Are you Ready for Microsoft Power Platform Fundamentals (PL-900)? Self-assess yourself with "Whizlabs FREE TEST"

Microsoft Power Platform Fundamentals (PL-900)

Quick Bytes for you before the exam!

The information provided in WhizCards is for educational purposes only; created in our efforts to help aspirants prepare for the Microsoft Power Platform Fundamentals (PL-900) certification exam. Though references have been taken from Microsoft documentation, it's not intended as a substitute for the official docs. The document can be reused, reproduced, and printed in any form; ensure that appropriate sources are credited and required permissions are received.

Index

Describe the Business Value of Power Apps 03

- Describe the Business Value of Power Platform Services.....04
- Describe the business value of extending business solutions by using Power Platform.....06
- Describe Power Platform Administration and Security.....07
- Steps to Manage Power Apps.....08
- Create Users and Assign Security Roles.....09
- Environments Overview.....10
- Data loss Prevention Policies and Compliance and Data Privacy.....11
- Accessibility Standards and Guidelines.....12

Identify the Core Components of Power Platform.....13

- Describe Microsoft Dataverse.....14
- Describe Connectors.....16
- Describe AI Builder.....18

Describe the Capabilities of Power BI.....19

- Identify Common Power BI Components.....20
- Connect to and Consume Data.....21
- Share a Dataset.....22
- Build a Basic Dashboard using Power BI...23

Demonstrate the Capabilities of Power Apps.....24

- Identify common Power App Components.....25
- Use cases for formulas.....26
- Build a Basic Canvas app.....27
- Describe Power App Portals.....29
- Build a Basic Model Driven App.....30

Demonstrate the Capabilities of Power Automate.....31

- Identify common Power Automate Components.....32
- Build a Basic Flow.....34

Demonstrate the Capabilities of Power Virtual Agents.....35

- Describe Power Virtual Agent Capabilities.....36
- Build and Publish a Chatbot.....39

Describe the Business Value of Power Apps

Describe the Business Values of Power Platform Services

Power BI

Collection of software services, apps, and connectors that work together to turn your unrelated data sources into coherent, visually immersive, and interactive insights.

Power Automate

Include powerful workflow automation directly in your apps with a no-code approach that connects to hundreds of popular apps and services.

Power Apps

Power Apps is a suite of apps, services, connectors, and data platform that provides a rapid application development environment to build custom apps for your business needs. This Low-code/no-code tools allow citizen developers to develop business workflow applications via drag-and-drop interfaces.

Power Virtual Agents

Easily build chatbots to create rich conversational experiences with your customers and employees—no coding required

Describe the Business Values of Power Platform Services

Microsoft Dataverse

Dataverse lets you securely store and manage data that are used by business applications. Data within Dataverse is stored within a set of tables. A table is a set of rows and columns.

Connectors

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.

Flow in Power Automate

Cloud flows: Flow automatically be triggered either automatically, instantly, or via a schedule.

Desktop flows: Desktop flows are used to automate tasks on the Web or the desktop.

Business process flows: A streamlined user experience that leads people through their organization's processes has been defined for interactions that need to be advanced.

Describe the business value of extending business solutions by using Power Platform

Out of the box tenant-wide analytics

Usage reporting: Power Apps and Power Automate

Maker activity reporting: Power Apps and Power Automate

Inventory reporting: Power Apps and Power Automate

Security Model

- ***Least Privilege:***
  Provide users with access only to the appropriate levels of information that are required to do their jobs.
- Categorize users by role and restrict access based on those roles.
- Support data sharing so that users and teams can be granted access to records that they do not own for a specified collaborative effort.
- Prevent a user's access to records the user does not own or share.

Dependencies between Action Rights

Action	Access rights required
Create a record and be the record owner	CREATE, READ
Share a record	SHARE. This right is required by the person doing the share operation.
	READ. This right is required by the person doing the share operation and the person with whom the record is being shared.
Assign a record	ASSIGN, WRITE, READ
Append to a record	WRITE, READ, APPENDTO
Append a record	WRITE, READ, APPEND

Steps to Manage Power Apps

Sign into the Power Platform admin center.

In the navigation pane, select Environments, select an environment with resources, and then select the Power Apps resource.

Select an app to manage.

Select your desired action, e.g., Share and Delete.

Create users and Assign Security Roles

Create a Security Account

You use the Microsoft 365 admin center to create user accounts for every user who needs access to apps created using Power Apps and customer engagement apps in Dynamics 365. The user account registers the user with the Microsoft Online Services environment.

Assign a Security Role to the User

- Security roles control a user's access to data through a set of access levels and permissions. The combination of access levels and permissions included in a specific security role limits the user's view of data and the user's interactions with that data.
- You can assign more than one security role to a user. The effect of multiple security roles is cumulative, which means that the user has the permissions associated with all security roles assigned to the user.
- Security roles are associated with business units. If you've created business units, only those security roles associated with the business unit are available for the business unit users. You can use this feature to limit data access to data owned by the business unit.

Environments Overview

An environment is a space to store, manage, and share your organization's business data, apps, and flows.

Environment scope:
Each environment is created under an Azure Active Directory (Azure AD) tenant, and users within that tenant can only access its resources.

Environment permissions

1. *Environment Admin:* Perform all administrative actions on an environment
2. *Environment Maker:* Create resources within an environment, including apps, connections, custom connectors, gateways, and flows using Power Automate.

Types of environments
Production, Default, Sandbox, Trial, Developer, Microsoft Dataverse for Teams

The default environment:
A single default environment is automatically created by Power Apps for each tenant and shared by all users in that tenant. Whenever a new user signs up for Power Apps, they're automatically added to the default environment's Maker role

Data loss Prevention Policies and Compliance and Data Privacy

Data loss prevention (DLP) policies:

Ability to create and enforce policies that define which connectors can access and share business data. The policies that define how data can be shared are referred to as data loss prevention (DLP) policies.
Compliance and data privacy

Compliance and Data Privacy

- *Trust Center:*
  Centralized resource for obtaining information on Microsoft's portfolio of products
- *Data Location*
- *Data Protection:*
  TLS 1.2 (or higher) is required for accessing the server endpoints.
- Resources to manage GDPR Compliance

Accessibility Standards and Guidelines

- Layout and Color
- Keyboard Support
- Screen reader support
- Control type and structure
- Multimedia
- Working with Signatures

Identify the Core Components of Power Platform

Describe Microsoft Dataverse

Dataverse Database

- Tables are used to model and manage business data.
- Dataverse provides standard tables by default. Following best practices these are designed to capture the most common concepts and scenarios within an organization.
- Columns define the individual data items that can be used to store information in a table.

Table Relationships

Relationship Type	Description
1:N (One-to-Many)	A table relationship where one table row for the **Primary table** can be associated with many other **Related table** rows because of a lookup column on the related table. When viewing a primary table row, you can see a list of the related table rows associated with it. In the Power Apps portal, the **Current table** represents the primary table.
N:N (Many-to-Many)	A table relationship that depends on a special **Relationship table** is sometimes called an Intersect table. Many rows of one table can be related to many rows of another table. When viewing rows of either table in a N:N relationship, you can see a list of any other table rows related to it.

Describe Microsoft Dataverse

Table Relationships Behaviour

Preserve data integrity

- Prevent deleting the primary table so that the related table rows can be reconciled, perhaps associating them with a different primary table.
- Allow the related tables to be deleted automatically with the deletion of the primary table row.

Common Data Model:

Common Data Model includes a set of standardized, extensible data schemas that Microsoft and its partners have published. This collection of predefined schemas includes entities, attributes, semantic metadata, and relationships.

Business Rule

- Can define a business rule for a specific model-driven form
- Canvas apps cannot have a business rule applied to a specific form, but it enforces when interacting with data
- Maintain business logic at the data layer instead of the app layer
- Better control of data
  - Confirm data follow business logic
  - Rule are tied to the data, not the app

Metadata means data about data:
In Dataverse, the metadata is a collection of tables.

- Existing metadata: Dataverse comes with several standard tables that support core business application capabilities.
- Limitations on creating metadata items: Within each table, there is an upper limit on the number of columns you can create. This limit is based on the technical limitations on the amount of data stored in a database table row.

Describe Connectors

Types of Data sources

- **Tabular Data**
- **Function-based Data**

Actions

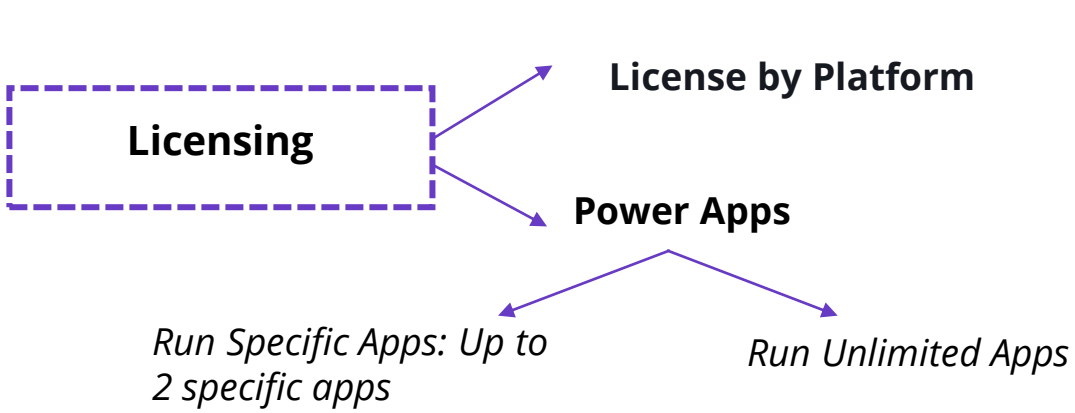
Types of Triggers

- **Time Based**
- **Event Based**

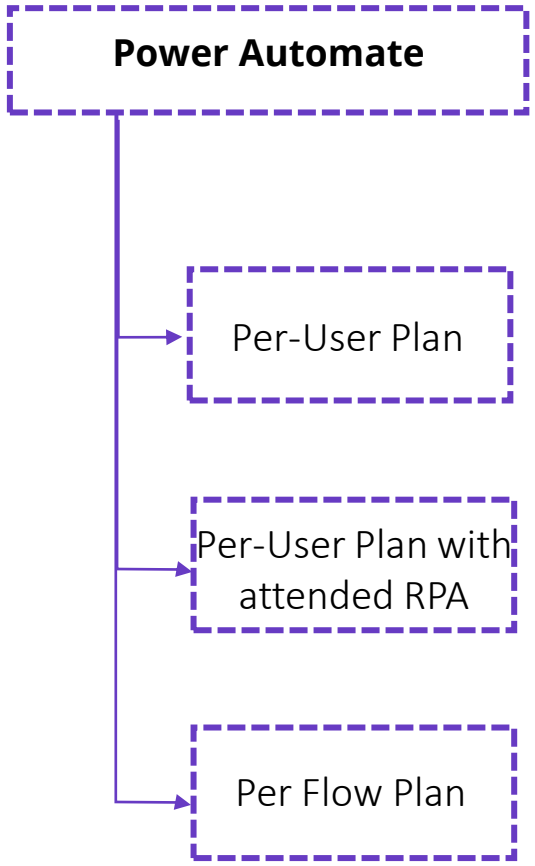
Types of Custom Connectors

- **Using a blank custom connector**
- **Use a webhook as a trigger for Azure Logic Apps and Power Automate**
  - *From an OpenAPI definition*
  - *From a Postman collection*

Describe Connectors



Publish and share an App → *The licensing comes in a single pricing model – 2000 session buckets per month.*



Describe AI Builder

Business Value: Low code platform enables organizations to analyze data, act on it through applications, and automate business processes.

Types of Model

- **Business card Reader:**
  Scan business cards. Extract contact information from pictures of business cards or your mobile phone's camera
- **Detection Model**

Model domain:
Common objects, Objects on retail shelves, Brand logo

Form Processing Model

- Define fields and tables to extract
- Analyze
- Tag documents
- Tag all documents across all collections

Prediction Model

- From two available options (binary)
- From multiple possible outcomes
- Where an answer is a number

Describe the Capabilities of Power BI

Identify Common Power BI components

Element

- **Power BI Desktop**
- **Power BI Service**
- **Power BI Mobile**

Workspace → *Workspaces are created on capacities. Workspaces are places to collaborate with colleagues to create collections of dashboards, reports, and paginated reports.*

- ✓ My workspace
- ✓ Workspaces : share content with colleagues
- ✓ App : Collection of dashboard and reports

Datasets → *Single source of data*

Reports → *One or more pages of visualization*

- ✓ Reading view
- ✓ Editing view

***Dashboards**:*
Single canvas that contains zero or more tiles and widgets

Filters in Power BI reports

- **Automatic Filters**
- **Manual Filters**
- **Include/Exclude Filters**
- **Drill-down Filters**
- **Cross-drill Filters**
- **Drill-through Filters**
- **URL Filters**
- **Pass-through Filters**

WHIZLABS

Data Modeling and Visualizations

Modeling View:
View and work with complex datasets that contain many tables.

Steps to shape and combine data in Power BI Desktop

- **Shape Data**
- **Adjust Data**
- **Combine Data**
- **Combine Queries**

Merging: When you have one or more columns that you'd like to add to another query, you merge the queries.

Appending: When you have additional rows of data that you'd like to add to an existing query, you append the query.

Share a Dataset

You start by creating a .pbix file with a data model in Power BI Desktop

Publish the .pbix file to a new workspace experience in the Power BI service.

You can also publish an app from this workspace. When you do, on the Permissions page, you specify who has permissions and what they can do.

Limitation and considerations: Use row-level security (RLS) in the dataset so that each person's credentials determine which data they can access.

Build a Basic Dashboard using Power BI

Share and collaborate with colleagues in Power BI

Publish your reports from Power BI Desktop to the Power BI service.

Create Groups, which you can use as a security model to identify a subset of users who have access to dashboards, reports, and datasets that you create.

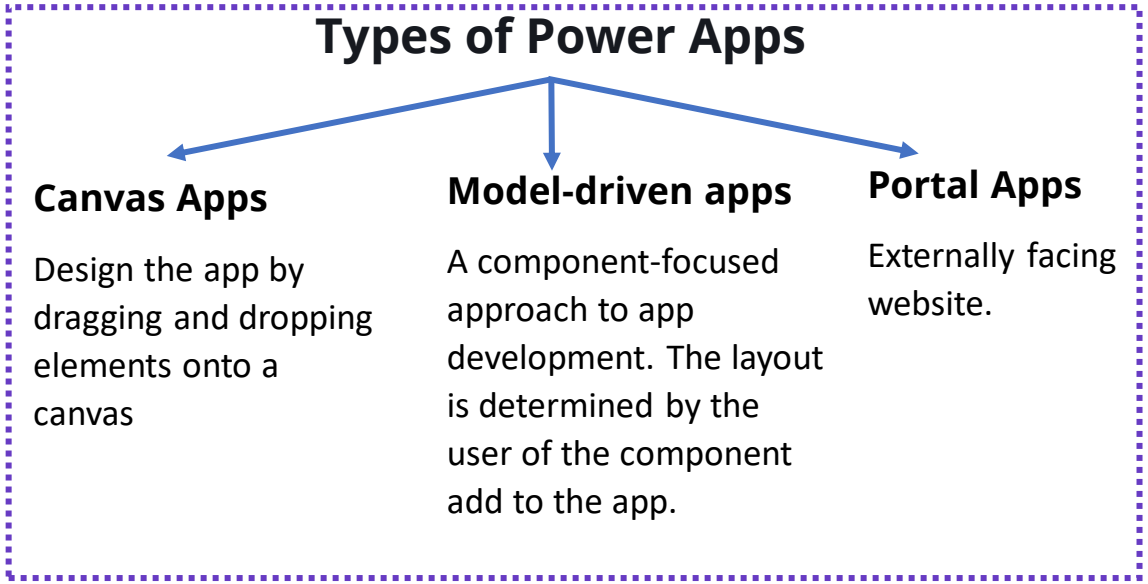
Create Apps that package a dashboard, report, and dataset to send to your colleagues, who can use the content pack as a starting point and further enhance it.

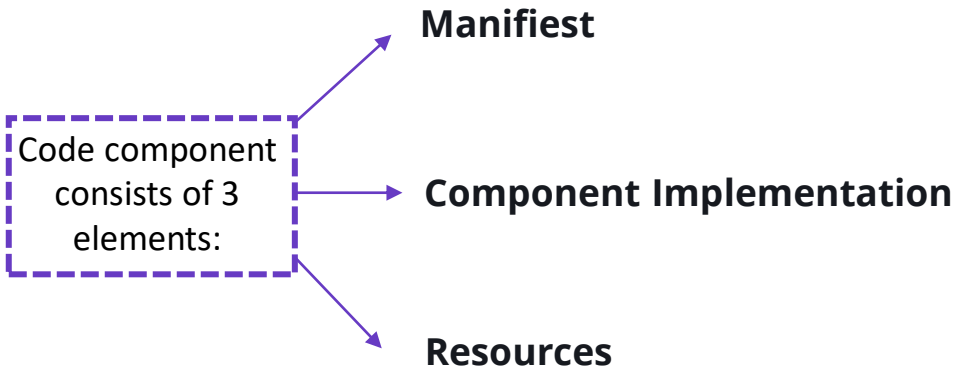
Publish to the web so that live reports can be embedded in a webpage.

Demonstrate the Capabilities of Power Apps

Identify common Power App Components

Types of Power Apps





Reusable components

Canvas Component libraries: Reusable building blocks for canvas apps

Limitation

1. Can't save data sources, forms, and data tables with components
2. Collections in components are not supported.
3. Can't insert a component into a gallery or a form
4. A master instance of a component is a local master and scoped to the app. If the user changes a master instance, only copies of the app's component will reflect the change.
5. Can't package media files when user import a component
6. Components don't support the UpdateContext function

Power Apps Component Framework (PCF) components

Empowers professional developers and app makers to create code components for model-driven and canvas apps.

Use Cases for Formulas

Elements

Functions take parameters, perform an operation, and return a value.

Signals return information about the environment.

Named operators, such as ThisItem and Self, provide access to information from within a container.

Enumerations return a pre-defined constant value

Build a Basic Canvas App

Types of Data Sources

- Cloud Service
- Local

Cloud Service

- Display
- Modify
- Elements of Table

Elements of Table

- **Records**
- **Fields**
  - An individual piece of information in a record
- **Columns**
  - A column refers to the same field for one or more records in a table
- **Table**
  - A table comprises one or more records, each with multiple fields with consistent names across the records.

Local

- **Collections**
  - Created dynamically with the Collect function.
  - Allow duplicate records
  - Users can use the SaveData and LoadData functions to save and reload a copy of the collection.
  - Users can use the Export and Import controls to save and reload a copy of the collection to a file that the user can interact with.

Build a Basic Canvas App

Types of Connectors

- **Standard Connectors**
- **Custom Connectors**

Security and Types of Authentication

- **Azure AD Integrated**
- **Open-standard authorization (OAuth)**
- **SQL username and password authentication**
- **Windows Authentication**

Publish and share an App → Share

- Everyone in organization
- Share an app with a list of aliases, friendly names, or a combination of those.
- Can't share an app with a distribution group in your organization

Publish → **Identify the live version:** Live version is published for everyone with whom the app is shared.

Co-owner

Limitation: Regardless of permissions, no two people can edit an app at the same time. If one person opens the app for editing, other people can run it but not edit it.

Describe Power App Portals

Portal Templates

- Community portal
- Customer self-service portal
- Employee self-service portal
- Partner portal
- Customer portal
- Portal from bank

Security

- Common identity providers for portals
- **Open registration:** Least restrictive sign-up configuration
  - The portal allows a user account to be registered by providing a user identity.
  - Require users to provide an invitation code or valid email address to register with the portal.

Build a Basic Model-Driven App

Approach

Step 1
Model the business data
- Consider metadata-driven architecture
- Consider the structure of data stored in Data verse

Step 2
Define business processes

Step 3
Build the app

Build Blocks

Data
- Relationship

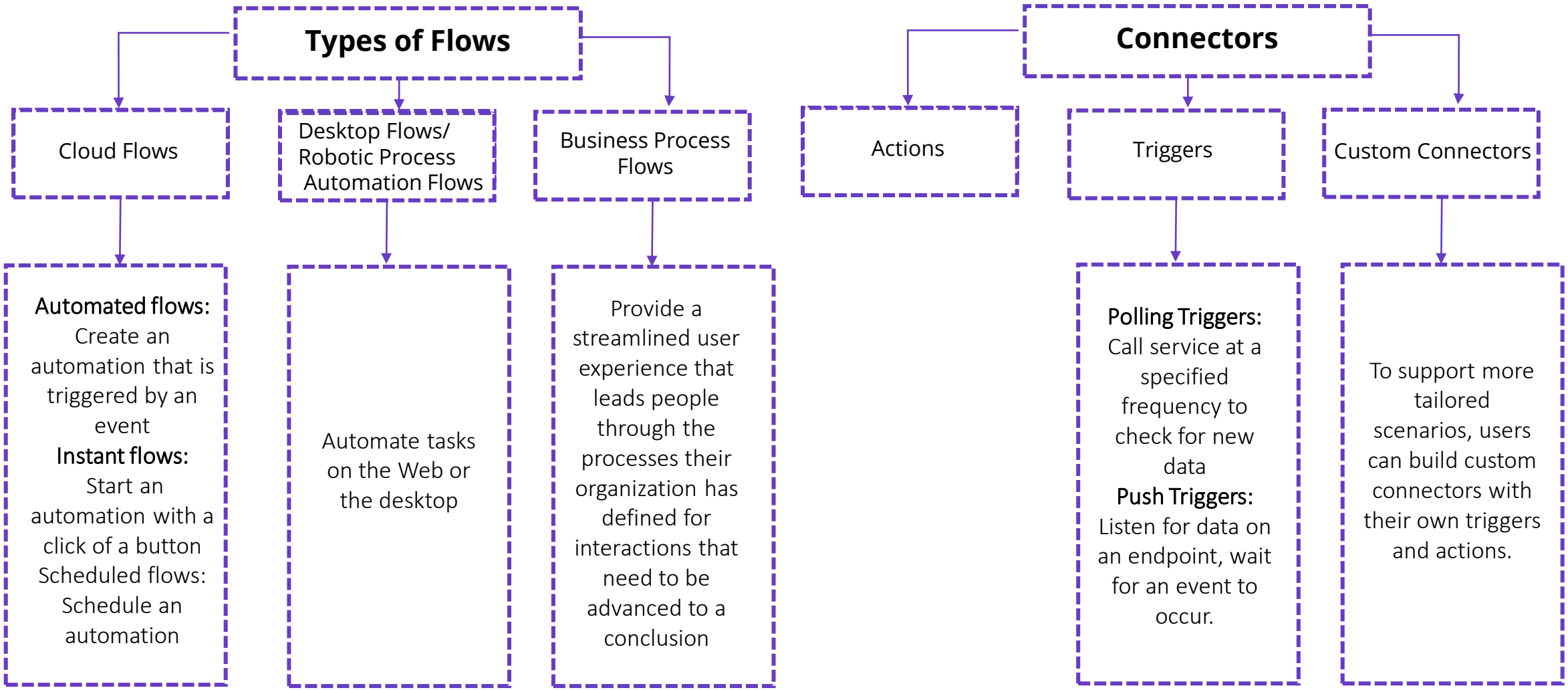
Logic
- Business process flow
- Workflow
- Actions
- Business rule
  - ✓ To set field requirements, hide or show fields, validate data.
- Flows

Visualization
- Chart
- Dashboard
- Embedded Microsoft Power BI

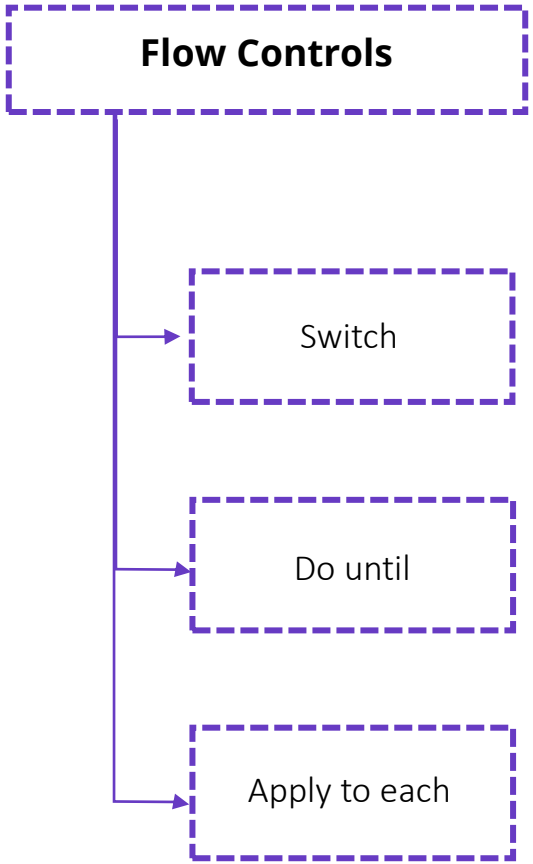
Security Role

Demonstrate the Capabilities of Power Automate

Identify common Power Automate Components



Identify common Power Automate Components



Steps to create approval flow

1. Create an automated cloud flow
2. Add a trigger
3. Add a profile action (Using Get my profile (V2) connector)
4. Add an approval action
5. Add a condition
6. Add an email action for approvals (Using Send an email (V2) connector
7. Add an update action for approved requests
8. Add an email action for rejections
9. Add update action for rejected requests

Build a Basic Flow

Creating a Flow

- **Instant flows:** Creating a button
- **Automated:**
- Event Trigger
- Scheduled
- **Time zone**: UTC
- **Start time format:** YYYY-MM-DDTHH:MM:SSZ

Use Data Operations

- Use the compose action
- Use the join action
- Use the select action
- Use the filter array action
- Use the create CSV table action
- Use the create HTML table action

Export

Export to a package:
e.g.
Send the resulting zip file to a co-worker in the same tenant to import or to someone in another tenant

Demonstrate the Capabilities of Power Virtual Agents

Describe Power Virtual Agent Capabilities

Describe Power Virtual Agent Capabilities

Entities

- *Prebuilt entities:* The most commonly used stereotype information in real-world dialogs
- *Custom entities:* Include domain-specific knowledge

Information unit that represents a certain type of a real-world subject

Slot Filling

- Natural language understanding concept that means saving an extracted entity to an object
- Landing the extracted entity value into a variable

Actions

E.g.: Calling a Power Automate flow: A flow can only be called from a topic located in the same Data verse environment

Nodes in conversation path

Message Nodes

- Ask a question
- Call an action
- Show a message

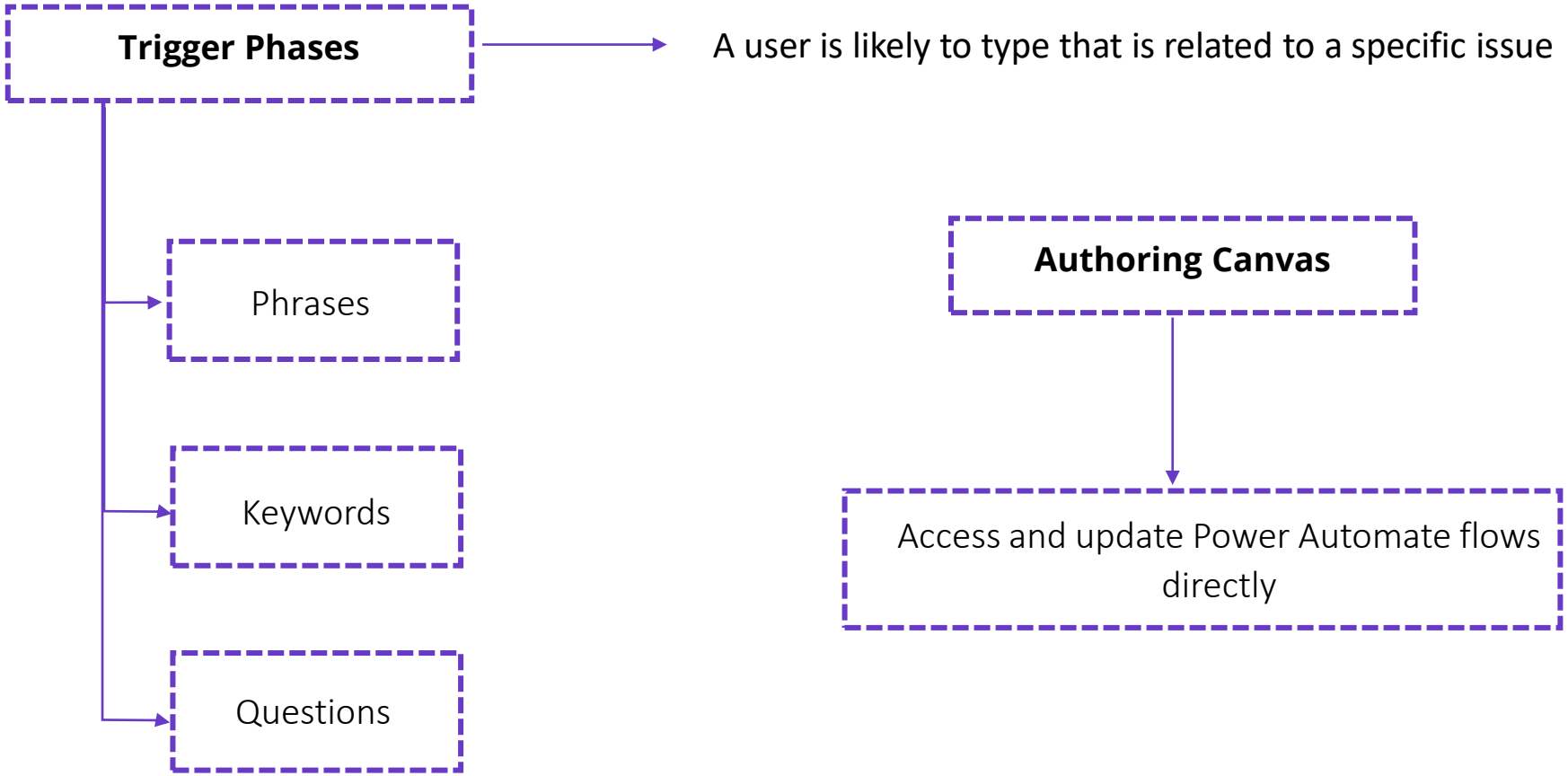
After the Last Node

- Go to another topic
- End the conversation

Conditions

- Add a condition
- Branch based on a condition

Describe Power Virtual Agent Capabilities



Build and Publish a Chatbot

Create a Chatbot

Known issues:

- No access to any environments.
- The environment doesn't have a database created.
- The environment is created in an unsupported region.

Publish a Chatbot

Test chat:

- It is for bot authors to test how conversation nodes flow and if there are errors when they are creating and testing their bot.

Demo website:

- It lets user share a URL with other members of the team, or other stakeholders who want to try out the bot. It's not intended for production use.

Analyze a Chatbot

Analyze bot performance and usage:

Review overall analytics for your bots.

Build and Publish a Chatbot

Analyze a Chatbot

Summary Charts

Total sessions	Total number of sessions within the specified time period.
Engagement rate	% of total sessions that are engaged sessions (either resolved, escalated, or abandoned)
Resolution rate	% of engaged sessions that are resolved. (In the end-of-conversation survey, user either does not respond or responds Yes.)
Escalation rate	% of engaged sessions that are escalated to a human agent.
Abandon rate	% of engaged sessions that are abandoned. (neither resolved nor escalated after 1 hour)
CSAT	Graphical view of the average of CSAT scores for sessions.

Analyze a Chatbot

- ✓ *Engagement over time chart:*

Number of engaged and unengaged sessions over time

- ✓ *Session outcomes over time chart*:

Resolved, Escalated, Abandoned.

- ✓ *Resolution rate drivers chart:*

Topic, Rate, Impact

- ✓ *Escalation rate drivers chart:*

Topic, Rate, Impact

- ✓ *Abandon rate drivers chart:*

Topic, Rate, Impact

- ✓ *Analyze customer satisfaction:*

Identify overall trends in customer satisfaction, and where satisfaction is falling behind.

- ✓ *Customer satisfaction drivers:*

Topic, Engaged sessions, Resolution rate, Abandon rate, Escalation rate, Avg CSAT, Impact

Analyze a Chatbot

- ✓ *Analyze topic usage:*

See how individual topics are doing and how well they're working at resolving issues.

- ✓ *Analyze session information:*

Review and monitor how sessions are doing, including analytics from the topics triggered during a session

- ✓ *Session Transcript*

SessionID, StartDateTime, InitialUserMessage, TopicName, ChatTranscript

Billed Sessions

An interaction between a customer and a bot, and represents one unit of consumption

Reasons for a session end

User ends the chat session	No new message for more than 30 minutes, the session is considered closed.
Session is longer than 60 minutes	The first message is sent after 60 minutes starts a new session.
Session has more than 100 turns	A turn is defined as one exchange between a user and the bot. The 101th turn starts a new session.