

Introduction to Power Apps – Session 3

27 Dec 2020, Talks academy



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AGENDA SLIDE

What we will cover today



01

Intro to Power Apps
Recap



02

Building Apps via
PowerApps Template



03

Building Apps via
Power Apps from
scratch



04

Intro to Power Apps
Input, Galleries, Forms



05

Demos

House Keeping



6 pm IST - Start
of Session



Class Slides



Labs



Additional
Resources



Video
Resources



Q & A

Location of Slides

- <http://bit.ly/PowerAppsCourse>



Course Roadmap

Introduction to Power Apps

Introduction

Introduction on Power Apps.
Why, What & How

Connections

Using variables, collection,
data types, delegation
connections and different
data sources

Building Apps

Using Templates or build
from scratch. With
OneDrive, & SharePoint

Basics on Formulas,
Delegation, Search, Filter,
Patch function.

Formulas

With Microsoft Teams,
Power Automate &
SharePoint Online

Integration

Building end to end solutions.
AI Builder & Mixed Reality.

Real world

Low Code Concepts



**Declarative &
Imperative** Logic



Formulas



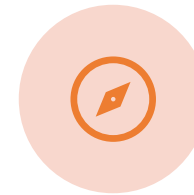
**Variables and
Collections**



Data Sources



**Controls &
Bindings**



Navigation

Variables

Variable Type	Scope	Description	Functions to Use
Global variables	App	Simplest to use. Holds a number, text string, Boolean, record, table, etc. that can be referenced from anywhere in the app .	<u>Set</u>
Context variables	Screen	Great for passing values to a screen, much like parameters to a procedure in other languages. Can be referenced from <u>only one screen</u> .	<u>UpdateContext</u> <u>Navigate</u>
Collections	App	Holds a table that can be referenced from <u>anywhere in the app</u> .	<u>Collect</u> <u>ClearCollect</u>

[Understand variables in canvas apps - Power Apps | Microsoft Docs](#)

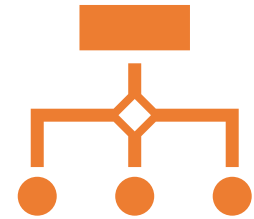
Collections



Why **Collections**?



Locally store data in your
apps



Group of items that are
similar such as **SPO**

Collections functions



How to use?



Collect



Clear




Clear Collect




Sample will work soon in Session 6

AS

Repeating Table Sample



Add New Issue +

Issue #	Issue Name	Priority	Status	Due Date	
1	<input type="text" value="Aroh"/>	<div>Low</div>	<div>Not Started</div>	<div>12/31/200</div>	
15	<input type="text"/>	<div>Low</div>	<div>Not Started</div>	<div>12/31/200</div>	
16	<input type="text"/>	<div>Low</div>	<div>Not Started</div>	<div>12/31/200</div>	

Sample will work soon in Session 6

The screenshot displays the Microsoft Power Apps editor interface. The top navigation bar is purple with the 'Power Apps' logo. Below it is a ribbon with tabs: 'File', 'Home', 'Insert', and 'View' (which is currently selected). Under the 'View' tab, there are icons for 'Data sources', 'Media', 'Collections', 'Variables', and 'Advanced'. The main workspace shows a formula bar with 'OnChange' selected in the dropdown, followed by an equals sign and a function selector 'fx'. A dropdown menu is open, showing the formula: `ClearCollect(colIssueUpdates, ShowColumns(Table(Defaults(IssueTrakers)), "creb3_name", "creb3_duedate", "creb3_priority", "creb3_issuestatus", "creb3_issuetrakerid"))`. The 'ClearCollect' function is highlighted with an orange box. Below the formula bar, there is a 'Tree view' pane on the left with a search bar and a list of components: 'App', 'Welcome Screen', 'Button1', 'Label7', 'GroupHeader', 'Rectangle2', 'imgUserImage', 'Gallery2', 'Icon1', 'dtDueDate', 'ddlStatus', 'ddlPriority', 'txtTaskName', and 'txtIssueNo'. The main canvas area shows a dark-themed form with a text input field, a dropdown menu set to 'Low', and another dropdown menu set to 'Not Started'. The number '16' is visible in the bottom left corner of the canvas.

Data Types

Data Type	Description	Examples
Boolean	A true or false value. Can be used directly in If, Filter and other functions without a comparison.	<i>True</i>
Color	A color specification, including an alpha channel.	Color.Red ColorValue("#102030") RGBA(255, 128, 0, 0.5)
Currency	A currency value that's stored in a floating-point number. Currency values are the same as number values with currency-formatting options.	123 4.56
Date	A date without a time, in the time zone of the app's user.	Date(2019, 5, 16)
DateTime	A date with a time, in the time zone of the app's user.	DateTimeValue("May 16, 2019 1:23:09 PM")
GUID	A <u>Globally Unique Identifier</u> .	GUID() GUID("123e4567-e89b-12d3-a456-426655440000")
Hyperlink	A text string that holds a hyperlink.	"https://powerapps.microsoft.com"

Data Types

Data Type	Description	Examples
Image	A <u>Universal Resource Identifier (URI)</u> text string to an image in .jpeg, .png, .svg, .gif, or other common web-image format.	MyImage added as an app resource "https://northwindtraders.com/logo.jpg" "appres://blobmanager/7b12ffa2..."
Media* 1. Browser ~ supports 100 MB 2. Mobile ~ supports 30-70 MB	A URI text string to a video or audio recording.	MyVideo added as an app resource "https://northwindtraders.com/intro.mp4" "appres://blobmanager/3ba411c..."
Number	A floating-point number.	123 -4.567 8.903e121
Option set	A choice from a set of options, backed by a number. This data type combines a localizable text label with a numeric value. The label appears in the app, and the numeric value is stored and used for comparisons.	ThisItem.OrderStatus

Data Types

Data Type	Description	Examples
Record	A record of data values. This compound data type contains instances of other data types that are listed in this topic. More information: Working with tables .	{ Company: "Northwind Traders", Staff: 35, NonProfit: false }
Record reference	A reference to a record in an entity. Such references are often used with polymorphic lookups. More information: Working with references .	First(Accounts).Owner
Table	A table of records. All of the records must have the same names for their fields with the same data types, and omitted fields are treated as <i>blank</i> . This compound data type contains instances of other data types that are listed in this topic. More information: Working with tables .	Table({ FirstName: "Sidney", LastName: "Higa" }, { FirstName: "Nancy", LastName: "Anderson" })
Text	A Unicode text string.	"Hello, World"
Time	A time without a date, in the time zone of the app's user.	Time(11, 23, 45)
Two option	A choice from a set of two options, backed by a Boolean value. This data type combines a localizable text label with a boolean value.	ThisItem.Taxable

Understand delegation in a canvas app



Minimize the **amount of data** that must be brought to your **device**



Only the **first set of records** can be retrieving



Dramatically reduce the **processing power, memory, and network bandwidth** that your app need



Snappier response times for your users, **even on phones connected via a cellular network.**



PowerApps formulas meets the need to **minimize data** moving over the network



Power Apps will delegate processing of **data to the data source (CDS, SharePoint, SQL Server)**



Rather than moving the data to the app for processing locally.

Understand delegation in a canvas app



Working with **large data sets** requires using **data sources** and **formulas** that can be delegated



only way to keep your app performing well.



Small data sets (fewer than 500 records), you can use any data source and formula



App can process data locally, if the formula can't be delegated

Delegation

SharePoint - Connectors | Microsoft Docs

→ ↺ 🔒 https://docs.microsoft.com/en-us/connectors/sharepointonline/ ☆ ⚙ 🗂 👤

🔍 Filter by title

Cloudmersive NLP

Cloudmersive PDF

Cloudmersive Video and Media

Cloudmersive Virus Scan

Cognito Forms

Commercient

Common Data Service

Common Data Service (current environment)

Company Connect

Computer Vision API

Connect2All

Connective eSignatures

Content Conversion

Content Moderator

Corda Blockchain [DEPRECATED]

COSMO Bot

CPQSync

CRM Bot

Custom Vision

DEPRECATED

ⓘ Note

SharePoint types that map to Power Apps as complex often have subfields that map to basic types such as text and number.

Power Apps delegable functions and operations for SharePoint

The following Power Apps operations, for a given data type, may be delegated to SharePoint for processing (rather than processing locally within Power Apps).

Item	Number	Text	Boolean	DateTime	Complex [1]
Filter	Yes	Yes	Yes	Yes	Yes
Sort	Yes	Yes	Yes	Yes	No
SortByColumns	Yes	Yes	Yes	Yes	No
Lookup	Yes	Yes	Yes	Yes	Yes
=	Yes	Yes	Yes	Yes	Yes
<, <=, <>, >, >=	Yes [2]	No	No	Yes	Yes
StartsWith	-	Yes	-	-	Yes
IsBlank	-	No [3]	-	-	No

Is this page helpful?

👍 Yes

👎 No

In this article

[Known issues and limitations](#)

[Power Apps data type mappings](#)

[Power Apps delegable functions and operations for SharePoint](#)

[Connector in-depth](#)

[Creating a connection](#)

[Throttling Limits](#)

[Actions](#)

[Triggers](#)

[Definitions](#)

Delegation

[Power Apps delegable functions and operations for Dataverse](#)

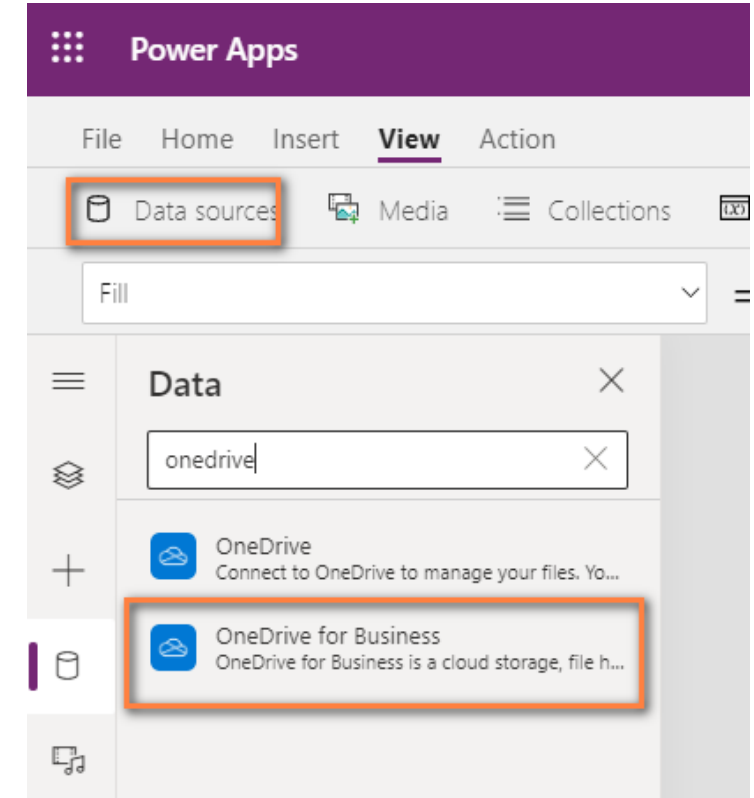
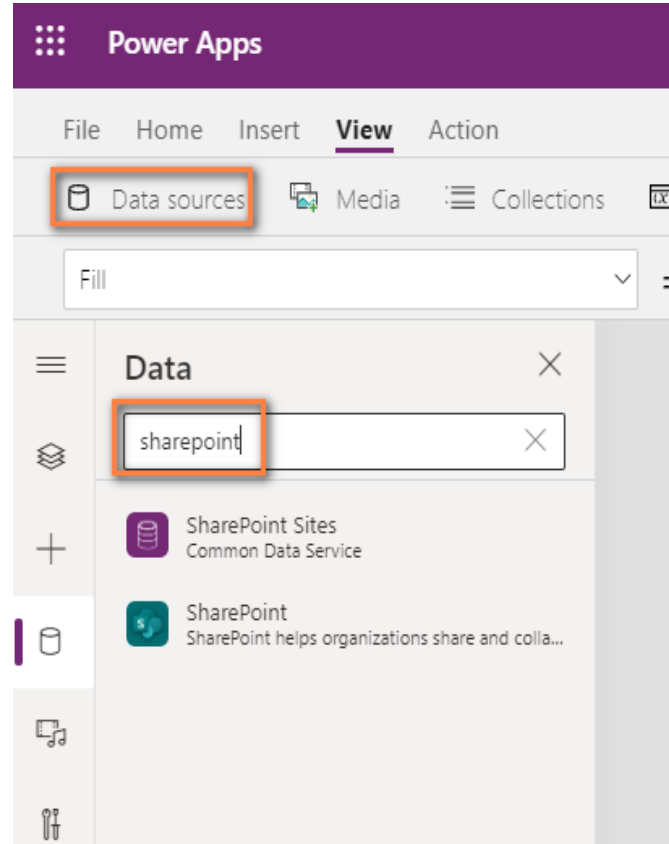
Power Apps delegable functions and operations for Dataverse

These Power Apps operations, for a given data type, may be delegated to Dataverse for processing (rather than processing locally within Power Apps).

Item	Number [1]	Text [2]	Choice	DateTime [3]	Guid
Filter	Yes	Yes	Yes	Yes	Yes
Sort	Yes	Yes	No	Yes	-
SortByColumns	Yes	Yes	No	Yes	-
Lookup	Yes	Yes	Yes	Yes	Yes
=, <>	Yes	Yes	Yes	Yes	Yes
<, <=, >, >=	Yes	Yes	No	Yes	-
And/Or/Not	Yes	Yes	Yes	Yes	Yes
StartsWith	-	Yes	-	-	-
IsBlank	Yes [4]	Yes [4]	No [4]	Yes [4]	Yes
Sum, Min, Max, Avg	Yes [5]	-	-	No	-

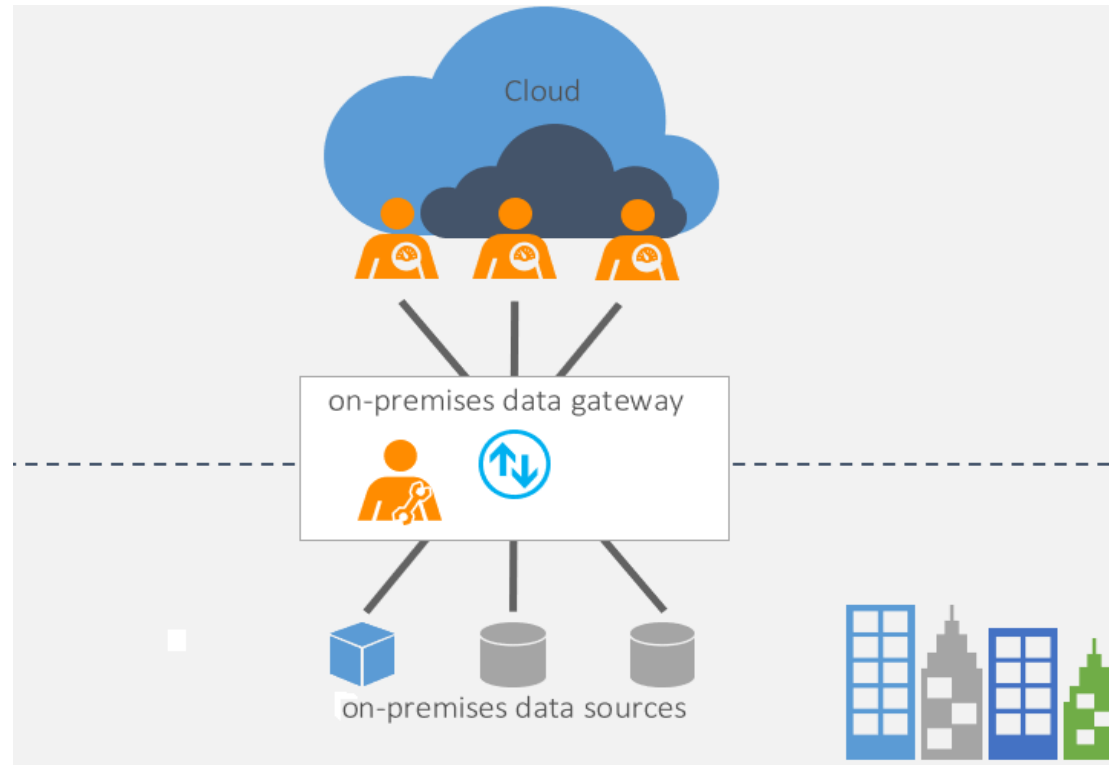
Data Sources

- In Power Apps, most canvas apps use external information stored in cloud services **called Data Sources**.
- A common example is a table in an **Excel file stored in OneDrive for Business** or SharePoint.



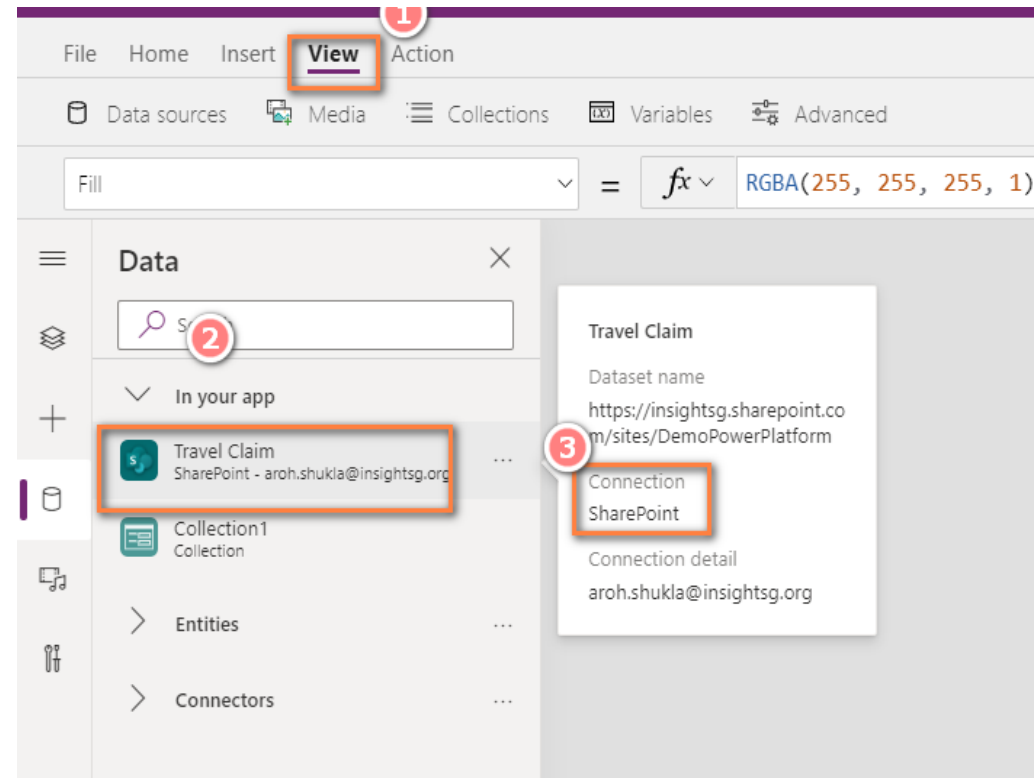
Data Gateway

- By **using a gateway**, organizations can keep databases and other data sources on their on-premises networks, yet securely use that **on-premises data in cloud services**.



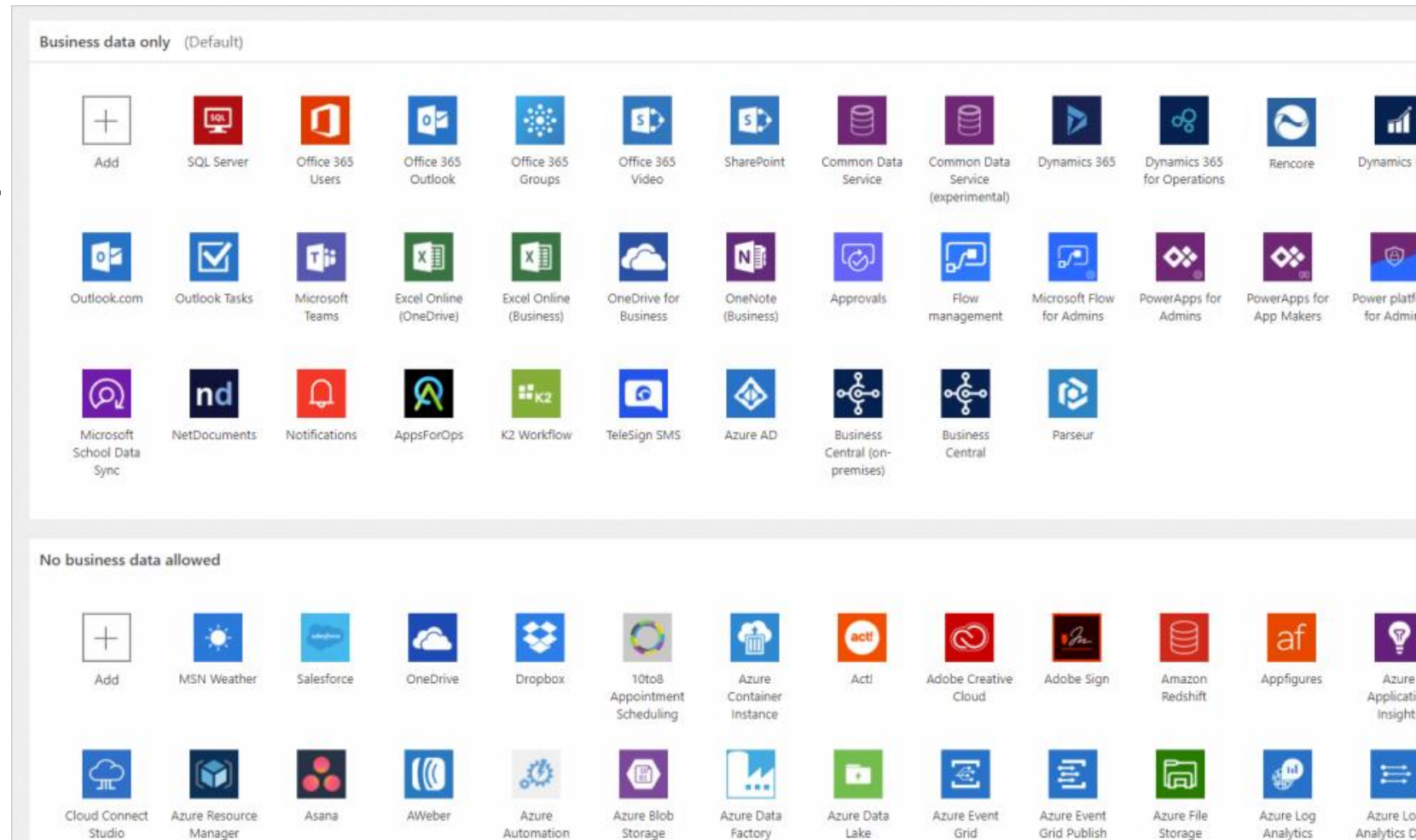
Connections

- Data is stored in **a data source**, and you bring that data into your app by creating a connection. The connection uses a **specific connector to talk to the data source**.
- Power Apps has **connectors for many popular services** and on-premises data sources, including **SharePoint, SQL Server, Office 365, Salesforce, and Twitter**.



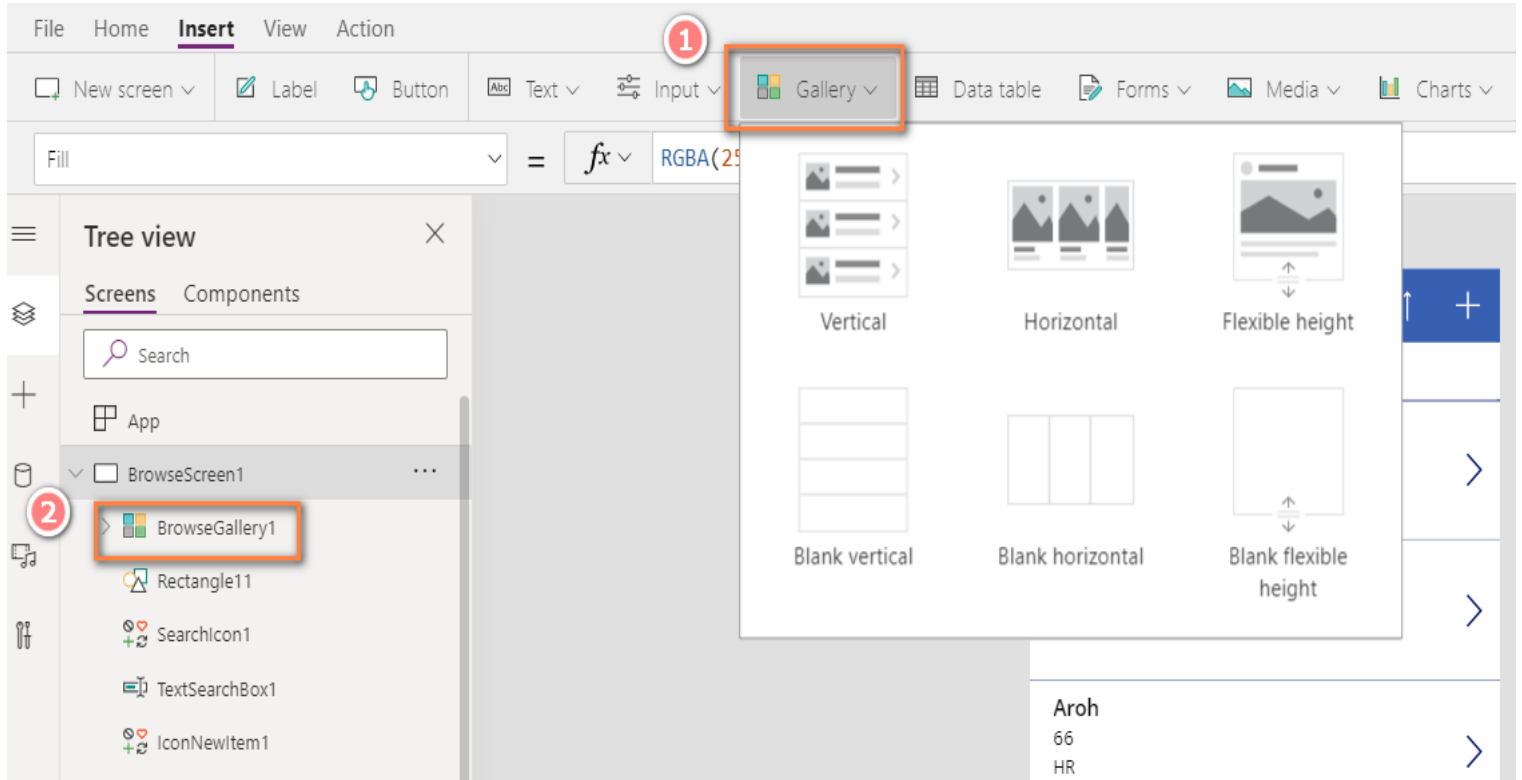
Connectors

- Power Apps has more **than 300+** connectors. Power Apps has connectors for many popular services and on-premises data sources, **including SharePoint, SQL Server, Office 365, Salesforce, and Twitter.**
- Power Apps can connect to 2 types of connector**
- Standard Connector
- Premium Connector



Galleries

- A **Gallery** control can show **multiple records** from a data source, and each record can contain multiple types of data.
- For example, use a Gallery control to show multiple contacts with each item showing contact information that includes a name, an address, and a phone number for each contact.



Forms

- Add three **types of controls** to a canvas app so that the user can **browse** for a record, **display** details about that record, and **edit or create** a record:

Assets		
Search items		
Tablet	Barath	Ben.Change@contoso.com
		343453
Tablet	Pratap	Ben.Change@contoso.com
		12235
PC	Aaron	Ben.Change@contoso.com
		1234333
Tablet	Saurabh	Ben.Change@contoso.com
		45454
Tablet	Kimberly	

Browse screen
Primary control: Gallery

Assets	
AssetID	343453
ApproverEmail	Ben.Change@contoso.com
AssetType	Tablet
AssignedTo	Barath
DeviceName	Surface PRO 3 128GB
ImageThumbnailURL	http://compass.surface.com/assets/09/73/097303c9-0b0c-4d60-8afa-43e5dfaa1b2d.jpg#Surface-pro-3-new.jpg
ImageURL	https://www.microsoft.com/global/en-us/news/publishingimages/ImageGallery/Images/Products/SurfacePro3/SurfacePro3Primary_Print.jpg
SecurityCode	JKOT

Details screen
Primary control: Display form

Assets	
AssetID	343453
ApproverEmail	Ben.Change@contoso.com
AssetType	Tablet
AssignedTo	Barath
DeviceName	Surface PRO 3 128GB
ImageThumbnailURL	http://compass.surface.com/assets/09/73/097303c9-0b0c-4d60-8afa-43e5dfaa1b2d.jpg#Surface-pro-3-new.jpg
ImageURL	https://www.microsoft.com/global/en-us/news/publishingimages/ImageGallery/Images/Products/SurfacePro3/SurfacePro3Primary_Print.jpg
SecurityCode	JKOT

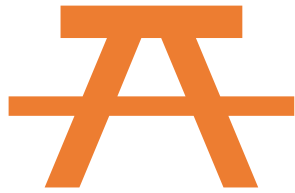
Edit and Create screen
Primary control: Edit form

Canvas: Standard versus Customized List

Standalone Power Apps and **SharePoint Customized List** form are essential same. However, there are a few important differences that need to weigh before an avenue is chosen.

Feature set	Stand Alone	Customized SharePoint List
Backup / Export	✓	x
SharePoint List UI integration	x	✓
Embed in SharePoint Page	✓	✓
Power Apps Permissions	✓ with Power Apps management interface	SharePoint Permissions
Publish to Microsoft Teams	✓	x

1. Creating a Check In app



Simple **check-in** app

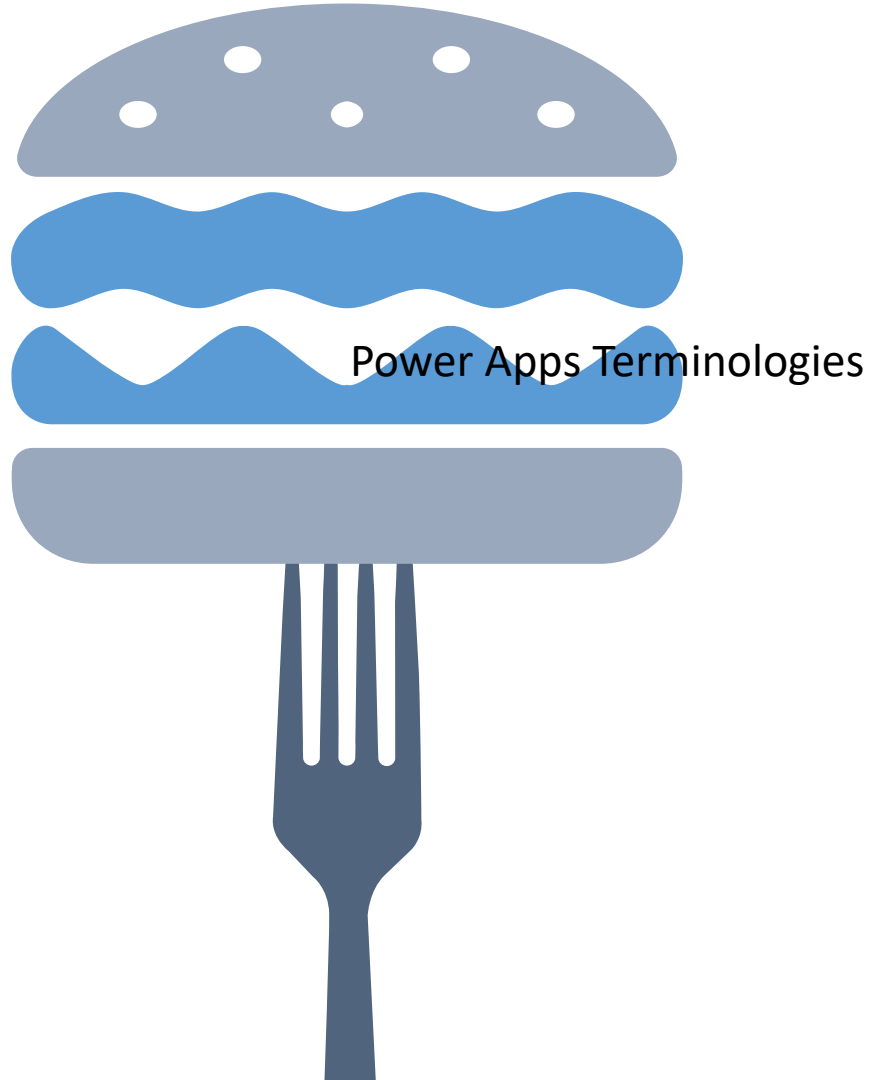


submit their **hardware
issue**



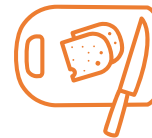
Data source – **OneDrive /
Excel**

Scenario 2 (SPO + Power Apps)



Business case

Users can easily order food delivery service at the comfort of their home due to COVID-19



Data Source

SharePoint Online Custom List .



Only with Mobile Phone

Ordering will only through mobile phone.

Demo

Collection
Building Apps

YOU HELD THROUGH !



Prepared by:

Aroh Shukla