Microsoft Power Apps Bootcamp

Instructor: Jeremy Nathan
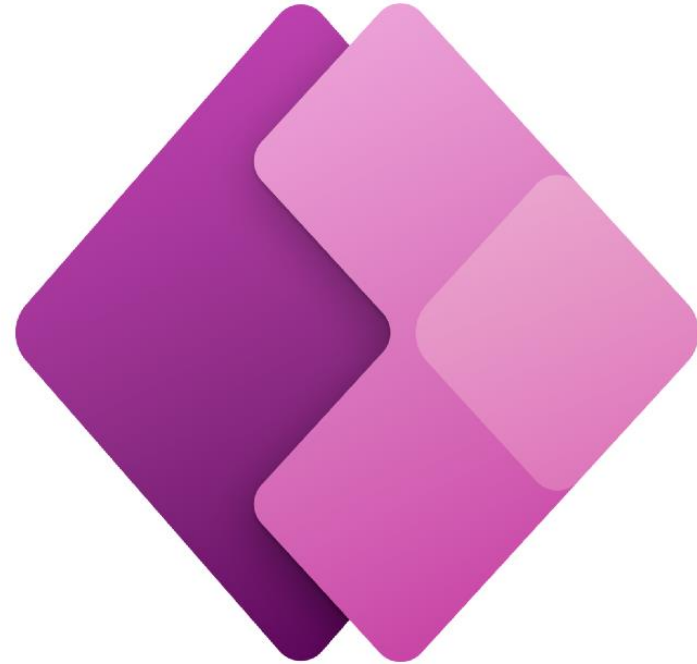
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About Me
Advisor
Technology Trainer
Course Developer
Data Analyst
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Based in
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Ask Questions!

Type questions in the chat for everyone or in Q&A; I will answer them live

Agenda Microsoft Power Apps Bootcamp

Day 1: Creating Power Apps Using Connecting Data

Create an Environment

Data preparation and linking to data

Share Apps

Day 2: Creating Power Apps with the Microsoft Dataverse

Power App from Blank Canvas App from SharePoint data

Import data to Dataverse and Make a Model-driven app

Power App from a SQL Table and create a data gateway

Day 3: Augmenting Power Apps with Power Automate and Virtual Agents

Trigger Power Automate inside a Power App

Chat Bots

Day 4: Creating Portal Apps and Power Pages

Power Pages and insert a Power BI report

Portal Management and Power Apps Admin Center

Day 1: Creating Power Apps Using Connecting Data

Course set-up

To do the tasks with me on your computer, you will need a Microsoft 365 license with access to Power Apps

[Free Power Apps Developer Plan | Microsoft Power Apps](#)

Here is the GitHub with the instructions and resources we will use:
https://github.com/jeremynathan/powerapps_bootcamp

Microsoft Power Platform

- **Power BI** - Data analysis and visuals

- **Power Apps** – No code apps for business

- **Power Automate** – Automate business tasks

- **Power Virtual Agents** – Chat bots

- **Power Pages** – External websites

- **Dataverse** – Database for tables of data

- **AI Builder** – Extract text from PDFs and pictures

- **Power Fx** – The code behind Power Apps and Power Automate

- **Dynamics 365** – CRM using Dataverse
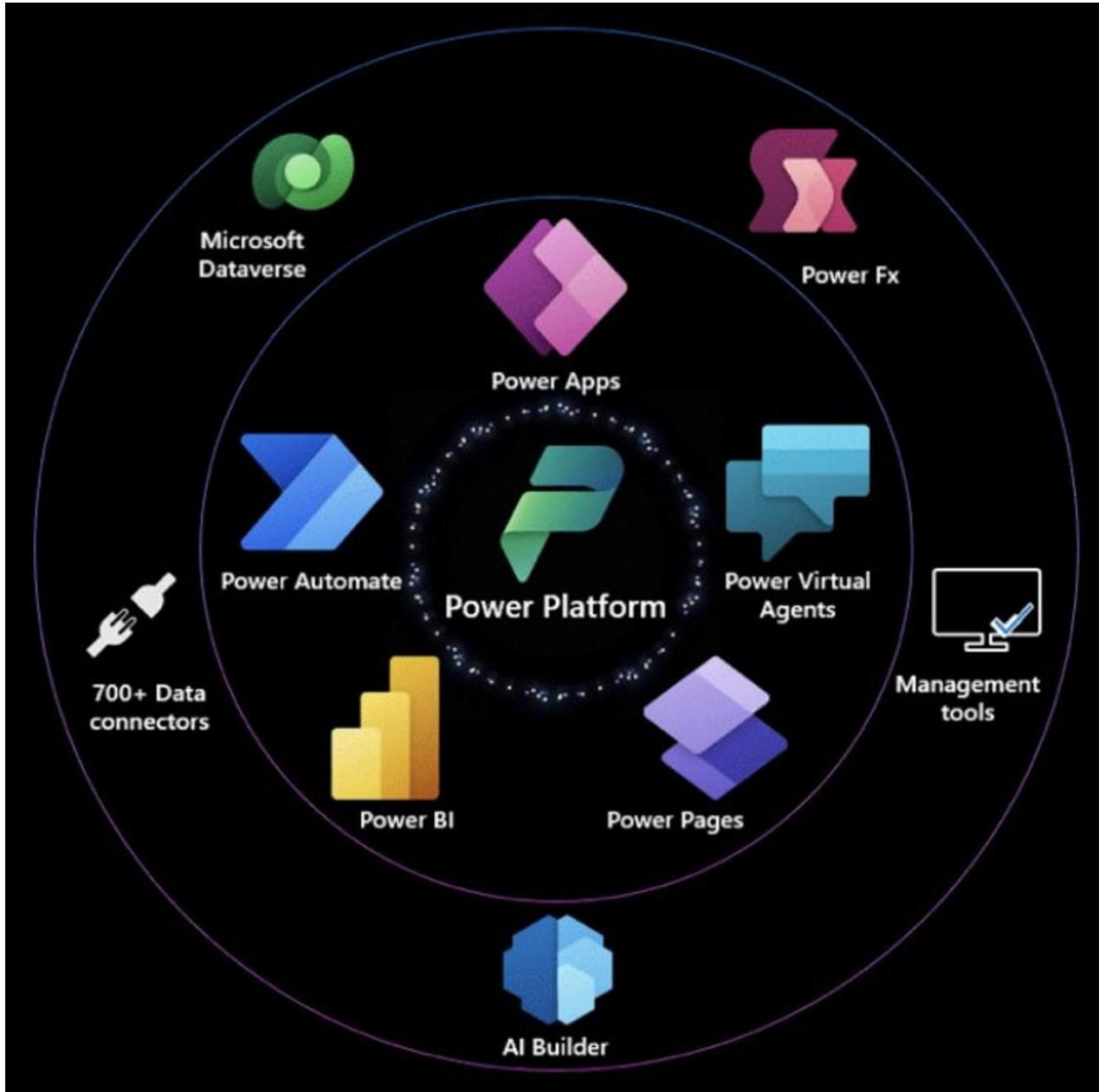
Why Use Power Apps?

- Easy to use

- Less expensive than building traditional apps

- Fully control and monitor data structure

- Integrated into the Microsoft ecosystem

- Reduces repetitive work by automating processes

Heathrow Airport Uses Power Apps:

https://customers.microsoft.com/en-us/story/766053-heathrow-airport-travel-transportation-power-apps
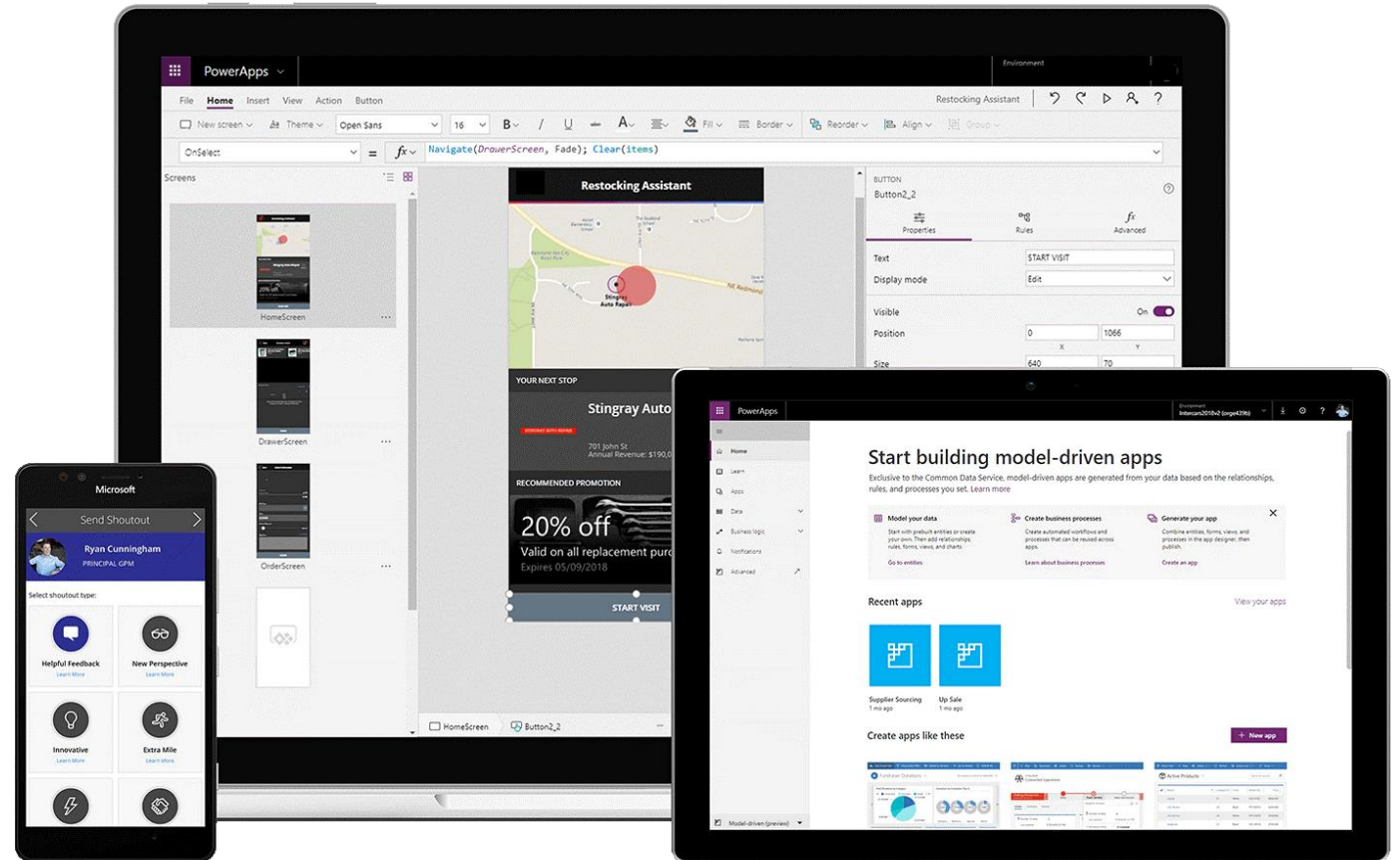
Power Apps Business Use Cases

- Data Entry

- Inventory Tracker

- Customer Service Apps

- Workflow processes

- Office Operations Management

- Maintenance

- Labor Hours

- Employee Directory

- Document Upload
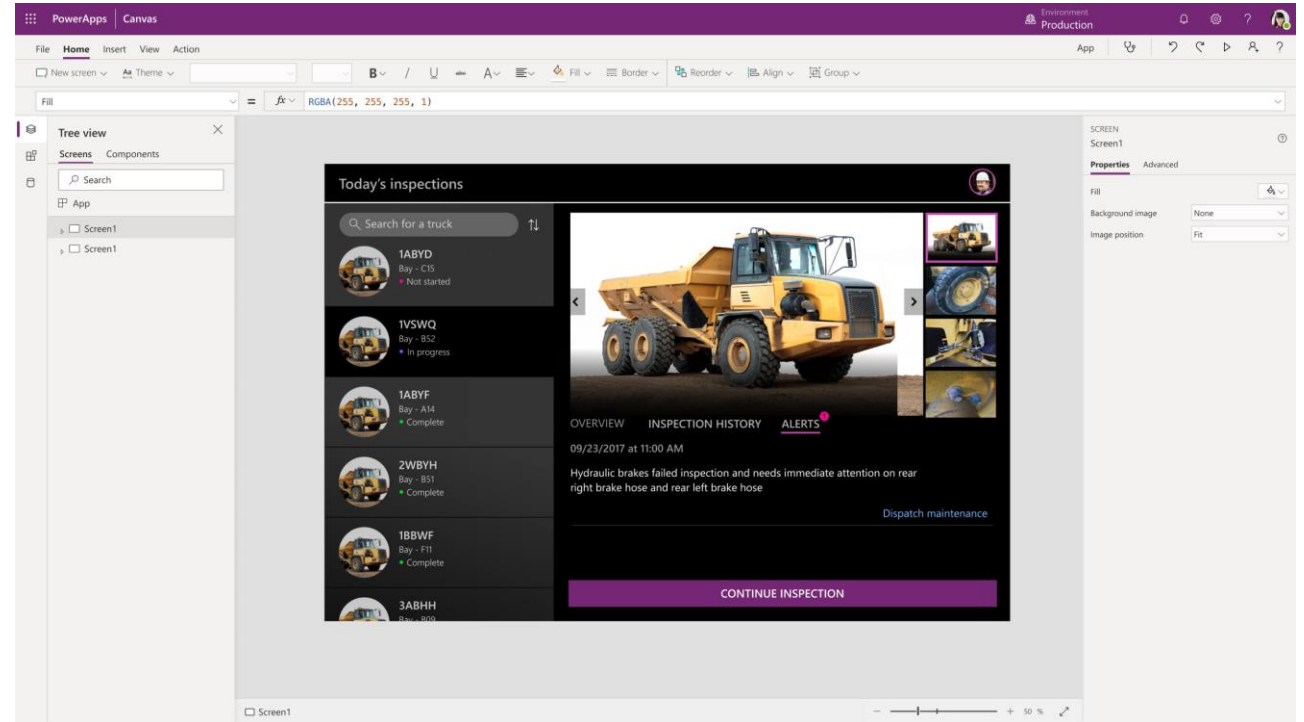
Compatible Devices

- Webpage – hyperlink, Teams

- Desktop App – Power App desktop app

- Mobile Device – mobile version

Types of Power Apps

1) **Canvas** – from data in SharePoint, OneDrive, SQL data, Dataverse data, SharePoint list, Salesforce, and other API connectors

2) **Model-driven –** from data in Dataverse tables

3) **Portal** –internal website

4) **Power Pages** – external website

Environments

A Power Platform environment is a place that holds data, apps, chatbots, and flows.

Types of Environments

- **Default** – every company using Office 365 has a default environment. Every user who has access to Power Apps can make an app in the default environment.

- **Trial** – 30-day trial environment. If users can make a new environment, they can make one trial per user

- **Sandbox** – Made for practice. You can copy items in a sandbox environment. This environment can be converted to a production environment

- **Trial (subscription-based)** – made for larger development projects. Only an admin can create.

- **Developer** – a practice environment. Can only have one user. Cannot share apps here.

* Making of any environments or trial licenses can be blocked by admins
* When you come back to Power Apps tab, always look to make sure you are in the correct environment

Create a Trial environment to create apps using Power Apps

1) Go to https://admin.powerplatform.microsoft.com/home
2) Click on environment and +New
3) Type in a name
4) Put in Type of "Trial"
5) Click on Yes for database
6) Click Next, leave defaults, click Save
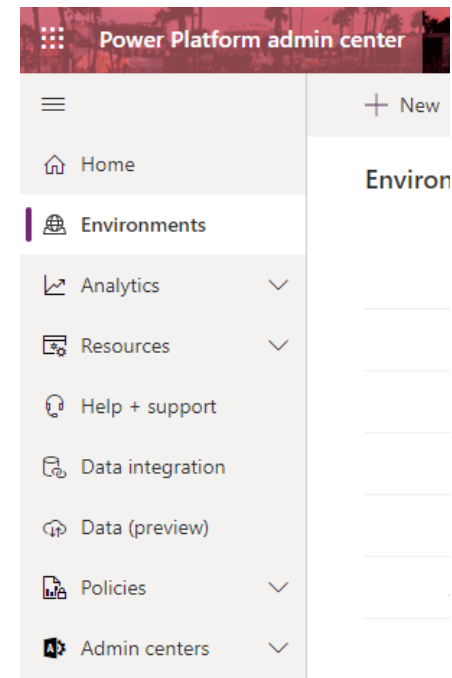
Make a Power App from a Template

Templates are great ways for you to learn the workings of Power Apps

1) Go to https://make.powerapps.com/

2) Make sure you go to your test or trial environment

3) Click on create on the left

4) Scroll down to the start from template section

* The easiest templates to start with will say Canvas app under the name

5) Click on a template (here we are clicking on Power Apps Training)

6) Change the name to something unique and that you can remember that you created it

7) Click Allow for app permissions to sign you in

8) On the next screen that comes up click on skip

9) While in edit mode, hold down the Alt key on your keyboard while clicking on items in the app to try it out. Click on save.

Import Data from Excel to SharePoint List

* Data must be formatted as a table no more than 20000 rows

Here we are making a new list first
1) Go to the SharePoint site where you want to import the data into
2) Click on +New button
3) Click on List
4) Click on From Excel
5) Click on Upload file
6) Navigate to the file and click Open
7) Click Next
8) Type in a name for the list, description, click Create

*If you do not have your data formatted as a table you will get this message below. Make sure to open the Excel file and turn the data into a table.

Customize

You don't have any tables in this file. You need to define tables to import as a list.

Add a table in Excel:

① Open the Excel document

Open

② Select the cells to include
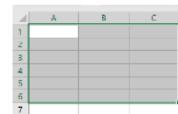
③ Select the data, and click 'Format as Table'

④ After saving, return here and click 'Refresh'

Refresh

Power App from SQL Table

Steps

1. Create a data gateway by downloading and installing a standard gateway https://docs.microsoft.com/en-us/data-integration/gateway/service-gateway-install
2. Click on Download the standard gateway link
3. In Power Apps click on New and SQL

*You need access to SQL Server to make this app

*You need a Power Apps per user license to use a premium connector like SQL

Share Apps
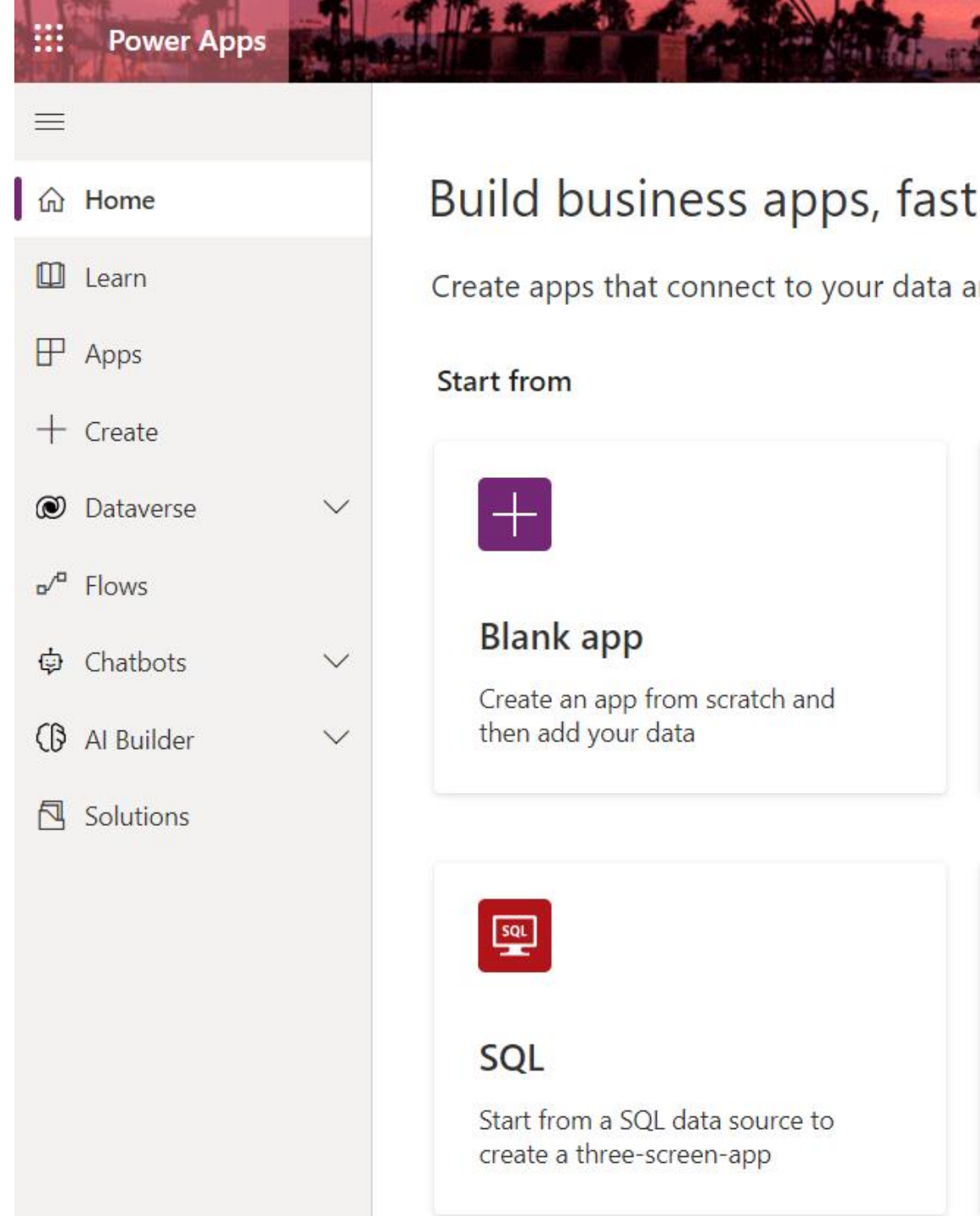
1) **Ownership** - to edit or modify an app
2) **Access** – the platform in which you share the app
   Teams link, Power BI embedded
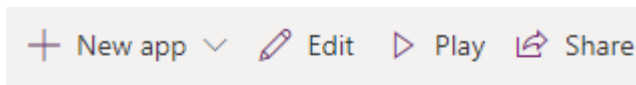
Apps

Apps   Component libraries

	Name
✏️	Vehicle Inventory App SP List
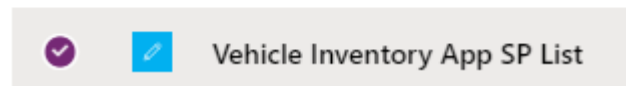
Share Vehicle Inventory App SP List

Add people as Users and Co-owners to your app. Make sure your data connections have been shared with all users.

ed.smith

ES Ed Smith
ed.smith@jncomputertraining.com

Email message

Ed,
Here is the app for you to access.
Thanks, Jeremy

Version Control

If you make an error, publish a previous version of your app

1) In your list of apps, click on the ellipsis next to the name of the app, click on **details**

2) Click on **Versions**

3) Select a previous version on the left side of the name of that version. Click Restore
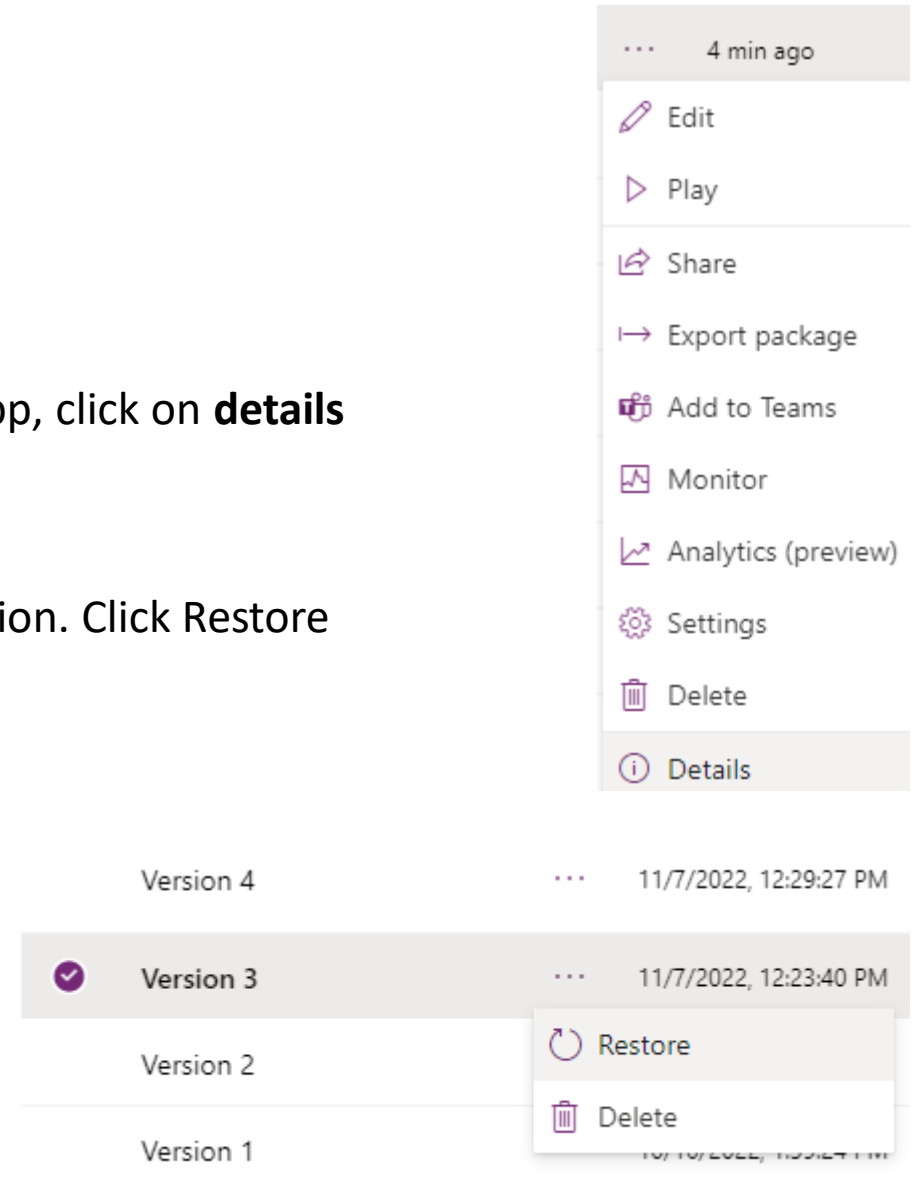
Day 2: Creating Power Apps with Microsoft Dataverse

Dataverse is a place to store data that can be used to make Power Apps

Azure Active Directory is used to secure data

Data in Dataverse can be secured based on records or fields

Import Data to Dataverse

1) Go to https://make.powerapps.com
2) Click on Dataverse, Tables, Import, **Import data**
3) Click on Excel workbook File (on top-left corner of screen)
4) Click on Upload file – **Browse button**
5) Sign into your Organizational account (your work email) and click Next button
6) Check the box next to the Sheet name(s) (similarly as Power BI) and click Next
7) Check each column's data type and change if necessary for business requirements
8) Click on Add new step
9) Change the Sheet name to what you want for the table name and click Next
10) Select Load to new table, type in Table name
11) Column mapping - Unique primary name column **ID** to Alternate key columns – **None**
12) Select Refresh automatically
13) Click Publish
* It can take several minutes where you will see notifications that the data upload is running on the bottom of the screen

Blank Canvas App from SharePoint List

STEPS:

1) Go to the SharePoint site where List is located
2) Click on Site contents
3) Click on List name
4) Click on Integrate, Power Apps and Create an app
5) Type in a name for your app

- Make sure your app is descriptive, unique and easy to remember
- This creates an app in your Organization's environment
- Press F5 key to preview app
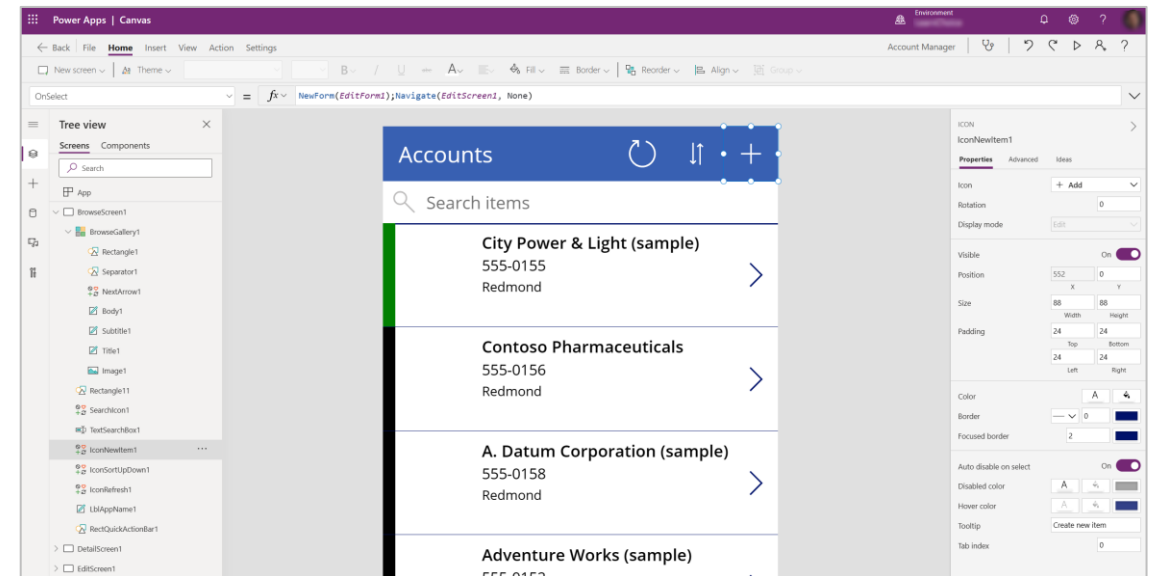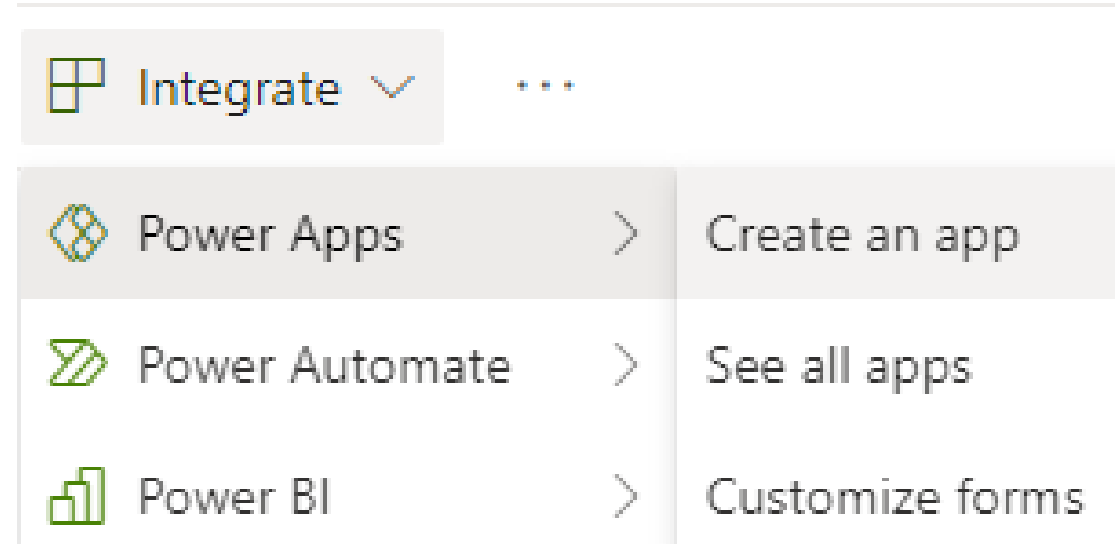
Editing Power Apps

- Insert an image into a Power App
  - Click on Media to the left , Click upload, navigate to the image, drag and drop the image onto App
- Settings
  - Click on the gear in your Power App to Enable modern command bar or go back to classic command bar. This toggle is under Preview tab

Power Fx Functions

Power Fx is the formula language used in Power Apps and Power Automate

The good thing about a formula language is that you can write one step at a time

https://learn.microsoft.com/en-us/power-platform/power-fx/formula-reference

An easy method is to write a formula based on a button press - OnSelect

Power Fx Common Functions

Fx functions in green work the same as their Excel counterparts

Abs	Color	DateValue	GUID	Left	Param	Sequence	Time
Acos	ColorFade	Day	HashTags	Len	Pi	ShowColumns	TimeValue
Acot	ColorValue	Defaults	Hour	Ln	PlainText	Shuffle	TimeZoneOffset
AddColumns	Concat	Degrees	If	LookUp	Power	Sin	Today
And	Concatenate	Distiinct	IfError	Lower	Proper	Sort	Trim
Asin	Count	DropColumns	isBlank	Match	Radians	SortByColumns	TrimEnds
AsType	Cos	EncodeUrl	IsEmpty	MatchAll	Rand	Split	Ungroup
Atan	Cot	EndsWith	IsError	Max	RenameColumns	Sqrt	Upper
Atan2	CountA	Errors	IsMatch	Mid	Replace	StartsWith	User
Average	CountIf	Exp	IsNumeric	Min	RGBA	StdevP	Validate
Blank	CountRows	Filter	IsToday	Minute	Right	Substitute	Value
Calendar	DataSourceInfo	Find	IsType	Mod	Round	Sum	VarP
Char	Date	First	JSON	Month	RoundDown	Switch	Weekday
Choices	DateAdd	FirstN	Language	Not	RoundUp	Table	With
Clock	DateDiff	ForAll	Last	Now	Search	Tan	Year
Coalesce	DateTimeValue	GroupBy	LastN	Or	Second	Text	

Common Power Fx Functions

- Text - "Text"

- Navigate(ScreenName) – Takes you to another screen

- Back() – takes you back to previous screen

- Exit() – exits app, Exit(true) – exits app and signs user out

- If(Condition, ThenResult [, DefaultResult])

- Sort(*Table*, *Formula* [, *SortOrder*])

- Value – converts a string to a function. Value("123.456")

- Today() – current date and time.

- Coalesce – evaluates arguments and returns first value that isn't blank. Coalesce(Value1 [, Value2, …])

- IsMatch – tests whether a text string matches a pattern. IsMatch(Text, Pattern [, Options])

- Errors – provides error messages. Errors(DataSource [, Record])

- Concatenate - combines strings of text. Concatenate(String1 [, String2, …])

- Concurrent - evaluates multiple formulas concurrently. Concurrent(Formula1, Formula2 [, …])

Common Power Fx Functions Part 2

- Color – RGBA(255, 255, 255, 1)   is default button color, blue
- Fill – Colors.Primary1   is yellow
- Left, Right, Mid
- Len, Trim, Find
- Upper, Lower, Proper
- Char, Split

Common Button Properties in Power Apps

Power Apps Properties

Button Control properties

Ctrl F in browser for find and replace. This will make it easy to find screens, fields, controls, properties, etc

- OnSelect – default is false, in drop-down menu, or Action (classic) menu
- Text – default is "Button", in drop-down and under properties on right side of screen
- Align – for text. Default is Align.Center. In Fx bar and to the right in text alignment buttons
- BorderColor – color of border. Default is ColorFade(Self.Fill, -15%)
- Width – number of pixels, 160 is default, size in fx bar or on the right under properties
- Visible – default is true, false for invisible. In Fx bar or toggle to the right
- Color – text color. Default is white RGBA(255, 255, 255, 1). In Fx bar and to the right of Color
- Fill – fill color. Default is blue RGBA(56, 96, 178, 1). In Fx bar and to the right in fill paint bucket
- BorderColor, BorderSyle, BorderThickness, Font, FontWeight, HoverColor, HoverFill

Day 3: Augmenting Power Apps with Power Automate and Virtual Agents

Power Automate

- Also known as Robotic Process Automation (RPA)

- Automate workflows in the Cloud

- Trigger events manually or on a schedule

- Send autoreply emails, approvals, and move data automatically

- Over 370 connectors including Microsoft and 3rd Party Apps
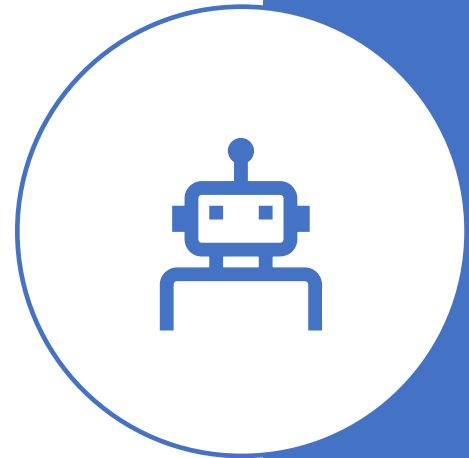
# Main Types of Power Automate (Flows)

1) **Automated cloud flow** – triggered by an event you specify
    (triggered automatically)

1) **Instant cloud flow** – triggered manually such as by a button press

2) **Scheduled cloud flow** – triggered at a certain time in the future

Save Email Attachments to OneDrive

1) Make a OneDrive folder to store attachments

2) Go to https://make.powerautomate.com/templates

3) In the Search templates box, type "save office 365"

4) Sign into OneDrive and Outlook, click Continue

5) Click on show advanced options, put in options

6) Click in Folder path, arrow next to root to choose folder, click save
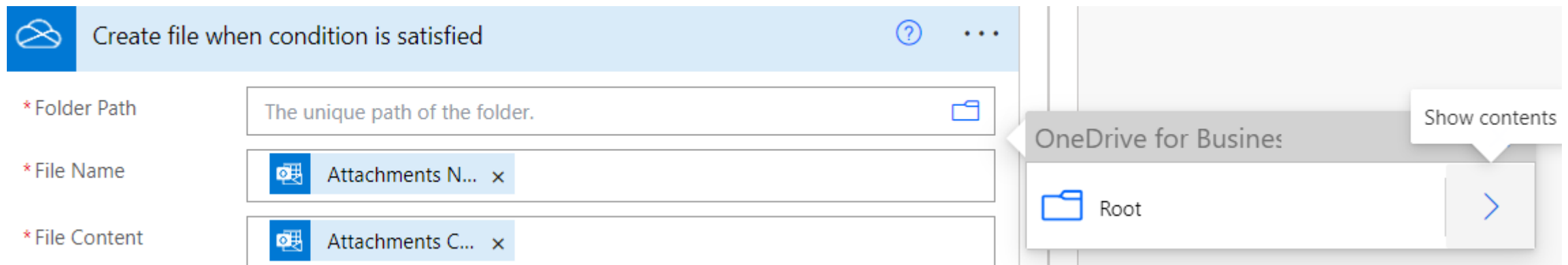
Power Automate Tips

- Rename the flow something you can remember what it does
- Always click on Test, manually
- Flow checker will let you what errors you have if any
- Turn off the flow by clicking the ellipsis and Turn off
- Click on the name of the flow to see details such as run history

Edit

Share

Save As

Send a copy

Export

Run history

Analytics

Turn off

Repair tips off

Delete

Details
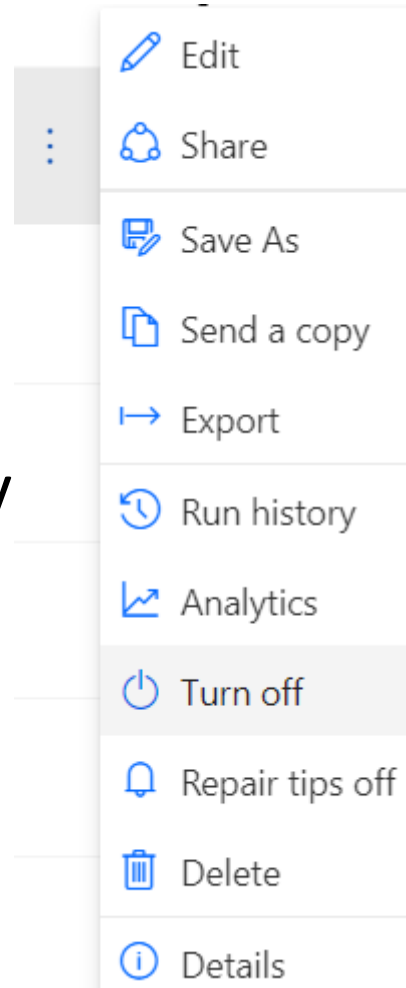
Saving data from Microsoft Forms into Excel using Power Automate (Flow) - Part 1

1) Make a new form or use an existing form. https://www.office.com/launch/forms

2) Go to https://make.powerautomate.com/

3) Click on Create

4) Click on Automated cloud flow (automated means it is always listening for an action to trigger it)

5) Name the flow, click on When a new response is submitted, click Create

6) Select your form from the drop-down and click + New Step below

7) Search for forms and select Get response details

8) Select the same Form Id as above. In response Id click in the box and to the right select the Response Id from the Dynamic content picker

9) Click on + New, search for **add a row** and select Add a row into a table Excel Online (Business) (Excel Online Business is for files in OneDrive or SharePoint)

Saving data from Microsoft Forms into Excel using Power Automate (Flow) – Part 2

10) Make a new Excel file with a table and save in a OneDrive or SharePoint folder

11) Click on the drop-down for the Location and navigate to OneDrive for Business or the Groups mean

SharePoint sites (or corresponding Microsoft Teams sites)

12) Click to the right to show contents to get inside a folder

13) Select the appropriate Excel file

14) Select the table name (if you have not changed it, it will be Table1)

15) Click in ID box and click Select parameter

Click on Response Id below

16) Skip start time

17) Completion time, click on Submission time

18) Skip email and name, especially since most Forms are anonymous

19) Put in the dynamic content for each of the questions

20) Click on Save at the bottom or on the top-right corner of the screen

21) Get new responses into your Forms form and then go to your Excel file and refresh

# Running a Power Automate Flow from a Power App

* Clicking on a button to run a flow is an Instant Cloud Flow in Power Automate

1) In any Power App, insert a button

2) Click on settings gear (it might be under the environment, click on the ellipsis and Settings)

3) Click on upcoming features. Enable legacy ribbon to see Action tab
* After you make the flow, ensure you select the button, select OnSelect, replace false in the formula bar with NameOfTheFlow.Run()
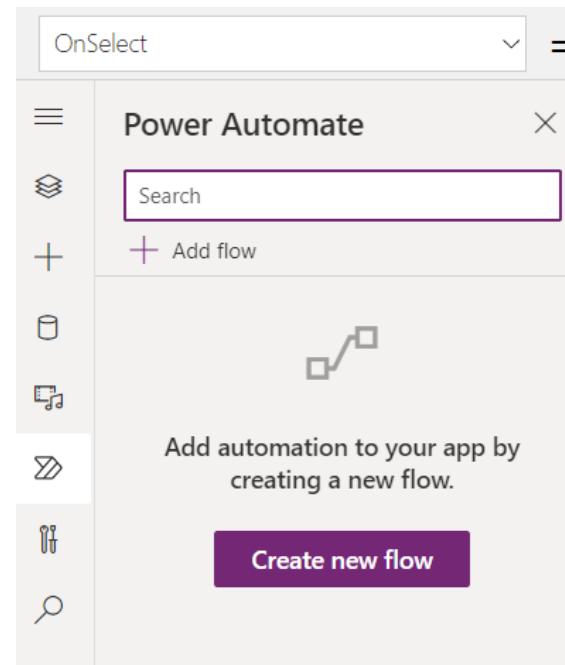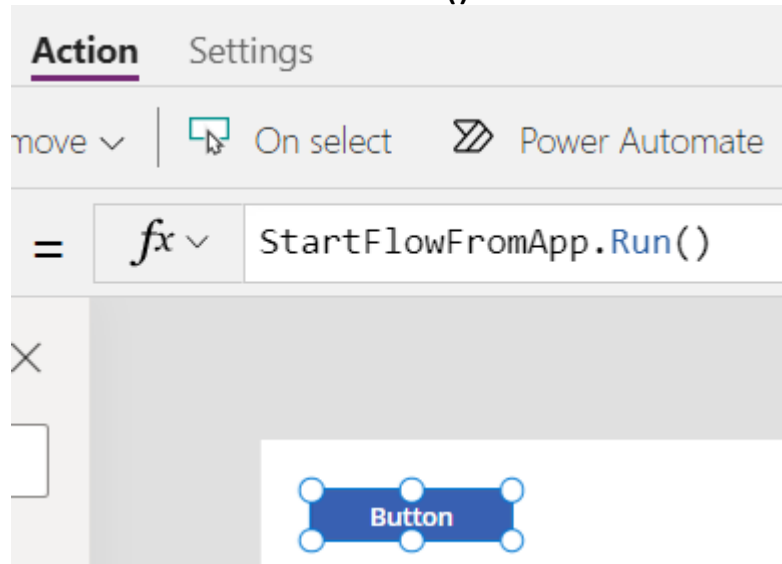
Power Virtual Agents (PVA)

Also known as Chatbots

Conversational message bot to reply based on typed messages

This uses AI to provide an answer even if the message is not exact

Use conditions to that the bot will provide based on what the customer types

Day 4: Creating Portal Apps and Power Pages

Power Pages

- Make low-code websites for users who do not have an email address at your company, such as external users, suppliers, customers, etc.

- Can collect data from the site and store in Dataverse tables

Welcome, Jeremy

Create modern, secure business websites

+ Create a site

Power Pages

https://make.powerpages.microsoft.com

Example Site:

https://powerplatformintegration.powerappsportals.com
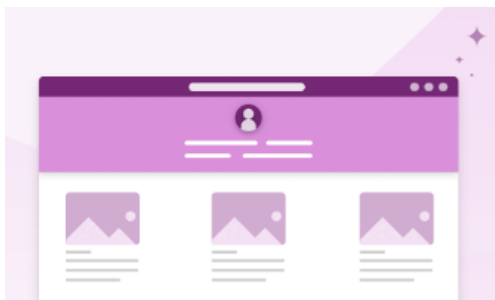
1) Click on + Create a site button, choose a template
2) Click Next, Give your site a name, type in a unique web address
3) Click Done and start designing the site
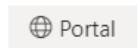
* You can share the URL with anyone to visit the site

Portal Apps

1) In the Power Apps Home page, click on Blank

2) Click on Create a blank website
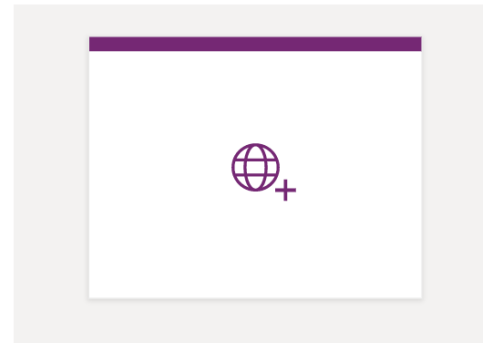
3) Type in a name for your Portal app and an address

Blank website

Create a no-code website for internal or external audiences. Customize it to get the features and the look you want. Learn more

⊕ Portal

← **Portal from blank**   ✕

ⓘ TIP: We'd need to install portal solution packages on this environment, and this may take a while. To try portals quickly, use an environment with the required packages already installed or create a new environment using the link. Create new environment

Name *

[   ]

Address * ⓘ

[   ] .powerappsportals.com

Language

[English   ∨]

☐ Use data from existing website record ⓘ

By clicking on Create, you agree to the Terms and Conditions and the Terms of Service.

Privacy and Cookies

[Create] [Cancel]

Create a website to share data with external and internal users. This template comes with sample pages to get you quickly started. Learn more

⊕ Portal

[Create]   *This will take between 20 to 30 minutes to provision

Q & A

What questions do you have?

Ask now in the Q & A section or email
jnathan@jncomputertraining.com

It was great working with you; see you next time!

-Jeremy Nathan