

# Designing Flows



# Agenda

- What Is Microsoft Flow?
- Working with the Flow Designer
- Reviewing Flow Run History
- Creating a Flow from Scratch
- Creating Flows on SharePoint Lists



# What is Flow?

- Service for automating workflows across other services
  - Designed by Microsoft for business users more than developers
- What can you do with Flow?
  - Get notifications
  - Copy files
  - Collect data
  - Automate approvals



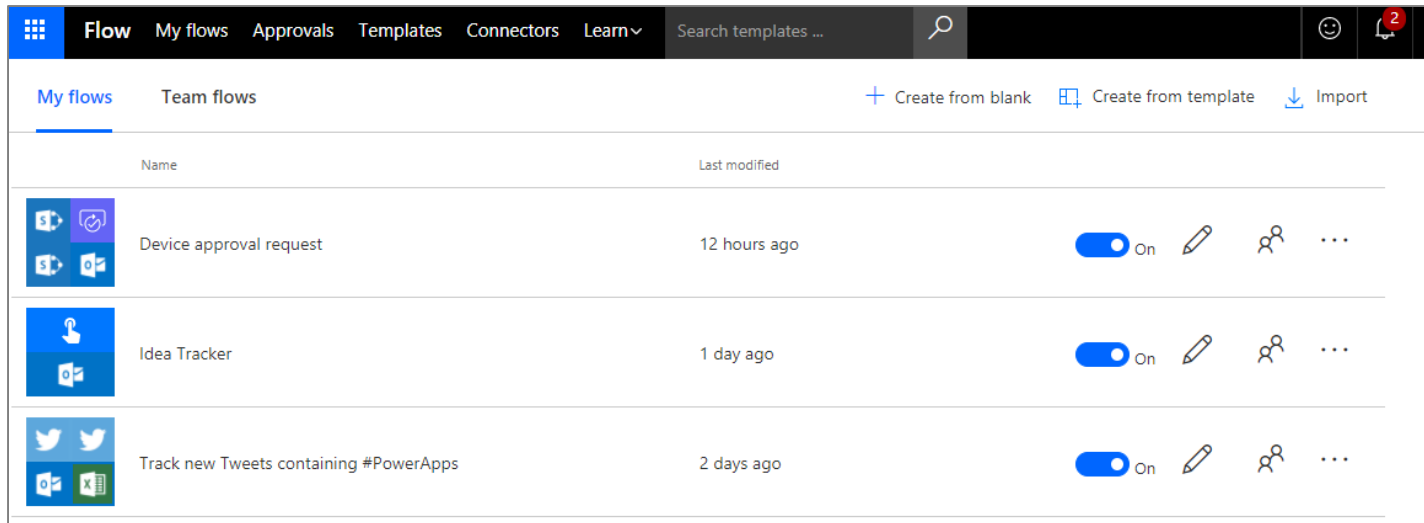
# Building Blocks of Flow

- Flows whether created from a template or from scratch:
  - Will contain **building blocks** that work together in certain ways (much like a flowchart)
- Building blocks of Flow:
  - **Services** - sources and destinations of data in a flow
  - **Triggers** - events that start a flow
  - **Actions** - tasks accomplished by the flow
  - **Conditions** - allow for branching if/then logic in a flow
  - **Loops** - for iterating over actions more than once



# Creating and Managing Flows

- Each user has a list of flows
  - Flows can be shared with or transferred to other users

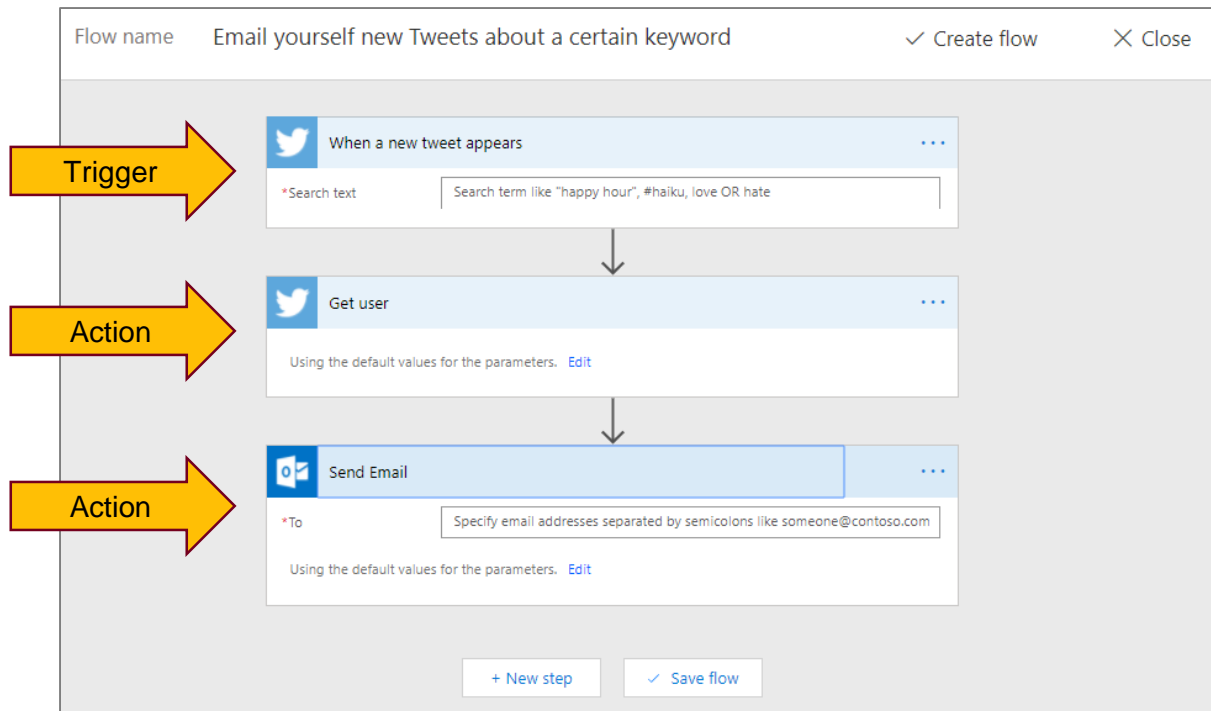


- Two ways to create a new flow
  - Create from template
  - Create from blank



# Working with the Flow Designer

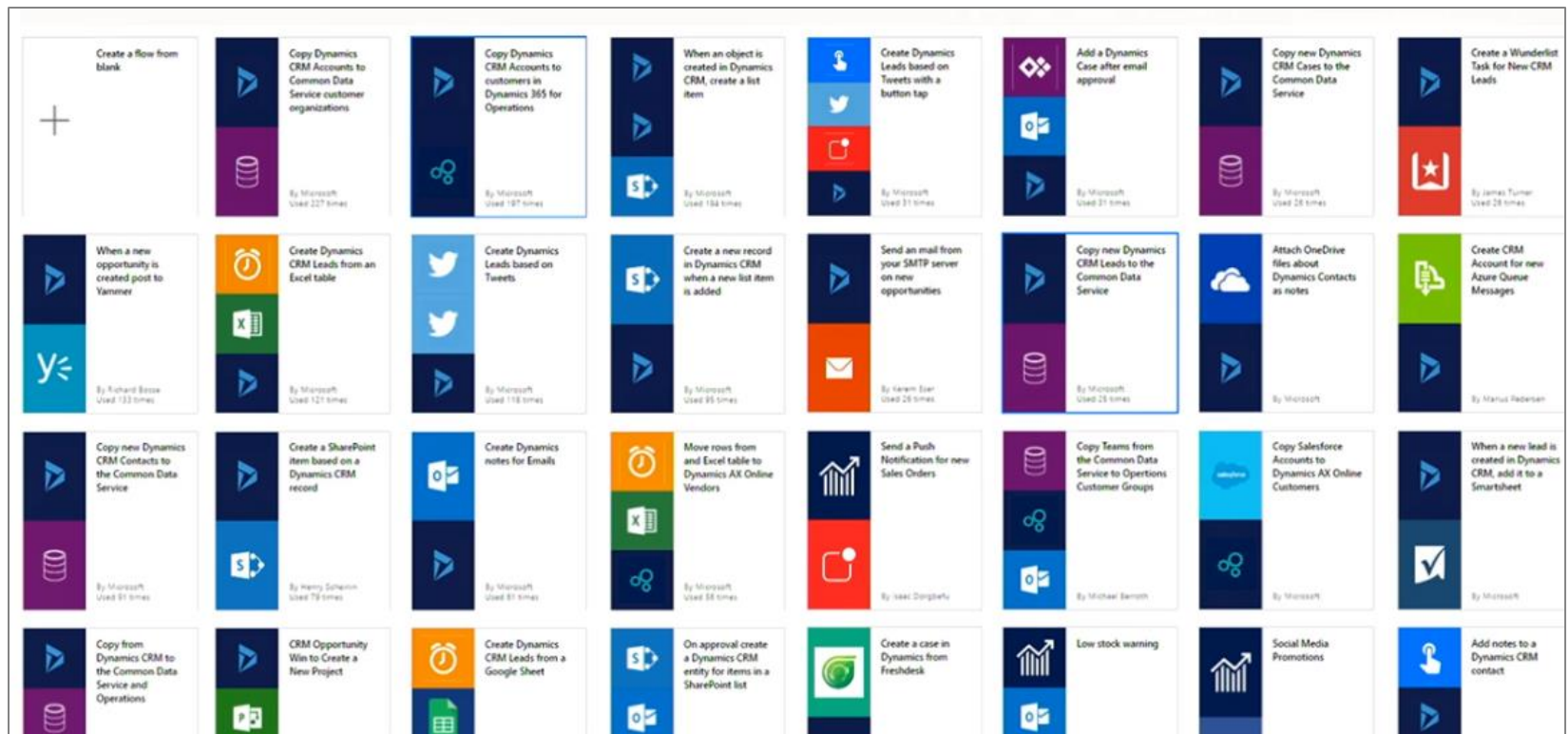
- Flow Designer provides UI for building flows
  - Somewhat similar to SharePoint Designer workflow designer
  - You build flows by adding and configuring steps
  - There are 3 types of steps: triggers, actions or conditions





# Flow Templates

- There are 100s of templates
  - Flow is built with pre-configured trigger and actions



# Build a Flow from Scratch

- Flow created without any trigger or actions
  - You must start by adding a trigger
  - Then you add actions and conditions

Sending an Exchange email when a new file is added in Dropbox

Authenticate to your Dropbox account.  
Select folder to monitor

Authenticate to your O365 account.  
Build email *Subject* and *Body*

Specify *Send To* email address and additional properties (optional): *From*, *CC*, *BCC* and *Importance*

Choose to include properties from previous step (Dropbox file) to improve relevance





# Examples Services to Use with Flow

- SharePoint Online
  - Trigger a flow when a new item is added
  - Trigger a flow when a new document is uploaded
  - Add an action to create or update a list item
- Twitter
  - Trigger a flow when a tweet contains a specific hashtag
  - Track tweet by sending email or write to SharePoint list
  - Add an action to reply to a tweet





**DEMO**

# Creating a Twitter Account for Testing Purposes

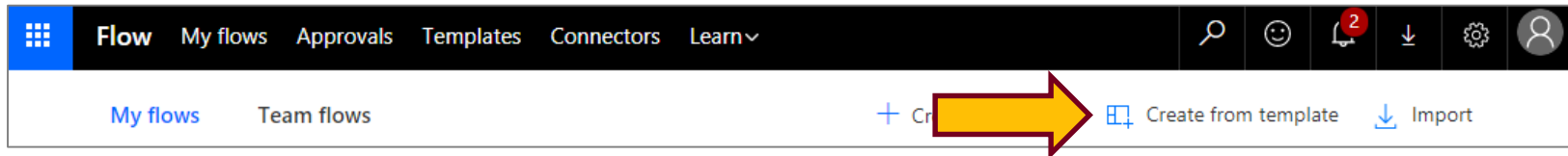
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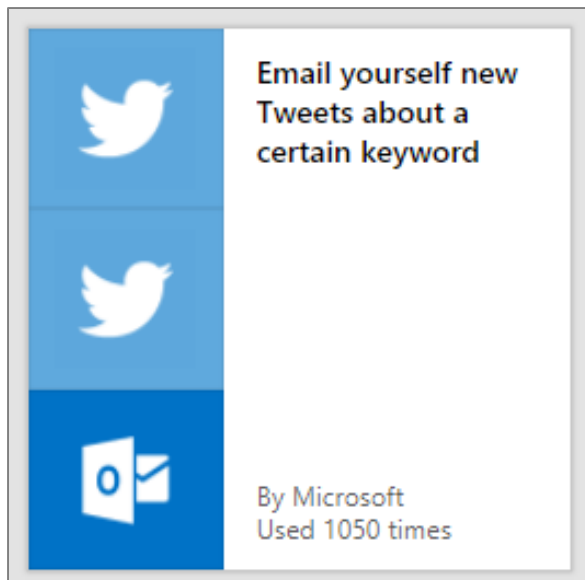


# Creating a Flow from a Template

- Use Create from template link

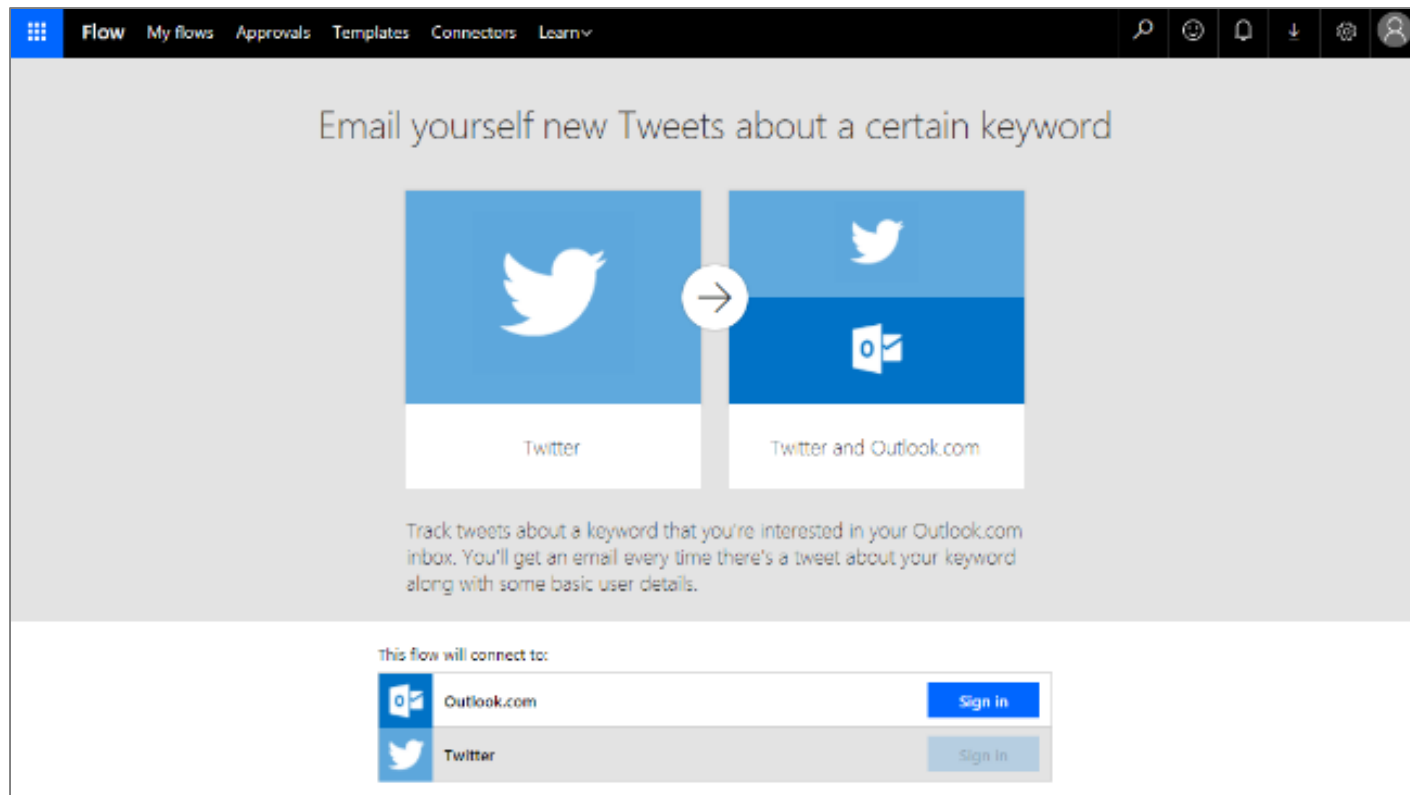


- Select a template



# Many Flow Templates Require Connections


- This allows a flow to read and write data
  - Flow often requires user to authorize permissions






# Authorizing an App to Connect to a Service

- User must authorize app to use service

 Microsoft

student@ddpaf.onmicrosoft.com 

## PowerApps and Flow

Publisher's website: msmanaged-na.consent.azure-apim.net

This app would like to:

- ✓ Read and write access to your mail
- ✓ Send mail as you
- ✓ Have full access to your calendars
- ✓ Have full access of your contacts
- ✓ Access your data anytime

You should only accept if you trust the publisher and if you selected this app from a store or website you trust. Ask your admin if you're not sure.

Cancel Accept

## Authorize Microsoft PowerApps and Flow to use your account?



Microsoft PowerApps and Flow  
By Microsoft  
www.powerapps.com

Microsoft PowerApps is a service for building and using custom business apps that connect to your data and work across the web and mobile - without the time and expense of custom software development.

☒ Remember me · [Forgot password?](#)

Authorize app Cancel

**This application will be able to:**

- Read Tweets from your timeline.
- See who you follow, and follow new people.
- Update your profile.
- Post Tweets for you.






# Working with the Flow Designer

Flow name

Email yourself new Tweets about a certain keyword

✓ Create flow


✕ Close

 When a new tweet appears

\*Search text


Search term like "happy hour", #haiku, love OR hate

↓

 Get user

Using the default values for the parameters. [Edit](#)

↓

 Send Email

\*To

Specify email addresses separated by semicolons like someone@contoso.com


Using the default values for the parameters. [Edit](#)

+ New step

✓ Save flow


# Building a Flow

Flow name    Track new Tweets containing #PowerApps    ✓ Update flow    ✕ Close


 When a new tweet appears ...

\* Search text


↓

 Get user ...

\* User name  

 Tweeted by ✕


↓

 Send Email ...


\* To

\* Subject  
 Name ✕"/>

\* Body  
Tweet:  

 Tweet text ✕

  
-----  
Tweeted by:  

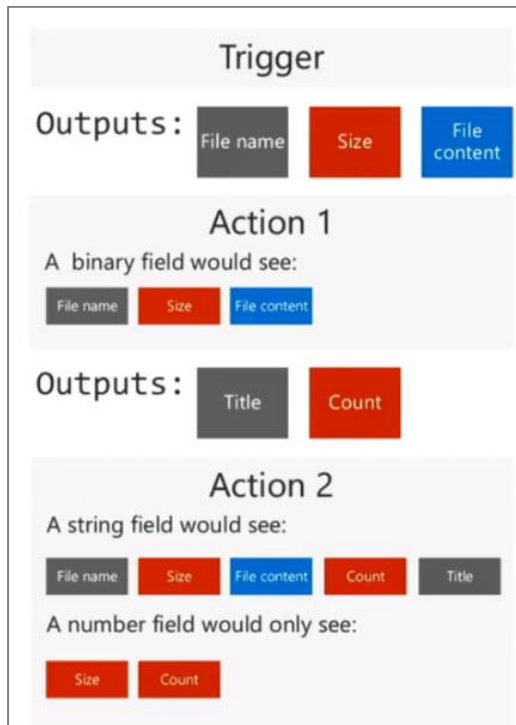
 Tweeted by ✕

Show advanced options ▾



# Data Flows from Step to Step

- Data flows from one step to the next
  - Data from a step is available as output in later steps
  - Add Dynamic Content feature used to insert data from earlier steps
  - Certain data shows up based on the types of inputs & outputs



# Adding Dynamic Content

The screenshot illustrates the process of adding dynamic content to a PowerApps form. The main interface shows a 'Send Email' action with the following fields:

- To:** Student@DDPAF.onmicrosoft.com;
- Subject:** New tweet about PowerApps from [Twitter icon] Name x
- Body:**
  - Tweet: [Twitter icon] Tweet text x
  - 
  - Tweeted by: [Twitter icon] Tweeted by x |

At the bottom right of the 'Send Email' action, there is a link labeled 'Add dynamic content' with a plus icon. A red arrow points from this link to a panel on the right side of the screen.







The panel on the right is titled 'Dynamic content' and 'Expression'. It contains a search bar labeled 'Search dynamic content'. Below the search bar, there is a list of dynamic content options, each with a Twitter icon and a description:

- Original tweet user name  
Screen name of the user
- Original tweet user profile image url  
Url of the profile image
- OriginalTweet.MediaUrls - Item
- Profile image url  
Url of the profile image
- Tweet id  
Id of the tweet
- Tweet language  
Language code of the tweet
- Tweet text  
Text content of the tweet
- Tweeted by  
Name of the user who has posted the tweet



# Using Expressions

Many reasons to use expressions:

-  Convert types
-  Perform simple, inline calculations like string manipulation or arithmetic, or date/time manipulation
-  Generate data like the current time, a GUID or a random number
-  Handling optional values
-  "If" conditional statements
-  Working with lists



# How to Create Expressions

1  Add Dynamic Content

2

Dynamic content

Expression

*fx* replace(body('Get\_record'))?

OK

3

Action name

Inputs

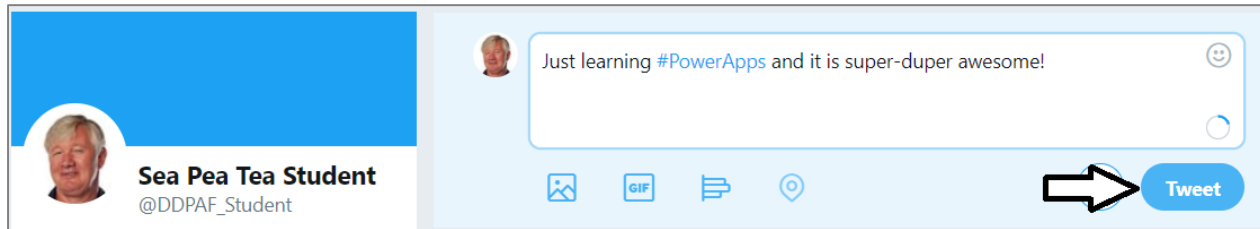
*fx* replace(...) x



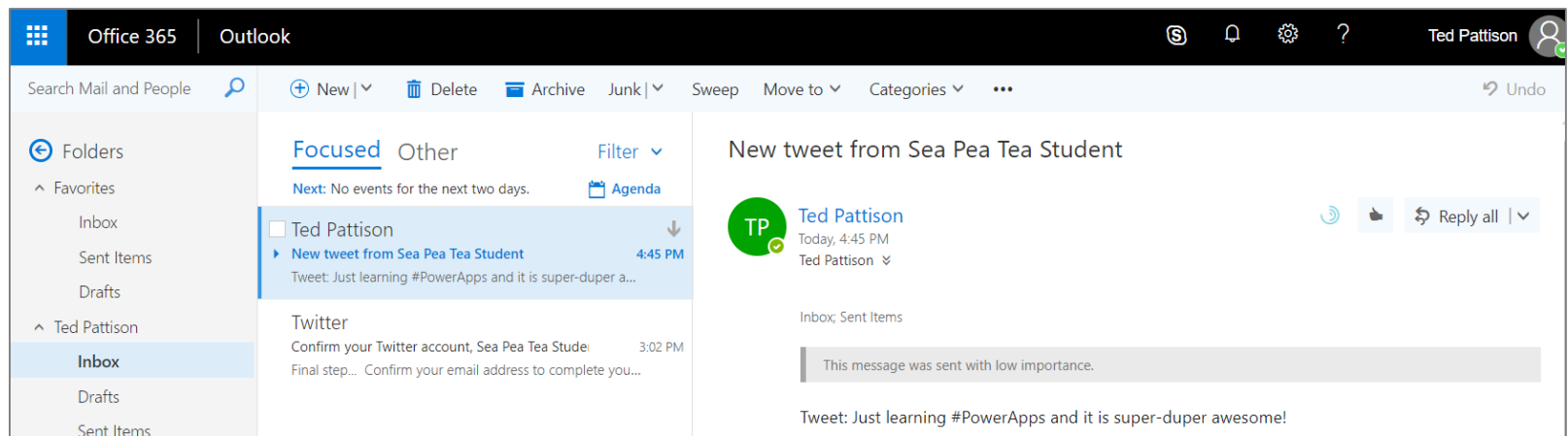


# Testing the Flow

- The Trigger

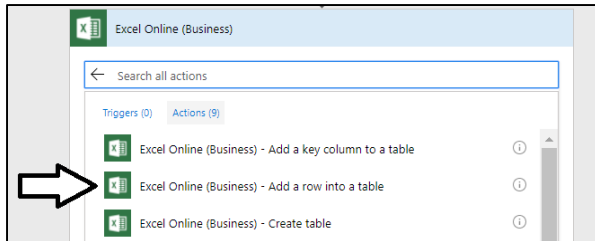


- The Action *(you can also think about it as the "Reaction")*

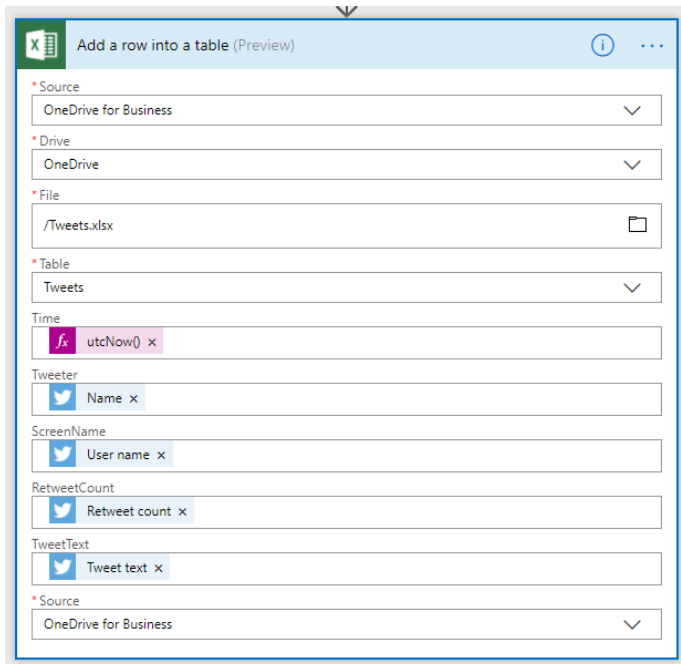


# Adding a Second Action

- Add a second action



- Configure the action to insert new row in Excel table

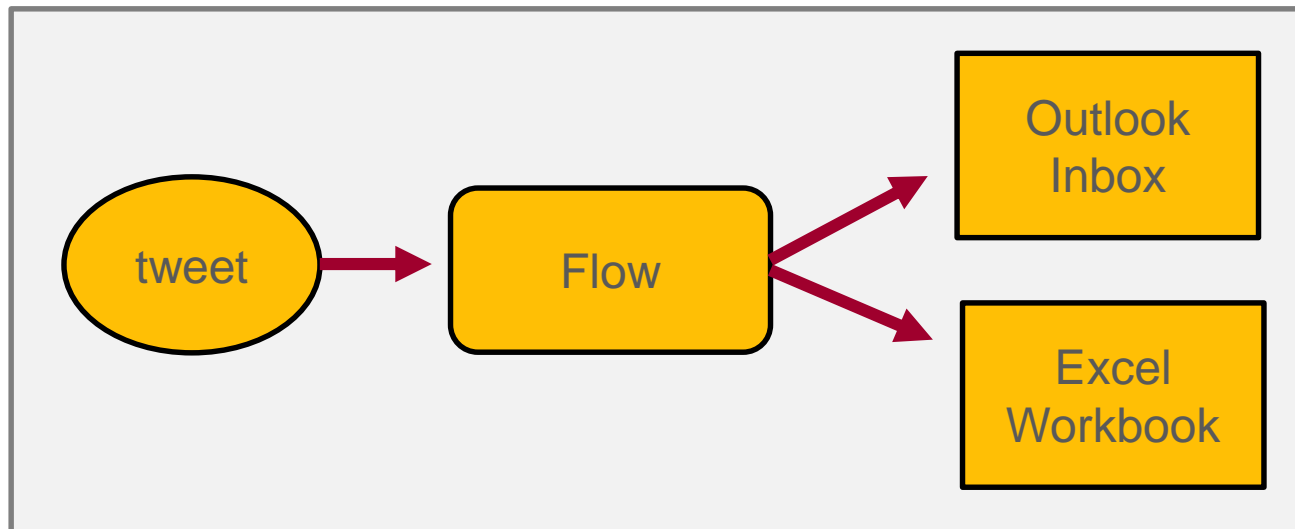


# Updating a Table in an Excel Workbook

- Flow now writes tweets to Excel workbook as well as sending email

Excel Online					
Ted Pattison ▸ Documents				Tweets	
	A	B	C	D	
1	Time	Tweeter	ScreenName	RetweetCount	TweetText
2	2018-03-25T23:38:	Sea Pea Tea Student	DDPAF_Student	0	#PowerApps gets even better with Microsoft Flow
3					

- Observation: It's easy to design a flow to write data to multiple services



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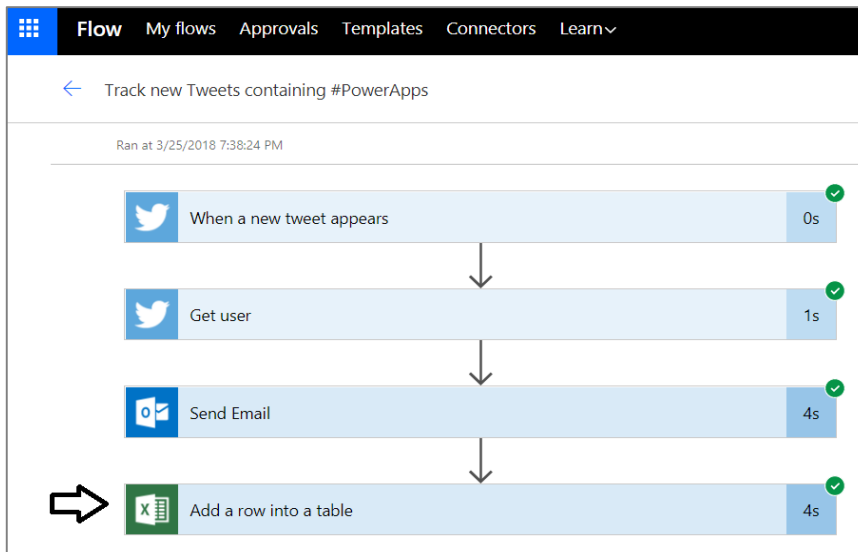


# Run History



- Flow provides history flows that have run

RUN HISTORY			
➡	✓ Succeeded	9 minutes ago	8 seconds
	✓ Succeeded	2 hours ago	0 seconds
	✓ Succeeded	3 hours ago	0 seconds

- Provides read-only view of data for auditing & monitoring



# Run History Details

 Add a row into a table 4s 

INPUTS

Source

OneDrive for Business

Drive

OneDrive

File

/Tweets.xlsx

Table

Tweets

item

```
{  
  "Time": "2018-03-25T23:38:28.5422853Z",  
  "Tweeter": "Sea Pea Tea Student",  
  "ScreenName": "DDPAF_Student",  
  "RetweetCount": "0",  
  "TweetText": "#PowerApps gets even better with Microsoft Flow"  
}
```

Time

2018-03-25T23:38:28.5422853Z





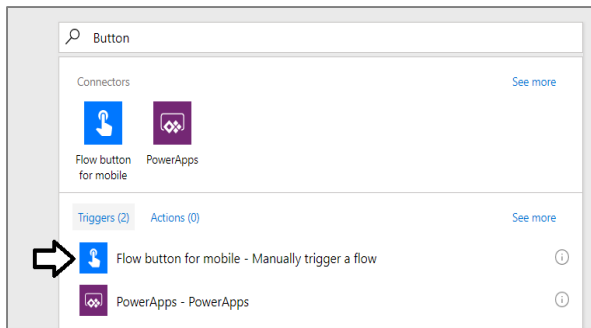
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# Creating a Flow Trigger by Manual Button

- Use Run button for Mobile as flow trigger



- Trigger can be extended with one or more input fields

A screenshot of the 'Run flow' dialog box. The title is 'Run flow'. Below it, there is a section for 'Idea Tracker' with the owner 'Ted Pattison'. Under 'See details', there are two input fields: 'Quality \*' with a dropdown menu set to 'Good', and 'Idea \*' with a text input field containing 'Learn PowerApps for career advancement'. At the bottom, there is a blue 'Run flow' button and a grey 'Cancel' button. An arrow points to the 'Run flow' button. There is also an 'Edit connections' link at the bottom left.




# Building Out The Idea Tracker Flow


Flow name

Idea Tracker

✓ Update flow

✕ Close

 Manually trigger a flow

 Quality

Please enter your input

...

List Options


Lame


Good


Great


Brilliant


Enter another option










 Idea


Please enter your input

...

+

 Add an input




 Send an email

\* To


Student@DDPAF.onmicrosoft.com;

\* Subject

 Quality ✕

Idea for consideration

\* Body

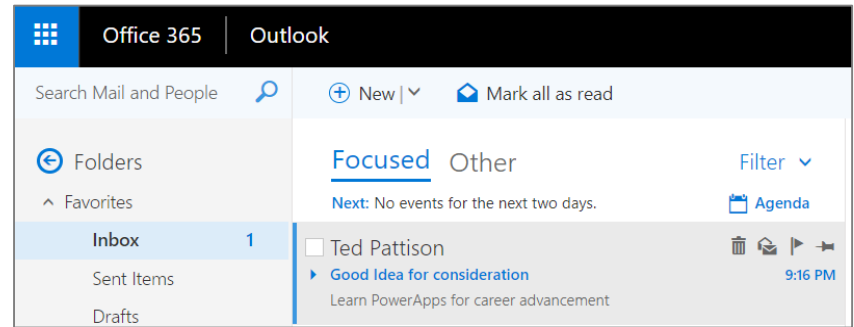
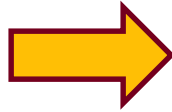
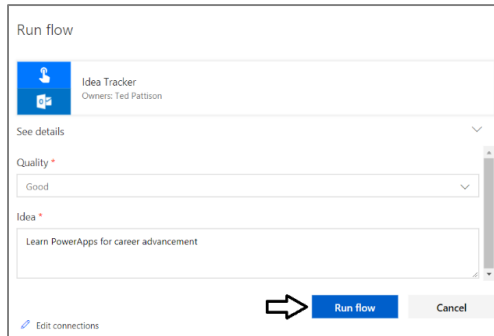
 Idea ✕

Show advanced options ▾

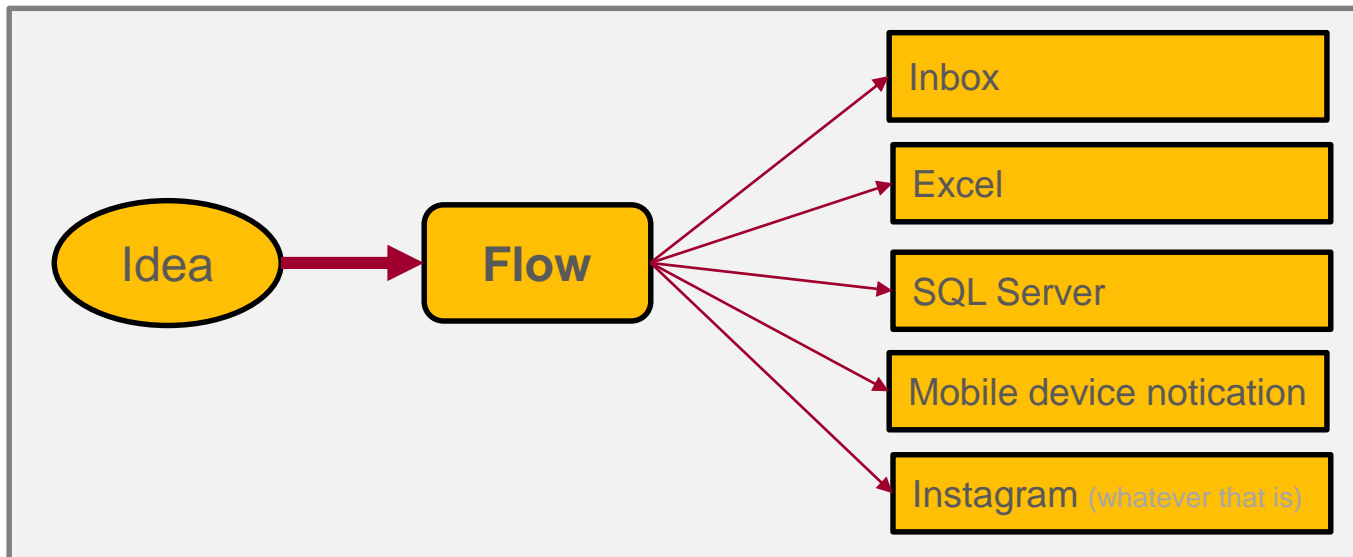


# Where Should You Write the Idea?

- You can track the idea by sending an email



- Or get even more extravagant



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# Creating a Flow for a SharePoint List

CP

Critical Path Labs Team Site

+ New

Quick edit

Export to Excel

Flow

PowerApps

...

Expenses

Expense

Category

Date

Amount



Verizon - Telephone and Internet	Operations	1/1/2018	\$923.00
Electricity Bill	Operations	2/5/2018	\$338.00





Create a flow  
See your flows

Create a flow



Start with a template and create automated tasks between your SharePoint data and other apps. Choosing a template will open the Microsoft Flow site where you'll finish creating your flow.





Send a customized email when a new SharePoint list item is added





Start approval when a new item is added



When a message is posted on a group, create a SharePoint list item



Request manager approval for a selected item



When an object is created in Dynamics 365, create a list item

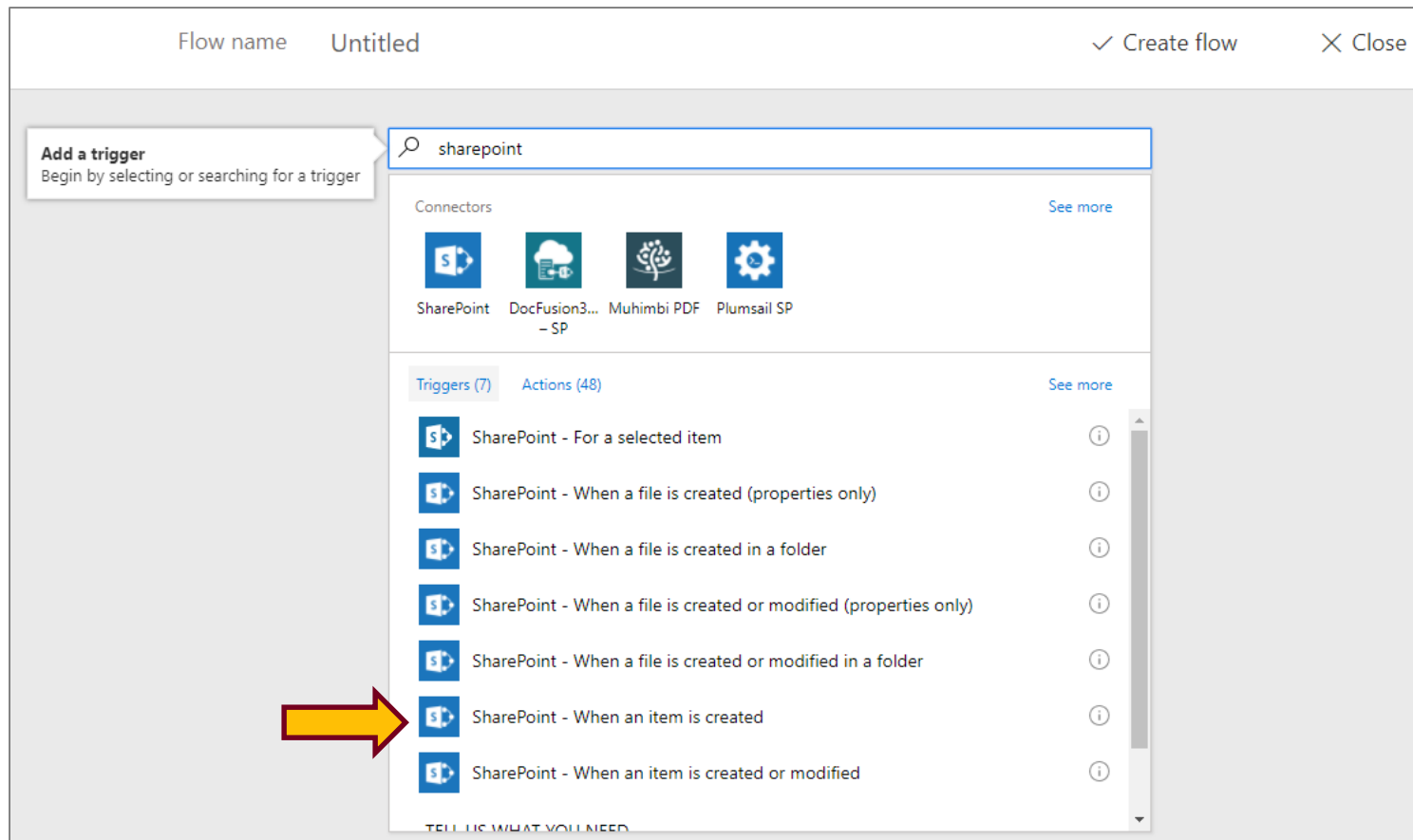
Show more





# Another Way to Create Flows for SharePoint

- Create the flow from blank using the Flow Designer
  - Then add trigger based on SharePoint item event



# Using a Condition

- Send alert email if expense amount greater than \$500
  - Condition runs test which returns true or false
  - Condition provide **If yes** branch and **If no** branch

The screenshot displays a Microsoft Flow (Power Automate) interface for a flow named "Large Expense Alert". The flow is in the "Create flow" state. The first step is a trigger "When an item is created" configured with the Site Address "https://ddpaf.sharepoint.com" and the List Name "Expenses". This is followed by a "Condition" step. The condition is set to "Amount" (with a delete icon 'x') "is greater than or equal to" "500". Below the condition, there are two branches: "If yes" (green background) and "If no" (red background). The "If yes" branch is currently selected. The interface includes a "Flow name" field, a "Create flow" button, and a "Close" button.

Flow name: Large Expense Alert

✓ Create flow    ✕ Close

**When an item is created**

\* Site Address: https://ddpaf.sharepoint.com

\* List Name: Expenses

**Condition**

Amount x is greater than or equal to 500

Add dynamic content + Edit in advanced mode Collapse condition

✓ If yes    ✕ If no



# Build Out Branches using Actions

Flow name Large Expense Alert ✓ Create flow ✕ Close

When an item is created

Condition

Amount x is greater than or equal to 500

[Add dynamic content](#) [Edit in advanced mode](#) [Collapse condition](#)

**If yes**

Send an email

\*To: Ted Pattison x ;

\*Subject: Large Expense Alert!

\*Body:

Expense: Expense x

Category: Category Value x

Amount: Amount x

Link to item x

[Add dynamic content](#)

**If no**

[Add an action](#) [More](#)



# Summary

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