

Managing your SharePoint data with Power Automate

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Goals



Explore SharePoint
Data Management
Features



Understand working
with Power Automate



Build Workflows
involving SharePoint &
Power Automate



Help Identify ways to
leverage Power
Automate in Research

Common Issues



Do you lose track of your files in your SharePoint library and wish there was a way to **organize** them?



Do you collaborate with your teammates and need to **routinely** notify them of any updates or changes?



Does your workflow involve putting together **scheduled** reports with newly updated data?



Do you work with sensitive data and want to **delegate** work without worrying about access?

SharePoint Document Library

Document Tagging

The screenshot shows a SharePoint document library interface. At the top, there is a navigation bar with options: '+ New', 'Upload', 'Edit in grid view', 'Sync', 'Add shortcut to OneDrive', 'Pin to Quick access', '...', and 'All Documents'. Below the navigation bar is a title 'PowerAutomate Documents' with a dropdown arrow. The main area displays a grid of four items:

Name	Created	Modified	Created By
Data Collection	2 minutes ago	2 minutes ago	Llewellyn Fernandes
Grant Proposals	3 minutes ago	3 minutes ago	Llewellyn Fernandes
NIH Correspondence	2 minutes ago	2 minutes ago	Llewellyn Fernandes
Results and Findings	About a minute ago	About a minute ago	Llewellyn Fernandes

Standard SharePoint Document Library

- Row-Column Layout similar to a file explorer
- Access Settings
- Menu Items
- Metadata Tags
 - Relevant Dates
 - File/Folder Creator Info

Built-in SharePoint Management Features

Rules based on Tags

The screenshot shows a SharePoint Document Library titled "Documents". The library contains four items: "Data Collection", "Grant Proposals", "NIH Correspondence", and "Results and Findings". Each item has columns for Name, File Size, Created, Created By, Modified, Owner, Data Level, Team, and Status. The "Data Level" column uses color-coded tags: "Level 1" (blue), "Level 3" (orange), "Level 2" (green), and "New" (light blue). The "Team" column uses colored tags: "Data Science" (blue), "Grants and Compliance" (red), "Project Management" (green), and "Community Engagement" (orange). The "Status" column also includes a "New" tag. A tooltip for the "Rules" button in the top right corner is visible, showing options like Automate and Integrate.

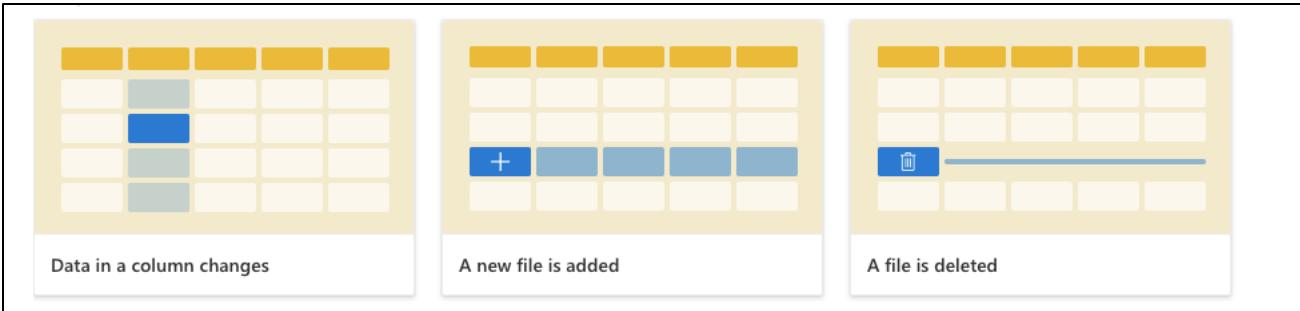
Name	File Size	Created	Created By	Modified	Owner	Data Level	Team	Status
Data Collection	2 items	October 2, 2023	Kevin Luu	Tuesday at 3:53 PM	Llewellyn Fernandes Tobin Magle	Level 1 Level 3	Data Science	New
Grant Proposals	5 items	September 28, 2023	Kevin Luu	Tuesday at 3:53 PM	Kristin Anne McLean	Level 1	Grants and Compliance Project Management	New
NIH Correspondence	2 items	October 3, 2023	Kevin Luu	Tuesday at 3:53 PM	Brian Jeffery Roland	Level 2	Grants and Compliance Project Management Data Science Community Engagement	New
Results and Findings	4 items	Monday at 3:21 PM	Llewellyn Fernandes	Tuesday at 3:53 PM	Kevin Luu	Level 2	Project Management Data Science	New

- Modified SharePoint Document Library
- Custom Metadata Tags
- Team/Document Owners
- Status updates
- Data Levels
- **Design Rules** based on these Tags

Limitations

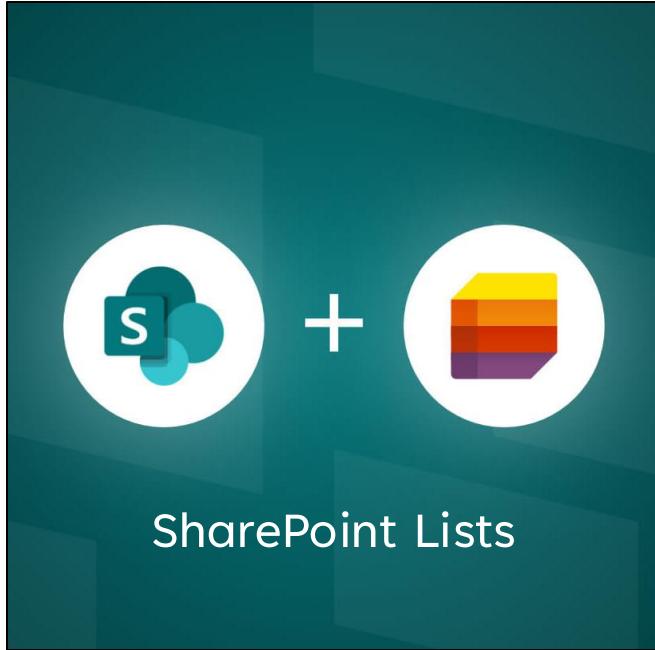
Documents						
Name	File Size	Created	Created By	Modified	Owner	Data Level
Data Collection	2 items	October 2, 2023	Kevin Luu	Tuesday at 3:53 PM	Llewellyn Fernandes Tobin Magie	Level 1 Level 3 Data Science New
Grant Proposals	5 items	September 28, 2023	Kevin Luu	Tuesday at 3:53 PM	Kristin Anne McLean	Level 1 Grants and Compliance Project Management New
NIH Correspondence	2 items	October 3, 2023	Kevin Luu	Tuesday at 3:53 PM	Brian Jeffery Roland	Level 2 Grants and Compliance Project Management Data Science Community Engagement New
Results and Findings	4 items	Monday at 3:21 PM	Llewellyn Fernandes	Tuesday at 3:53 PM	Kevin Luu	Level 2 Project Management Data Science New

- Modifying tags can modify important metadata



- Limited Functionality with Rules

Solution?



SharePoint List

The screenshot shows the SharePoint navigation bar with 'Home' selected. Below it is a 'New' dropdown menu with several options: 'List' (highlighted with a red box), 'Document library', 'Page', 'Space', 'News post', 'News link', and 'App'. To the right, the 'Create a list' screen is displayed, featuring four creation methods: 'Blank list', 'From existing list', 'From Excel', and 'From CSV'. Below these are sections for 'Templates' and 'From Microsoft' and 'From your organization'. Under 'From Microsoft', there are six cards with preview images and titles: 'Issue tracker', 'Employee onboarding', 'Event itinerary', 'Travel requests', 'Travel requests with ap...', and 'Work progress tr...'. Each card has a brief description below its title.

- A **list** is a user-friendly **collection of data** similar to Excel spreadsheets.
- You'll find several ready-to-use list **templates** to provide a good starting point.
- SharePoint lists can be linked to Power BI reports and many other connectors.

Working with Lists

	Title	File Name	File Extension	Parent Folder	File Size (bytes)	Last Modified	File Location	File Status	File Link	Folder Link	Add column
8	Document	docx	Brian's Shared	0.024529	5-20-2024	Shared Documents/Brian's Shared/Document.docx	Updated	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document.docx	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document.docx		
14	Htejhjhj[ojho{ej}	docx	Shared Documents	0.024527	5-20-2024	Shared Documents/Htejhjhj[ojho{ej}.docx	Updated	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Htejhjhj[ojho{ej}.docx	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Htejhjhj[ojho{ej}.docx		
24	Library_Struct	xlsx	Kevir's Shared folder	0.022384	5-21-2024	Shared Documents/Kevir's Shared folder/Library_Struct.xlsx	Updated	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Kevir's Shared%20folder/Library_Struct.xlsx	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Kevir's Shared%20folder/Library_Struct.xlsx		
25	FolderStructure	docx	test	0.000424	5-17-2024	Shared Documents/Tobin's Shared/test/FolderStructure.docx	Updated	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Tobin's Shared/test/FolderStructure.docx	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Tobin's Shared/test/FolderStructure.docx		
27	Document1	docx	Brian's Shared	0.019879	5-20-2024	Shared Documents/Brian's Shared/Document1.docx	Updated	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document1.docx	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document1.docx		
28	Document2	docx	Brian's Shared	0.019649	5-20-2024	Shared Documents/Brian's Shared/Document2.docx	Updated	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document2.docx	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document2.docx		
29	Document3	docx	Brian's Shared	0.019649	5-20-2024	Shared Documents/Brian's Shared/Document3.docx	Updated	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document3.docx	https://nwildcat.sharepoint.com/:b/doclib/RCDS-TEST/Shared%20Documents/Brian's Shared%20docs/Document3.docx		

Similar Layout to a Document Library

Data can be edited, shared with others, and exported as csv/excel

Lists can be connected to Microsoft Forms

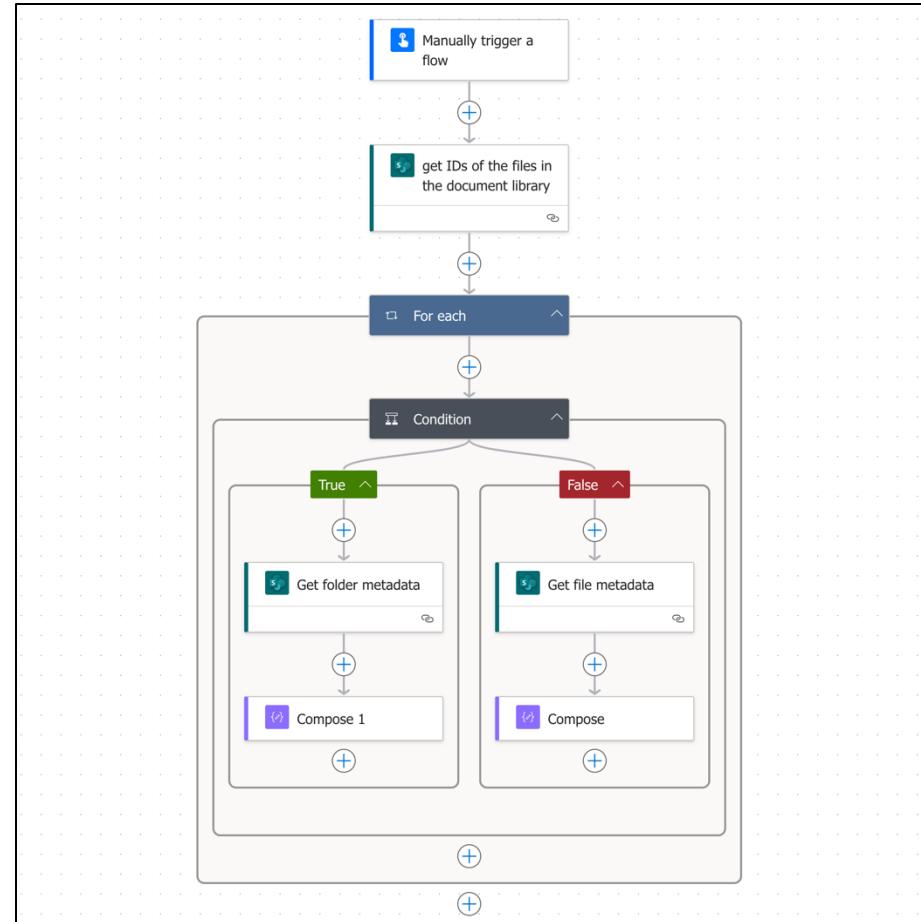
There are multiple column types to work with

Custom access permissions can be set to each list

What is Power Automate?

Microsoft Power Automate is a low-code web-based automation and workflow platform enabling users to:

- Automate repetitive and time-consuming tasks that typically require some form of Human Interaction
- Integrate with other third-party applications and services
- Streamline research processes



Getting Started

The screenshot shows the Microsoft Power Automate home screen. On the left is a sidebar with navigation links: Home, Create (highlighted), Templates, Learn, My flows, Approvals, Solutions, Process mining, AI hub, Automation center (preview), Desktop flow activity, More, and Power Platform. At the bottom left is a blue button labeled "Ask a chatbot". The main area has two sections:

- Start from blank**: This section contains six cards:
 - Automated cloud flow: Triggered by a designated event.
 - Instant cloud flow: Triggered manually as needed.
 - Scheduled cloud flow: You choose when and how often it runs.
 - Describe it to design it: Describe the flow you want and AI builds it for you.
 - Desktop flow: Automates processes on your desktop environment.
 - Process mining: Evaluate and optimize your existing processes and tasks.
- Start from a template**: This section has a search bar and tabs for Top picks, Remote work, Email, Notifications, Save to cloud, and Approval. It displays eight templates:

Template	Category	Count
Forward emails to a channel	By Microsoft	157729
Create a Planner task when a channel post starts with TODO	By Microsoft	138825
Notify a team when Planner tasks change status	By Microsoft	67888
Analyze emails sentiment with AI Builder and send results to Teams	By Microsoft	54543
Schedule a recurring message in a chat	By Microsoft Power Automate Community	30341
Forward emails to a chat	By Microsoft	20803
Schedule a recurring message in a channel	By Microsoft Power Automate Community	14932
Summarize emails using GPT	By Microsoft	4120

At the bottom, there is a URL: <https://make.powerautomate.com/environments/Default-7d76d361-8277-4708-a477-64e8366cd1bc/create>.

Go to:

<https://make.powerautomate.com/>

Log in using your Northwestern Credentials

Once on the home screen, Select the **Create** option

You will then be presented with **templates** and **blank flows**

CONNECTORS

Built-In

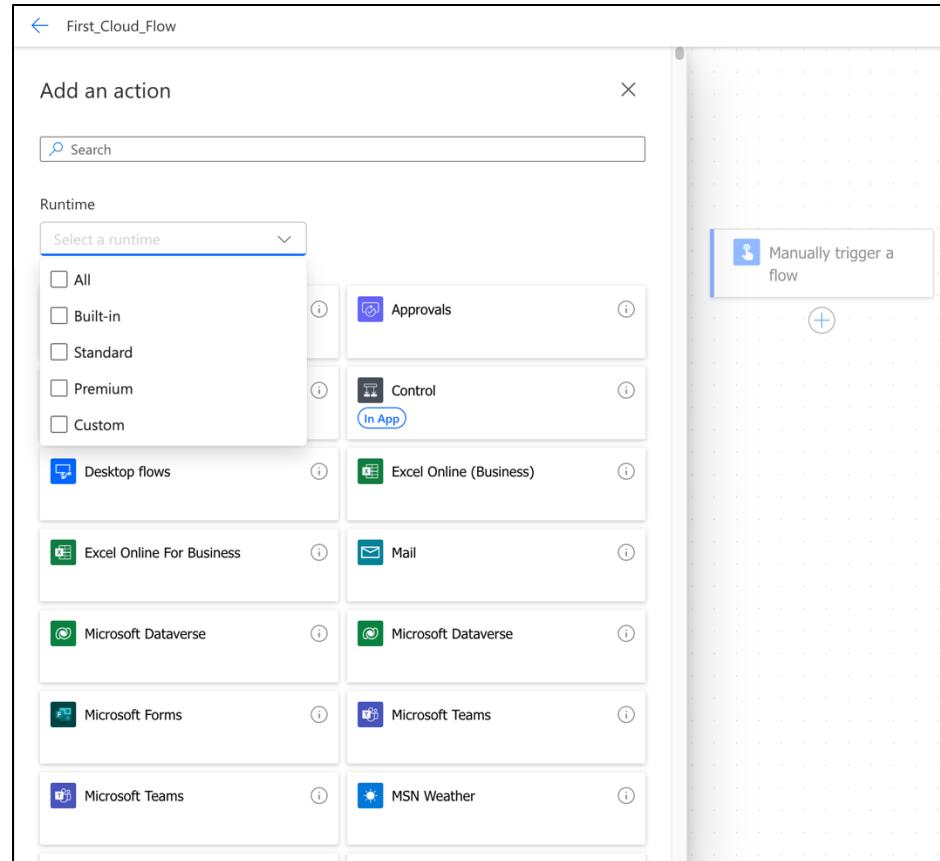
- Built-in actions are natively available within Power Automate and don't require any additional connectors or services.

Standard

- Standard actions are available through Power Automate's included connectors that do not require a premium license.

Premium

- Premium actions require a premium license or subscription to access additional connectors and services.



SharePoint



SharePoint

SharePoint helps organizations share and collaborate with colleagues, partners, and customers. You can connect to SharePoint Online or to an on-premises SharePoint server.

- Add attachment
- Approve hub site join request
- Cancel hub site join request
- Check in file
- Check out file
- Copy file
- Copy folder
- Create file
- Create item
- Create new document set
- Create new folder
- Create sharing link for a file or folder
- Discard check out

One Drive



OneDrive for Business

- When a file is created Trigger
- When a file is modified Trigger
- Create file
- For a selected file Trigger
- List files in folder
- When a file is created (properties only) Trigger
- When a file is modified (properties only) Trigger
- Convert file Preview
- Convert file using path Preview
- Copy file
- Copy file using path
- Create share link
- Create share link by path

Smartsheet



Smartsheet

Smartsheet is a powerful work management and collaboration tool that lets you easily track and manage your work so you and your team can be mor... [Read more](#)

Insert row

(i)

Add a comment to a discussion

(i)

Add a discussion to a row

(i)

Add a discussion to a sheet

(i)

Get a discussion

(i)

Get a sheet

(i)

Get a sheet data (dynamic schema)

(i)

Get discussions for a sheet

(i)

Get subfolders of a folder

(i)

Get the columns of a sheet

(i)

Get the columns of a sheet (dynamic schema)

(i)

List the sheets

(i)

Teams



Microsoft Teams

Microsoft Teams enables you to get all your content, tools and conversations in the Team workspace with Microsoft 365.

Add a member to a team

(i)

Create a Teams meeting

(i)

Create a chat

(i)

Create a team

(i)

Get message details

(i)

Get messages

(i)

List members

(i)

Post a choice of options as the Flow bot to a user

(i)

Post adaptive card and wait for a response

(i)

Post card in a chat or channel

(i)

Post message in a chat or channel

(i)

Reply with a message in a channel

(i)

Reply with an adaptive card in a channel

(i)

Slack



Slack

Slack is a team communication tool, that brings together all of your team communications in one place, instantly searchable and available wherever you go.

- Create a channel (i)
- Join a public channel (i)
- List public channels (i)
- List public channels (Pagination support) Preview (i)
- Post message (V2) (i)
- Set do not disturb (i)

Outlook



Office 365 Outlook

Microsoft Office 365 is a cloud-based service that is designed to help meet your organization's needs for robust security, reliability, and user productivity.

- Create contact (V2) (i)
- Create event (V4) (i)
- Send an HTTP request (i)
- Send an email (V2) (i)
- Delete contact (V2) (i)
- Delete email (V2) (i)
- Delete event (V2) (i)
- Export email (V2) (i)
- Find meeting times (V2) (i)
- Flag email (V2) (i)
- Forward an email (V2) (i)
- Get Attachment (V2) (i)
- Get calendar view of events (V3) (i)

Amazon AWS

The screenshot shows the Zapier integration catalog for Amazon AWS. It lists several integrations:

- Amazon S3**: Includes actions for "Get S3 object content" (Premium), "Get S3 object metadata" (Premium), and "List S3 regions" (Premium). Each action has a "Preview" button and a help icon.
- Amazon SQS**: Includes actions for "Sends a message to the SQS queue" (Premium) and "Deletes a message from the SQS queue" (Premium). Each action has a "Preview" button and a help icon.
- Amazon Redshift**: Includes actions for "Get rows" (Preview, Premium), "Get row" (Preview, Premium), and "Get tables" (Preview, Premium). Each action has a "Preview" button and a help icon.
- Amazon S3 Bucket (Independent Publisher)**: Includes actions for "Get S3 object content" (Premium), "Get S3 object metadata" (Premium), and "List S3 regions" (Premium). Each action has a "Preview" button and a help icon.

Each integration entry includes a "See more" link at the bottom right.

GitHub

The screenshot shows the Zapier integration catalog for GitHub. It lists various GitHub-related actions:

- GitHub**: GitHub is described as a web-based Git repository hosting service. It offers all of the distributed revision control and source code management (SCM) f... [Read more](#)
- Action: Add selected repository to an organization secret [Preview](#) [Help](#)
- Action: Check if a user is a repository collaborator [Preview](#) [Help](#)
- Action: Compare two commits [Preview](#) [Help](#)
- Action: Create a pull request [Preview](#) [Help](#)
- Action: Create a reference [Preview](#) [Help](#)
- Action: Create a repository dispatch event [Preview](#) [Help](#)
- Action: Create a repository using a template [Preview](#) [Help](#)
- Action: Create an issue [Preview](#) [Help](#)
- Action: Create or update a repository secret [Preview](#) [Help](#)
- Action: Find issues by state and keyword [Preview](#) [Help](#)
- Action: Get a particular issue of a repository [Preview](#) [Help](#)
- Action: Get a pull request [Preview](#) [Help](#)
- Action: Get a reference [Preview](#) [Help](#)

Metadata

- Each SharePoint action will fetch specific metadata attributes regarding the Document Library/SharePoint List.
- With Power Automate you can:
 - **Retrieve** specific metadata
 - **Transform** the metadata to a format you desire (using functions)
 - **Utilize** the metadata to conduct tasks using other SharePoint Actions
 - Create **customized** (Instant, Scheduled, or Event-Triggered) reports leveraging metadata
 - **Trigger** another action (send email, request approval) using the metadata as the input

Get document library files properties

body/value
List of Items

Body
List of Items

ID
List item id. Use this value for specifying the item to act on in other list related actions.

Title

Created
When this item was created.

Modified
When this item was last changed.

Name
File name of the item in document libraries, display name of the item in lists.

File name with extension
For libraries, returns file name including extension. For lists, returns the title property.

Folder path
Path to the folder the item is in, relative to the site address.

Full Path
Full path of an item or a folder or a file

Content approval status
The content approval status. It can be one of the following: Draft, Pending, Approved, or Rejected

Comments associated with the content approval of this list item
The comments associated with moderation of the list item.

Checked out
True when the file is checked out, false otherwise.

Version number
The version number of the file or the list item.

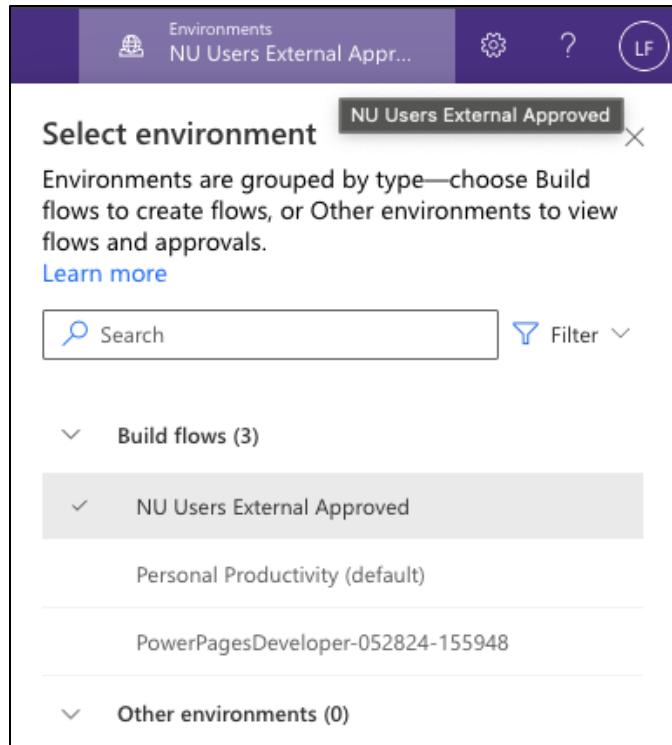
Trigger Window Start Token
A token expressing the time of the last flow check. Use this if you want to check if one or more columns were modified since the last flow check.

Trigger Window End Token
A token expressing the time of the current flow check. Use this if you want to check if one or more columns were modified since the last flow check.

body/value-key-item-output
Table item entity

Flow Environments

- A space where a maker stores and manages their apps and related business data.
 - **Personal Productivity environment:** Does not allow data to be passed from any Microsoft 365 service to an external platform. Default for all Northwestern Users
 - **NU Users External Approved environment:** Allows data to be passed to an external platform. Default for all Northwestern Users.
 - **FSM Users environment:** Does not allow data to be passed from any Microsoft 365 service to an external platform.
- Data protection policies are assigned to each environment to manage the flow of Northwestern's Microsoft 365 business data to external platforms.



NOTE: Please contact [Collaboration Services](#) for guidance with Power Automate Environments.

Power Automate Vocabulary

Environment (Personal)

Flow (Instant)

Connector (SharePoint)

Actions (Create File)

Dynamic Content + Functions

Workflows

Fun Stuff!

NOTIFICATIONS

Connecting to a SharePoint Site

Workshop_Flow_3

When a file is created (properties only)

Parameters Settings Code View About

Site Address *
RCDS-TEST - https://nuwildcat.sharepoint.com/sites/NUIT-RCDS-TEST

Library Name *
PowerAutomate Documents

Advanced parameters
Showing 2 of 2

Limit Columns By View
Use all columns (Do not limit)

Folder
Select a folder, or leave blank for the whole library

> How often do you want to check for items?

Connected to ybd1121@ads.northwestern.edu. Change connection

```
graph TD; A[When a file is created (properties only)] --> B[Send an email (V2)]; A --> C[Post message in a chat or channel]
```

Create an Automated Cloud Flow

Select a SharePoint action to trigger when a file is created

Send out an Email

Send out a Teams message

Notification Actions

The screenshot shows the configuration interface for the 'Send an email (V2)' action. It includes fields for 'To' (llewellyn.fernandes@northwestern.edu, kevin.luu@northwestern.edu), 'Subject' (Power Automate Email), and 'Body'. The body contains a message template: 'This email is to notify you, a new file named {Name} has been added to the document library by {Created By Email}'. Advanced parameters and importance levels are also shown.

The screenshot shows the configuration interface for the 'Post message in a chat or channel' action. It includes fields for 'Post As' (Flow bot), 'Post In' (Chat with Flow bot), and 'Recipient' (NetID@ads.northwestern.edu). The message body is identical to the one in the first screenshot. Advanced parameters and connection status are also shown.

Trigger Notifications based on the output of other Actions

You can send **emails** when a new file gets added/created

You can send notifications via **Teams Message**

Update Microsoft Planner

INTEGRATED LIBRARY FLOW

Using SharePoint's Integrated Automated Flows

The screenshot shows a SharePoint document library interface. At the top, there is a navigation bar with various icons: New, Share, Copy link, Sync, Add shortcut to OneDrive, Download, Automate, and a three-dot menu. Below this is a list of documents with columns for File Size, Modified, Owner, Data Level, Responsible, and Status (Not started). A red box highlights the 'Automate' dropdown menu. A secondary red box highlights the 'Create a flow' option within the Power Automate submenu.

Create a flow

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

- Request manager approval for a selected file
- Request approval in Microsoft Teams when a SharePoint item is c...
- Post a message to Microsoft Teams for a selected file
- Add an Outlook task for a selected file
- Create a Microsoft Planner task for a selected file in SharePoint

Show more ▾

[See your flows](#)

[Learn more about Power Automate](#)

Select the **Integrate** option in the Menu bar

Select **Power Automate**

Select **Create a Flow**

Choose a Template or build your own

WORKSHOP CERTIFICATE

Working with Lists

Create item

Parameters Settings Code View Testing About

Site Address *
RCDS-TEST - https://nuwildcat.sharepoint.com/sites/NUIT-RCDS-TEST

List Name *
Workshop Attendees

Advanced parameters
Showing 5 of 6 Show all Clear all

Title
Email Address

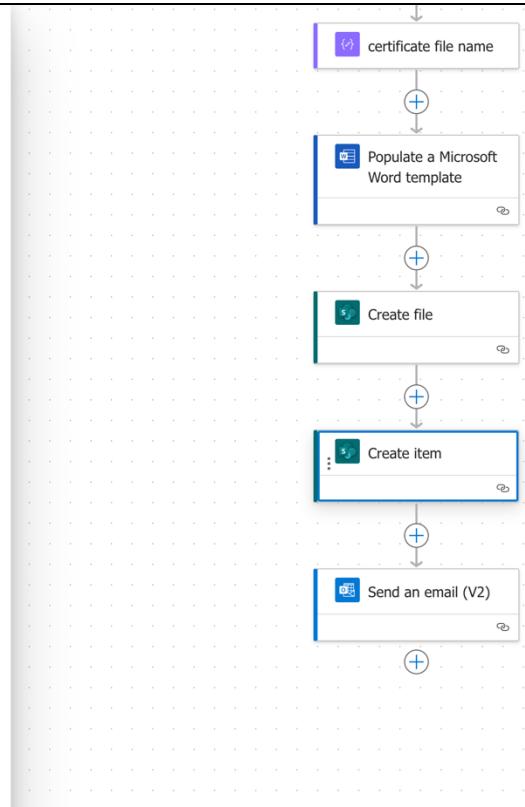
First Name
First Name

Last Name
Last Name

Confidence
How confident ar...

Response Time
Submission time

Connected to ybd1121@ads.northwestern.edu. [Change connection](#)



Adding data to Lists

Modify metadata to work with the column types

Leverage Dynamic data from other Connectors

Build data pipelines converting excel files to lists

Creating Files

Populate a Microsoft Word template

Parameters Settings Code View Testing About

Location *
SharePoint Site - RCDS-TEST

Document Library *
Documents

File *
/NIH Correspondence/workshop attendance certificate.docx

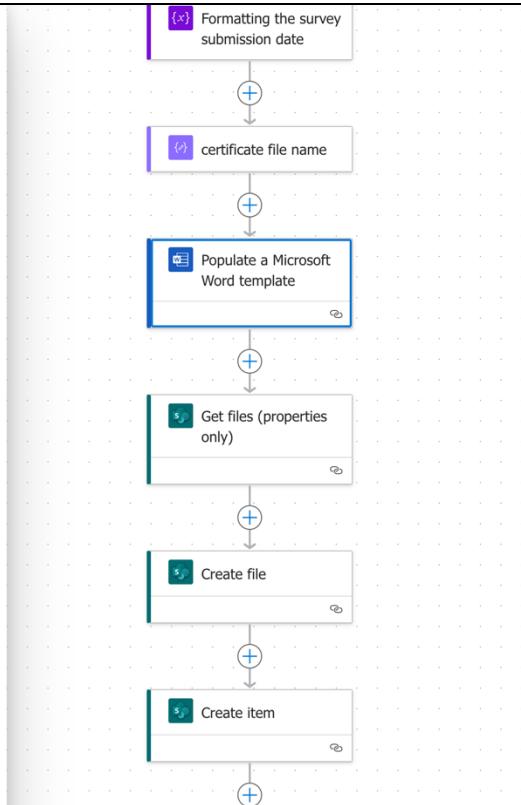
Advanced parameters
Showing 3 of 3

Last Name
Last Name x

First Name
First Name x

Date
{x} Survey Response ... x

Connected to ybd1121@ads.northwestern.edu. [Change connection](#)



Premium Feature

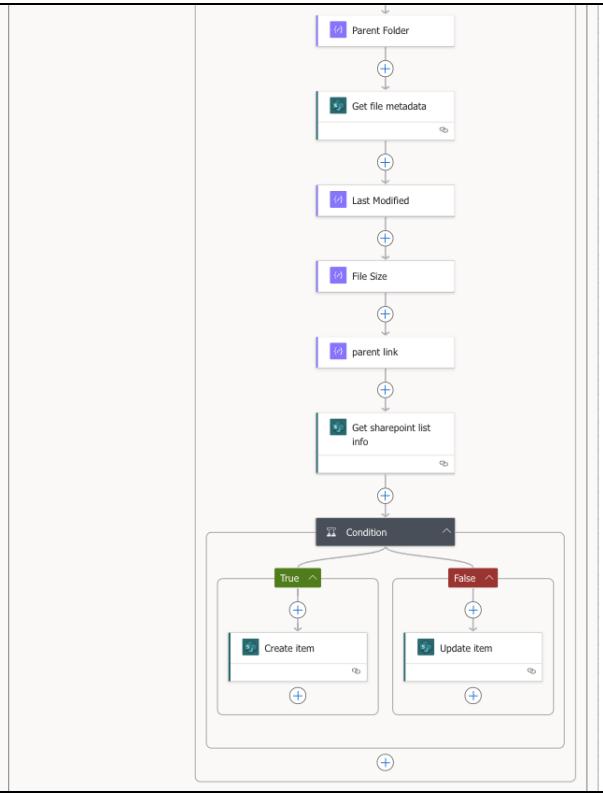
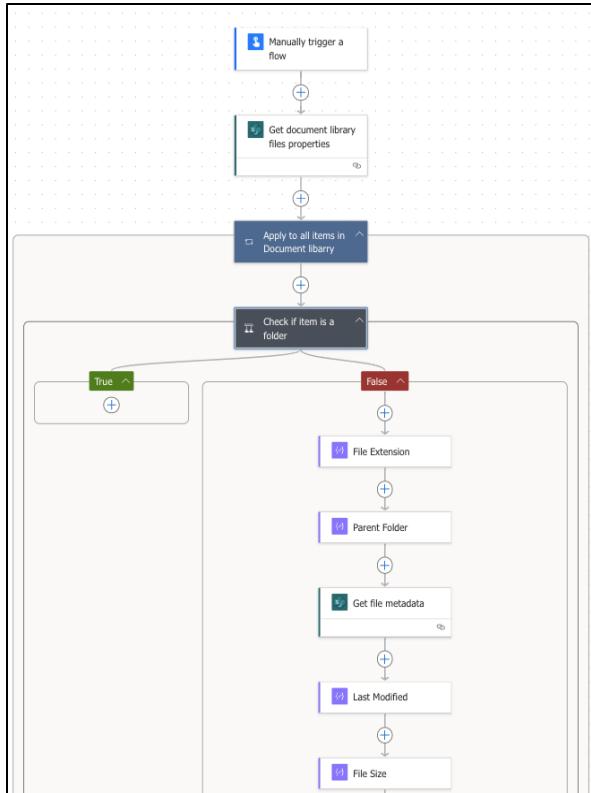
Automated responses to forms

Send gift cards to survey participants

Share data with requestors based on form responses

DOCUMENT TRACKER

SharePoint List



This is the final flow of the day

This Flow encompasses all the Actions that we covered today

This flow contains Built-In Actions like Compose and Conditions

We connected to SharePoint

We perform actions that updates a SharePoint List

We send notification emails based on actions

SharePoint List

The screenshot shows the 'Create item' step of a Power Automate flow. At the top, there are tabs: 'Parameters' (which is selected), 'Settings', 'Code View', 'Testing', and 'About'. Below the tabs, there are two main sections: 'Site Address' and 'List Name'. Both of these fields have dropdown menus with options. The 'List Name' dropdown has 'Document_Library_Structure' selected. Below these, there is a large 'Advanced parameters' section containing many fields, each with a placeholder value and a delete button ('x'). The fields include: Title (ID), File Name ((Name)), File Extension (Outputs), Parent Folder (Outputs), File Size (MB) (Outputs), Last Modified (Outputs), File Location ((FullPath)), File Status Value (New), File Link ((Link)), and Folder Link (Outputs). A green border highlights the 'Advanced parameters' section.

The screenshot shows the 'Update item' step of a Power Automate flow. At the top, there are tabs: 'Parameters' (selected), 'Settings', 'Code View', 'Testing', and 'About'. Below the tabs, there are three main sections: 'Site Address', 'List Name', and 'Id'. The 'List Name' dropdown has 'Document_Library_Structure' selected. The 'Id' field contains the expression 'outputs(...)' with a delete button ('x'). Below these, there is a large 'Advanced parameters' section containing many fields, each with a placeholder value and a delete button ('x'). The fields are identical to the 'Create item' step: Title (ID), File Name ((Name)), File Extension (Outputs), Parent Folder (Outputs), File Size (MB) (Outputs), Last Modified (Outputs), File Location ((FullPath)), File Status Value (Updated), File Link ((Link)), and Folder Link (Outputs). A green border highlights the 'Advanced parameters' section.

Power Automate has SharePoint Actions specific to Lists

In this example, we showcase the **Create Item** and **Update Item** actions

Connect your SharePoint Site using the **Site Address**

Lists that exist in your Site will show up in your **List Name** as options

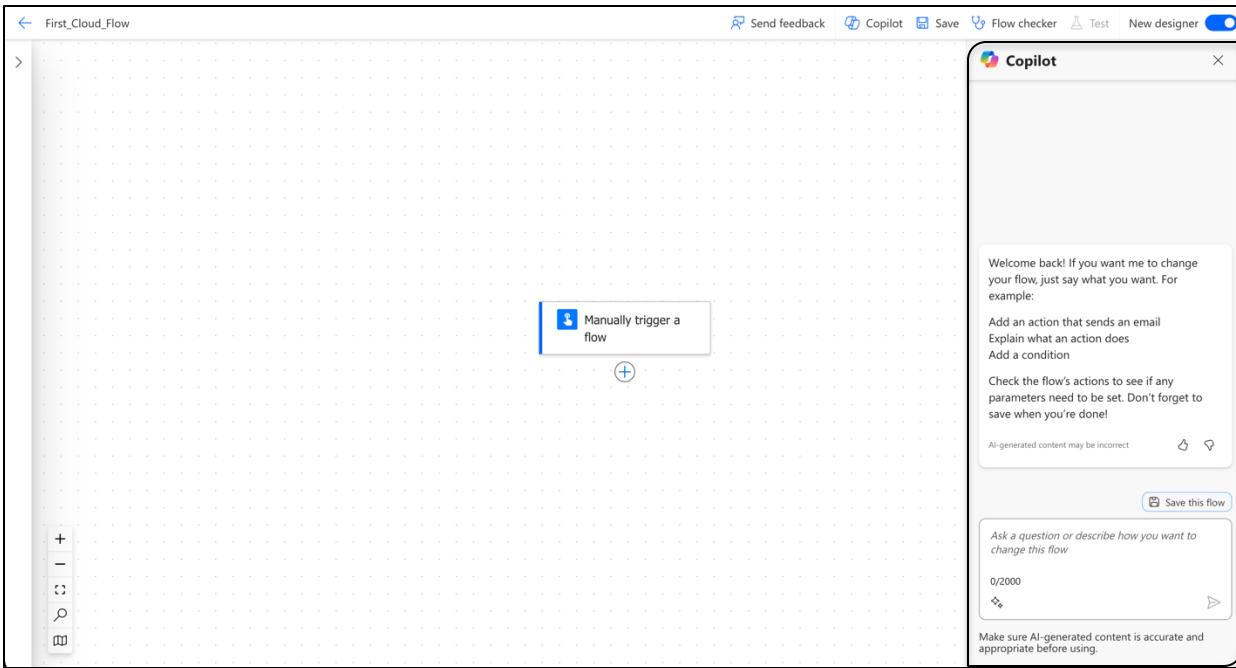
Upon selecting your list, the columns will preload as **parameters** to pass to your list

You can then insert your metadata into those fields

The data in the SharePoint list will modify every time the flow runs

Closing Notes

Copilot



Allows **open-ended** and **conversational** experiences while creating your flows.

As you build, you'll be able to ask questions and get assistance making improvements and changes.

You can ask it to **add actions** to your flows

Write functions using dynamic content present in your flow

Still in testing phase! Results don't always provide the solution you are looking for

Use it to understand Power Automate better

Reach out!

FIND WHAT YOU NEED



PLANNING

- Writing a Data Management Plan
- Protecting the Sensitive Information in My Data



DATA COLLECTION AND STORAGE

- Choosing Appropriate Storage
- Documenting Your Research
- Transferring Data to or from Northwestern
- Sharing Data with an External Collaborator



DATA SHARING AND ARCHIVING

- Making Your Data Reusable
- Sharing Data Publicly
- Archiving Data When a Project is Done



SUPPORT AND RESOURCES

- Talk to a Data Management Expert
- Northwestern Research Data Management Resources
- External Research Data Management Resources

[Research Data Management Website](#)

Office Hours: Every Monday
3 p.m. – 4 p.m.
Mudd Library,
GIS Lab

Emails:
researchdata@northwestern.edu

[Consultation Calls](#)

Power Automate Resources

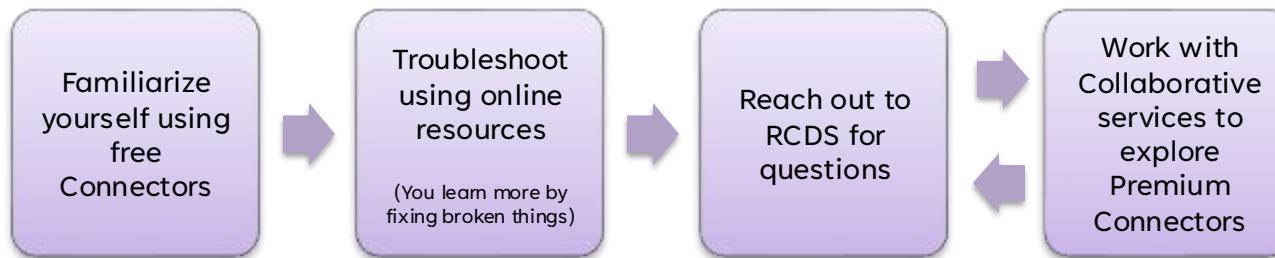
YouTube Channels

- <https://www.youtube.com/@RezaDorrani>
- <https://www.youtube.com/@ShanesCows>
- <https://www.youtube.com/@PragmaticWorks>

Northwestern IT

- [Collaboration Services](#)
- [Research Computing and Data Services](#)

Power Automate Exploration Guide



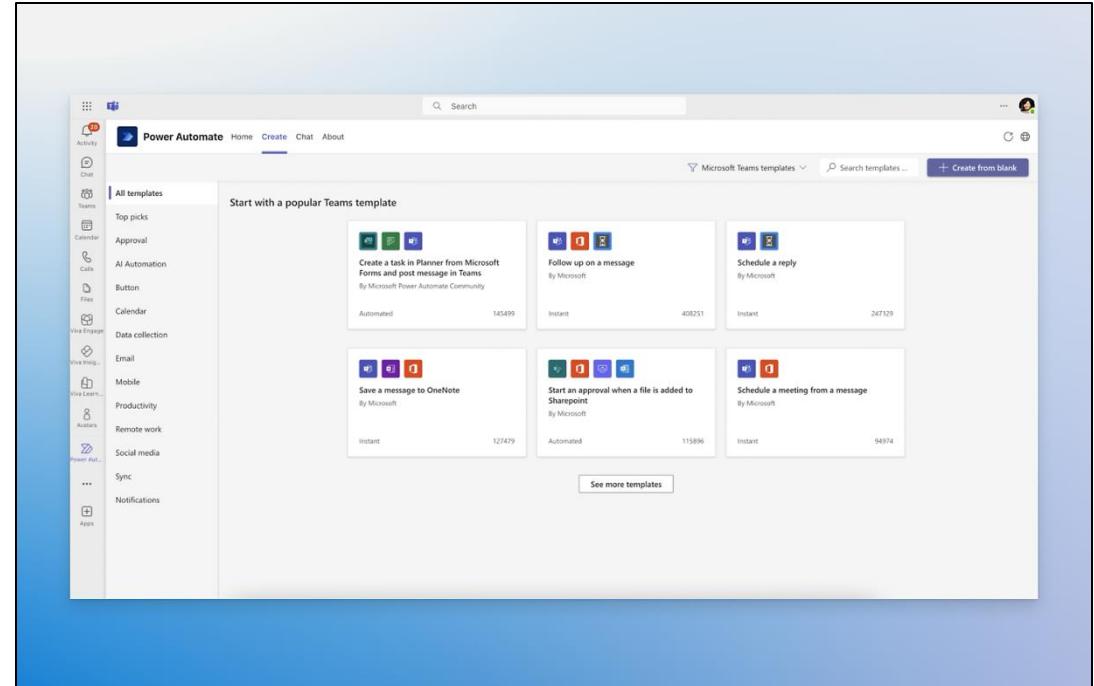
Power Automate Notes

Appendix

INTRODUCTION

Features

- A comprehensive automation platform supported by AI.
- Use digital process automation (DPA) to automate apps, data, and services.
- Start from scratch, use a prebuilt template, or engage with Copilot to automate tasks and processes.
- Automate in Excel, SharePoint, or Teams without switching applications and interrupting your workflow.



Build an instant cloud flow



Triggered manually from any device, easy-to-share instant flows automate tasks so you don't have to repeat yourself.

Examples:

- Get an automatic mobile alert whenever a VIP client emails you
- Save all your email attachments to a folder automatically

Flow name

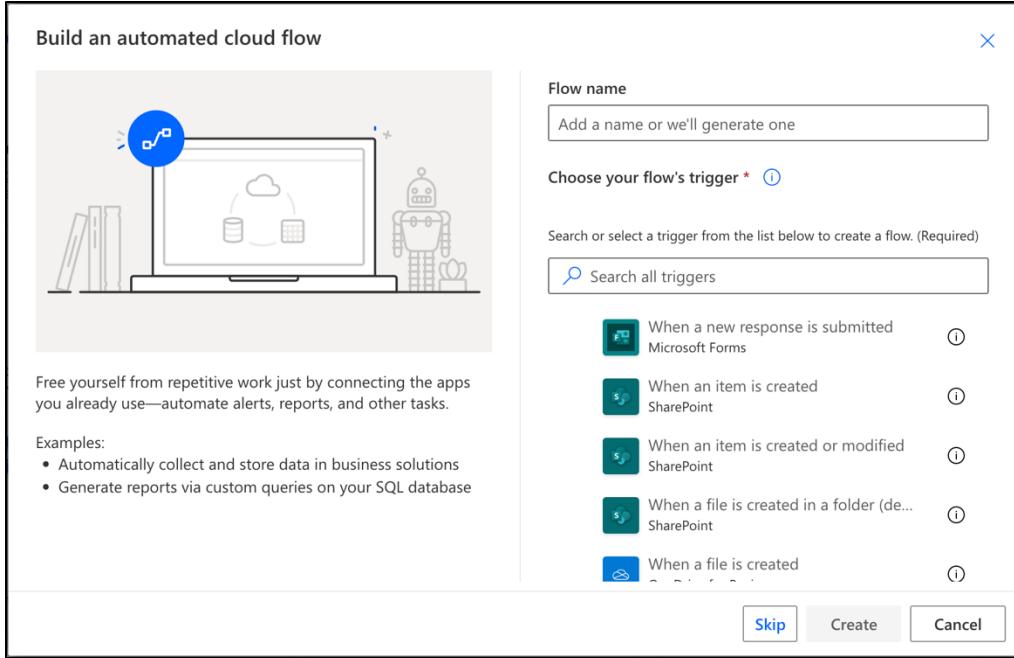
Choose how to trigger this flow *

- Manually trigger a flow
Flow button for mobile
- When Power Apps calls a flow (V2)
Power Apps
- Run a flow from Copilot Skills
- When Power Virtual Agents calls a fl...
Power Virtual Agents
- When a flow step is run from a busin...
Microsoft Dataverse
- When a row is selected
Microsoft Dataverse
- For a selected message (V2)

Skip Create Cancel

Power Automate Flows

Instant Cloud Flow



Power Automate Flows

Automated Cloud Flow

Build a scheduled cloud flow



Stay on top of what's important without the effort—you choose when and how often the flow runs.

Examples:

- Automate team reminders to submit expense reports
- Auto-backup data to designated storage on a regular basis

Flow name Add a name or we'll generate one

Run this flow *

Starting * at

Repeat every * *

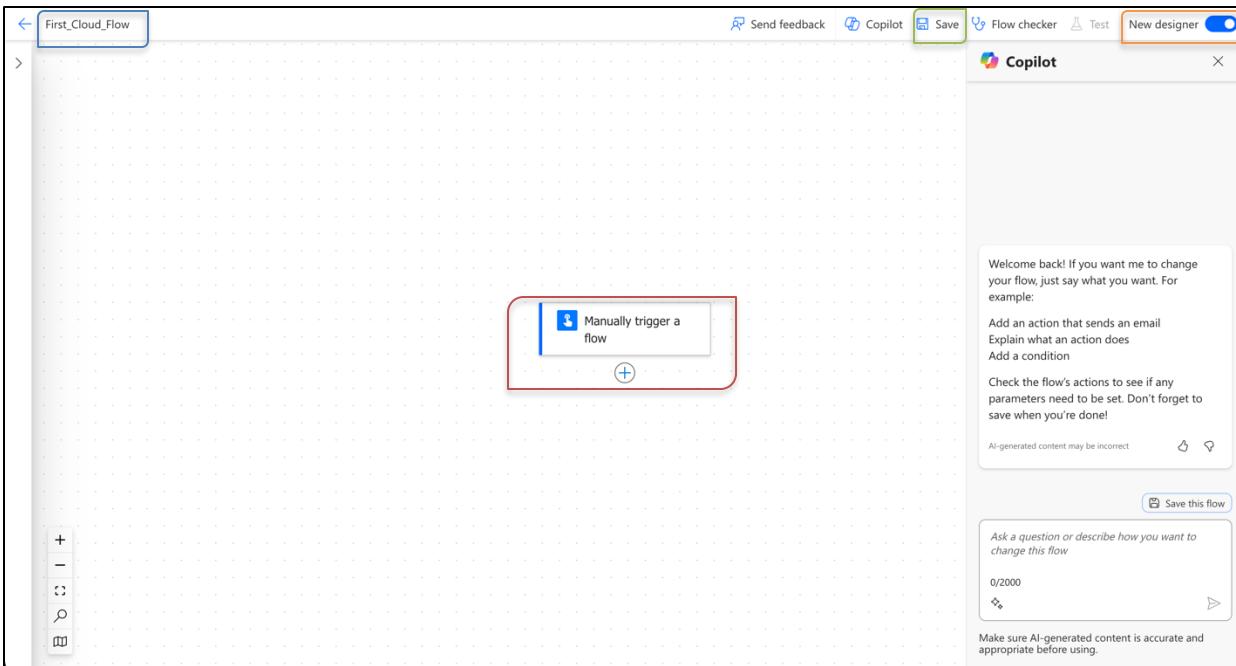
This flow will run:
Every minute

[Skip](#) [Create](#) [Cancel](#)

Power Automate Flows

Scheduled Cloud Flow

Creating a Flow



Create an Instant Cloud Flow

Skip Initial Flow Details

Toggle between **New designer** and Old

Add a **Flow Name**

Add a “**Manual Trigger**”

Save

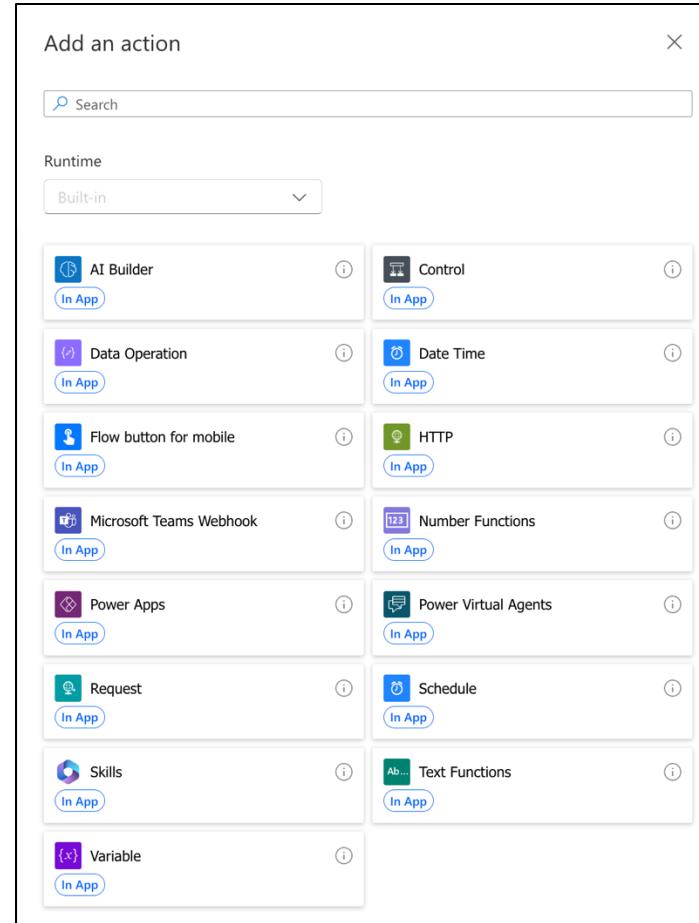
Built-in Actions

Definition:

- Built-in actions are natively available within Power Automate and don't require any additional connectors or services.

Common Built-in Actions:

- Control Actions
- Variables
- Expressions
- Loops and Conditions



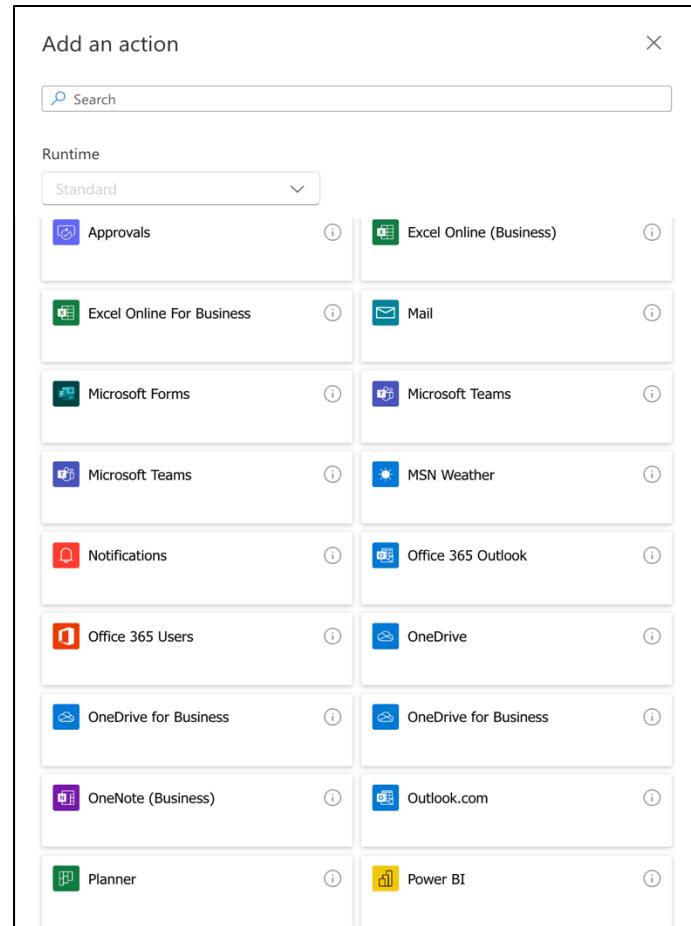
Standard Actions

Definition:

- Standard actions are available through Power Automate's included connectors that do not require a premium license.

Common Standard Actions:

- Microsoft Services
- Notifications



Premium Actions

Definition:

- Premium actions require a premium license or subscription to access additional connectors and services.

Common Premium Actions:

- Enterprise Systems
- Databases
- Advanced Services

Add an action ×

Search

Runtime

Premium

Azure DevOps	Desktop flows
Microsoft Dataverse	Microsoft Dataverse
SQL Server	Exights gen. Document & more
1Me Corporate	1pt (Independent Publisher)
24 pull request (Independent Pu...	365 Training
3E Events	Abbreviations
Abortion Policy (Independent Pub...	absentify
Abstract Company Enrichment (I...	Abstract Email Validator (Indepen...
Abstract Exchange Rates (Indepe...	Abstract Holidays (Independent P...

WORKING IN A FLOW

Add actions

The screenshot shows the 'Add an action' dialog box from the Microsoft Flow designer. The 'Runtime' dropdown is set to 'Built-in'. The 'Data Operation' option is highlighted with a red border and has a green plus sign icon above it, indicating it is selected. Other options shown include AI Builder, Control, Date Time, Flow button for mobile, HTTP, Microsoft Teams Webhook, Power Apps, Request, Skills, and Variable.

Compose Action

Add a new action using the + icon

Select Built-in runtime

Select Data Operation

Select Compose Action

Add actions

The screenshot shows the Microsoft Power Automate designer interface. On the left, there is a sidebar with a 'Static Variable' card. The main workspace contains a flow diagram with the following steps:

```
graph TD; A[Manually trigger a flow] --> B[First Compose]; B --> C[Static Variable]; C --> D[Dynamic Variable]; D --> E[Failed Run Variable]
```

The 'Static Variable' action is highlighted with a red border.

Variable Action

Add a new action using the + icon

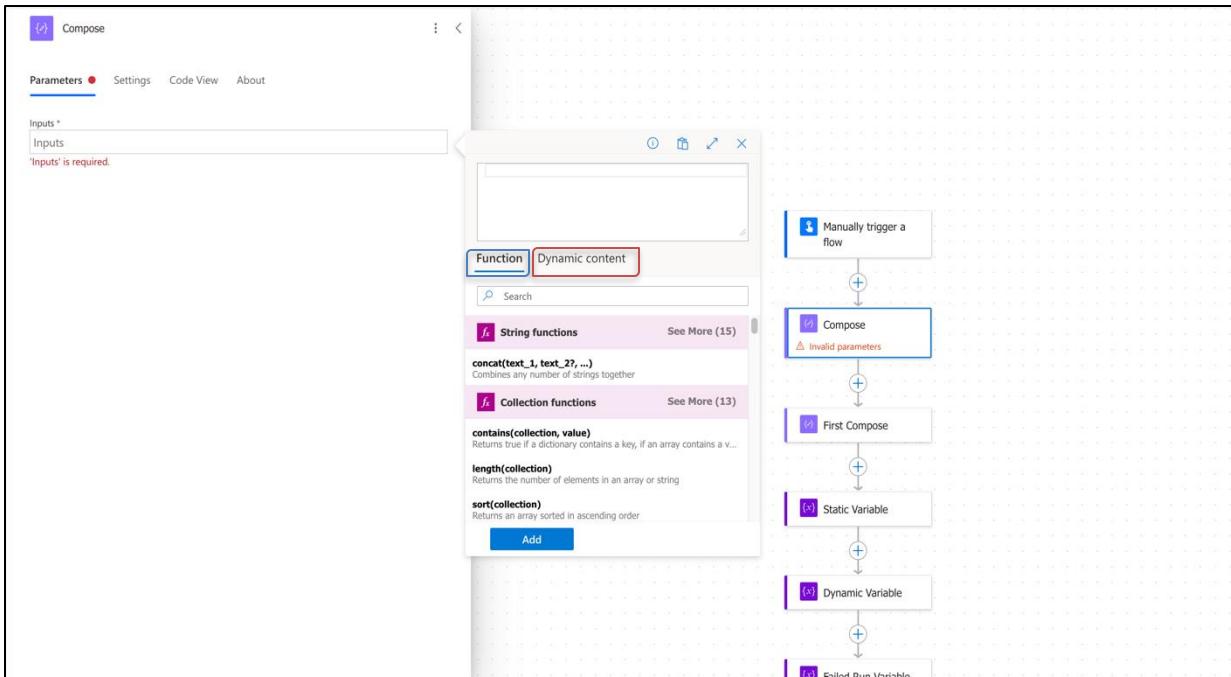
Select Built-in runtime

Select Initialize Variable

Set Variable Parameters

Rename Action

Inputs to Actions



Static Content

Text and numeric inputs

Dynamic Content

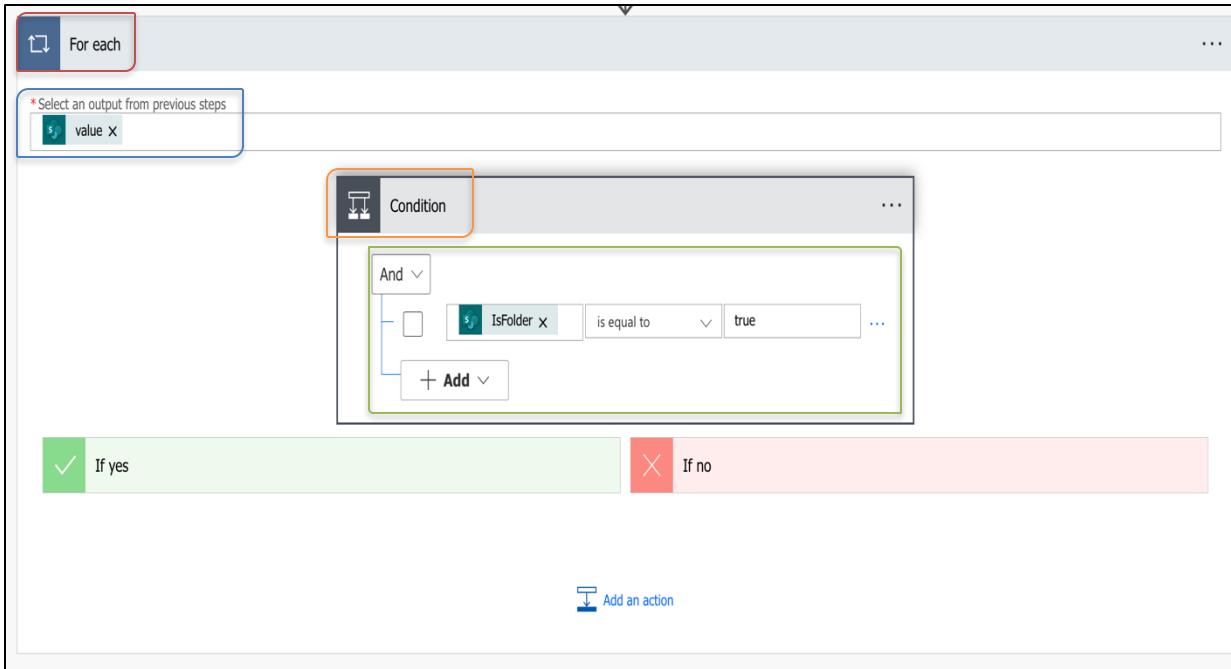
Data that is **automatically populated** based on the outputs of previous actions within a flow.

Functions

Predefined operations that can be used to perform various tasks, such as data manipulation, calculations, and logic operations.

CONTROLS AND CONNECTORS

Exploring Controls



Your document library will have multiple files/folders

The "For each" action can perform an action of your choice to each file/folder in your document library by referencing the [action's dynamic variable](#)

In this reference, we have added a **Condition** action from the Control Built-In actions

The condition checks for folders in the document library

The Condition Action will branch into two operations you can perform based on its output

Controls

Overview

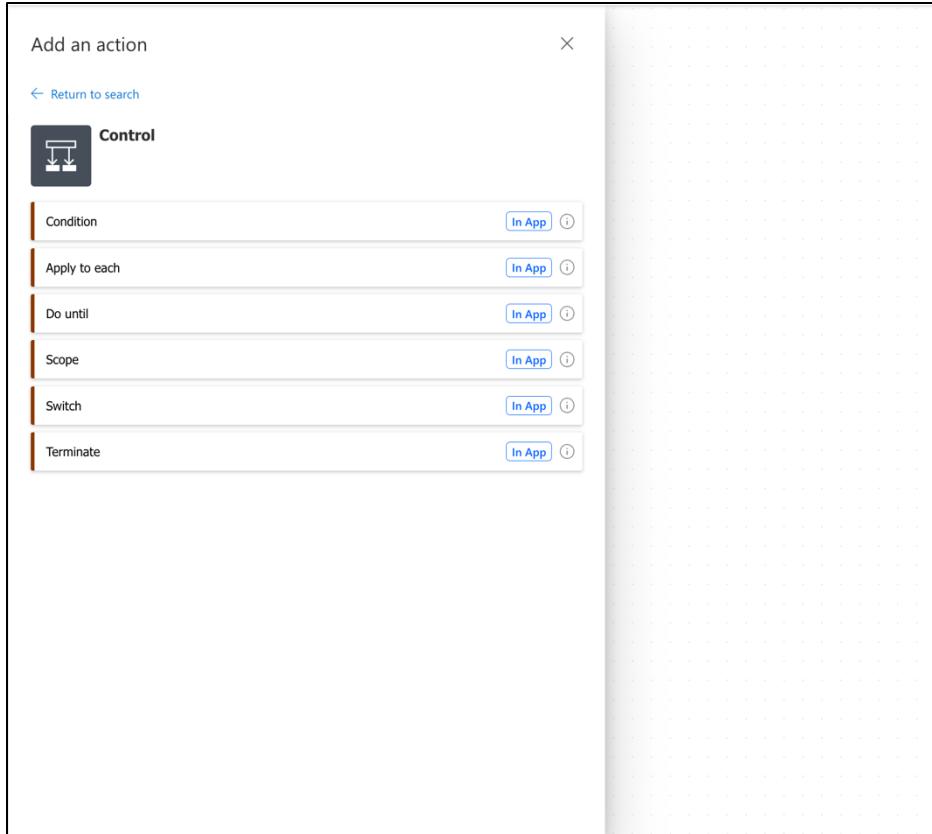
Controls in Power Automate enables you to create branching logic and iterative functions in your workflows, executing different actions based on specified conditions.

Key Features

- If-Then Logic:** Executes actions if a condition is met (true) and optionally different actions if the condition is not met (false).
- Flexible Conditions:** Compare values using operators like equals, greater than, less than, and more.
- Loop Through Collections:** Process each item in an array or list, such as emails, files, or database records.

Benefits

- Dynamic Workflows
- Automation
- Efficiency



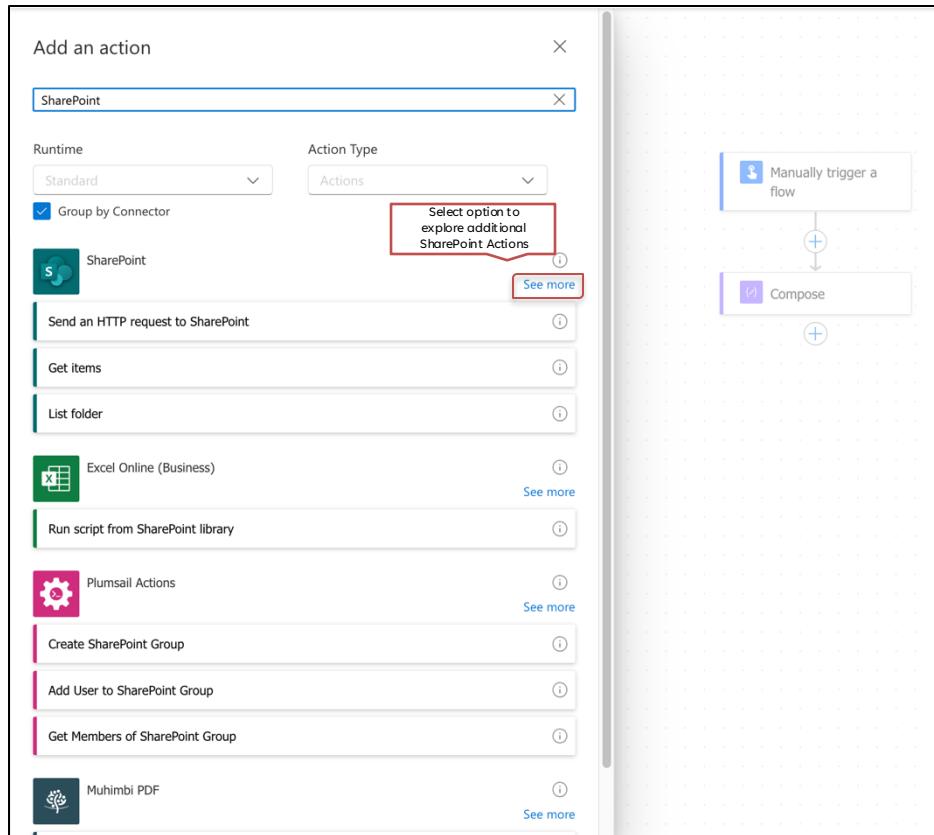
SharePoint Connector

Overview

SharePoint actions in Power Automate enable seamless integration with SharePoint sites, lists, and libraries, allowing for efficient automation of various tasks and workflows.

Key Actions

1. Get Items
2. Create Item
3. Update Item
4. Delete Item
5. Get File Content
6. Create File
7. Update File Properties



Connecting to a SharePoint Site

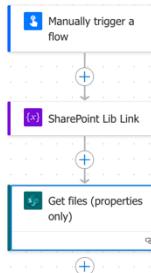
The screenshot shows a configuration interface for a SharePoint action. At the top, there is a button labeled "Get files (properties only)". Below it, a "Parameters" section contains:

- Site Address*: RCDS-TEST - https://nuwildcat.sharepoint.com/sites/NUIT-RCDS-TEST
- Library Name*: Documents

Under "Advanced parameters", there are several fields:

- Showing 6 of 6
- Filter Query: An ODATA filter query to restrict the entries returned (e.g. stringColumn ...)
- Order By: An ODATA orderBy query for specifying the order of entries.
- Top Count: Total number of entries to retrieve (default = all).
- Limit Columns By View: Avoid column threshold issues by only using columns defined in a view.
- Limit Entries To Folder: Select a folder, or leave blank for the whole library.
- Include Nested Items: Return entries contained in sub-folders (default = true).

At the bottom, a note states: "Connected to ybd1121@ads.northwestern.edu. Change connection".



Search SharePoint Action in action list

Select "See More" option

Select the "Get files (properties only)" action

Find or Enter in your SharePoint site address link

Select a Document library

Add in advanced parameters if needed

DYNAMIC CONTENT & FUNCTIONS

Dynamic Content

Overview

On selecting Dynamic Variables as an input option to a current action you are trying to work with, you will be presented with output options from all the actions created before the current one.

Key Items

- Select the “See More” option to expand the various options available for that action.
- Explore each action and test its output using a Compose Action

Usage Scenarios

- Using the “For Each” control to parse through each item in a SharePoint Document Library.
- Use the “body/value” action as the the input for the “For Each” control

The screenshot shows the 'Variables' section in Microsoft Power Automate. At the top, there is a search bar and a 'Variables' button. Below this, a 'Document Library Link' is shown with the 'Get files (properties only)' action selected. A callout box highlights the 'body/value' option under the 'List of Items' section. To the right, a 'See More (69)' link is visible. Further down, other variables like 'Body', 'ID', 'Title', 'Created', 'Modified', and 'Manually trigger a flow' are listed, each with a brief description. A 'See More (17)' link is also present at the bottom right.

Functions

Overview

You select functions when you want to perform specific operations. You can perform this operation with static values and with Dynamic Content

Key Items

- Function type will depend on the type of Dynamic content you are working with.
- Explore each function and test its output using a Compose Action

Usage Scenarios

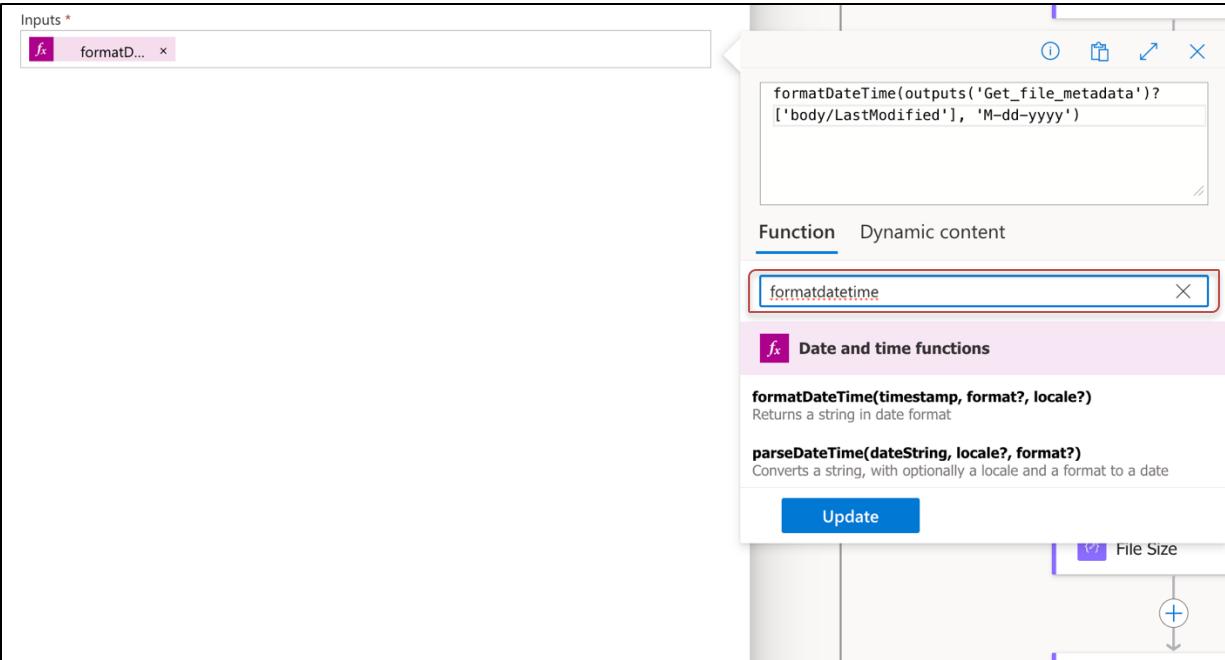
- In this instance, we are using the `formatDateTime` function to format the SharePoint "Get_file_metadata" "Last Modified" date to the "05-05-2024" format.

The screenshot shows a Power Automate 'Compose' action configuration. The formula bar at the top contains the expression: `formatDateTime(outputs('Get_file_metadata')?['body/LastModified'], 'M-dd-yyyy')`. Below the formula bar, the 'Function' dropdown is set to 'Dynamic content'. A search bar is present. The main area displays a list of functions categorized by type:

- String functions**: `concat(text_1, text_2, ...)` - Combines any number of strings together
- Collection functions**: `contains(collection, value)` - Returns true if a dictionary contains a key, if an array contains a value, or if a string contains a substring; `length(collection)` - Returns the number of elements in an array or string; `sort(collection)` - Returns an array sorted in ascending order; `reverse(collection)` - Returns the collection in reverse order
- Logical functions**: `if(expression, valueIfTrue, valueIfFalse)` - Returns a specified value based on whether the expression resulted in true or false; `equals(object1, object2)` - Returns true if two values are equal; `and(expression1, expression2)` - Returns true if both parameters are true; `or(expression1, expression2)` - Returns true if either parameter is true

A blue 'Update' button is located at the bottom right of the function list.

Exploring Functions



Select Function in the Input Field

You can look up a specific functions to work with

Use Dynamic Variables as inputs to the functions

Work with multiple data types

Pair multiple functions together and perform combined operations

FLOW MENU AND TROUBLESHOOTING

Flow Menu

The screenshot shows the 'Workshop_Flow_1' details page. The top navigation bar includes options like Edit, Share, Save As, Delete, Run, Send a copy, Export, Process mining (preview), Analytics, Turn off, and Repair tips off. A 'Flow checker' button is also present.

Details section:

- Flow: Workshop_Flow_1
- Status: On
- Created: Jun 21, 09:40 AM
- Modified: Jul 2, 11:43 AM
- Type: Instant
- Plan: The user who runs the flow

Connections section (highlighted with an orange border):

There aren't any connections for this flow.

Co-owners section:

Set primary owner Share

KL LF

Process mining (preview) section:

Average run duration 186 ms

Run only users section:

Your flow hasn't been shared with anyone.

Associated apps and flows section:

You don't have any apps or flows associated with this flow. [Learn more](#)

28-day run history table:

Start	Duration	Status
Jun 24, 11:32 AM (1 wk ago)	241 ms	Test failed
Jun 24, 10:16 AM (1 wk ago)	231 ms	Test succeeded
Jun 24, 10:13 AM (1 wk ago)	86 ms	Test failed
Jun 24, 10:11 AM (1 wk ago)	290 ms	Test succeeded
Jun 24, 10:08 AM (1 wk ago)	417 ms	Succeeded
Jun 24, 09:42 AM (1 wk ago)	118 ms	Failed
Jun 24, 09:41 AM (1 wk ago)	197 ms	Succeeded

Ask a chatbot button is located at the bottom left.

Flow Details outlining creation date and owner

Flow Menu highlights the different flow items

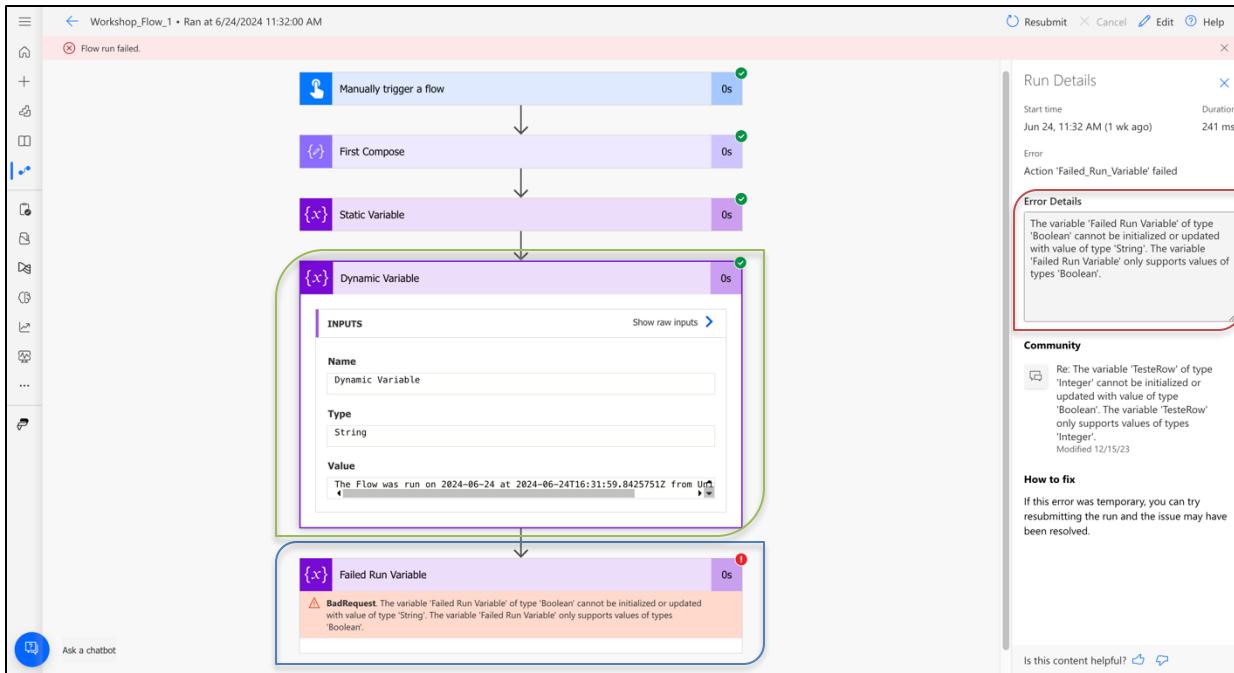
Co-owners contains user information the flow has been shared with

Flow Run History helps you keep track and investigate flow failures and runtime

Connections box will list all the external Actions your flow is connected to

You can have students only run the flow without them having access to the resources

Failed Runs



Select Failed run from Run History

Investigate Error Detail

Check the failed Action and the Error Type

Read out some of the passed actions and check outputs