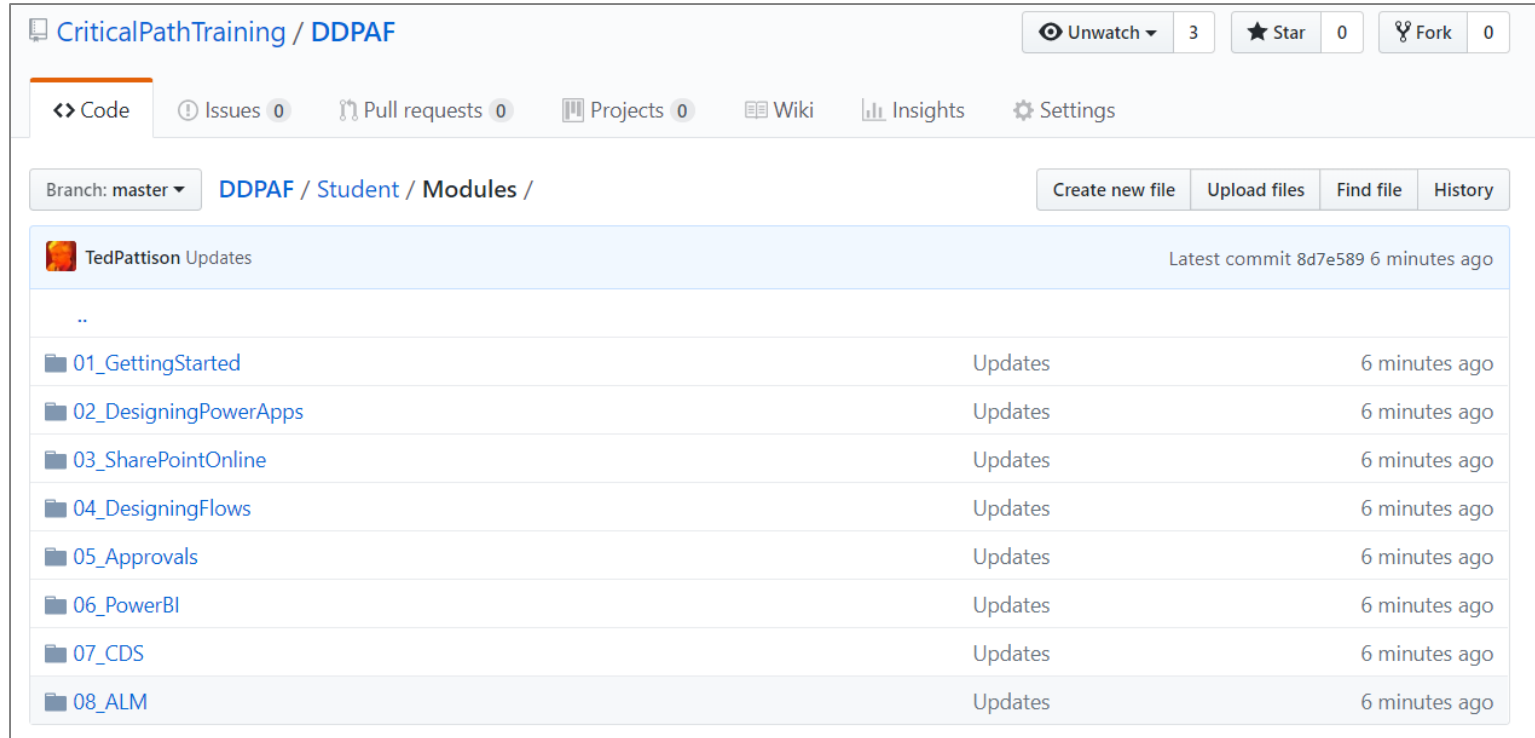


# Getting Started with PowerApps Studio



# Downloading Student Files

- Student files maintained in a GitHub repository
  - <https://github.com/CriticalPathTraining/DDPAF>



The screenshot displays the GitHub repository page for **CriticalPathTraining / DDPAF**. The repository is on the **master** branch. The page shows the repository structure with folders for modules 01 through 08, all updated 6 minutes ago. The repository is on the master branch and has 3 watches, 0 stars, and 0 forks.

Repository: CriticalPathTraining / DDPAF

Branch: master

DDPAF / Student / Modules /

Create new file Upload files Find file History

TedPattison Updates Latest commit 8d7e589 6 minutes ago

..		
01_GettingStarted	Updates	6 minutes ago
02_DesigningPowerApps	Updates	6 minutes ago
03_SharePointOnline	Updates	6 minutes ago
04_DesigningFlows	Updates	6 minutes ago
05_Approvals	Updates	6 minutes ago
06_PowerBI	Updates	6 minutes ago
07_CDS	Updates	6 minutes ago
08_ALM	Updates	6 minutes ago



# Student Background Questionnaire

- What is your name?
- What are you doing with PowerApps and Flow?
- Which products and services have you used?
  - PowerApps and Flow
  - Microsoft Excel
  - Office 365
  - SharePoint Online
  - Power BI
  - Dynamics 365
  - Others

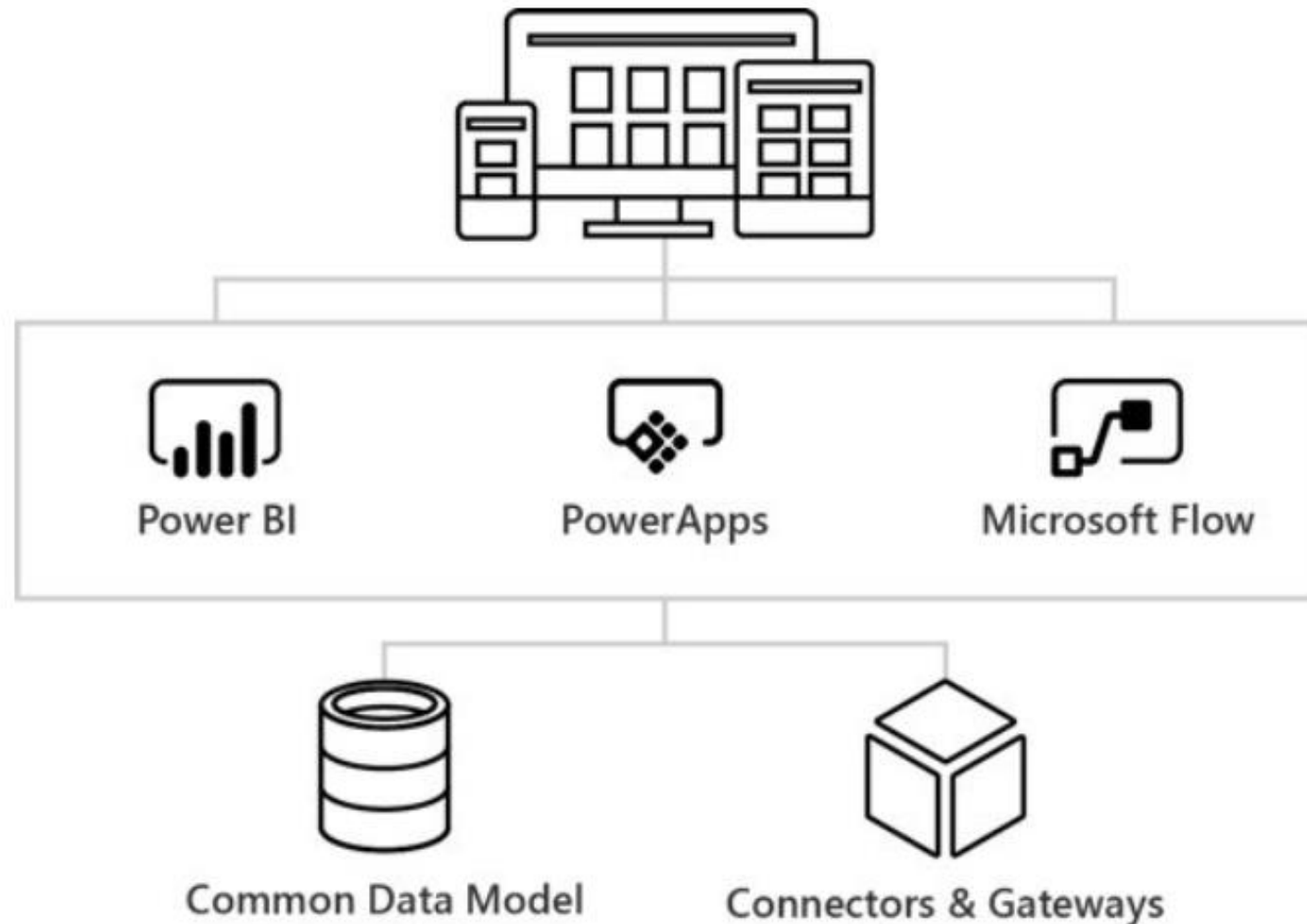


# Agenda

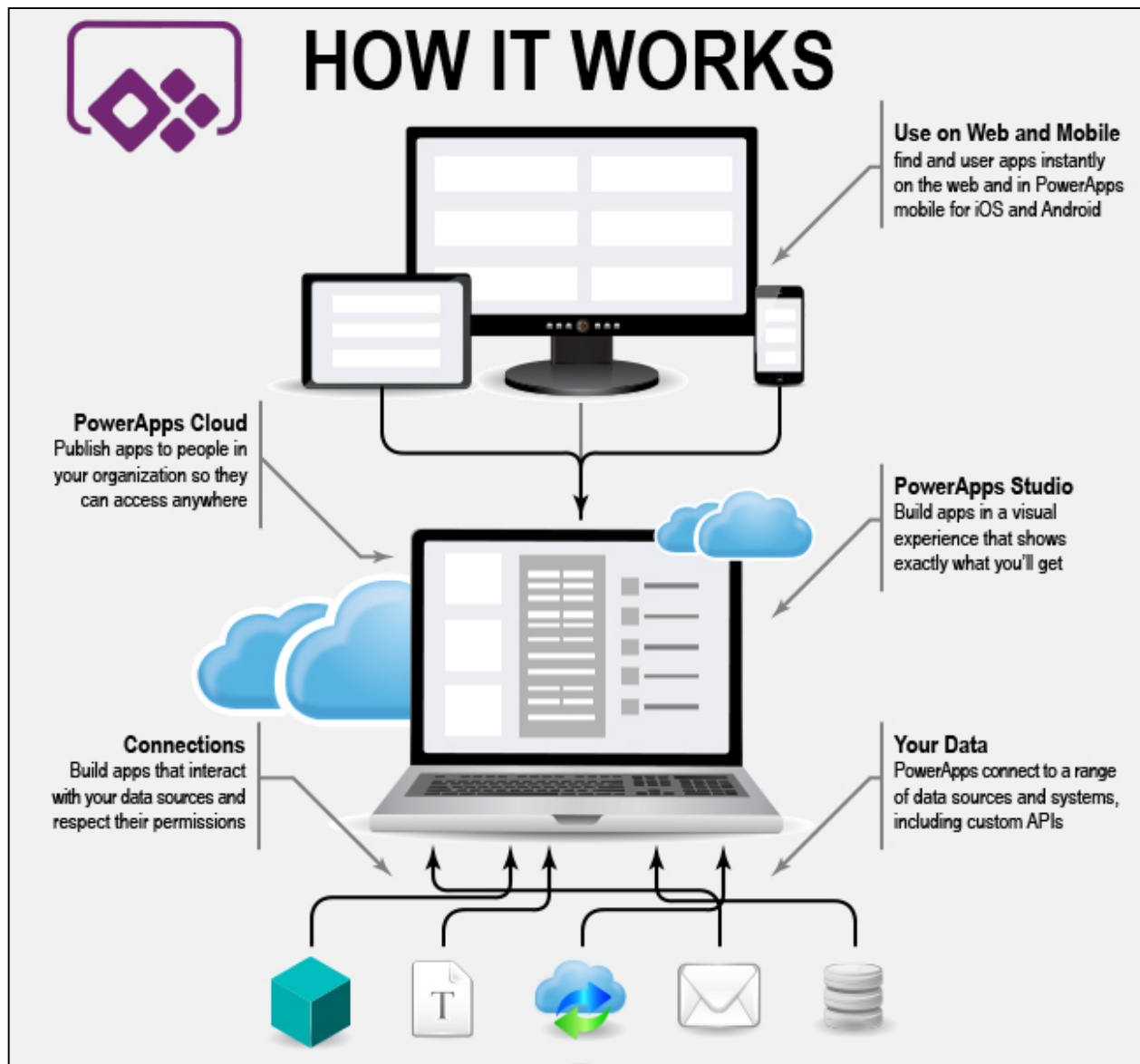
- Getting Started with PowerApps
  - Creating and Testing Apps with PowerApps Studio
  - Working with Screens and Controls
  - Understanding Connectors and Data Binding
  - Customizing Forms and Data Cards



# What is the Business Application Platform?



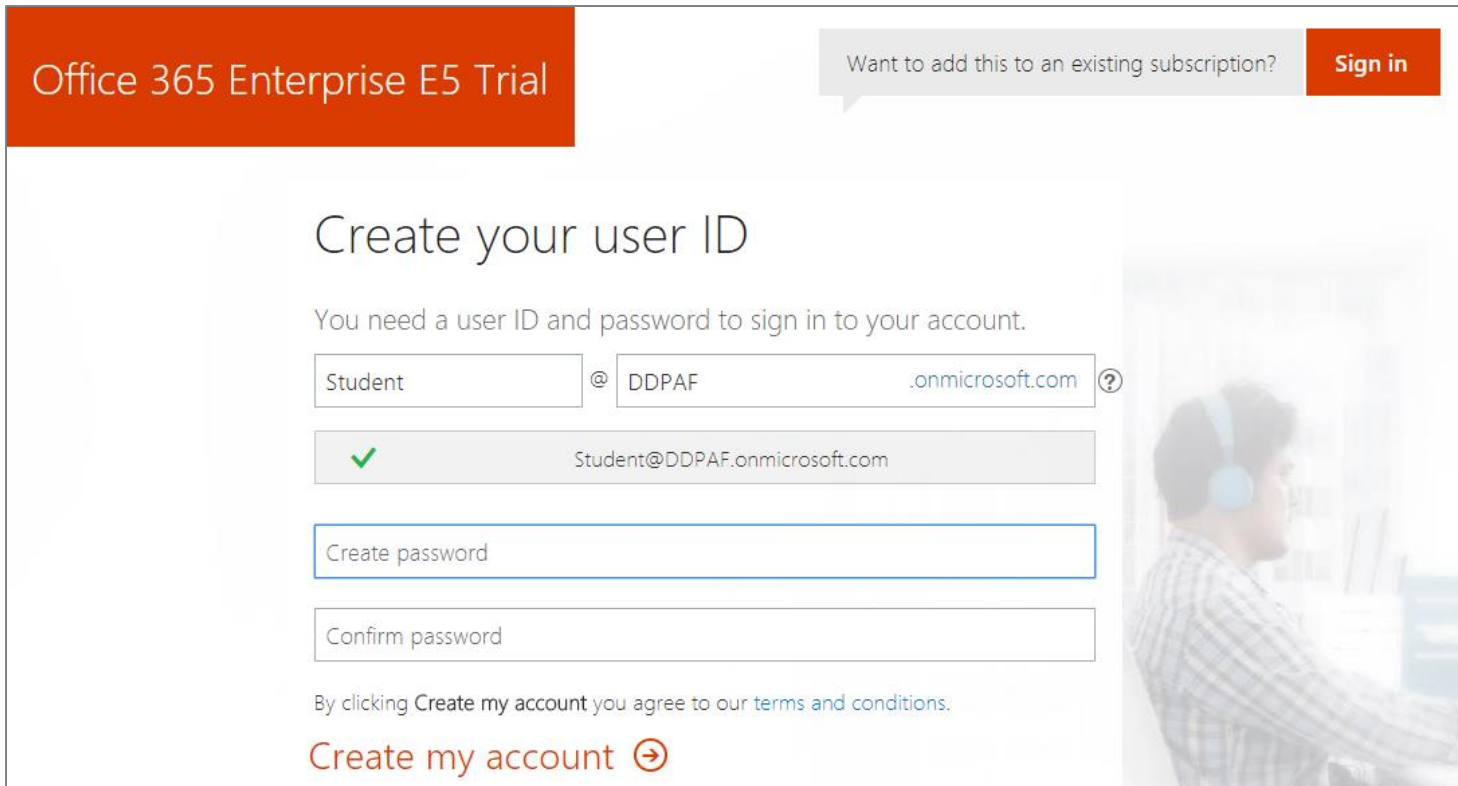
# What is PowerApps?





# Creating an Office 365 E5 Trial Tenant

- All students will create an Office 365 trial tenant
  - Provides an isolated development environment for lab exercises
  - Trial accounts will last for 30 days



The screenshot shows the 'Create your user ID' page for an Office 365 Enterprise E5 Trial. At the top left, there is an orange banner with the text 'Office 365 Enterprise E5 Trial'. At the top right, there is a grey button that says 'Sign in' and a link that says 'Want to add this to an existing subscription?'. The main heading is 'Create your user ID'. Below this, it says 'You need a user ID and password to sign in to your account.' The form has three input fields: a text field with 'Student', an '@' symbol, a text field with 'DDPAF', and a text field with '.onmicrosoft.com' followed by a question mark icon. Below these fields is a green checkmark icon and the text 'Student@DDPAF.onmicrosoft.com'. There are two more input fields: 'Create password' and 'Confirm password'. At the bottom, there is a link that says 'By clicking Create my account you agree to our terms and conditions.' and a red button that says 'Create my account' with a right arrow icon. On the right side of the page, there is a blurred image of a person wearing a headset and working at a computer.

Office 365 Enterprise E5 Trial

Want to add this to an existing subscription? [Sign in](#)

## Create your user ID

You need a user ID and password to sign in to your account.

Student @ DDPAF .onmicrosoft.com ?

✓ Student@DDPAF.onmicrosoft.com

Create password

Confirm password

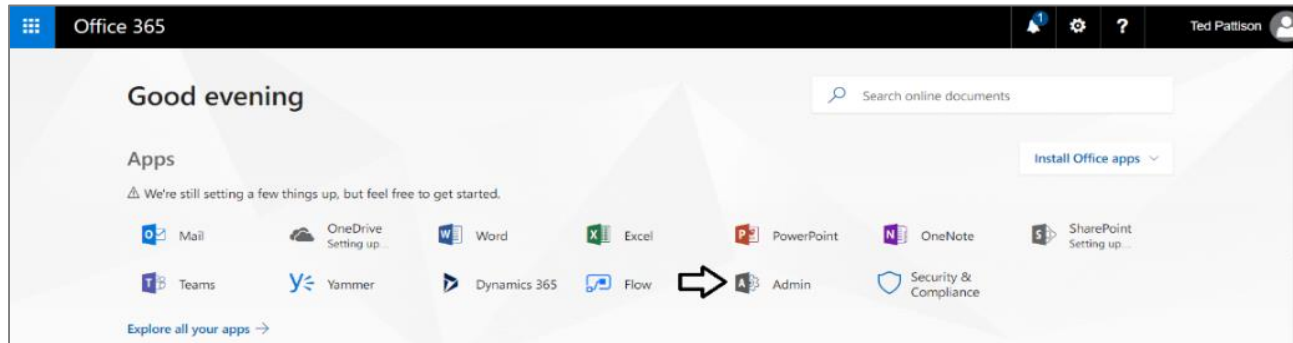
By clicking [Create my account](#) you agree to our [terms and conditions](#).

[Create my account](#) ➔

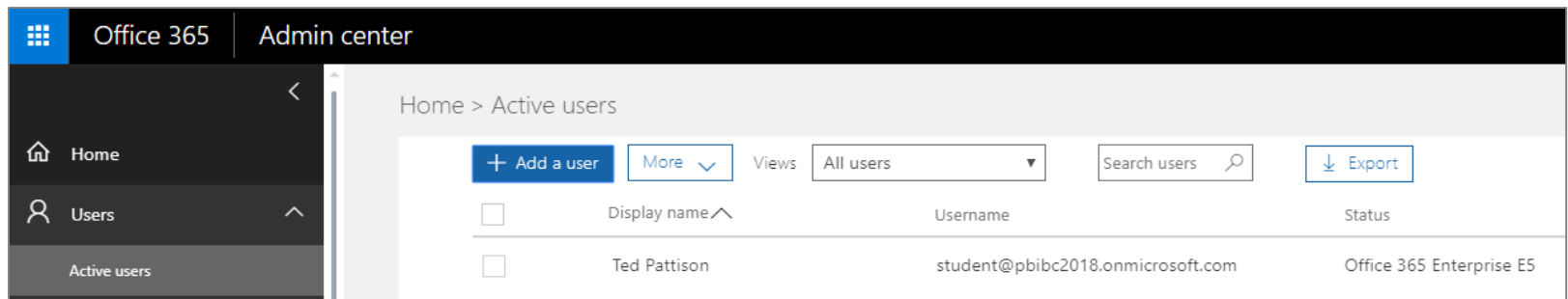


# Office 365 Admin Center

- Navigate to the Office 365 Admin center



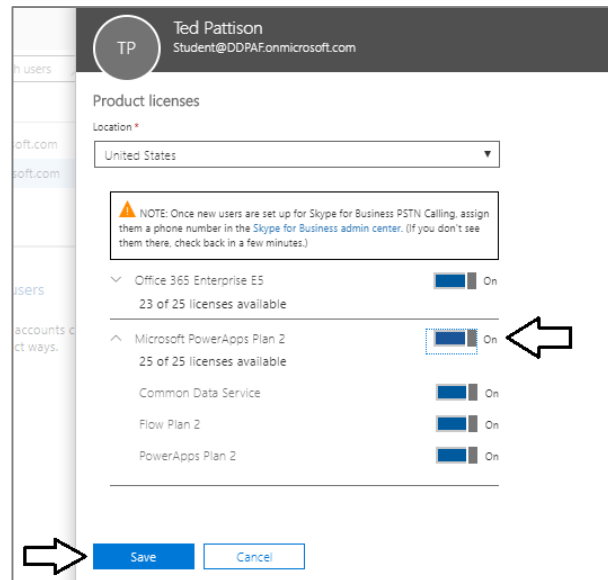
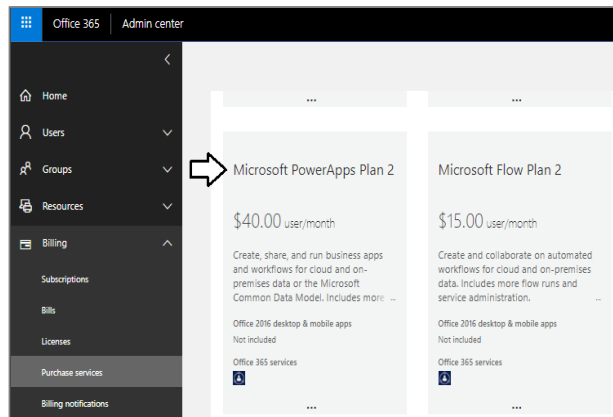
- Allows for management of users accounts and licensing





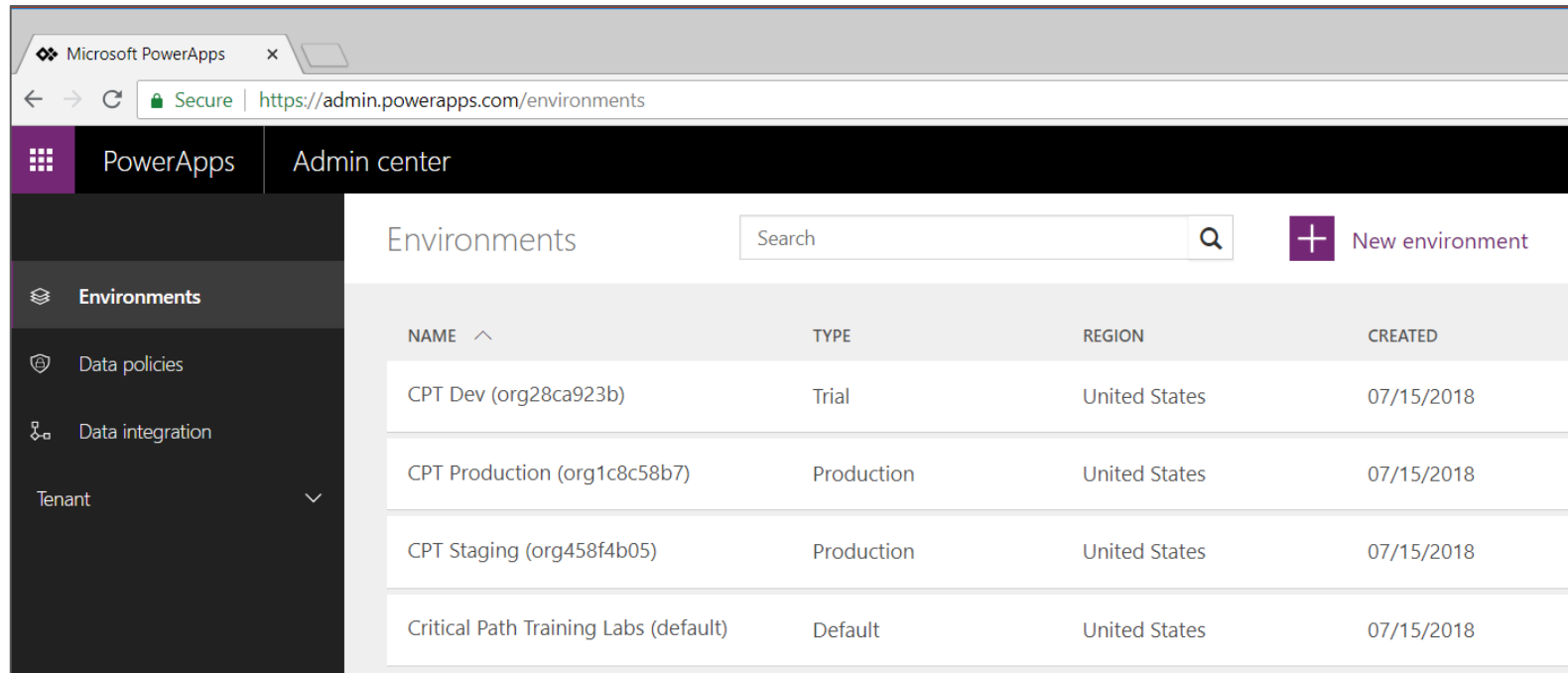
# Configuring a PowerApps Plan 2 License

- Certain design tasks require PowerApps Plan 2
  - You can start a 30-day trial for PowerApps Plan 2
  - License must be assigned to individual user accounts



# PowerApps Admin Center & Environments

- PowerApps architecture based on environments
  - Environment provides context for creating apps and flows
  - Every tenant is automatically created with default environment
  - Organization can create multiple environments for dev & staging
  - PowerApps Plan 2 license required to manage environments



The screenshot displays the Microsoft PowerApps Admin Center interface. The browser address bar shows the URL <https://admin.powerapps.com/environments>. The left sidebar contains navigation options: Environments (selected), Data policies, Data integration, and Tenant. The main content area is titled 'Environments' and includes a search bar and a '+ New environment' button. Below this is a table listing the environments for the tenant.

NAME ^	TYPE	REGION	CREATED
CPT Dev (org28ca923b)	Trial	United States	07/15/2018
CPT Production (org1c8c58b7)	Production	United States	07/15/2018
CPT Staging (org458f4b05)	Production	United States	07/15/2018
Critical Path Training Labs (default)	Default	United States	07/15/2018





**DEMO**

# Configuring PowerApps Plan 2 Licenses

# Agenda

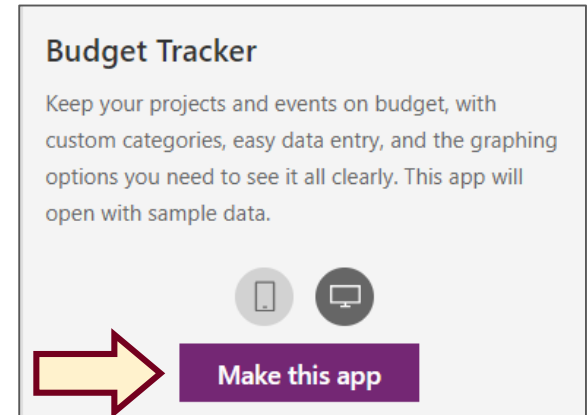
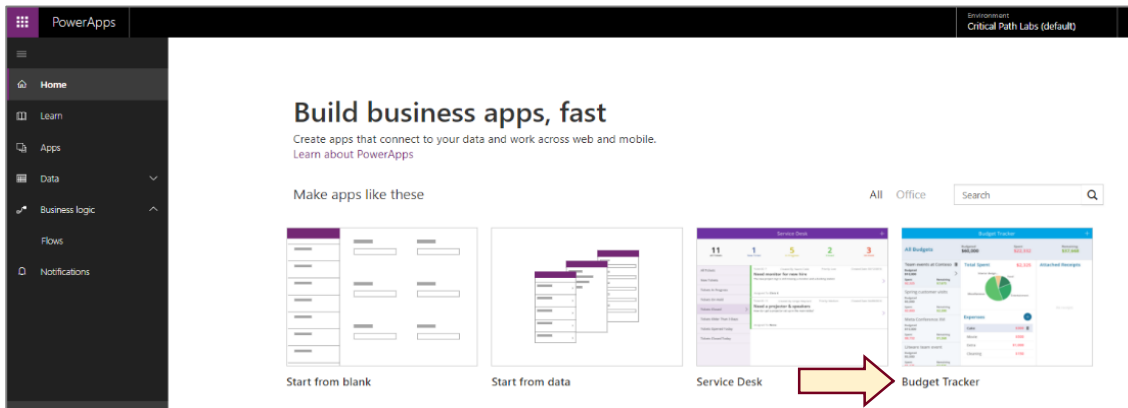
- ✓ Getting Started with PowerApps
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  - Customizing Forms and Data Cards





# Creating New Apps

- You create new apps from the PowerApps Home page
  - Located at <https://web.powerapps.com>
  - Chose an app template
  - Choose between **Mobile App** and **Tablet/Desktop App**
  - Click the **Make this app** button

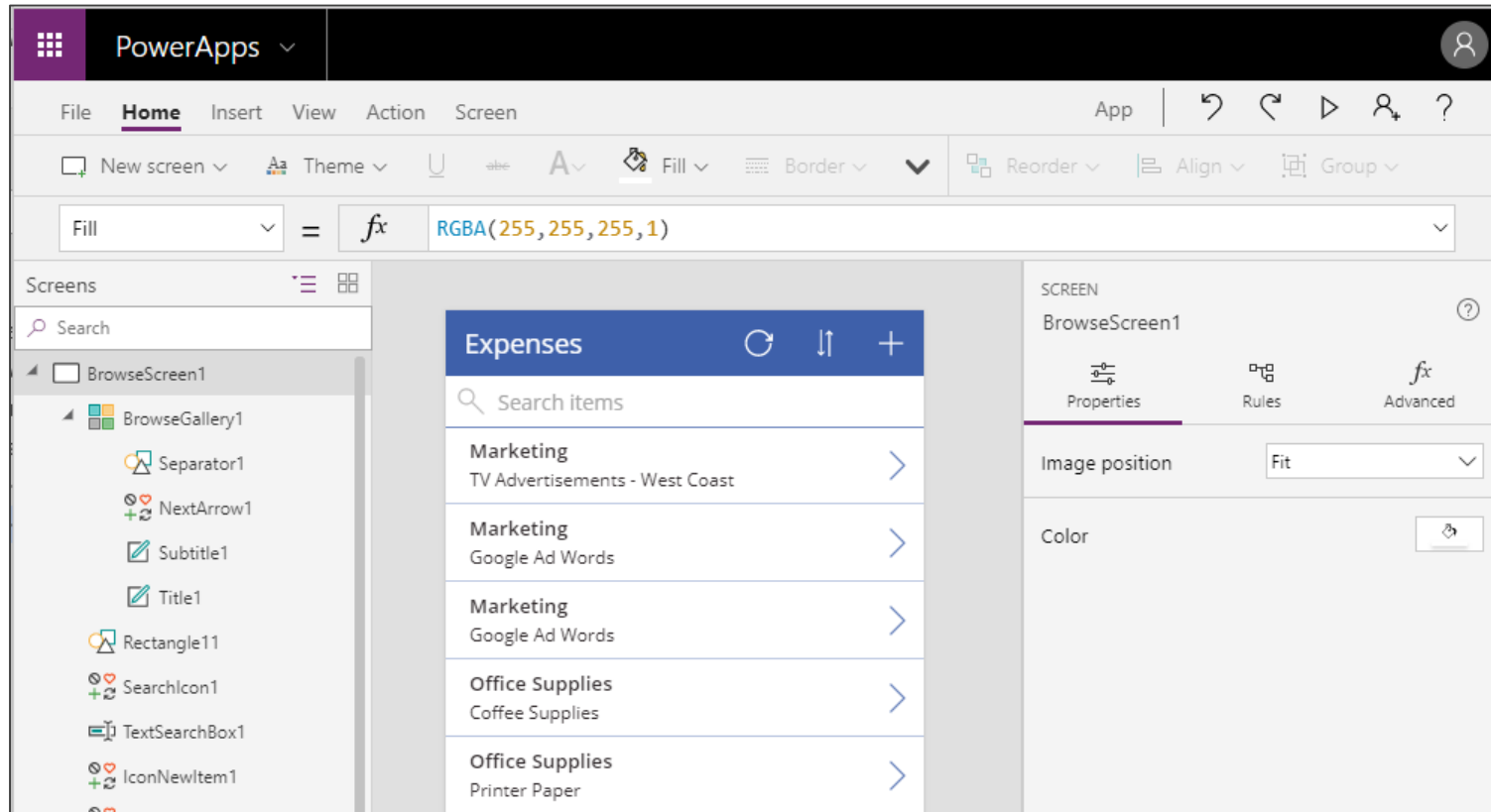


- New app creation redirects you to PowerApps Studio
  - Located at <https://create.powerapps.com>



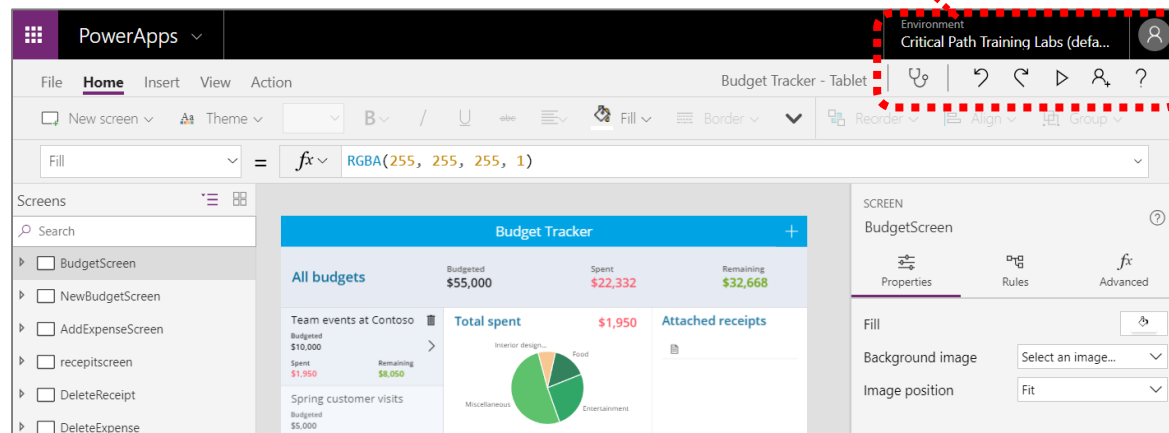
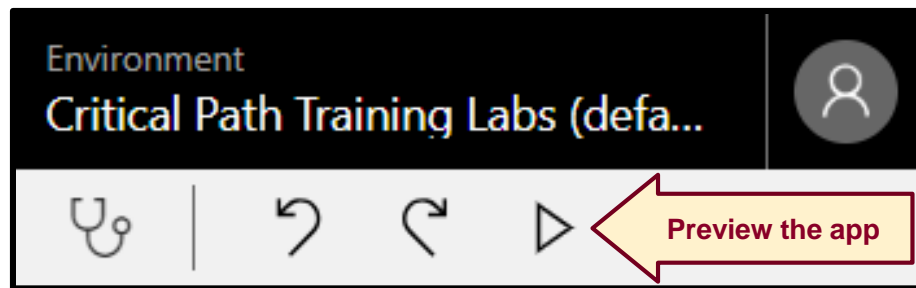
# Getting Started with PowerApps Studio

- PowerApps Studio for the Web is used to build apps
  - Environment supported across platforms (Windows & Mac)
  - Supports all popular, modern browsers



# Running an App from PowerApps Studio

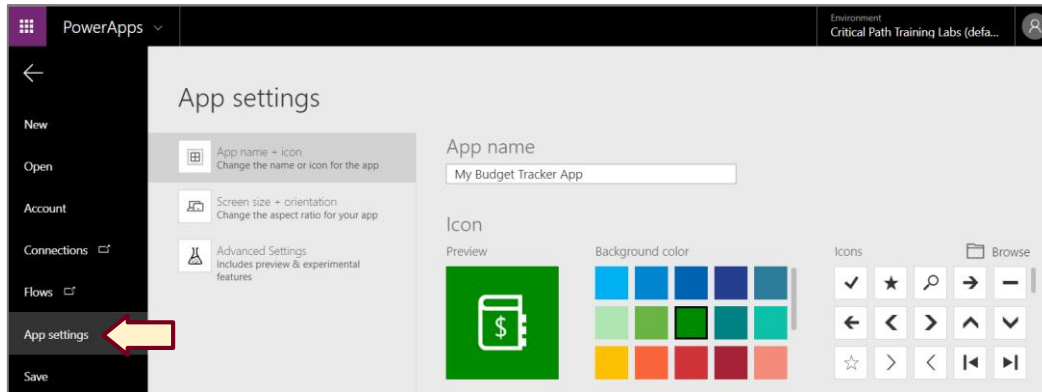
- You can run the app using the PowerApps Studio toolbar
  - Run the app by clicking the **Preview the App** button
  - Stop a running app to return to design mode



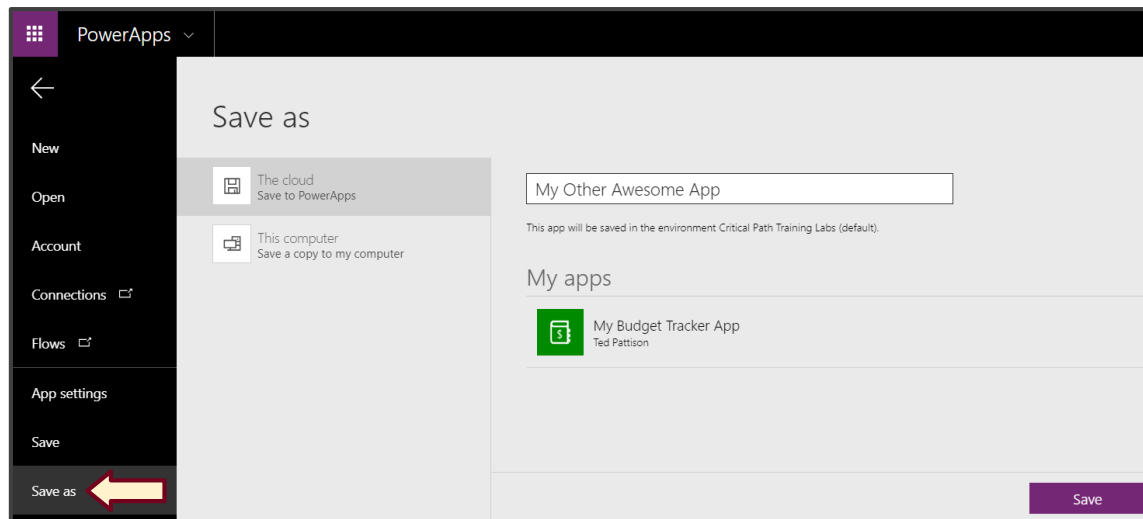


# Saving an App to the Cloud

- Before saving, first you should configure App settings



- Save app to cloud using Save or Save As command





**DEMO**

# **Creating an App with the Budget Tracker App Template**

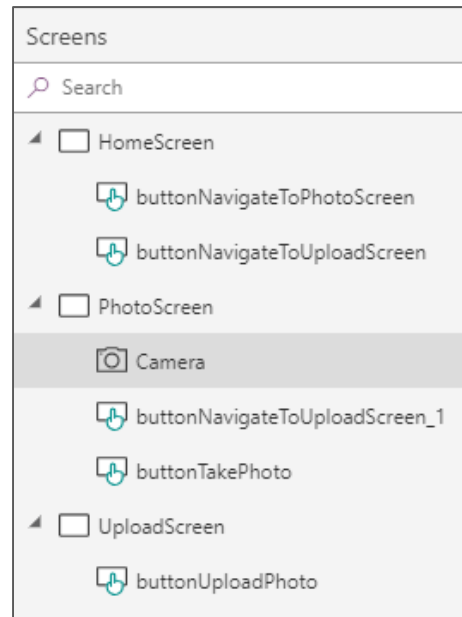
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# Building Apps using Screens and Controls

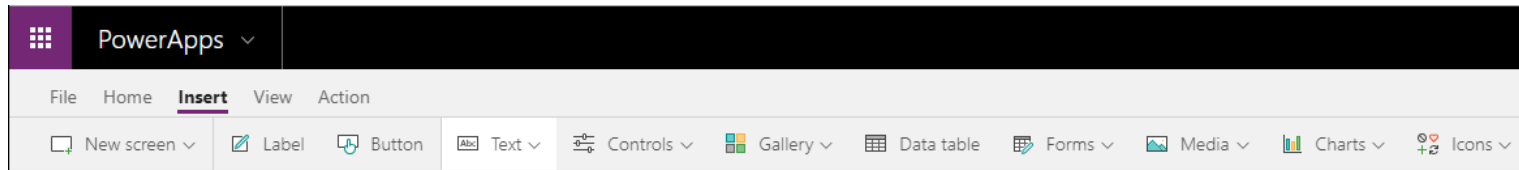
- Screens provide the top-level objects in PowerApps UI
  - Your app must have one screen but can have multiple screens
  - You design screens by adding and configuring controls
  - Left navigation shows hierarchical view of screens and controls
  - You can rename screens and controls using left navigation menu



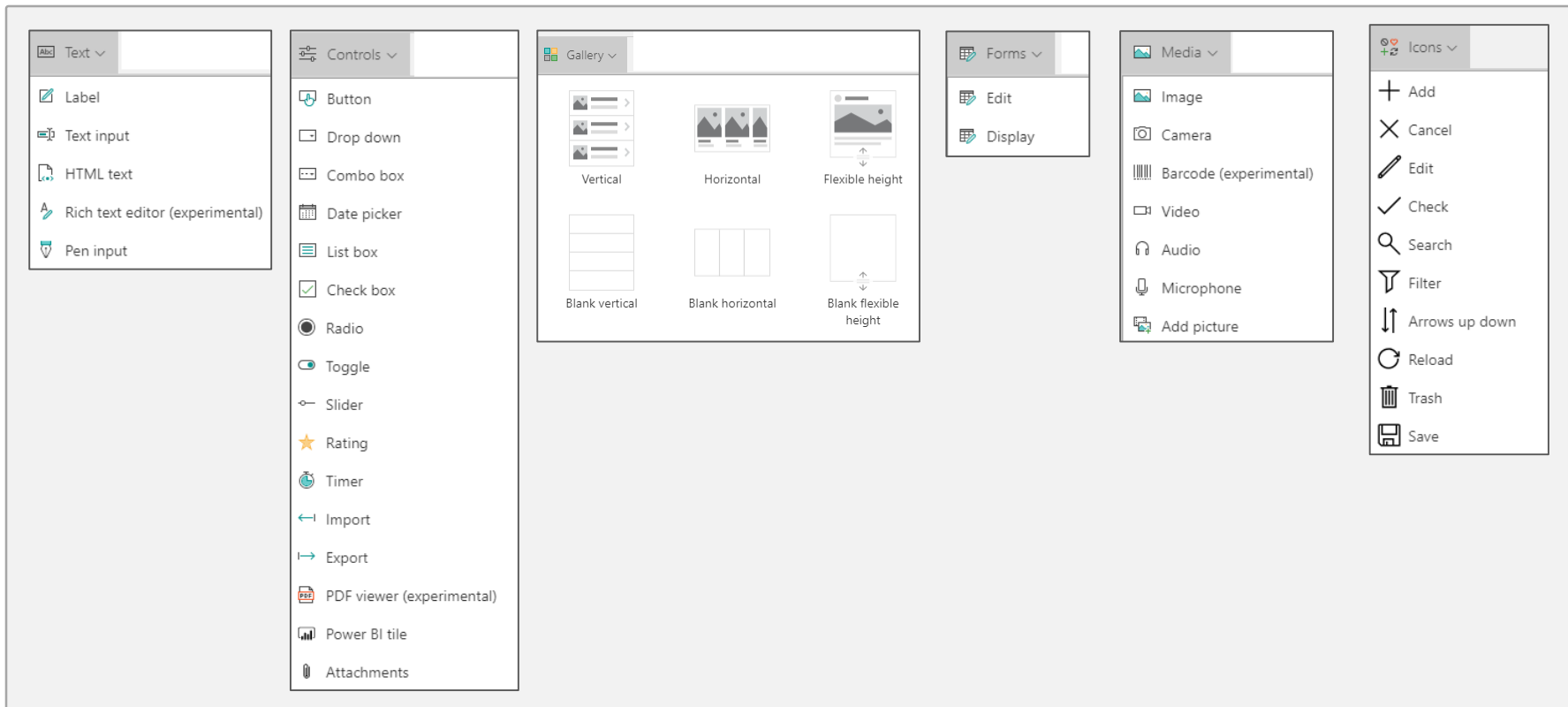


# Adding Controls to a Screen

- You add controls to a screen using the **Insert** ribbon tab

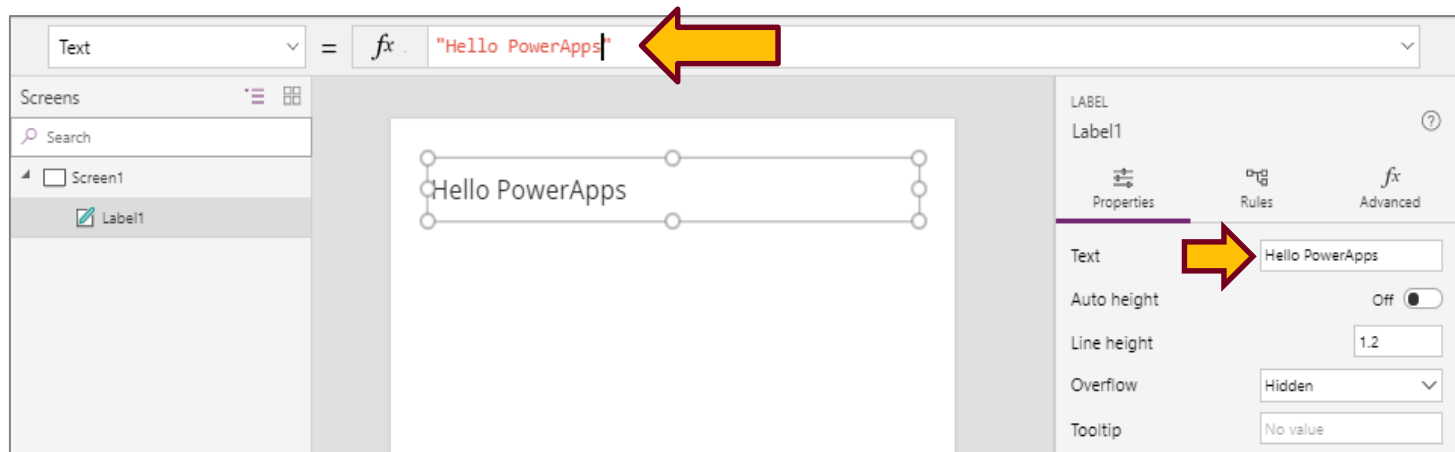


- PowerApps provides extensive set of controls for web and mobile apps



# Configuring Control Properties

- Control properties can be set two different ways
  - Property values can be set using Properties pane
  - Property values can be set using Formula bar



- Building apps with PowerApps requires shift in thinking
  - You don't write code to set property values like in VBA
  - Control properties configured using formulas
  - You develop using **declarative style** instead of **procedural style**

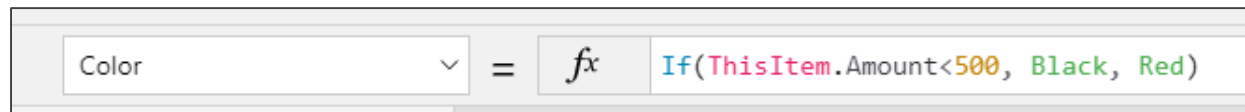


# PowerApps Formula Language

- PowerApps provides its own Formula Language
  - Designed to be as similar as possible to Excel Formula language
  - PowerApps Formula Language includes built-in set of functions
- You write formulas for specific properties
  - Set the Text property for a label



- Set the Color property of the label text



- Write an formula to filter the items shown in a gallery





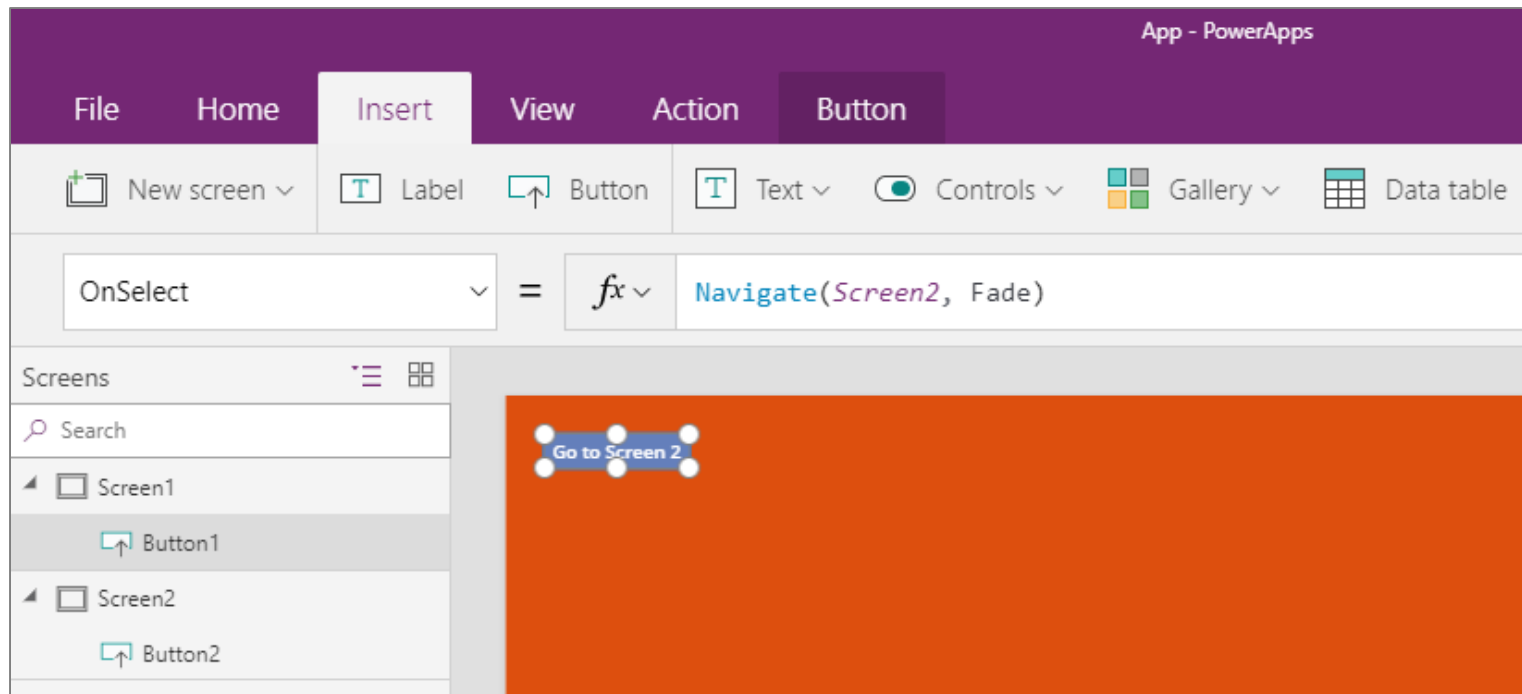


**DEMO**

**Creating an App using the Start  
from Blank Template**

# Navigating Between Screens

- Navigate to a screen using Navigate function
  - Call **Navigate** function from **OnSelect** property of **Button** control
  - **Navigate** function performs action instead of returning a value







**DEMO**

# Navigating Between Screens

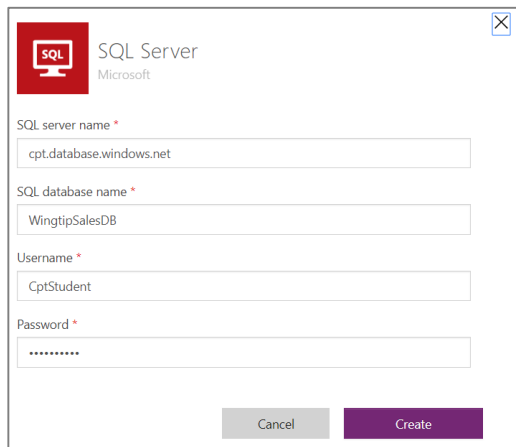
# Agenda

- ✓ Getting Started with PowerApps
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- Customizing Forms and Data Cards

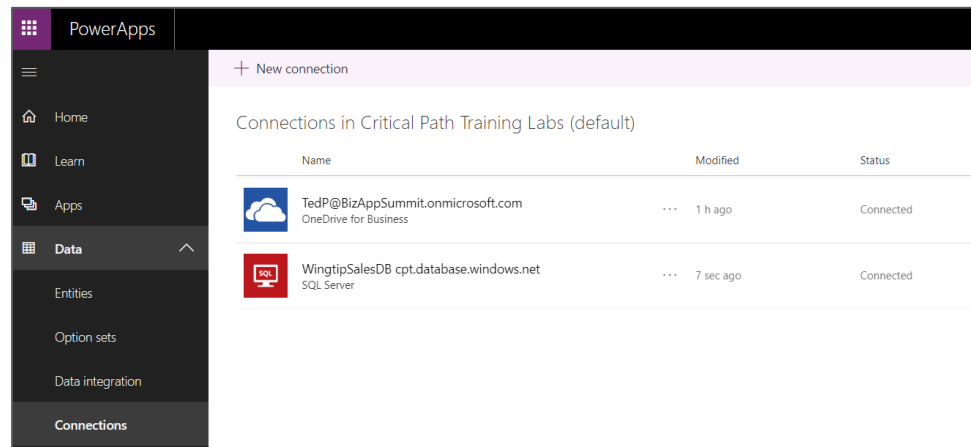


# Understanding Connectors & Connections

- What is a Connector?
  - API wrapper that PowerApps uses to interact with datasource
- What is a Connection?
  - Configuration created to connect to a specific datasource
  - Each connection is created using a specific connector
  - Connection also caches login credentials and granted permissions
  - Connections can be shared across users



The screenshot shows the 'SQL Server' connector configuration window. It has a title bar with the SQL Server icon and the text 'SQL Server Microsoft'. Below the title bar, there are four input fields: 'SQL server name \*' with the value 'cpt.database.windows.net', 'SQL database name \*' with the value 'WingtipSalesDB', 'Username \*' with the value 'CptStudent', and 'Password \*' with masked characters. At the bottom, there are two buttons: 'Cancel' and 'Create'.



The screenshot shows the 'PowerApps' interface with the 'Connections' tab selected. The left sidebar contains a navigation menu with options: Home, Learn, Apps, Data (selected), Entities, Option sets, Data integration, and Connections. The main area displays a table titled 'Connections in Critical Path Training Labs (default)'. The table has three columns: Name, Modified, and Status. There are two connections listed:

Name	Modified	Status
TedP@BizAppSummit.onmicrosoft.com OneDrive for Business	... 1 h ago	Connected
WingtipSalesDB cpt.database.windows.net SQL Server	... 7 sec ago	Connected



# Standard Connectors vs Custom Connectors

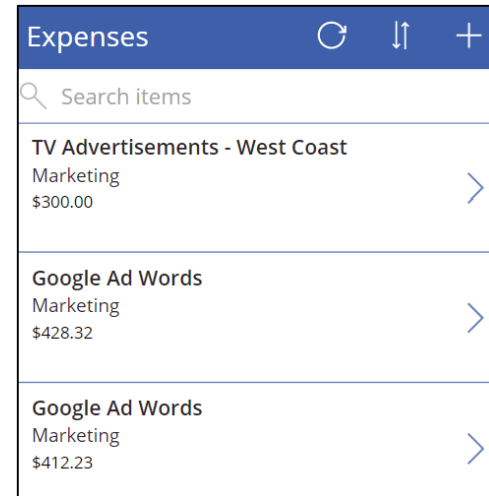
- PowerApps Supports two types of connectors
  - Standard connectors supplied out-of-box and vetted by Microsoft
  - Custom connectors created by organizations for their own use
- Many connectors are designed for tabular datasources
  - Underlying data is modeled as tables with rows and columns
  - Tabular data makes it very easy to use data binding
  - PowerApps provides tabular-based functions (e.g. Patch)
- Other connectors are function-based
  - Used when underlying datasource cannot be accessed as table
  - Connector executes calls against the external SaaS service
  - Data binding is possible but requires more effort



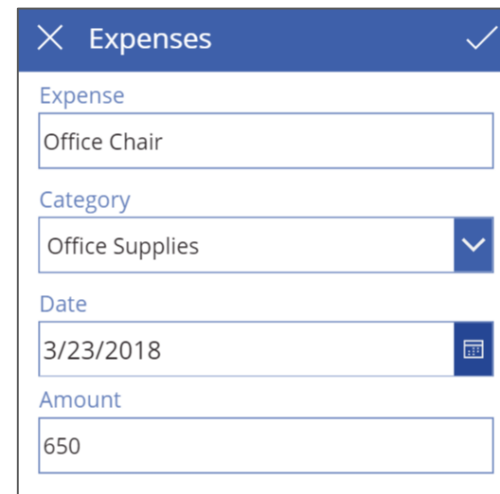


# Data Binding with Galleries and Forms

- Table binding
  - Gallery control
  - DataTable control
- Single-record binding
  - Display form control
  - Edit form control



Expenses	
Search items	
TV Advertisements - West Coast Marketing \$300.00	>
Google Ad Words Marketing \$428.32	>
Google Ad Words Marketing \$412.23	>



Expenses	
Expense	
Office Chair	
Category	
Office Supplies	
Date	
3/23/2018	
Amount	
650	





# Working with the Data Pane

- You use the Data pane to configure data binding
  - Select a data-bound control and then display Data pane
  - Data pane allows you to change layout for data binding
  - Once you select layout, you can then map fields below

The screenshot displays the PowerApps interface with the Data pane open. The left pane shows a list of controls under 'BrowseScreen1', with 'BrowseGallery1' selected. The center pane shows a gallery titled 'Expenses' with a list of items. The right pane, titled 'Data', shows the configuration for the selected control. It includes a 'Data source' section with a dropdown menu showing 'Expenses' and a 'Refresh' button. Below this is a 'Layout' section with a dropdown menu showing 'Title, subtitle, and body'. At the bottom, a 'Field mappings' section is highlighted with a red dashed border, showing a list of fields: 'Amount', 'Category', 'Title2', and 'Expense'. Four yellow arrows point to specific elements: 'Data-bound control' points to 'BrowseGallery1' in the left pane; 'Data-bound connection' points to the 'Expenses' data source; 'Data-binding layout' points to the 'Title, subtitle, and body' layout option; and 'Field mappings' points to the 'Field mappings' section.

**Data-bound control**

**Data-bound connection**

**Data-binding layout**

**Field mappings**



**DEMO**

## **Creating an App using the Start from Data Template**

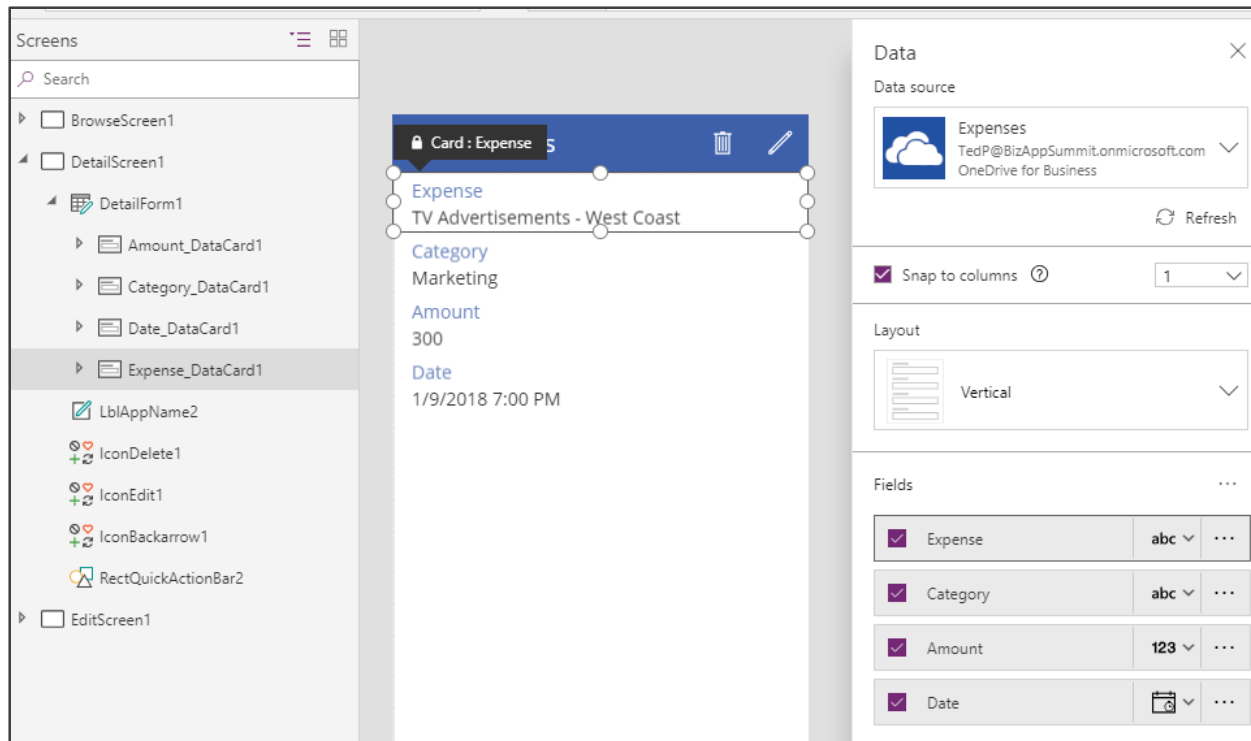
# Agenda

- ✓ Getting Started with PowerApps
- ✓ Creating and Testing Apps with PowerApps Studio
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- Customizing Forms and Data Cards



# Understanding Forms and Data Cards

- Form acts as a container for data cards
  - Each form binds to a single record
  - Within a form, each data card binds to an underlying field
  - Each data card contains an encapsulated set of child controls





# Changing a Field's Data Card Type

- Fields in Form control get default data card
  - Use Data pane to change data card used by any field
  - Different data cards offer different editing experiences

The image shows a screenshot of a form titled "Expenses" with a blue header bar containing a close button (X) and a checkmark. The form contains several fields: "Expense" (text input), "Category" (dropdown menu with a blue arrow), "Date" (calendar icon), "Amount" (text input), and "1/9/2018" (date input). A tooltip above the "Category" field reads "Card : Category" and "nts - West Coast". To the right of the form is a "Layout" pane with a "Vertical" layout option. Below the layout pane is a "Fields" pane showing a list of fields: "Expense" and "Category". Each field has a checkmark, a name, and a dropdown menu. Below the "Category" field, there are six icons representing different data card types: "View text", "View phone", "View email", "Edit text", "Edit multi-line text", and "Allowed Values". The "Allowed Values" icon is highlighted with a grey border.



# Customizing a Data Card

- By default, data cards are locked and cannot be edited
  - In many scenarios, you should leave data cards locked
  - Some scenarios call for unlocking data cards to customize them

The screenshot displays the Power Apps Studio interface. On the left, the 'Screens' pane shows a tree view of the app's components, including 'EditForm1' and several data cards. The central canvas shows a form titled 'Expenses' with fields for 'Expense' (TV Advertisements - West Coast), 'Category', 'Date' (1/9/2018), and 'Amount' (300). A tooltip 'Card : Date' is visible over the date field. On the right, the 'Properties' pane for 'Date\_DataCard2' is open. A red dashed box highlights the 'Unlock to change properties.' button, with a yellow arrow pointing to it from the 'Data' pane. The 'Data' pane shows the data source 'Expenses' and a list of fields: Expense, Category, Date, and Amount. The 'Properties' pane also shows the 'DATA' section with fields for 'DataField', 'DisplayName', and 'Required', all set to 'Date'.

**Screens**

- Search
- BrowseScreen1
- DetailScreen1
- EditScreen1
  - EditForm1
    - Amount\_DataCard2
    - Category\_DataCard2
    - Date\_DataCard2**
    - Expense\_DataCard2
  - LblAppName3
  - IconAccept1
  - IconCancel1
  - RectQuickActionBar3

**Expenses**

Expense  
TV Advertisements - West Coast

Category

**Card : Date**  
Date  
1/9/2018 19:00

Amount  
300

**Data**

Data source  
Expenses  
TedP@BizAppSummit.onmicrosoft.com  
OneDrive for Business

☒ Snap to columns 1

**Layout**  
Vertical

**Fields**

Field	Type	Options
<input checked="" type="checkbox"/> Expense	Text	abc v ...
<input checked="" type="checkbox"/> Category	Text	abc v ...
<input checked="" type="checkbox"/> Date	Date	Calendar v ...
<input checked="" type="checkbox"/> Amount	Text	123 v ...

**CARD Date\_DataCard2**

Properties Rules Advanced

☐ Lock **Unlock to change properties.**

Search for a property ...

**DATA**

DataField

DisplayName

Required

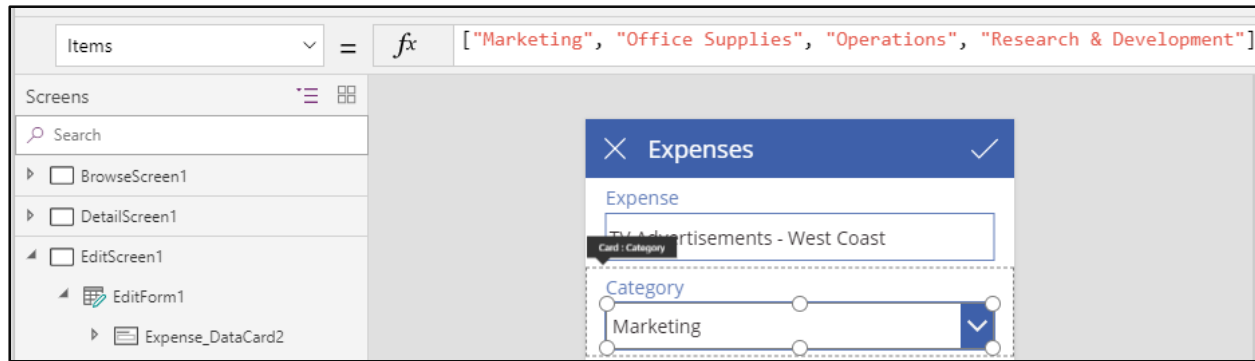
**DESIGN**

BorderColor



# Populating a Dropdown Combobox

- Once a data card is unlocked you can customize it
  - Add formula for **Items** property to populate combo box



- Dropdown list provides better user experience than textbox







**DEMO**

## **Customizing Forms and Data Cards**

# Summary

- ✓ Getting Started with PowerApps
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- ✓ Working with Screens and Controls
- ✓ Understanding Connectors and Data Binding
- ✓ Customizing Forms and Data Cards

