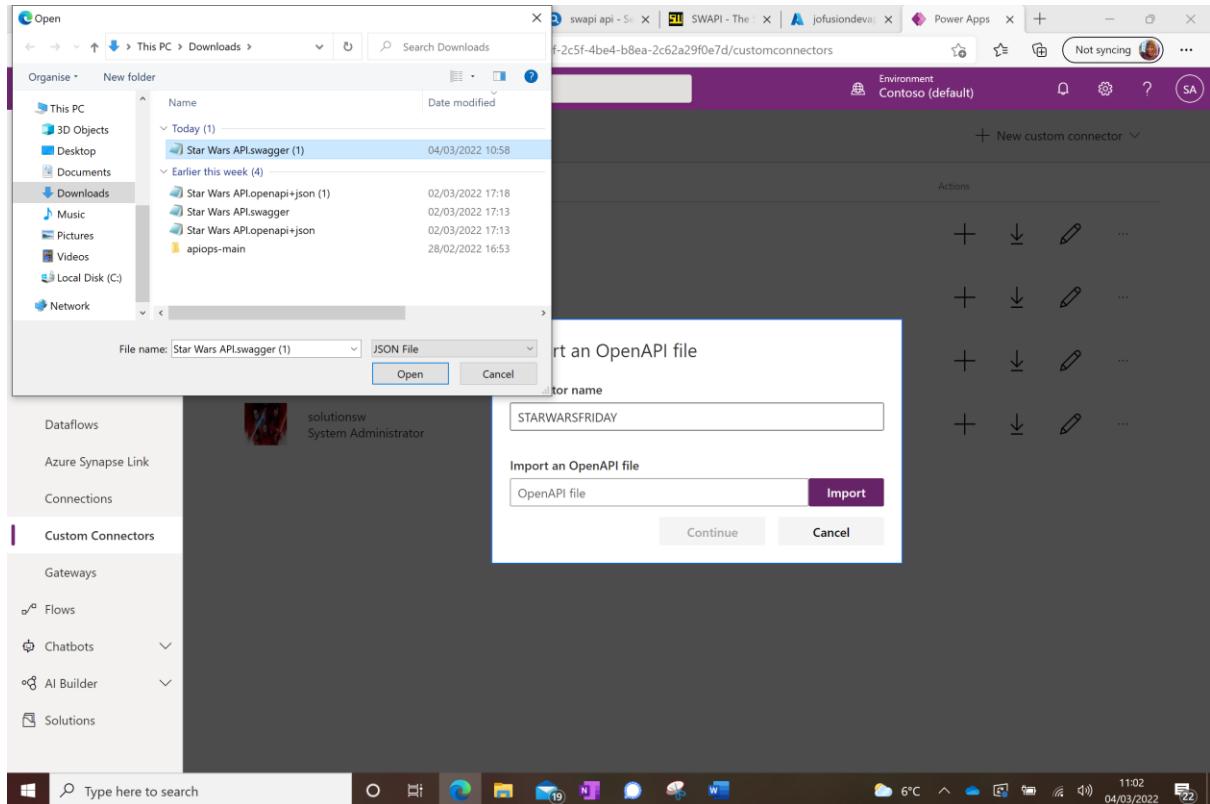
On the left choose Data then Custom Connectors

The screenshot shows the Power Apps environment. The left sidebar has a tree view with 'Home', 'Learn', 'Apps', 'Create', 'Data' (selected), 'Choices', 'Dataflows', 'Azure Synapse Link', 'Connections', 'Custom Connectors' (selected), 'Gateways', 'Flows', 'Chatbots', 'AI Builder', and 'Solutions'. The main area features a purple header with the text 'Build business apps, fast'. Below it, a message says 'Create apps that connect to your data and work across web and mobile. [Learn about Power Apps](#)'. A 'Start from' section offers six options: 'Blank app', 'Dataverse', 'SharePoint', 'Excel', 'SQL', and 'More create options →'. At the bottom, a 'Learning for every level' section is visible. The status bar at the bottom shows the URL <https://make.preview.powerapps.com/environments/Default-0d1d71bf-2c5f-4be4-b8ea-2c62a29f0e7d/home>.

Choose New Custom Connector at the top right,

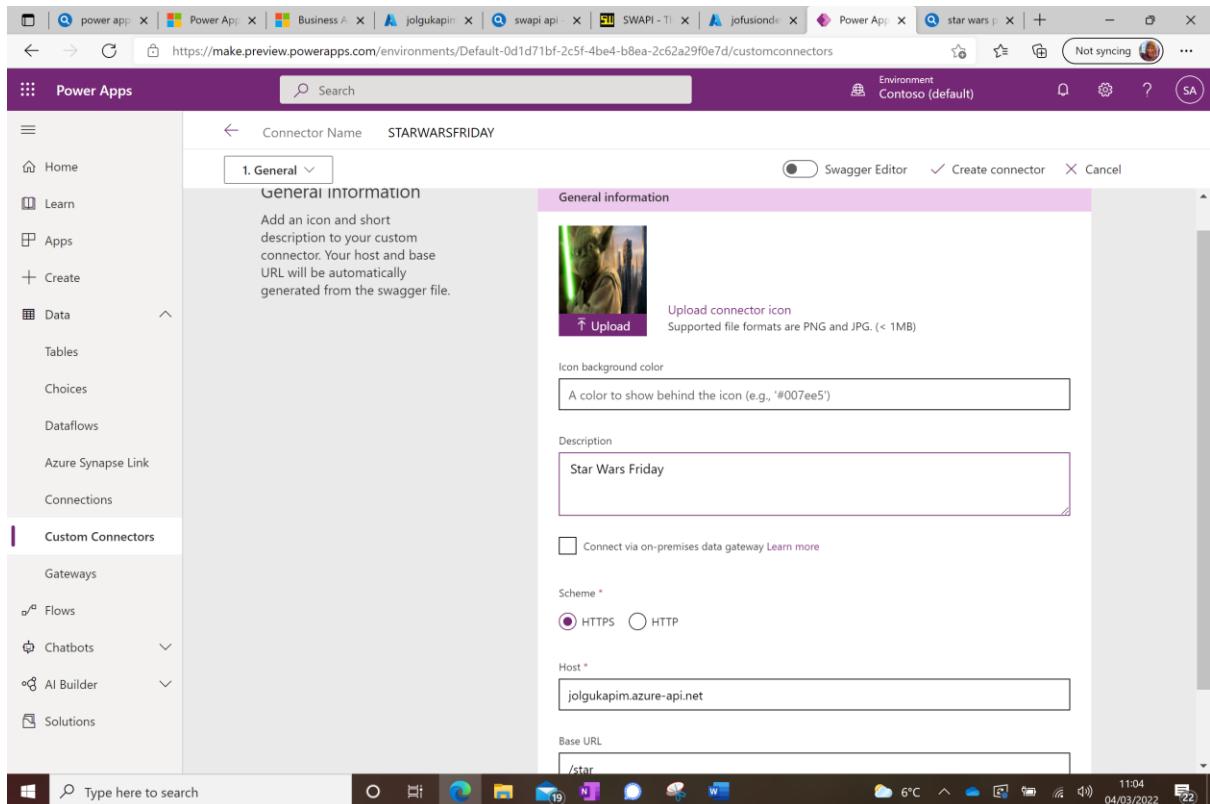
+ New custom connector ▾

Choose Import an OpenAPI file and select the json file you just downloaded.



Press Continue

Add an icon for your connector (an image from your computer) and add a description



Press the arrow next to Security at the bottom right

Change the Authentication type on the next screen to no authentication and click the arrow next to Definition

Toggle the Swagger Editor on at the top of the screen and replace the contents with the contents of the naug.swagger.json file from the github repository.

Select create connector

You can test the connector in the dropdown on the left

The screenshot shows the 'Power Apps' interface with the URL <https://make.preview.powerapps.com/environments/Default-0d1d71bf-2c5f-4be4-b8ea-2c62a29f0e7d/customconnectors>. The left sidebar is expanded to show 'Custom Connectors'. A modal window titled '3. Definition' is open, showing the 'General' tab. The 'Summary' field contains 'GetPeople', and the 'Description' field contains 'Get characters from the Star Wars universe'. The 'Operation ID' field is set to 'Getpeople'. Under 'Visibility', the 'none' option is selected. Below the modal, a 'Request' section is visible with a 'Verb' field set to 'Verb *'. The status bar at the bottom shows the URL and the date/time as 11:39 04/03/2022.

Click New Connection and select your connector, press create.

Select Custom Connectors again on the left, select your new connector and go to the Test tab. The new connection will now appear in the top box. Select Test Operation and check you get a 200 response.

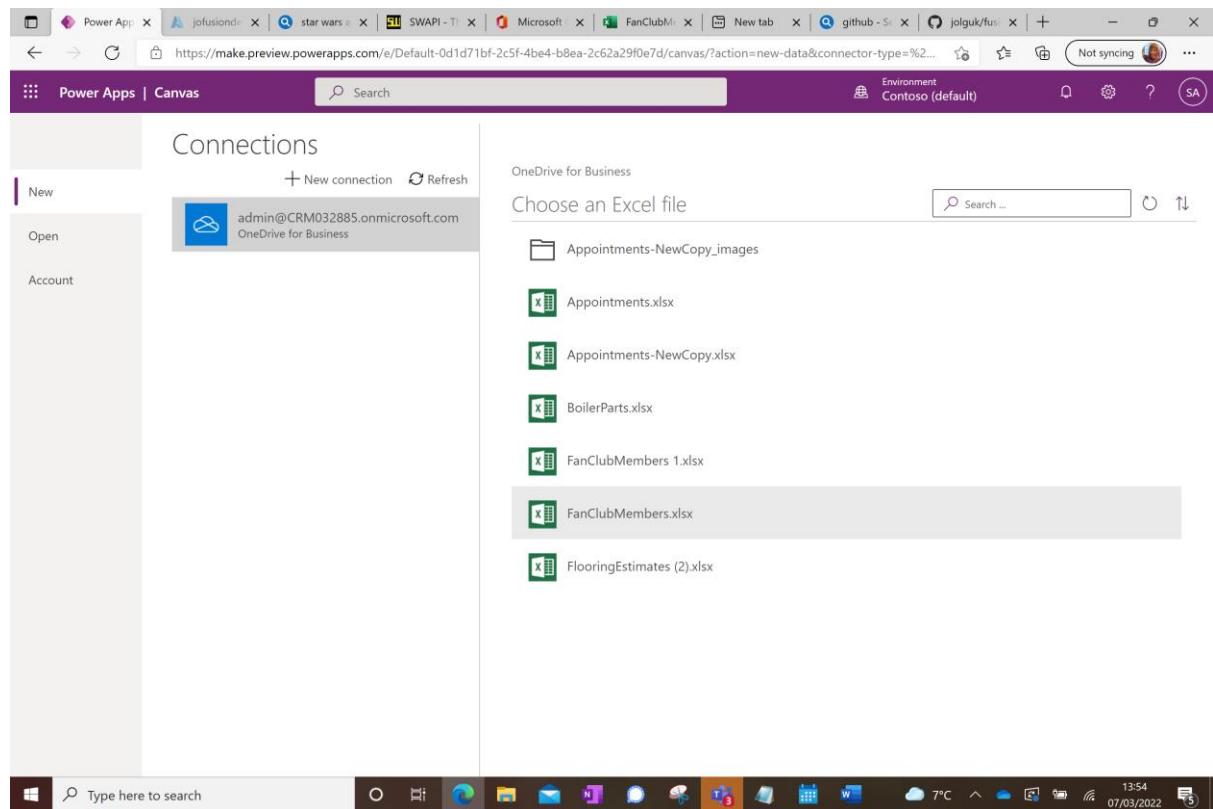
Now to create an app to use this connector.

First of all download the FanClub xls file from github and upload it to your OneDrive.

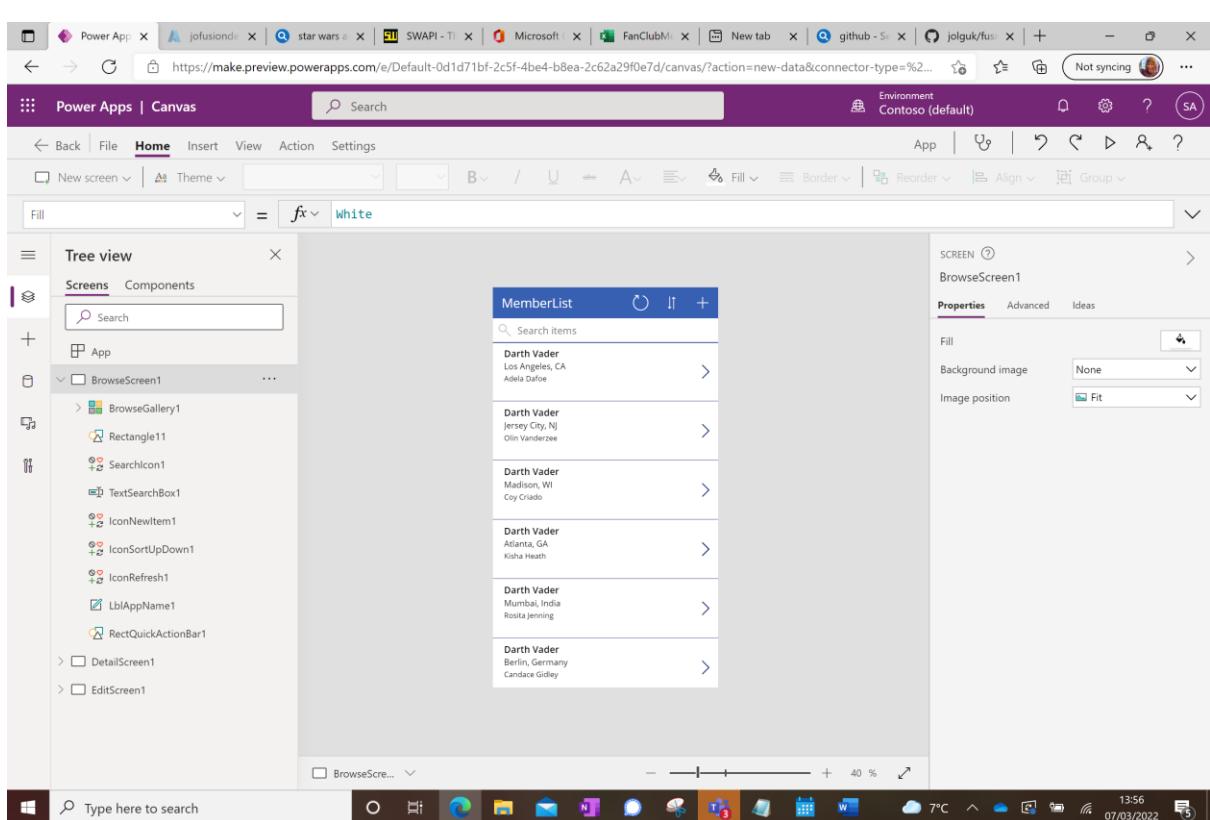
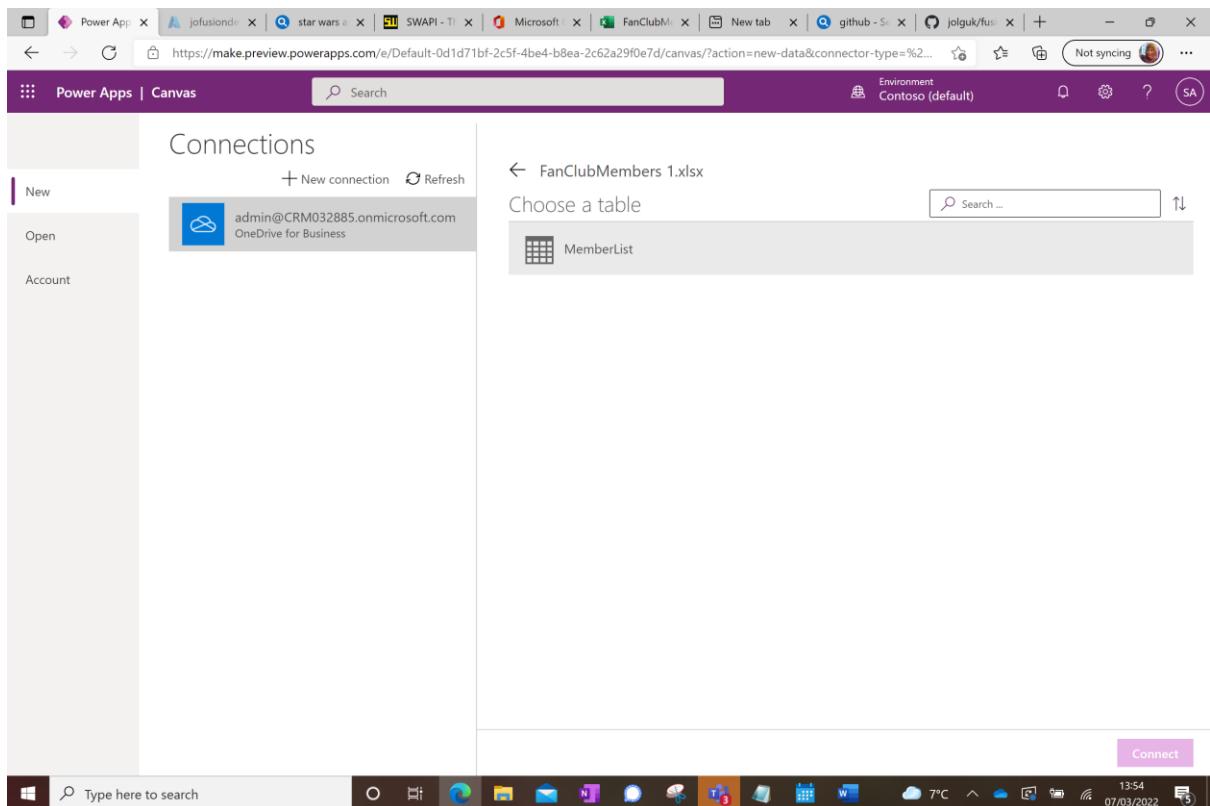
Then from the make.powerapps.com Home screen, select Excel.

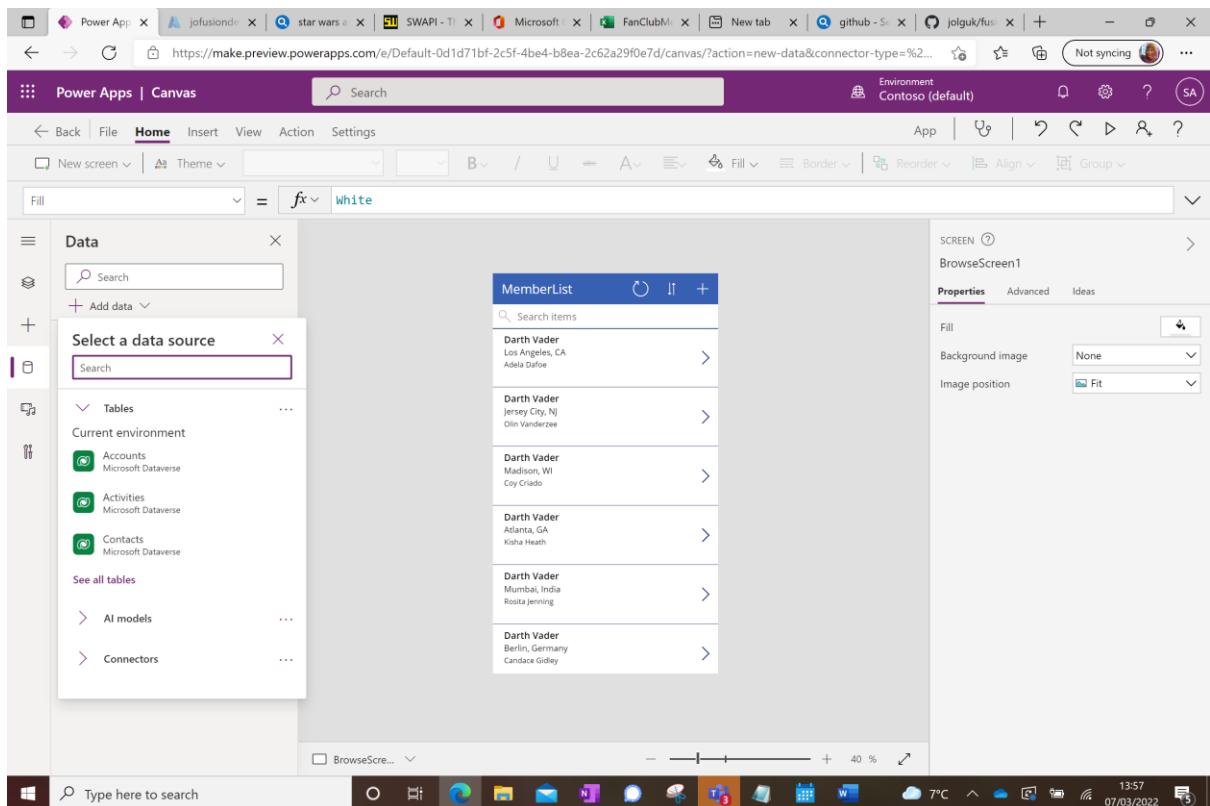
The screenshot shows the 'Power Apps' home screen with the URL <https://make.preview.powerapps.com/environments/Default-0d1d71bf-2c5f-4be4-b8ea-2c62a29f0e7d/home>. The left sidebar shows various app creation options like 'Blank app', 'Dataverse', 'SharePoint', 'Excel', and 'SQL'. A large image of a waterfall in autumn is displayed on the right side of the screen. The status bar at the bottom shows the URL and the date/time as 11:48 07/03/2022.

Select New Connection and make a Connection to your OneDrive. Select that connection, and then select the FanClub Excel file

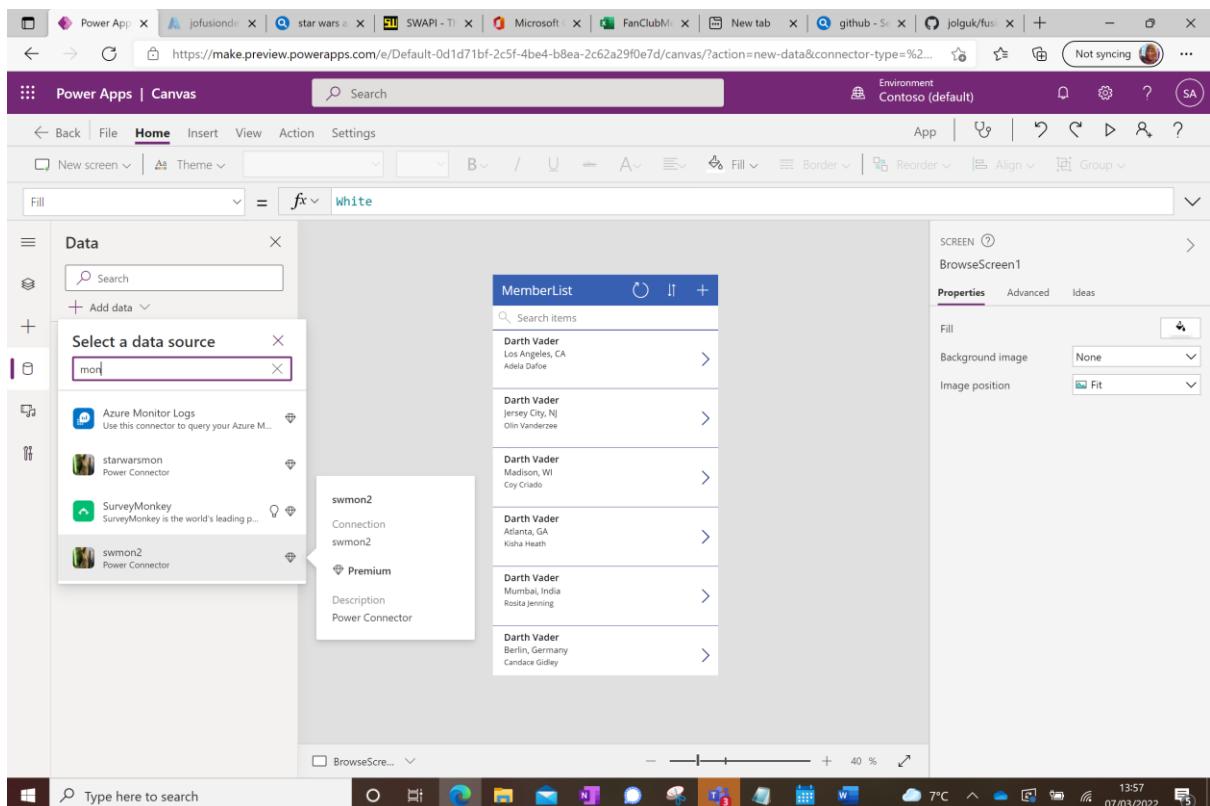


Then select the MemberList table which appears and Connect

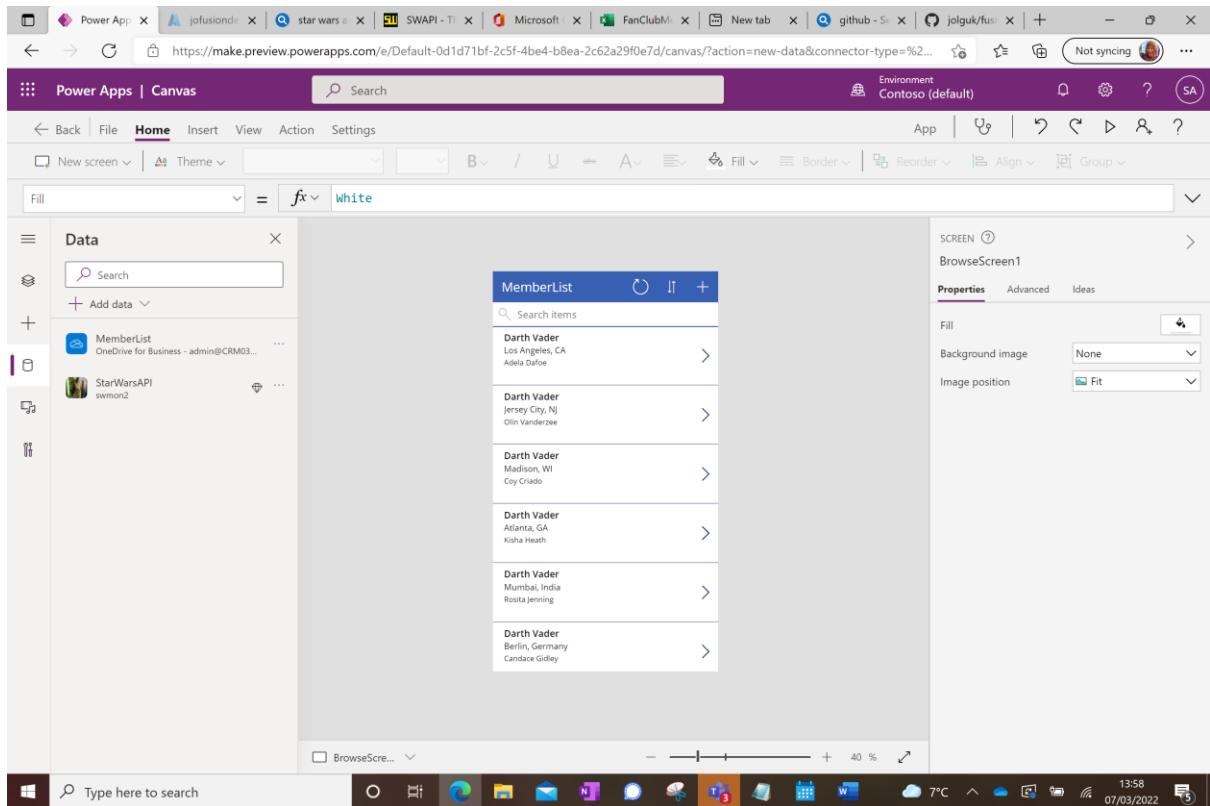




Type part of the name of your new connector into the search box, and click on it when it appears:

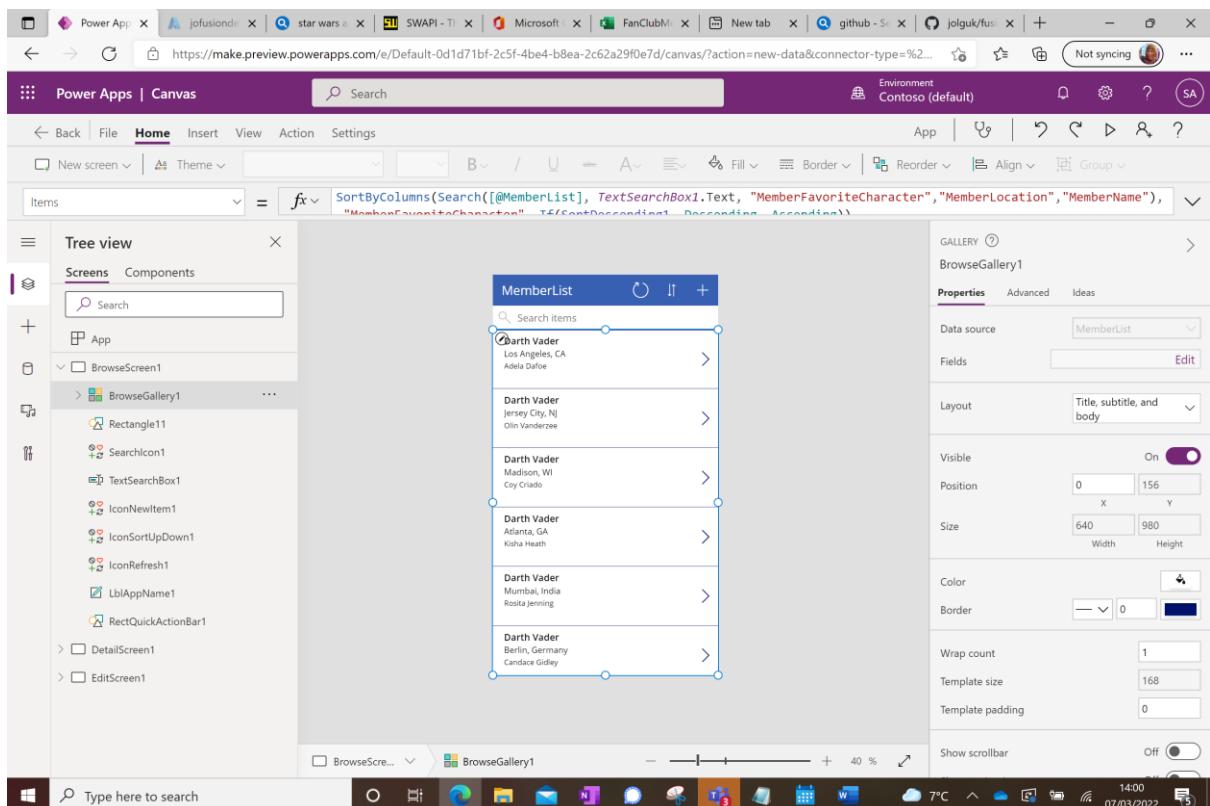


Click on it again to create a connection to it and you will see it as a Data Source alongside the Excel spreadsheet:

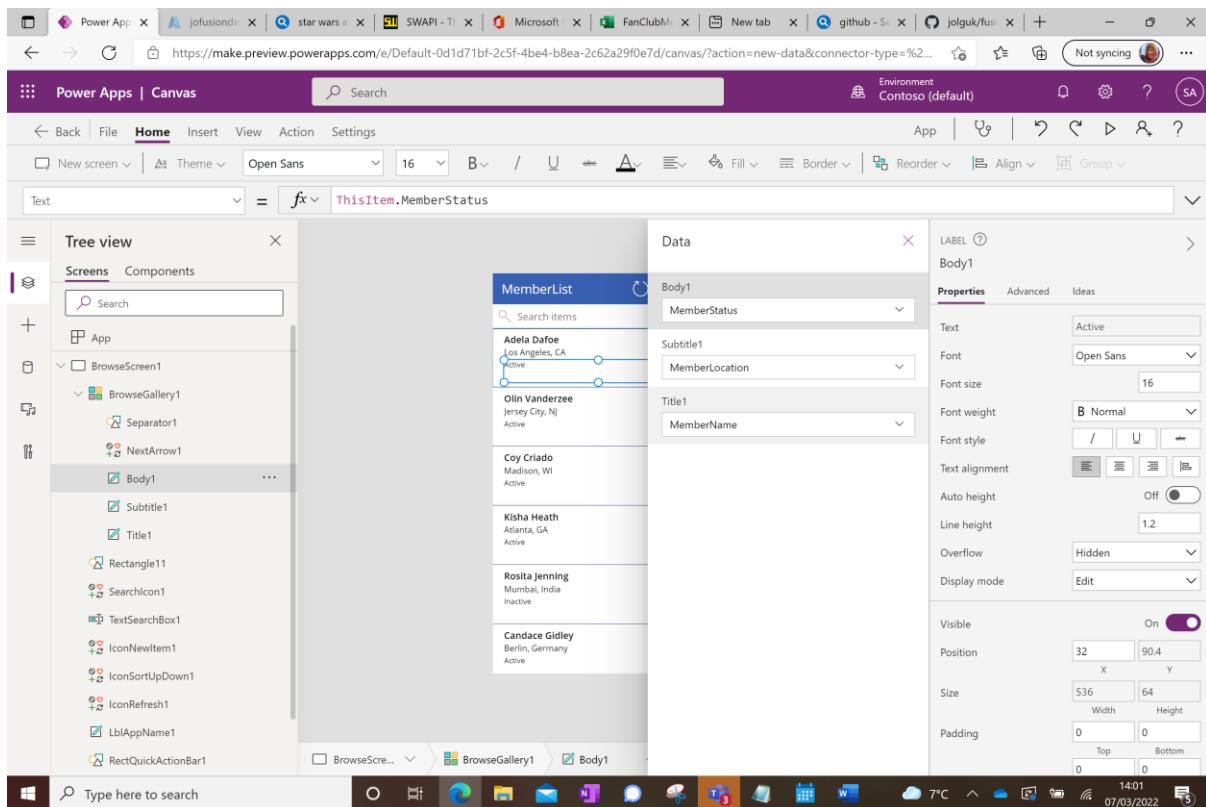


Click back onto the 3 diamonds to edit the app

Now you are in Tree View mode. Edit the fields so they show Member, Member Location, and Member Status rather than what's there now. Select BrowseGallery1, and then on the right hand screen click Edit in the Fields section



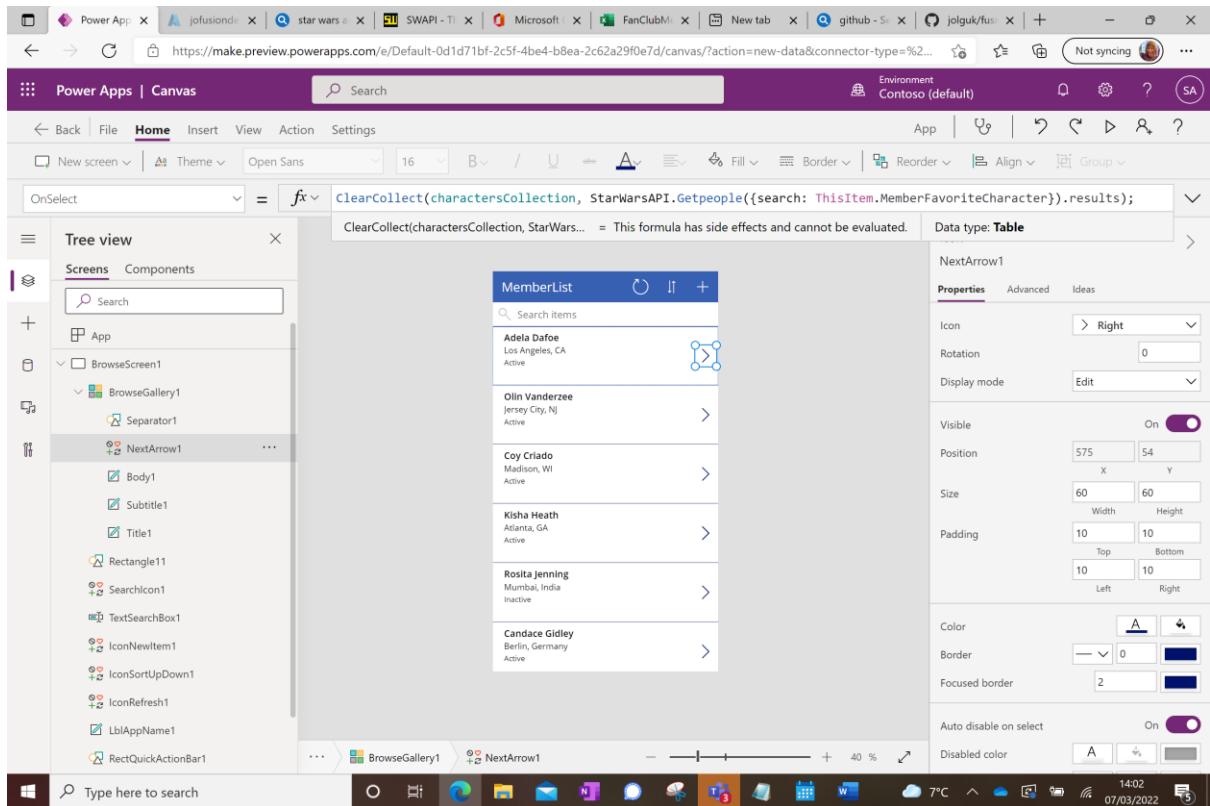
Change the Title dropdown to be Member Name and the Body dropdown to be Member Status



Now select the arrow to the right of the first member entry, and change the formula bar to read the following:

Navigate(DetailScreen1, None);

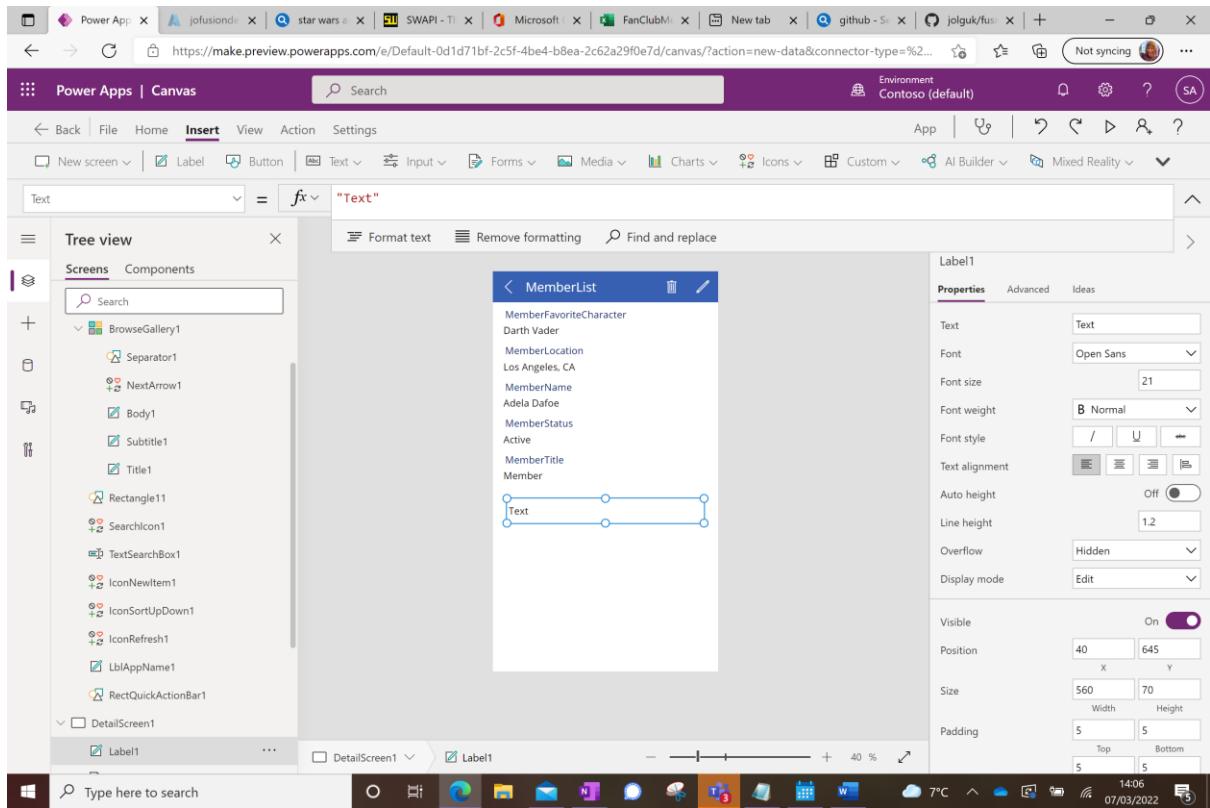
```
ClearCollect(charactersCollection, StarWarsAPI.Getpeople({search: ThisItem.MemberFavoriteCharacter}).results);
```



Click on DetailScreen1 on the left (you will probably have to scroll down to see it).

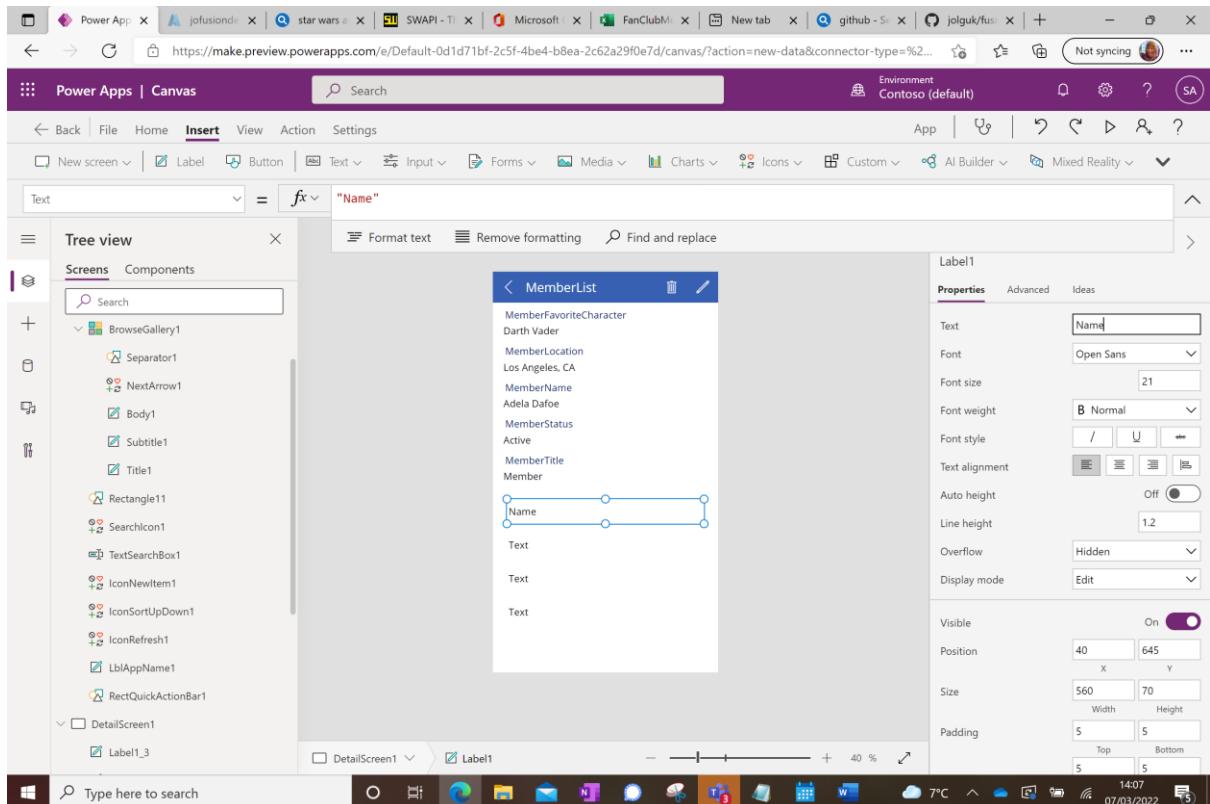
Create Labels to display details about the Star Wars characters:

Press Insert, then Label to create a Label and move the box to underneath the existing entries:



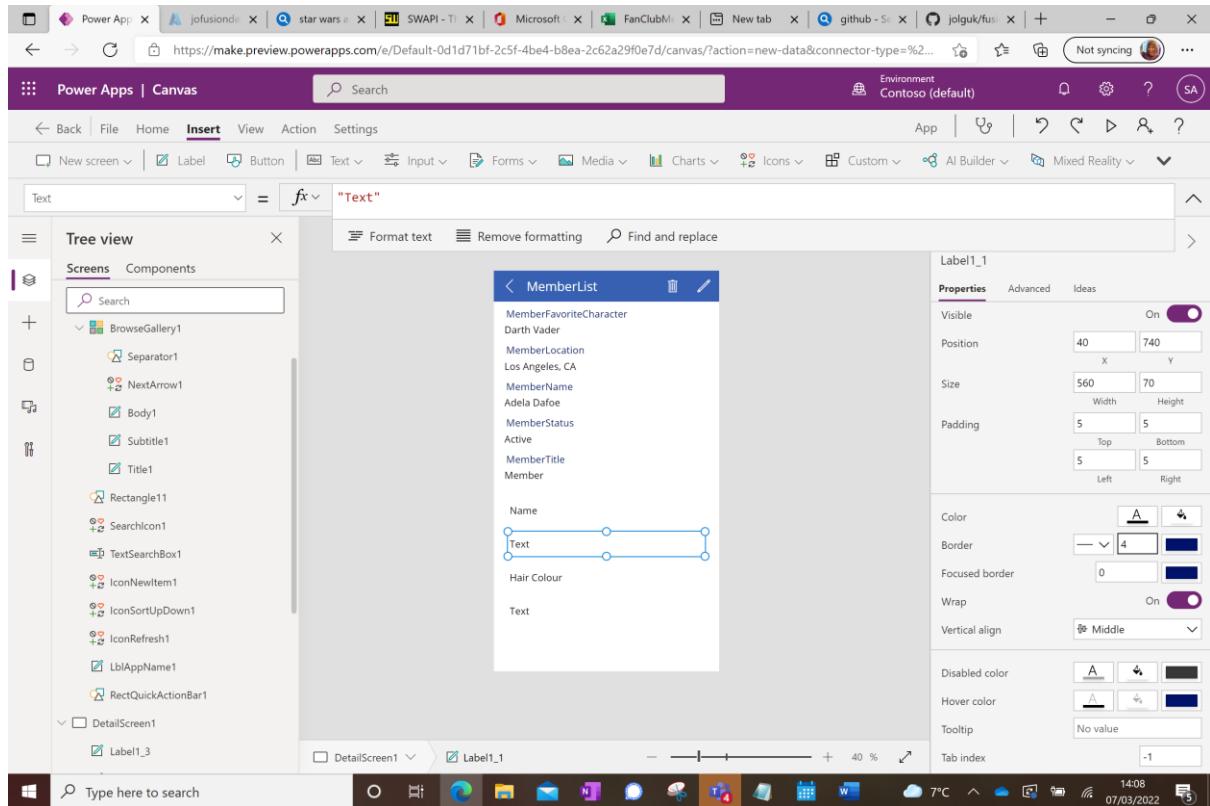
Copy that label and paste 3 times so you have 4 of them:

Label the top one 'Name' by typing into the Text box on the right:

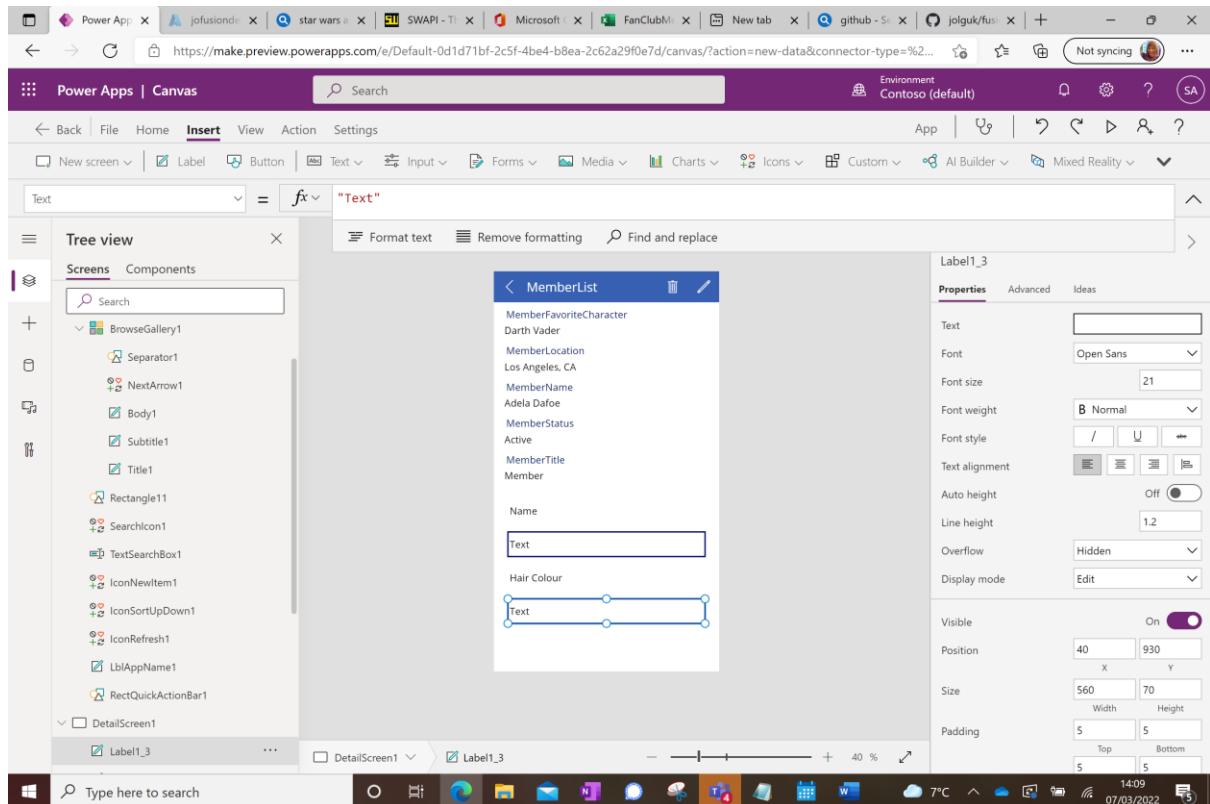


Label the 3rd one 'Hair Colour'.

Put borders around the 2nd and 4th ones by scrolling down in the properties section and changing the number in Border from 0 to 4:



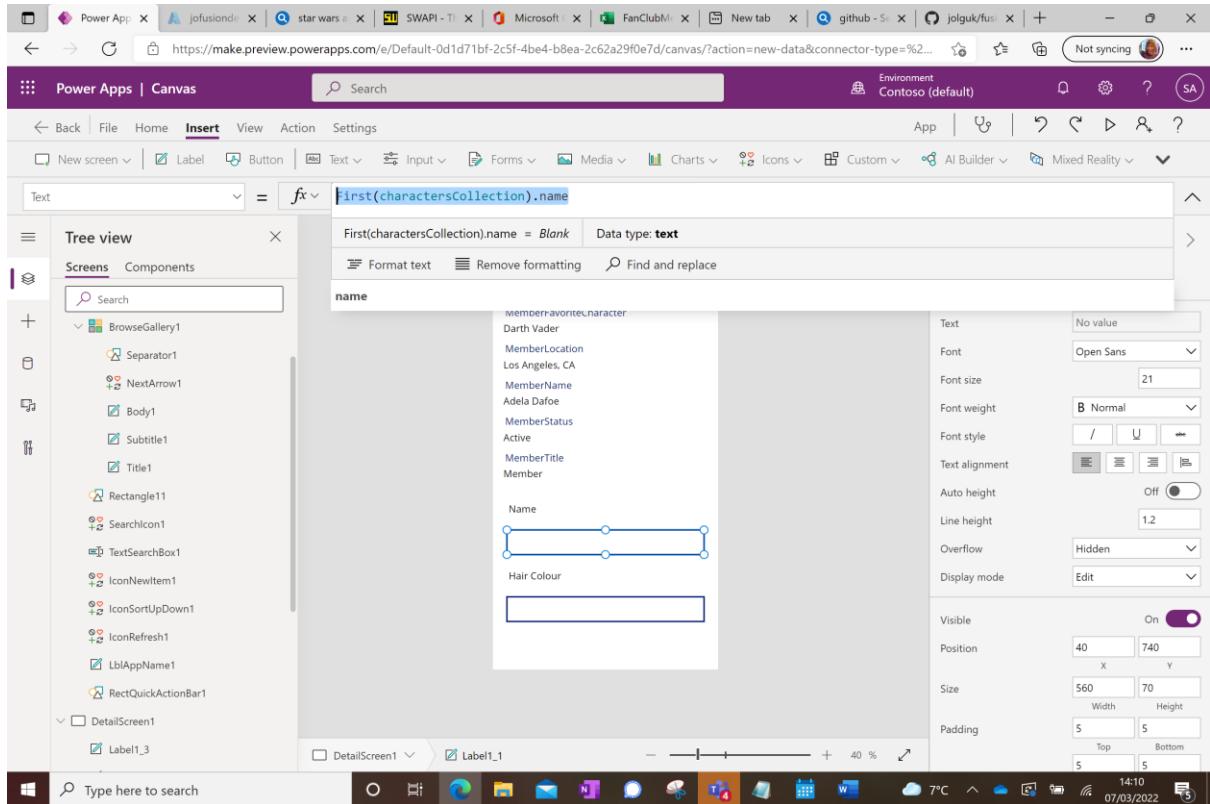
Also remove the Text from boxes 2 and 4:



Now add the formulas to calculate the values for the bordered boxes;

Click onto the first empty box and type the following into the formula bar:

First(charactersCollection).name



Do the same for the other box, substituting Hair_color (NB American spelling, you will be prompted as the data comes back from the collection) for Name.

Now you can play the app. Select BrowseScreen1 to return to the home page, then use the play button on the top right. Try selecting several characters, you will probably need to scroll down to find a variety as the top few will all be Darth Vader 😊

To save your new app, select File, then Save As

A screenshot of a Microsoft Edge browser window showing the "Save as" dialog for a Power App. The URL in the address bar is <https://make.preview.powerapps.com/e/Default-0d1d71bf-2c5f-4be4-b8ea-2c62a29f0e7d/canvas/?action=new-data&connector-type=%23...>.

The browser has several tabs open, including "Power App", "jofusionde", "star wars", "SWAPI - T", "Microsoft", "FanClubM", "New tab", "github - S", "jolguk/fus...", and "Not syncing".

The Power Apps environment is set to "Contoso (default)".

The "Save as" dialog shows the following options:

- New
- Open
- Account
- Settings
- Save
- Save as
- Share
- Collections
- Media
- Variables
- Close

The "Save as" section is expanded, showing:

- The cloud**: "Save to Power Apps" (selected)
- This computer**: "Save a copy to my computer"

The main area displays a list of existing apps in the "My apps and component libraries" section:

App	Modified
swexcelmon2	2 Hours ago
starwarsexcel	4 Hours ago
joannesqwsun	1 Day ago
sunpmapp	1 Day ago
satstarwars	1 Day ago
fridayapp	3 Days ago
joswfromscratch	3 Days ago

A "Save" button is located at the bottom right of the dialog.