

Mastering Microsoft Power Automate:

Automate Your Business Processes with Ease

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Microsoft Certified Trainer - Azure



DevelopIntelligence

A PLURALSIGHT COMPANY

Virtual Training Expectations for Me

I pledge to:

Make this as interesting and interactive as possible

Ask questions in order to stimulate discussion

Use whatever resources I have at hand to explain the material

Try my best to manage verbal responses so that everyone who wants to speak can do so

Use an on-screen timer for breaks so you know when to be back

Course Pre-requisites

This course assumes you have a basic understanding of Microsoft Office applications

Familiarity with basic workflow concepts is beneficial but not required

Course Objectives

By the end of this course, you will understand:

The Business value of Power Automate

How to create cloud flows that interact with Microsoft Dataverse

How to create business process flows

Robotic process automation with Power Automate Desktop Flows

Skills and knowledge to automate business processes in your organization.

Agenda

2 Days

Day 1

- Introductions
- Business value of Microsoft Power Platform
- Getting Started with Power Automate
- Building Cloud flows with Power Automate
- Sharing flows in Power Automate
- Lab Exercises

Day 2

- Introduction to Robotic Process Automation
- Desktop Flows in Power Automate
- Integrating a Desktop Flow with a Cloud Flow
- Process Advisor
- Lab Exercises

Introduction to Power Automate

Microsoft Power Automate

Power Automate is a cloud-based service that makes it practical and simple for line-of-business users to build workflows that automate time-consuming business tasks and processes across applications and services.

<https://docs.microsoft.com/en-us/power-automate/frequently-asked-questions>

Power Automate Audience



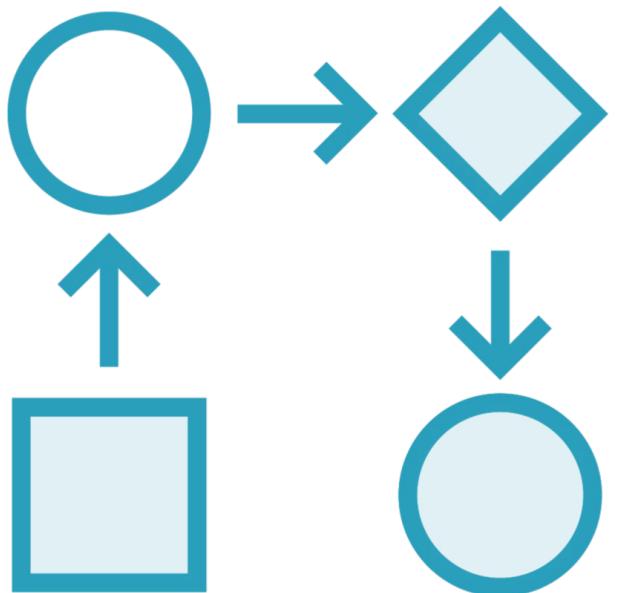
Anyone with a basic tech knowledge can automate business processes

- Line of business users
- IT Specialists

Create powerful workflows without any single line of code

- Developers can also take it to the next level

Power Automate and *Flows*



- Microsoft Power Automate was called Microsoft Flow
 - Renamed to Power Automate in November 2019
- In Power Automate you create flows
 - *Lowercase f*

Three Types of Flows

Cloud flows

Create a cloud flow when you want your automation to be triggered either automatically, instantly, or via a schedule. Those are the most popular types of flows in Power Automate

Business process flows

Business process flows provide a guide for people to get work done. They provide a streamlined user experience to help users follow a predefined process

Desktop flows

Robotic Process Automation (RPA) workflows that enable you to automate processes even in legacy applications with no APIs!

Power Automate Terms and Concepts

Power Platform Connectors



- Used in many products part of the Power Platform suite
- Connectors are a bridge from your data source to your flow
- Allow you to interact with data sources without any technical knowledge

Power Platform Connectors

Over 400 connectors available

Internal to Microsoft

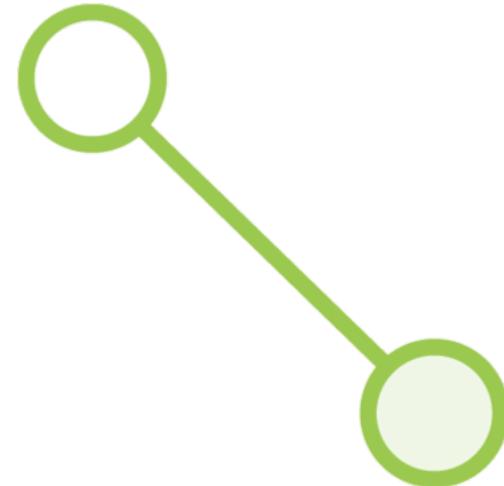
- SharePoint / OneDrive / Outlook**

External to Microsoft

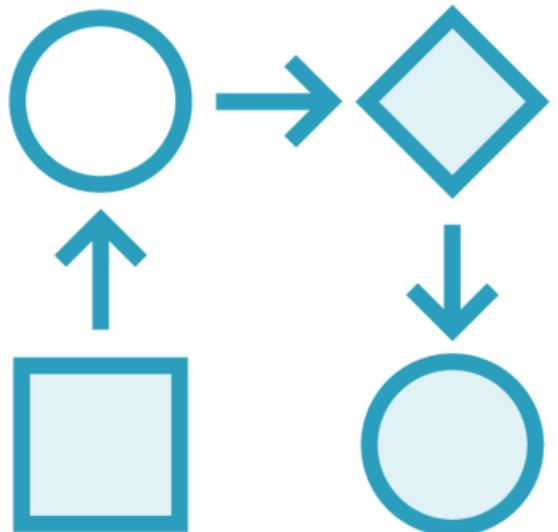
- Twitter, Mailchimp, Salesforce**

Two types of connectors from a licensing point of view

- Standard**
- Premium**



Triggers and Actions



There are two types of operations for Connectors

- Triggers & actions

Triggers only apply to Power Automate

Actions apply to both Power Apps and Power Automate

Triggers

A trigger is the event that starts a flow

Automated - event from another system

New item added in SharePoint List

New file added in OneDrive

New tweet with the #Globomantics hashtag

A trigger can be time based

Every day at 5:00 am

A trigger can also be Instant

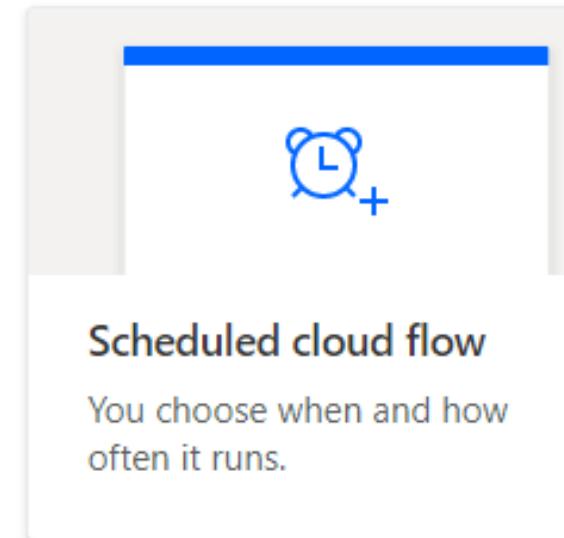
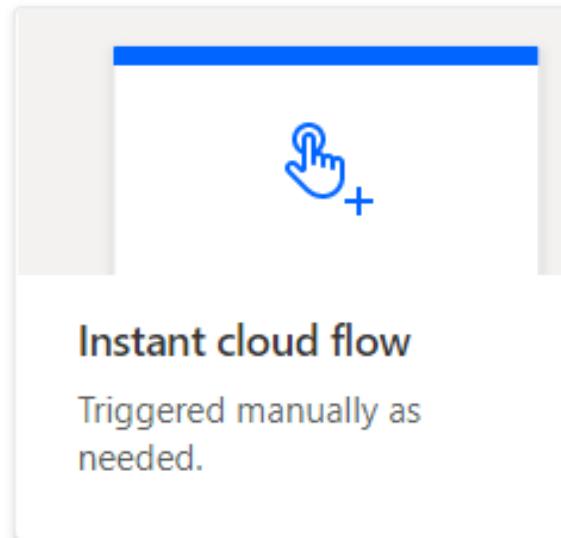
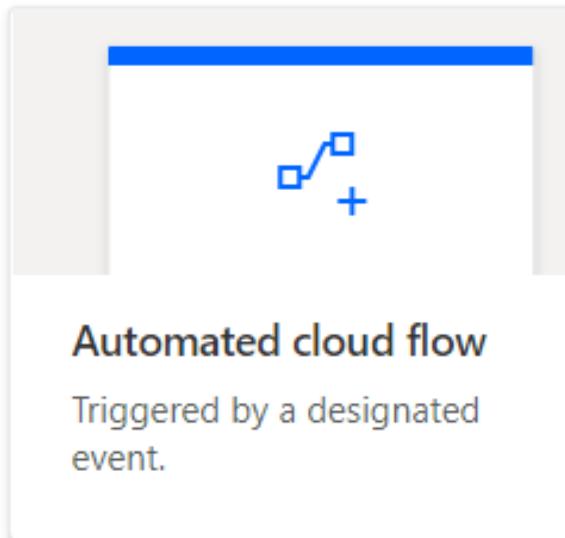
Triggered manually as needed



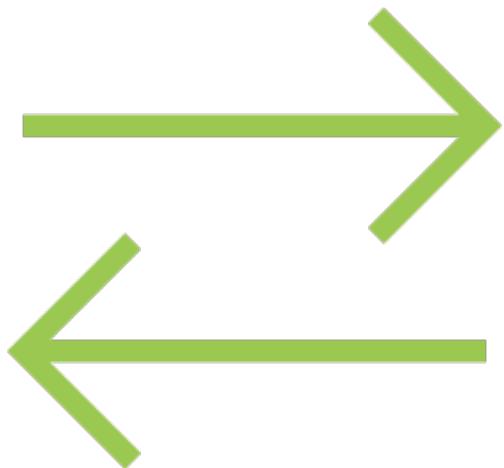
Experience in Power Automate Cloud Flows

Three ways to make a flow

Start from blank 



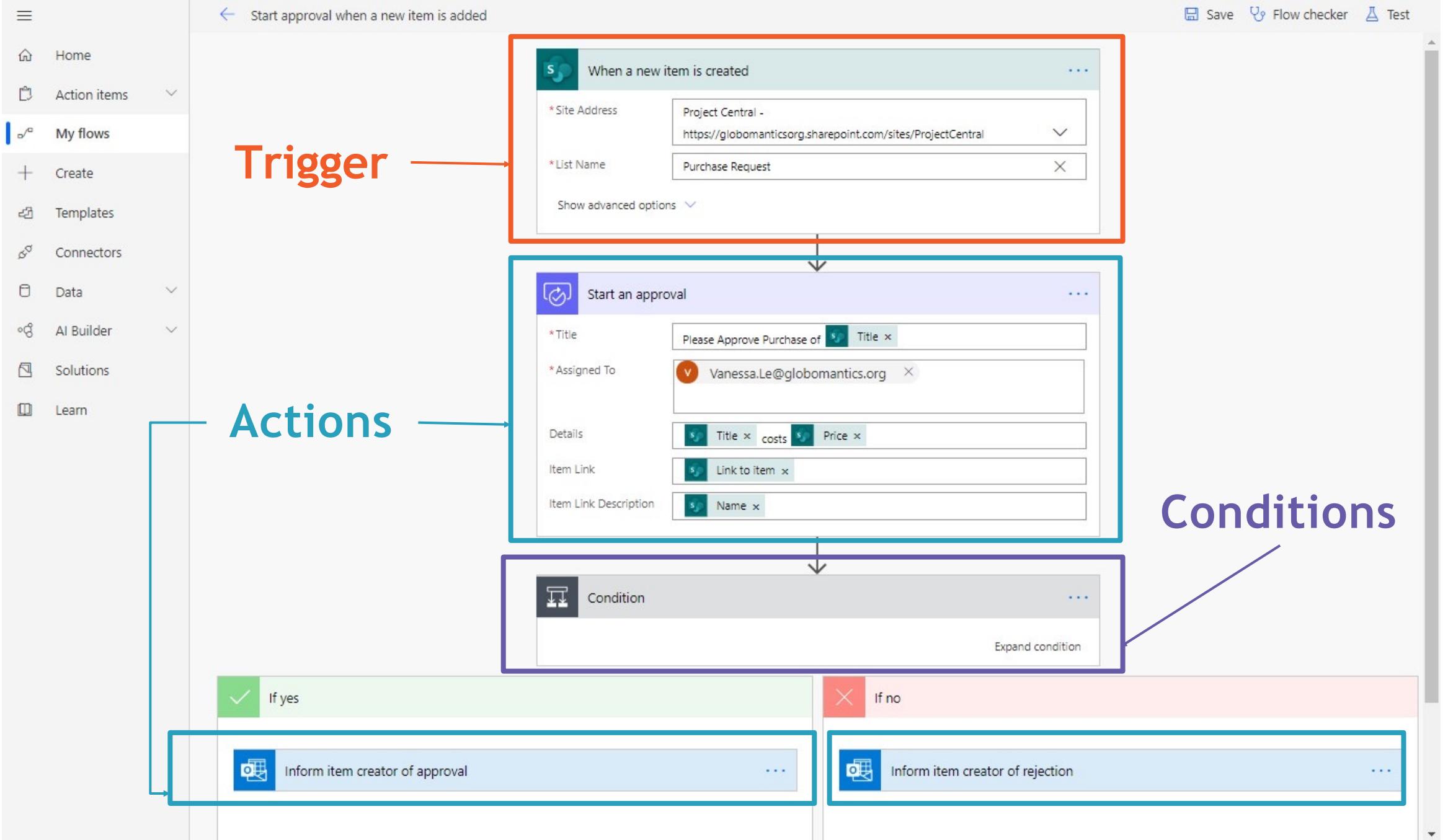
Actions



Interaction with your data source

Sample actions

- Start an approval
- Get the user's manager
- Send an e-mail



Recap



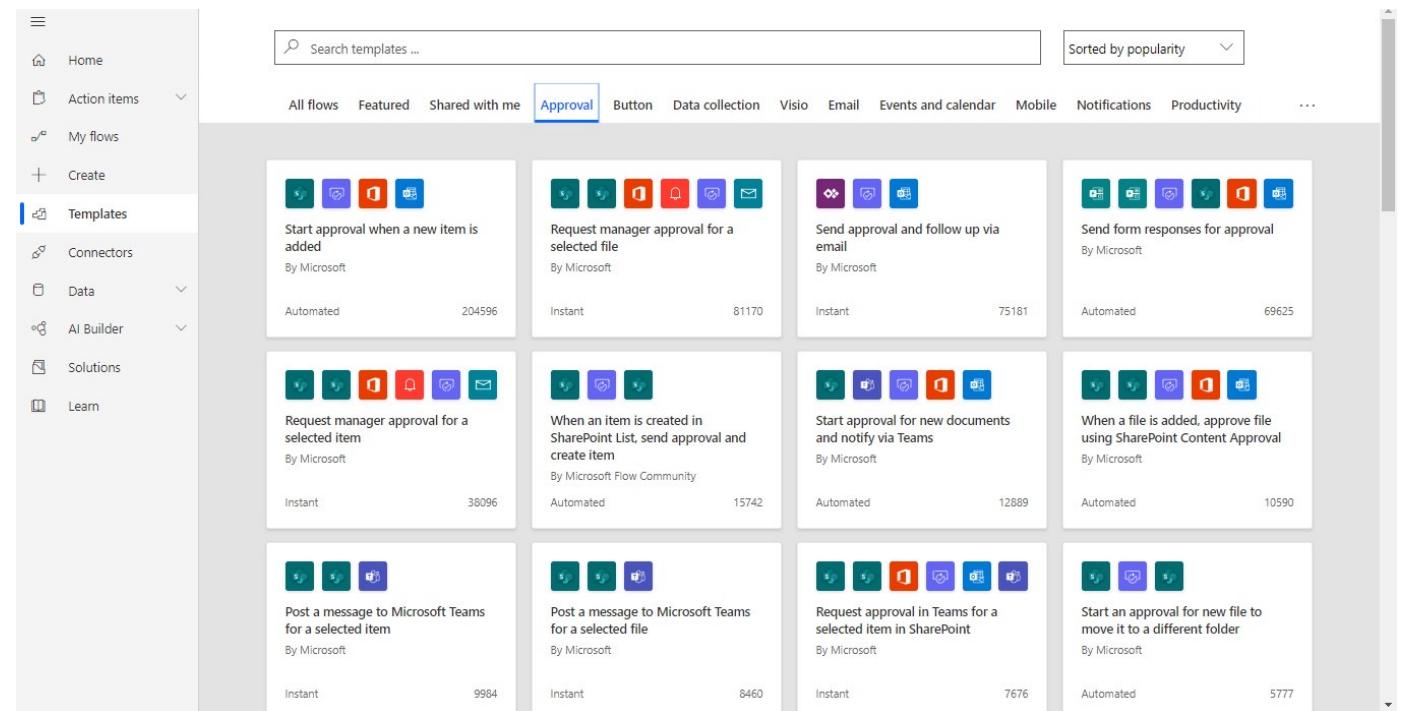
- Trigger
 - Event that starts the flow
- Actions
 - Everything your flow does
- Conditions
 - Allows you to do different actions depending on a value
- Connectors
 - All the services Microsoft Power Automate connects to

Templates

Hundreds of templates available

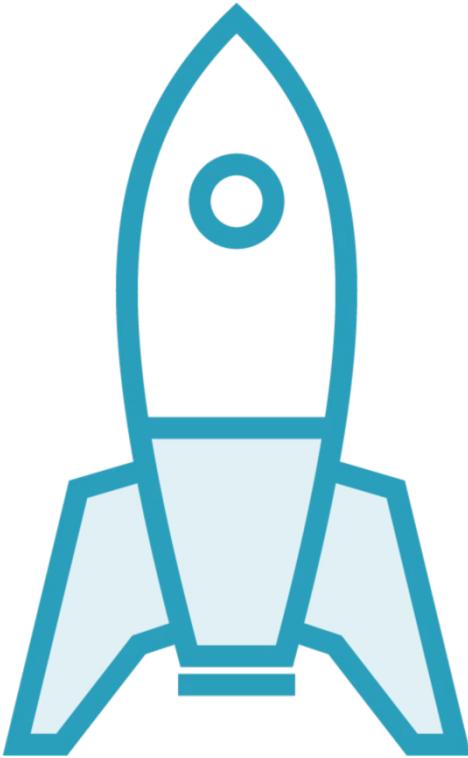
Useful as a quick start for your flows

You can customize them to fit your needs



Power Automate User Interface

Getting to Power Automate



Most flows are created from the web interface

- <https://make.power automate.com/>

There is a desktop tool for Desktop flows (RPA)

- Power Automate Desktop

Cloud flows not
shared with
anyone

Desktop flows
(RPA)

Flows you have shared
with other people or
they shared with you

The screenshot shows the Microsoft Flow interface. On the left, a sidebar menu includes options like Home, Approvals, My flows (which is selected and highlighted with a red box), Create, Templates, Connectors, Data, Monitor, and Automation. The main area is titled "Flows" and contains three categories: "Cloud flows" (highlighted with an orange box and connected by a red arrow from the sidebar), "Desktop flows (RPA)" (highlighted with a green box and connected by a green arrow from the title), and "Shared with me" (highlighted with a blue box and connected by a blue arrow from the title). Below these categories is a table listing three flows:

| Name | Modified | Type |
|---------------------------------|------------|-----------|
| Purchase Approvals | 3 sec ago | Automated |
| New Course Marketing | 47 sec ago | Instant |
| Contracts Notification Reminder | 11 h ago | Instant |

Flow name and details

Flows > Holiday Request Approval

Details

| | | | |
|-------------|---|----------|------------------|
| Flow | Holiday Request Approval | Status | On |
| Description | Holiday Approval Process for the Globomantics IT Team | Created | Feb 3, 12:23 PM |
| Owner | Vlad Catrinescu | Modified | Dec 11, 11:09 AM |
| Type | Automated | Plan | Per-user plan |

Connections

- Approvals
- Office 365 Outlook Permissions
- Office 365 Users Permissions
- Connections Multiple permissions

28-day run history

| Start | Durati... | Status |
|-------------------------------|-----------|-----------|
| Oct 14, 12:04 PM (38 sec ago) | 00:00:30 | Succeeded |

Owners

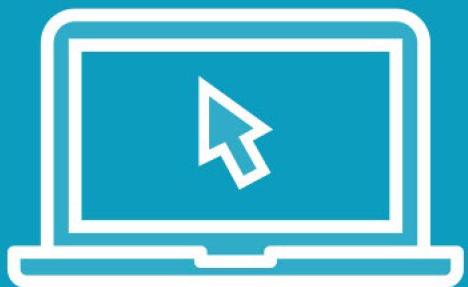
- VC Vlad Catrinescu

History of flow runs and durations

Connectors Used

Flow owners

Demo



Getting familiar with the Power Automate user interface

Conclusion



Introduction to Power Automate

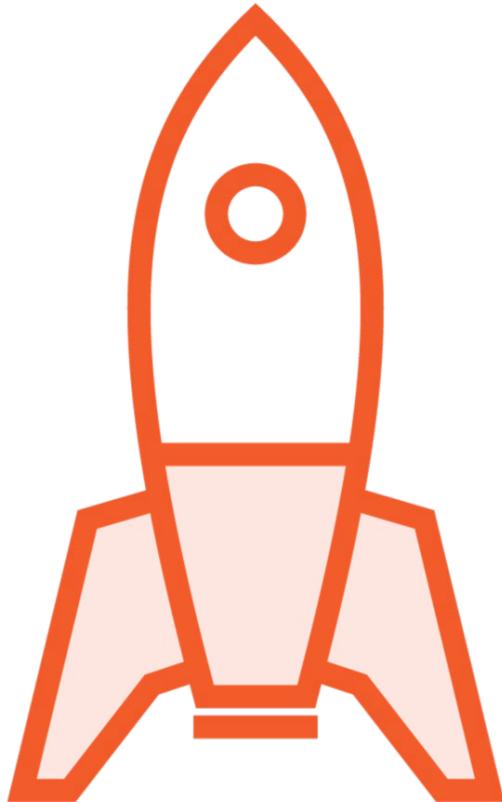
Power Automate terms and concepts

- Connectors
 - Triggers
 - Actions
- Templates

Power Automate user interface

Creating a Cloud Flow from a Template

Microsoft Power Automate Templates



Great way to get started with Power Automate
Templates can be customized

- Add / delete actions

Hundreds of templates offered out of the box

≡

Home

Action items

My flows

Create

Templates

Connectors

Data

Monitor

AI Builder

Process advisor

Solutions

Learn

Chat with a bot

Search templates ...

Sorted by popularity

All flows Featured Shared with me Remote work Approval Button Visio Data collection Email Events and calendar ...

Post MSN Weather updates to Yammer group everyday

By Microsoft

Scheduled 953

Save Outlook.com email attachments to your OneDrive

By Microsoft Power Automate Community

Automated 152904

Save email attachments from Outlook.com to Dropbox

By Microsoft

Automated 4341



Complete a custom action for the selected file

By Microsoft

Instant 21341

Keep my schoolwork in sync with my Google Drive

By Microsoft

Automated 5653

Save Gmail attachments to a Dropbox folder

By Microsoft

Automated 3766

Get daily reminders from your Outlook.com email

By Microsoft

Scheduled 3732

Run sentiment analysis on tweets and push results to a Power BI dataset

By Microsoft

Automated 3805

Notify and Email when a new file

Create an issue in Azure DevOps

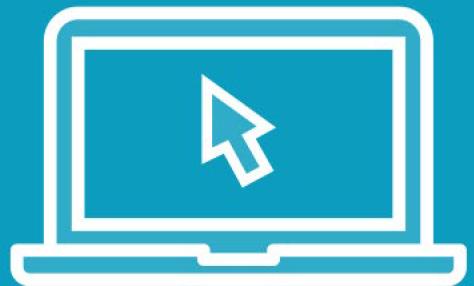
Send an email for new Tweets

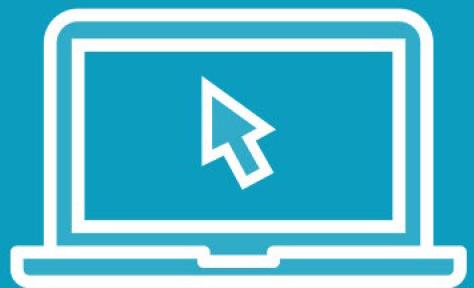
Trigger a flow with a Power BI

Other Makers Can Also Share Templates with You

The screenshot shows the Microsoft Power Automate interface. On the left is a navigation sidebar with icons for Home, Action items, My flows, Create, Templates (which is selected and highlighted in blue), Connectors, Data, Monitor, AI Builder, Process advisor, and Chat with a bot. The main area has a search bar at the top with the placeholder "Search templates ...". To the right of the search bar is a dropdown menu set to "Sorted by popularity". Below the search bar are several filter tabs: All flows, Featured, Shared with me (which is underlined in blue), Remote work, Approval, Button, Visio, Data collection, Email, and more. A large card in the center displays three small icons (RSS feed, checkmark, and document) above the text "Globomantics RSS to Social Template" and "By vlad@globomantics.org". Below this card, it says "Automated" and "0".



Send approval email when a new item is
added to a SharePoint List



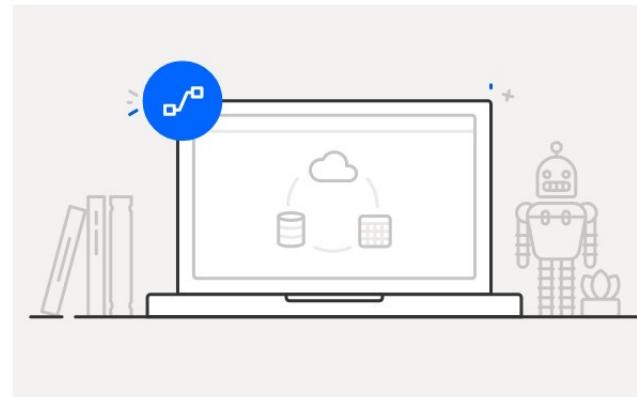
Copy files between Dropbox and
SharePoint

Creating a Cloud Flow from Scratch

Power Automate makes it easy even when starting from blank

You can search all triggers depending on the type of flow

Build an automated cloud flow



Free yourself from repetitive work just by connecting the apps you already use—automate alerts, reports, and other tasks.

Examples:

- Automatically collect and store data in business solutions
- Generate reports via custom queries on your SQL database

Flow name

Add a name or we'll generate one

Choose your flow's trigger *

Search all triggers

- When a new response is submitted Microsoft Forms
- When an item is created SharePoint
- When an item is created or modified SharePoint
- When a file is created in a folder SharePoint
- When a file is created OneDrive for Business
- When a task is assigned to me Planner

Skip

Create

Cancel

Conclusion



Created our first cloud flows

- Based on a template
- From scratch
- Basic flows

Sharing flows

- My flows
- Shared with you

Creating Advanced Cloud Flows

Overview



- Creating cloud flows that interact with Dataverse
- Using dynamic content and expressions
- Implementing logic control
- Implementing error handling

Creating Cloud Flows That Interact with Dataverse

Microsoft Dataverse



- Many organizations use Dataverse for business data
- Data from Dynamics 365 is also stored in Dataverse
- Power Automate allows you to automate processes using Dataverse content
- Dataverse connector is a premium connector
 - Make sure you have the right licenses!

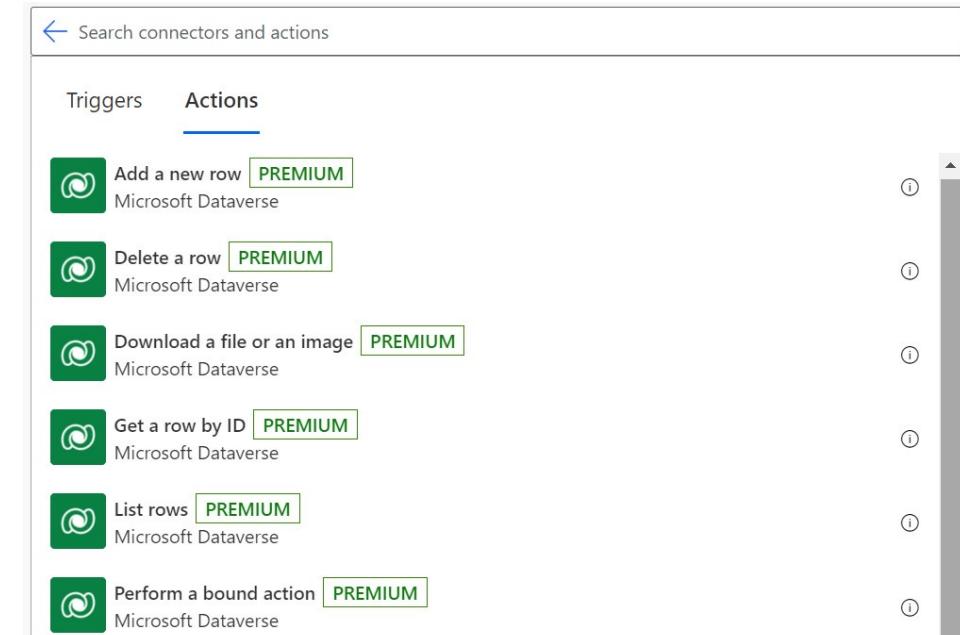
Triggers For the Dataverse Connector

Three available triggers:

- When a flow step is run from a business process flow
- When a row is added, modified, or deleted
- When an action is performed

| Triggers | Actions |
|--|----------------------|
|  When a flow step is run from a business process flow | PREMIUM |
|  When a row is added, modified or deleted | PREMIUM |
|  When an action is performed | PREMIUM |

Actions For the Dataverse Connector



The screenshot shows the 'Actions' tab selected in the Microsoft Power Automate interface. The left sidebar has a back arrow and the text 'Search connectors and actions'. Below it, 'Triggers' and 'Actions' are listed. Under 'Actions', there are seven items, each with a green icon and the text 'Microsoft Dataverse' followed by a 'PREMIUM' badge:

- Add a new row
- Delete a row
- Download a file or an image
- Get a row by ID
- List rows
- Perform a bound action

**Over a dozen actions related to
Dataverse**

**Created / Read / Update / Delete
operations on your Dataverse data**

Classic Dataverse Workflows

Dataverse had its own workflow capabilities

Now called “classic workflows”

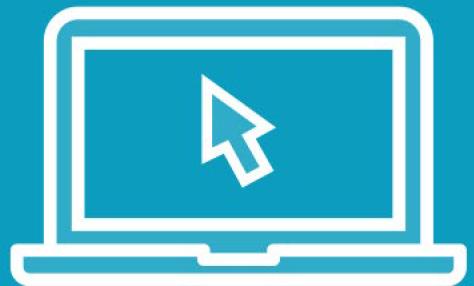
Microsoft recommends to use Power Automate

There are some limitations in Power Automate versus classic workflows

Full list of feature differences

<https://docs.microsoft.com/en-us/power-automate/replace-workflows-with-flows>

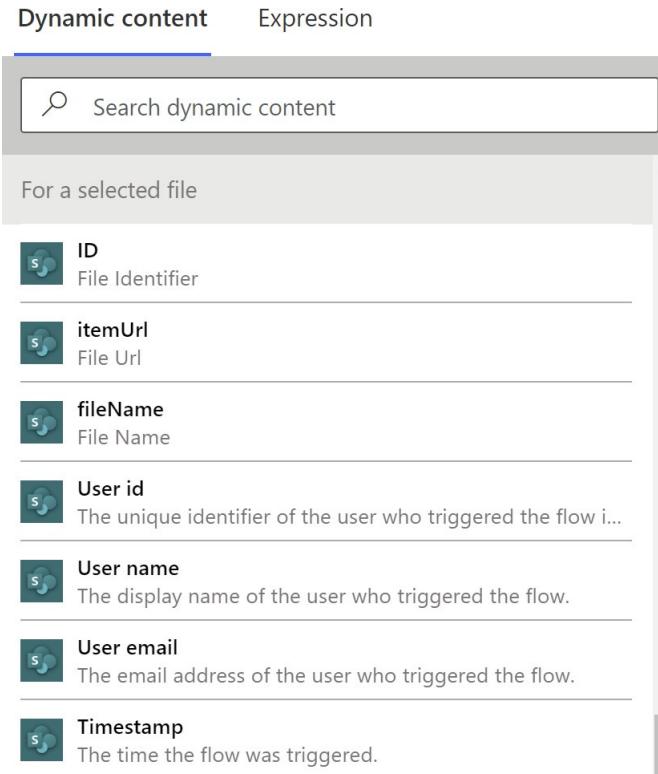
| Capability | Power Automate | Classic Workflow |
|-------------|--|------------------|
| Modeling | Conditional branching | Yes |
| | Looping | Yes |
| | Wait conditions on columns | No |
| | Parallel branch | Yes |
| | Out-of-the-box connectors to external systems (trigger and perform actions in external services) | Yes |
| Composition | Dynamic content | Yes |
| | Access to pre-image of event data | No |
| | Run child workflows | Yes |
| | Run Microsoft Dataverse actions (including custom) | Yes |



Create a Power Automate flow that
interacts with Dataverse

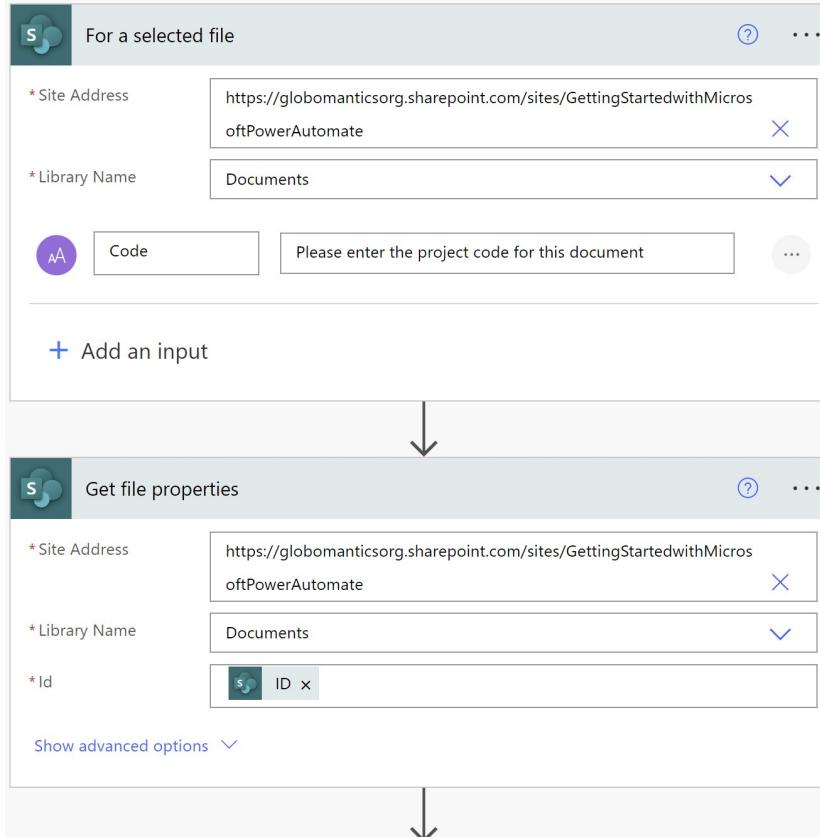
Using Dynamic Content and Expressions

Dynamic Content in Power Automate



- Dynamic content displays information returned from previous actions and trigger
- Pass this information to other actions
 - Or simply use it to compose a nice e-mail body!
- Dynamic content will send information as configured by the connector

Dynamic Content Tips and Tricks



Some triggers do not return all the information needed

- SharePoint - For a selected file
- Forms – when a new answer is submitted

There is usually a “get item details / properties” action

- Allows you to get all the info you are looking for!

Sometimes there is a “See More” button

- What you are looking for might be there

Expressions

**Expressions are a set of simple functions
that enable you to return data**

You use expressions to write a formula to
manipulate data

And return it the way you want it!

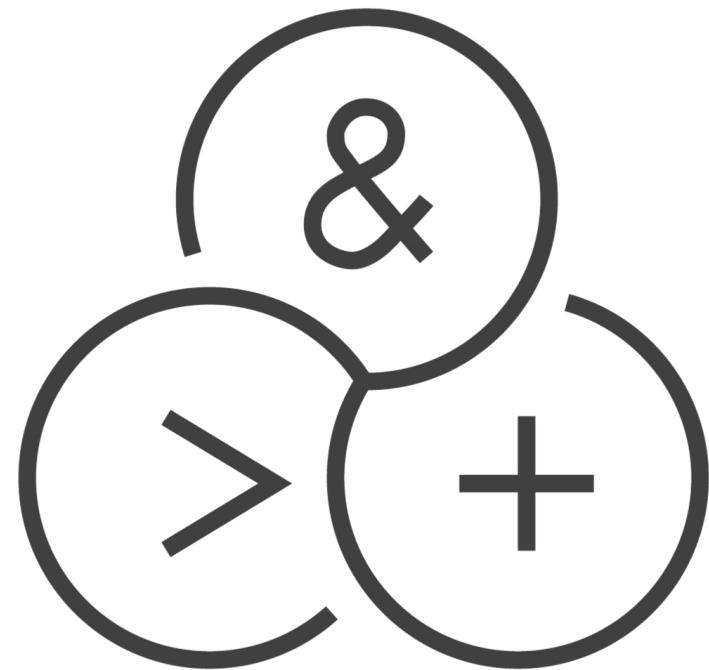
Expression can help you

Perform calculations

Concatenate strings

Manipulate dates

**You can modify dynamic content properties in
the format you need!**



Examples

Concatenate “First Name” and “Last Name” in a variable called “Customer Name”

Add 3 days to today’s date

Convert a string to all lowercase

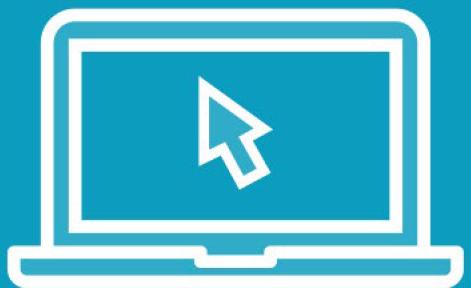
Remove URL unsafe characters from a string

Convert a number into a string with a specific currency



Reference guide to workflow expression functions in Azure Logic Apps and Power Automate

<https://docs.microsoft.com/en-us/azure/logic-apps/workflow-definition-language-functions-reference>



Using expressions in Power Automate

Implement Logic Control

Logic Control in Power Automate

Conditions

Loops

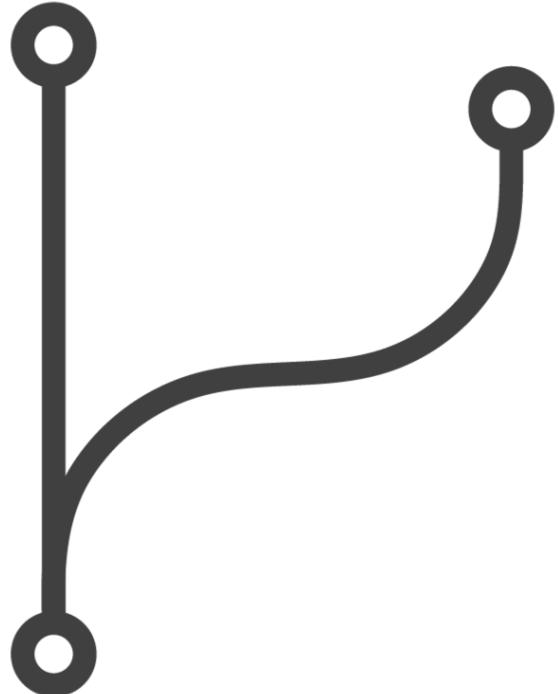
Branches



Conditions

Use a condition to specify that a cloud flow performs one or more tasks only if a condition is true or false.

Conditions



Allows us to choose which actions to run depending on a condition

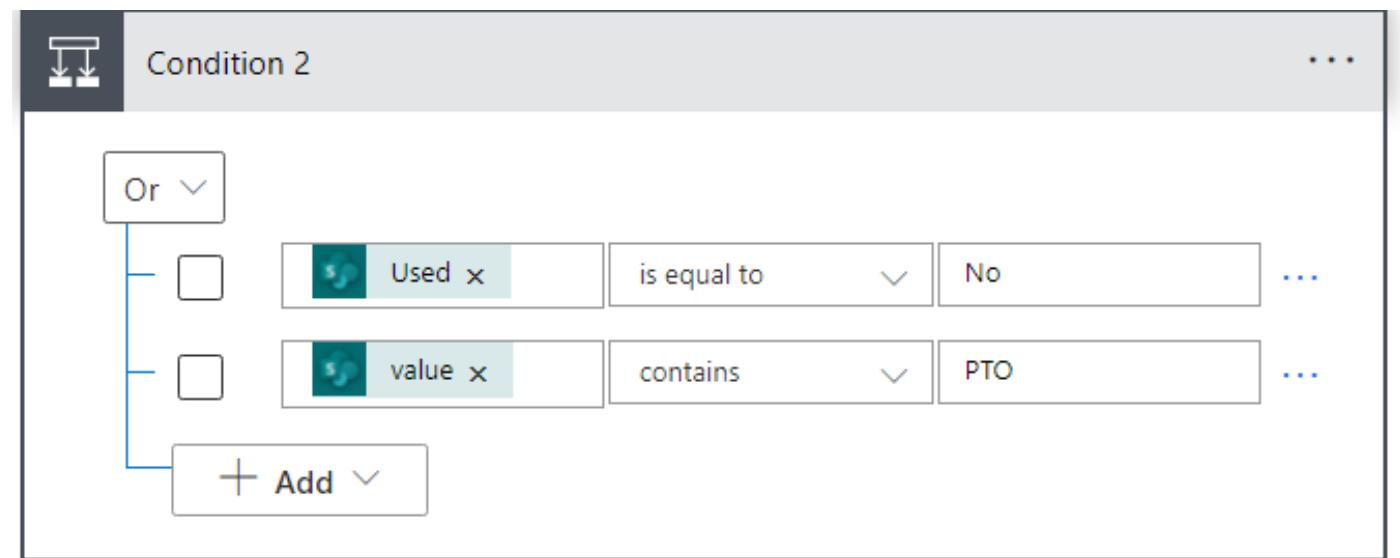
Limited to two choices

- Is the result true or false

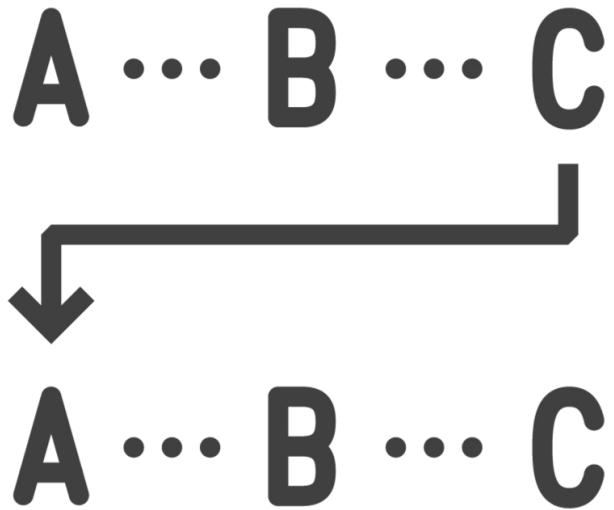
You can add multiple criteria to your conditions

Based on different properties

You can also have multiple groups



Switch Statements

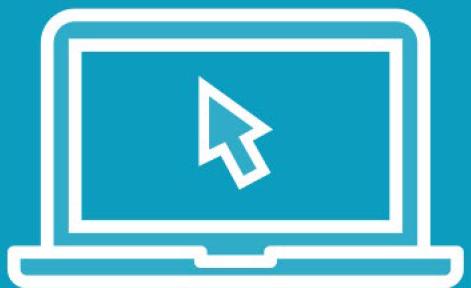


Switch statements can evaluate a single property

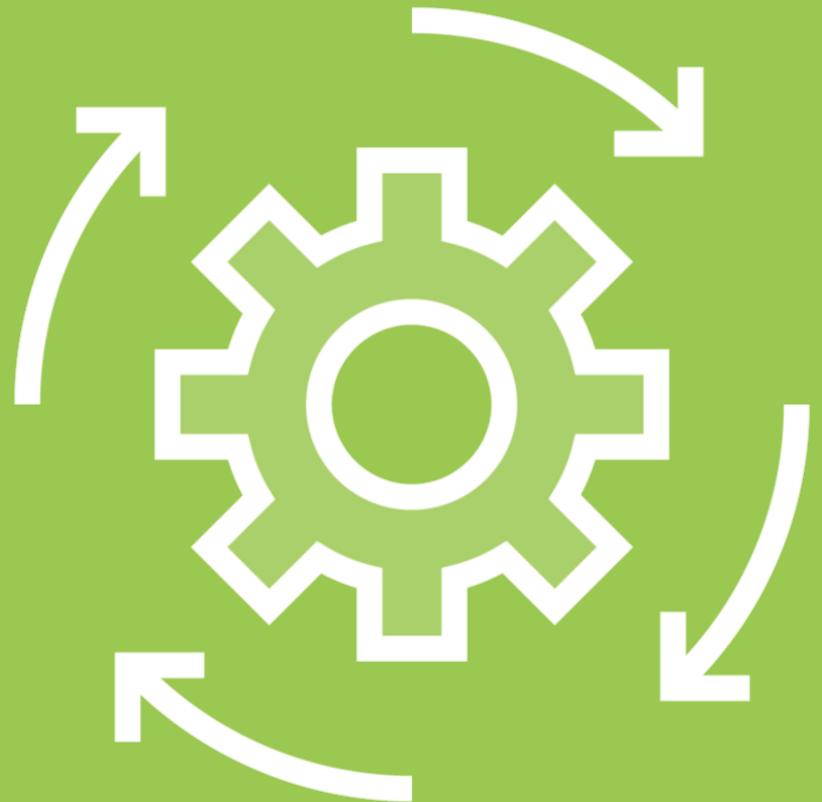
- But they allow you to have multiple potential results

Examples

- Provisioning flow with multiple template options
- Expense report with different options depending on value



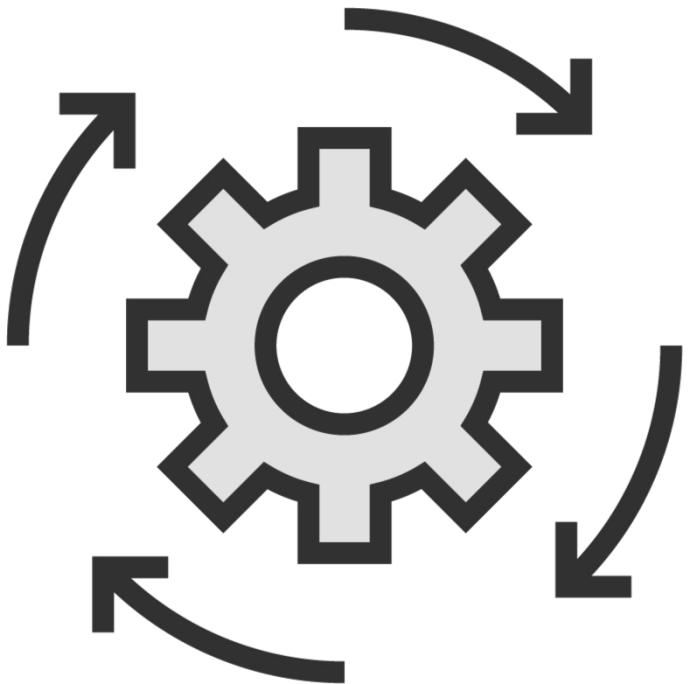
Conditions and switch statements inside
Power Automate



Loops

Loops are used to automate repetitive sections of a flow by executing a block of actions multiple times.

Power Automate Loops



Block of actions that will repeat over and over again

- Until a condition is met

Two types of loops in cloud flows

- Apply to each
- Do until

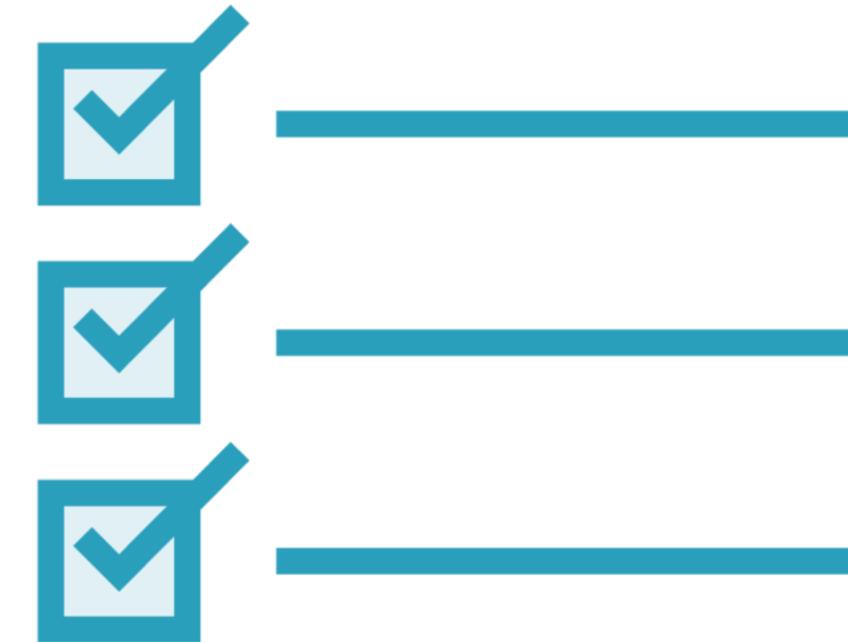
Apply to Each

Useful to process multiple items at once

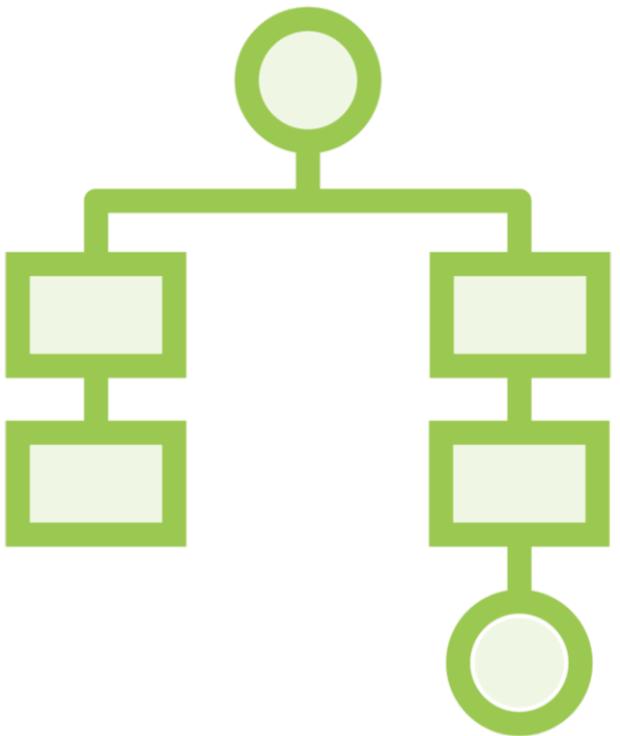
Often used for instant or scheduled cloud flows

Example flow

Every night check all the items in a SharePoint list and if Due Date is higher than today, send a reminder



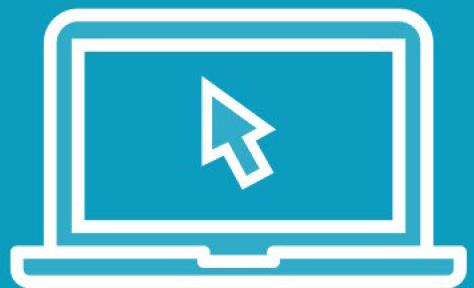
Do Until



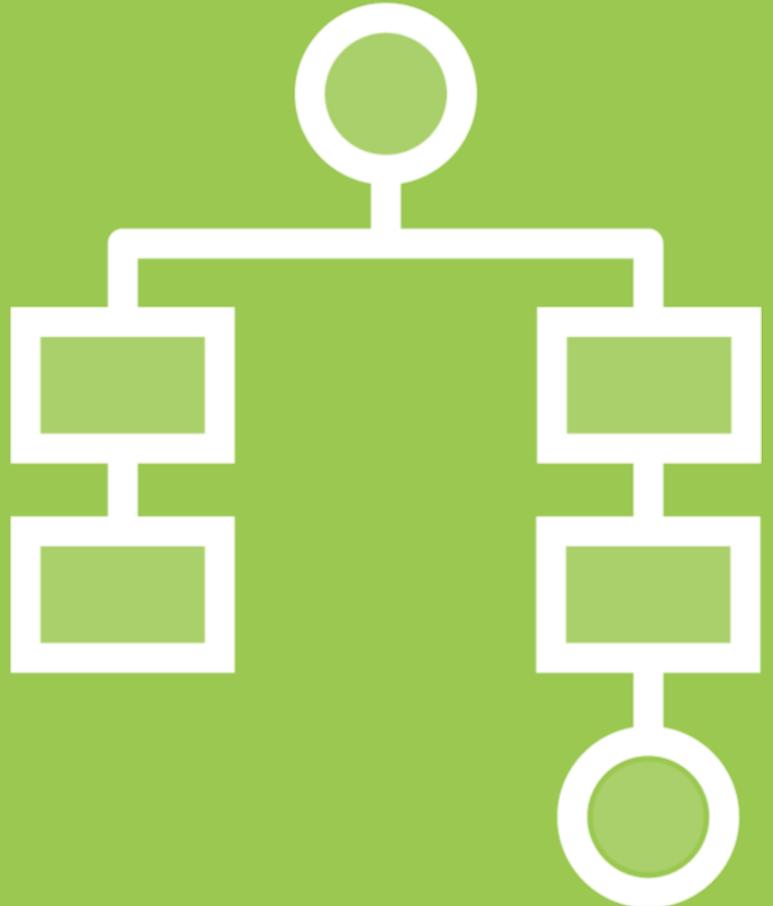
Repeat a set of actions until a certain condition is true

Example flow

- Start an approval – and then send a daily reminder to the approver until the approval process is complete



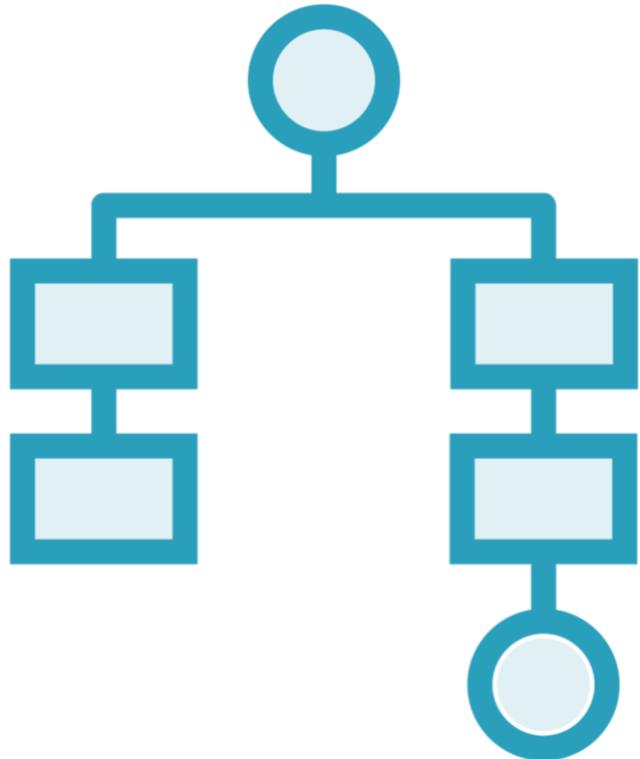
Looping through multiple items with the
Apply to Each loop



Branches

By default, your actions in flows run sequentially. To perform independent actions at the same time, you can create parallel branches, and then join those branches later in your flow.

Branches in Power Automate



Flows run sequentially by default

In some processes – certain tasks can be started simultaneously

Parallel branches allow us to start multiple processes at the same time

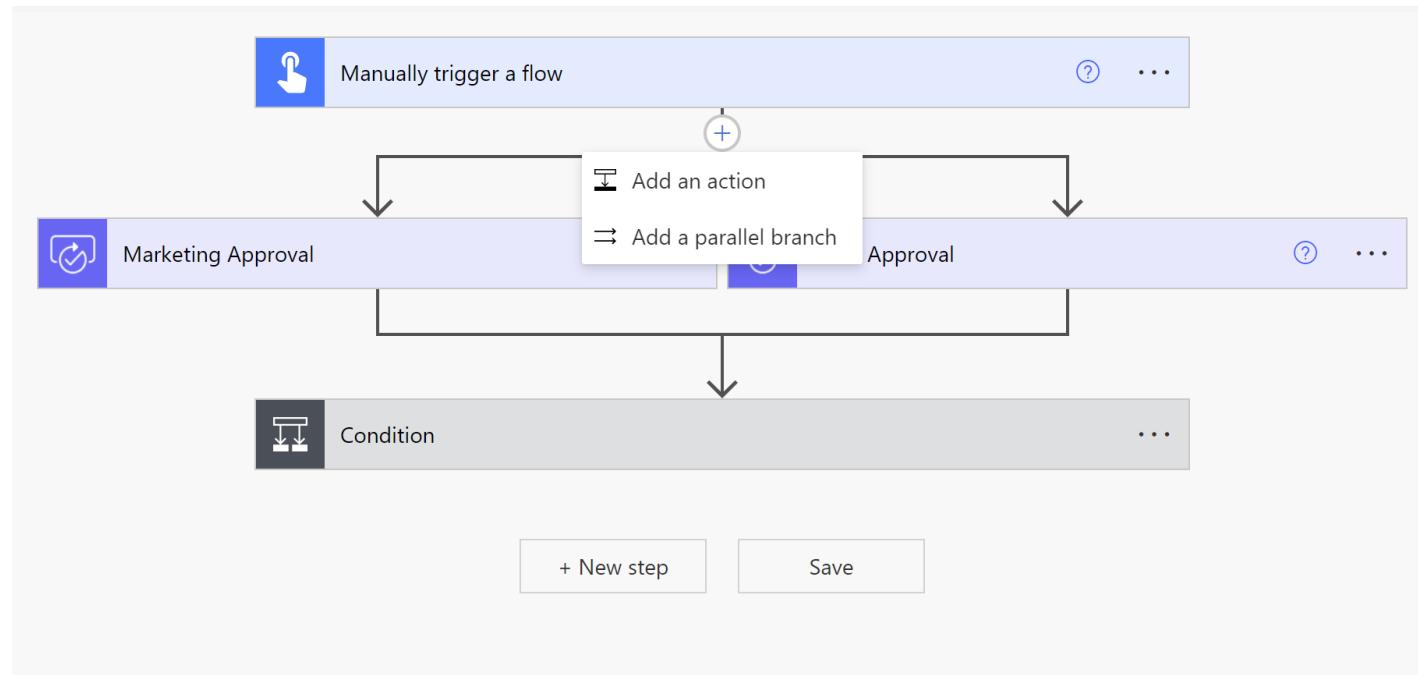
- And re-join them afterwards if needed

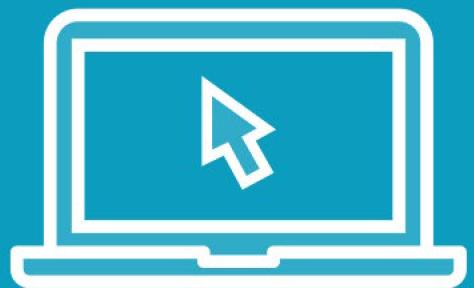
Allows your flows to run more efficiently and cut down on process length

You will see the option to at a parallel branch above an action - Add the action before!

You can rejoin branches once all steps in the branches are done

You can terminate the flow from any parallel branch





Cloud flow with multiple branches

Implementing Error Handling

Error Handling in Power Automate



We can never plan for every single scenario

- Sometimes our flows hit an unexpected scenario

Error handling allows us to control what happens when something doesn't go as planned

- Send an e-mail to a person
- Start another process

By default, you will get an e-mail when a flow fails

After a couple of hours / days

You also have access to the Power Automate monitor

But you need to manually check it

1 of your flow(s) have failed



Microsoft Power Automate <PowerAutomateNoReply@microsoft.com>

To: Vlad Catrinescu



Thu 3/31/2022 3:28 PM



Power Automate

! 1 of your flow(s) have failed

The flow(s) listed failed in the past week and may need your attention.

1 Notification:

| Flow name | Failure count |
|----------------------------|---------------|
| Selected Document Approval | 1 |

If you need more help, please visit the [Power Automate support page](#).



[Privacy Statement](#)

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Configuring Run After in Power Automate

Configure actions to run only if the previous action

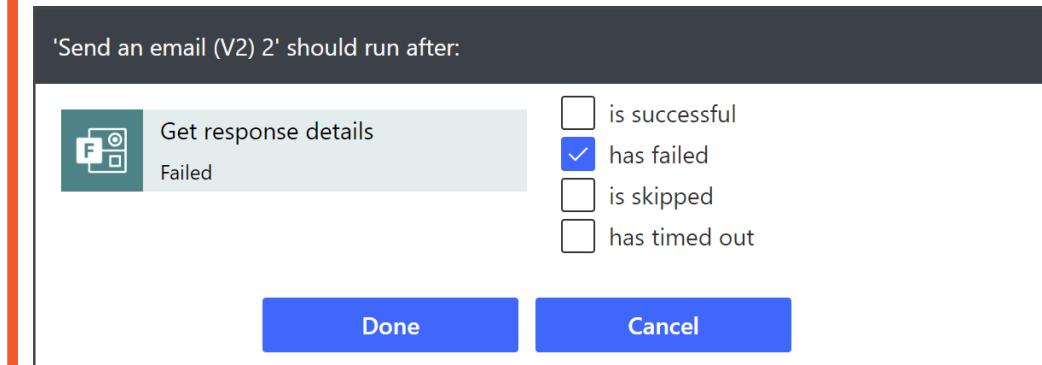
Is successful (by default) Has failed

Is skipped

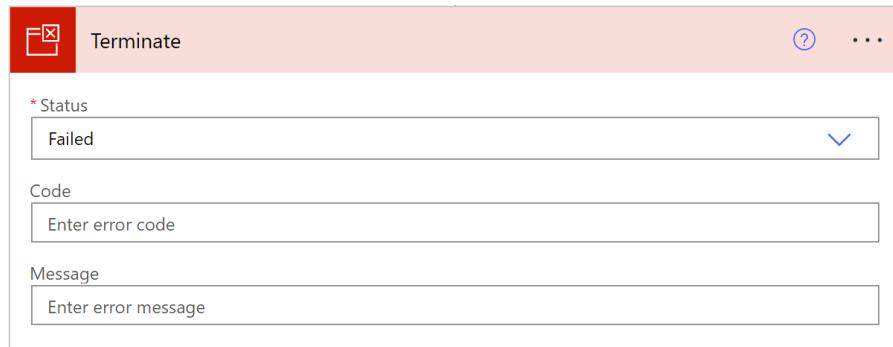
Has timed out

Allows you to configure an e-mail notification if

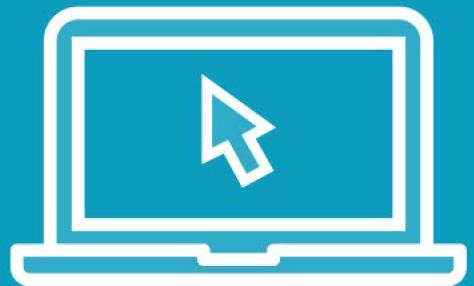
Certain task has failed The whole flow has failed



Terminate Action



- If you handle the error and the last action is succeeded flow will be marked as “Success”
- Use the Terminate action to mark flow as failed manually



Error handling in Power Automate

Conclusion



Creating cloud flows that interact with Dataverse

Using dynamic content & expressions

- Use existing information from trigger or actions
- Create or manipulate information

Implementing logic control

- Conditions
- Loops
- Branches

Implementing error handling

- Run after

Thank you!

If you have additional questions,
please reach out to me at:

siddharthdwn@gmail.com

We're done :)



Please complete the survey



The content stays online

