Power app overview / Introducing power apps

What is Power App and its usage: Power Apps is a suite of apps, services, connectors, and a data platform that provides you with an opportunity to build custom apps for your business needs. By using Power Apps, you can quickly build custom business apps that connect to your business data that is stored either in the underlying data platform (Microsoft Dataverse) or in various online and on-premises data sources (SharePoint, Excel, Office 365, Dynamics 365, SQL Server, and so on).

With Power Apps, you can:

- Build an app quickly by using the skills that you already have.
- Connect to the cloud services and data sources that you're already using.
- Share your apps instantly so that co-workers can use them on their phones and tablets.

Types of Power apps: Using Power Apps, you can create three types of apps: **canvas**, **model-driven**, and **portal**.

Power app studio / visual designer to compose pages: is the app designer used for building canvas apps. The app designer makes creating apps feel more like building a slide deck in Microsoft PowerPoint.

Dev environment setup: The Power Apps Community Plan gives you a free development environment for individual use, where you can:

- Learn to build business apps and workflows with the full functionality of Power Apps and Power Automate.
- Connect to any data source by using our 100 plus out of box connectors or by creating your own custom connectors
- Explore how you can use the dataverse to build powerful business apps with the common data model and the SDK
- Export the solutions you create in your individual environment

Connect to services to access data: Your canvas app's data connection can connect to SharePoint, SQL Server, Office 365, OneDrive for Business, Salesforce, Excel, and many other data sources

Shared with internal users or organization wide: After you build a canvas app that addresses a business need, specify which users in your organization can run the app and which can modify and even reshare it. Specify each user by name, or specify a security group in Azure Active Directory. If everyone would benefit from your app, specify that your entire organization can run it.

Simple publish, runtime player hosts application: Whenever you save changes to a canvas app, you automatically publish them only for yourself and anyone else who has permissions to edit the app.

When you finish making changes, you must explicitly publish them to make them available to everyone with whom the app is shared.

Power App Building Blocks

- **Power Apps Home Page**: Apps start here, whether you build them from data, a sample app, or a blank screen.
- **Power Apps Studio:** Develop your apps further by connecting to data, adding and arranging user interface (UI) elements (known as controls), and building formulas.
- **Power Apps Mobile**: Power Apps Mobile for Windows, iOS, and Android devices allows you to use all the apps that you've created, and those others have shared with you, on your mobile device.
- **Power Apps Admin Centre:** The Power Platform admin centre is the centralized place for managing Power Apps for an organization

Power Apps related technologies

- **Data sources:** Data sources bring cloud and on-premises data into your apps. You access data through built-in connections, custom connectors, and gateways.
- **Microsoft Dataverse:** A compliant and scalable data service that's integrated into Power Apps.
- **Power Automate:** Allows you to build automated workflows to receive notifications, run processes, collect data, and more.

Ways to build Power Apps

- **Create an app from a template:** A good way to create an app is to start from a template. Templates use sample data to help you determine what's possible. By opening templates in Power Apps Studio, you can learn, hands-on, how an app is built.
- **Create an app from a data source**: Another great way to get started is to generate an app from your own data. Simply point Power Apps at the data source of your choice (for example, a list in Microsoft SharePoint or Microsoft Dataverse), and watch as Power Apps automatically builds a three-screen app. This three-screen app lets you display, edit, delete, and create records**.**
- **Build from a blank canvas:** You can also build an app from the ground up and add all the pieces as you go. You can then branch out and use your imagination.

Designing a Power Apps app

As an App Maker, before you begin building your Power Apps solution, it's recommended to go through a design process. When designing your Power Apps solution, there are several different factors to consider, such as:

- **Understand the needs of the user:** By challenging the existing process and asking what it is the business needs to do, not what does the piece of paper or old software allows you to do, it opens the possibility of better, more efficient processes. For example, maybe on the paper process, the user had to type notes about what they see. Would it be better instead to just take a picture? This type of thinking will lead to better apps and better outcomes.
- **Business Requirements**: Every app you develop will have a different set of business requirements based on the solution. Taking the time to think about all the requirements is key to rolling out a successful production app.
- **Offline Mode**: There is a thorough discussion that needs to take place around Offline mode, and it's best to have this early in the design process as it will affect the rest of the process.
- **Data Model:** how do you actually decide which data source to use for your solution? Maybe you already have a data source implemented that users work with on a day to day basis, like SharePoint. Could you just use this as your data source to build your app? Do I need to connect to multiple data sources? These are all common questions you should ask yourself
- **User Experience (UX):** By designing your Power Apps solution in a Canvas app, you have complete control of the end-user experience. This allows you to fully customize nearly every aspect of your app. When designing your Power Apps solution your goal should be to keep it simple. When your end users open the application and begin using it, they should have no confusion about what to click on or where to go.

User Interface (UI): To fully visualize the User Interface or UI, you may want to consider creating a mockup of your application. Two common ways to create a mockup of your application are below:

    - Use Visio to create a wireframe diagram. A wireframe is a visual representation of an application's user interface.
- Use Power Apps to create a mockup of your application. You can add most of the controls, graphics, forms, and other items to your app screens and play with the layout and size for each element as if you were building the app for real
- **Business Logic:** When using the Dataverse, you can create business rules and recommendations to apply logic and validations without writing code or creating plug-ins. The great thing about the Dataverse and business rules is that they are applied at the data level. This means that you can apply rules that are enforced regardless of how the data is accessed.

Output: Finally, you will want to discuss your app's data output. This simply means what type of data will your app generate, and once the data is generated what will be done with it? A few questions to ask your app stakeholders:

- How does the data need to be visualized?
- What actions will be taken on the data once it is collected?
- Are there specific format or file types the data are needed?

The answers to these questions will help determine if additional functionality needs to be added to the app such as a Power BI report, email output, PDF, or CSV.

Summary

- To create, share, and administer your apps, you will use make.powerapps.com, the Power Apps Studio, and the Power Apps Admin Center.
- The power of Power Apps comes from the ability to connect to related technologies in your business. Examples of these are Microsoft Dataverse, Power Automate, Microsoft SharePoint, and other data sources.
- You can create an app by using several different methods. Some of these methods include from a template, a data source (like Microsoft SharePoint), or a blank canvas.

Power Automate overview

Power Automate is all about automation. Anyone from a basic business user to an IT professional can create automated processes using Power Automate's no-code/low-code platform.

- Automate business processes
- Send automatic reminders for past due tasks
- Move business data between systems on a schedule
- Connect to almost 300 data sources or any publicly available API
- You can even automate tasks on your local computer like computing data in Excel.

Power BI (Business Intelligence)

Microsoft Power BI is a collection of software services, apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights. Whether your data is a simple Microsoft Excel workbook, or a collection of cloud-based and on-premises hybrid data warehouses, Power BI lets you easily connect to your data sources, clean, and model your data without affecting the underlying source, visualize (or discover) what's important, and share that with anyone or everyone you want.

The parts of Power BI

Power BI consists of a Microsoft Windows desktop application called Power BI Desktop, an online SaaS (Software as a Service) service called the Power BI service, and mobile Power BI apps that are available on phones and tablets.

Power BI concepts

The major building blocks of Power BI are: *datasets, reports,* and *dashboards*. They are all organized into *workspaces*, and they are created on *capacities*.

Capacities

Capacities are a core Power BI concept representing a set of resources used to host and deliver your Power BI content. Capacities are either *shared* or *dedicated*. A shared capacity is shared with other Microsoft customers, while a dedicated capacity is fully committed to a single customer. Dedicated capacities require a subscription. By default, workspaces are created on a shared capacity.

Workspaces

Workspaces are containers for dashboards, reports, datasets, and dataflows in Power BI. There are two types of workspaces: *My workspace* and *workspaces*.

My workspace is the personal workspace for any Power BI customer to work with your own content.

Workspaces are used to collaborate and share content with colleagues.

Datasets

A **dataset** is a collection of data that you *import* or *connect* to. Power BI lets you connect to and import all sorts of datasets and bring all of it together in one place. Datasets can also source data from dataflows.