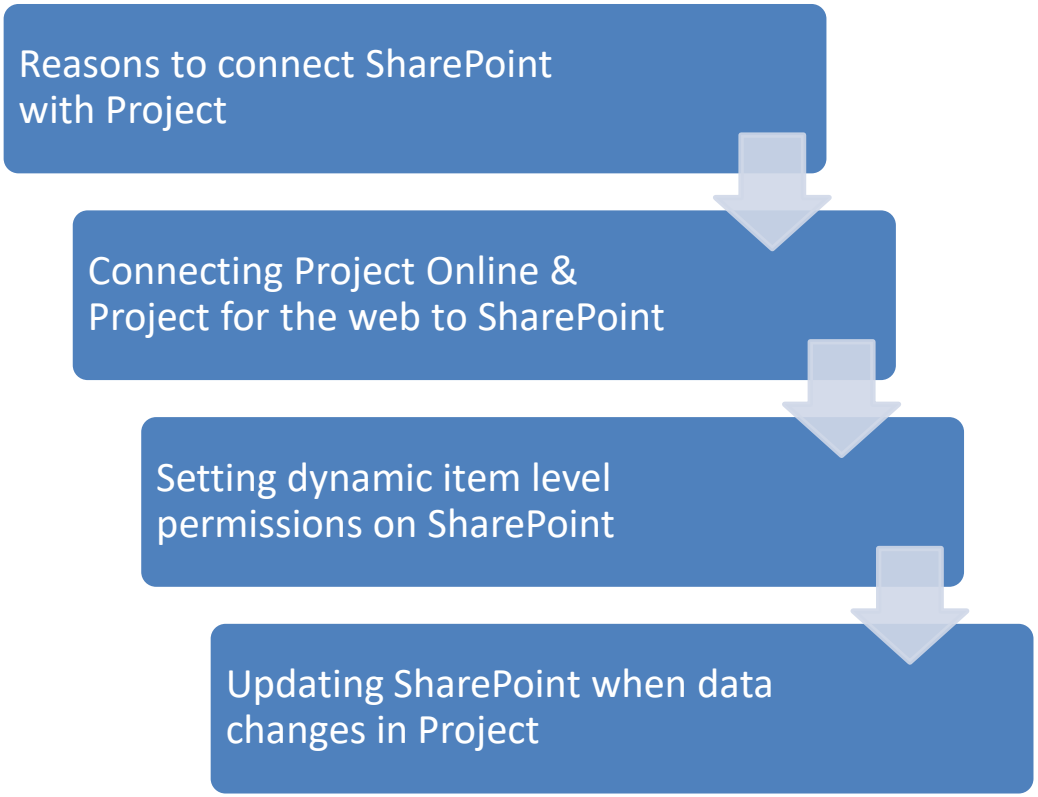
Automating Information between Microsoft Project and SharePoint

March 2, 2022 @ 12pm-1pm EST

Jeff Lynch

Automating Information between Microsoft Project and SharePoint Contents



Objectives and Licensing Considerations

The objective of this webinar is to introduce you to the basic tools and the differences between each product so that you can develop your own solutions that integrate data from one program to another.

Licensing requires a minimum of Project Plan 1 but may require Plan 3

Additional licensing for Power Automate per user plan may also be required if you elect to use Project for the web.

Use Cases for SharePoint Integration

Sharing information with non-project users

- Examples of this might include executive sponsors, external users (customers), board members or other people who do not have an active role in the project but do have interest in the outcomes of the project.

Ability of PMs to add additional information to the project

- An example of this would be adding in weekly or monthly status reports which are tracked over time for the project

Non-project related user information (private)

- This is the primary use case for todays webinar
- In this scenario, contractors are given a “work assignment” and then each contractor submits time logs against that assignment. The other contractors are not permitted to see the individuals' assignments or time logs, but the PM creates them and has the ability to view/edit those assignments. In addition, there are admin users that need access.

Process Overview

Set up SharePoint

- Add groups for admin, contractors and PMs
- Create a list in SharePoint to store the titles and basic details of a project
- Create a list in SharePoint to store Assignments
- Connect it to the Project list.

Set up Power Automate

- Create a Power Automate flow that runs when a project is created that will create an item in the SharePoint list.
- Create a Power Automate flow that assigns permission to the assignment
- Create a Power Automate flow that modifies the SharePoint project list when the project is complete.

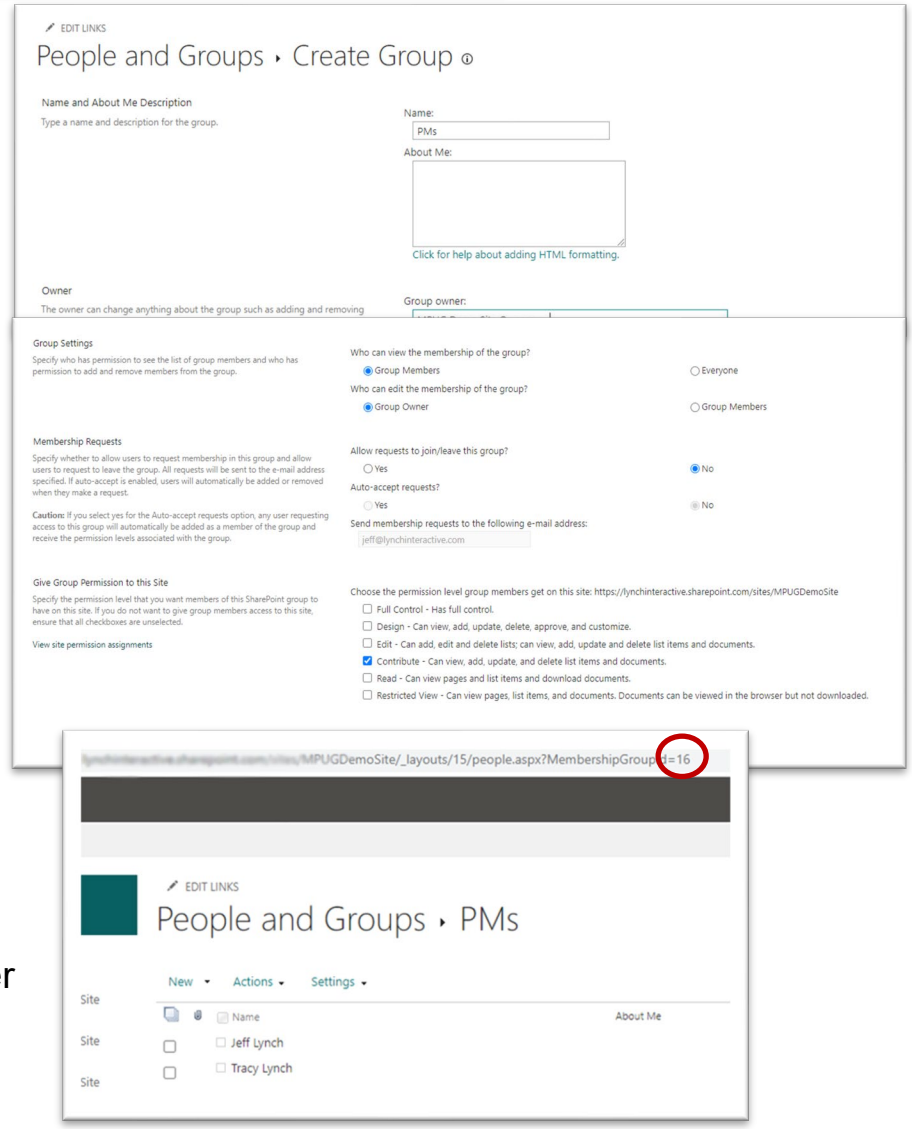
Set Up Groups in Sharepoint

We need groups to assign the basic permissions to allow them to see the lists they have individual permissions for. You can use the auto generated groups or create groups:

- Admins (Full or Contribute)
- PMs (Contribute)
- Contractors (Read)

Add members to each group accordingly. While adding them note the ID number at the end of the URL, we will need the admin and PM group IDs later.

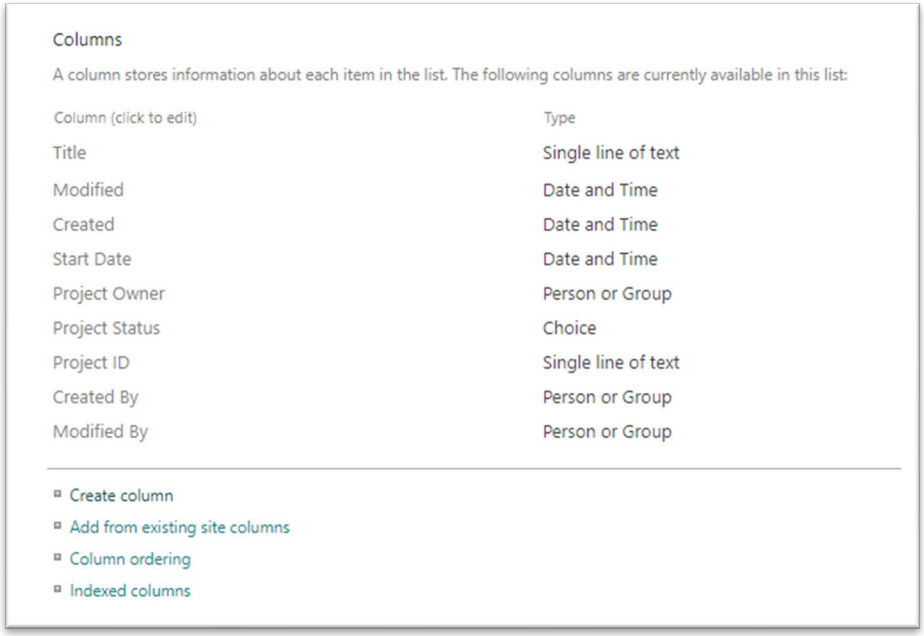
Tip – Use Contribute instead of Edit, Edit gives the user permission to delete lists and that's more control than they need.



Create a List in SharePoint – Project List

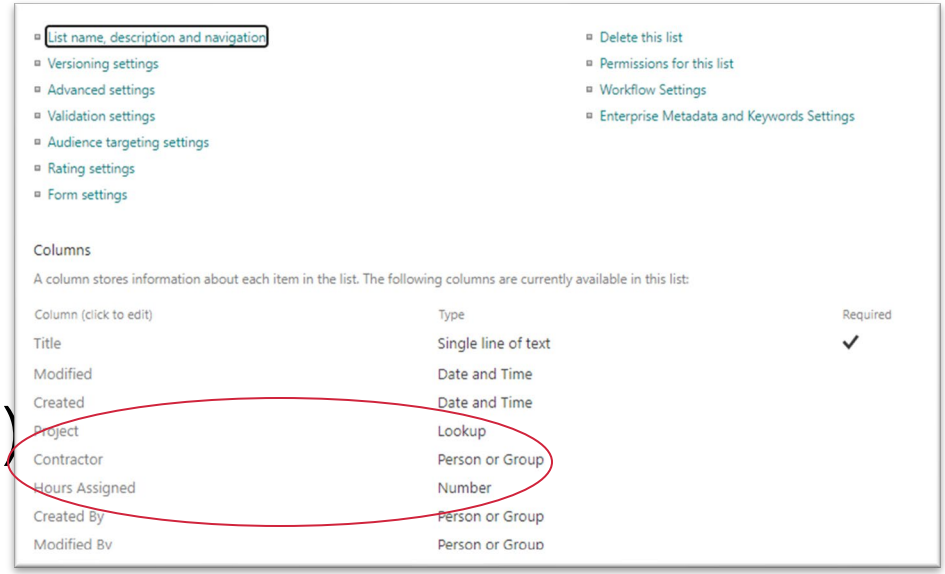
1. From Site Contents select New List and name it “Project List”
2. Create columns for:
   - Project Manager (Person)
   - Start Date (Date)
   - Status (choice field with Active, Complete)
   - Project ID(single line of text)

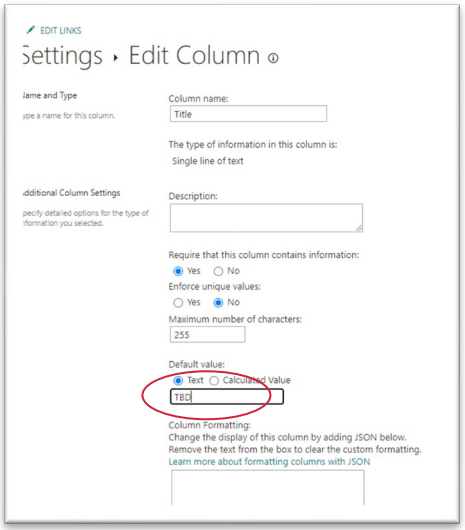
The ID will allow for updates to the SharePoint list based on changes to the project.



Create a List in SharePoint – Assignments

- Create a new list in SharePoint to store assignments.
- Add fields including:
  - Project (Lookup)
  - Contractor (Person)
  - Hours Assigned (Number)
- Modify the Title column to have some default text like TBD – we will change this when we set permissions to have a standard format.

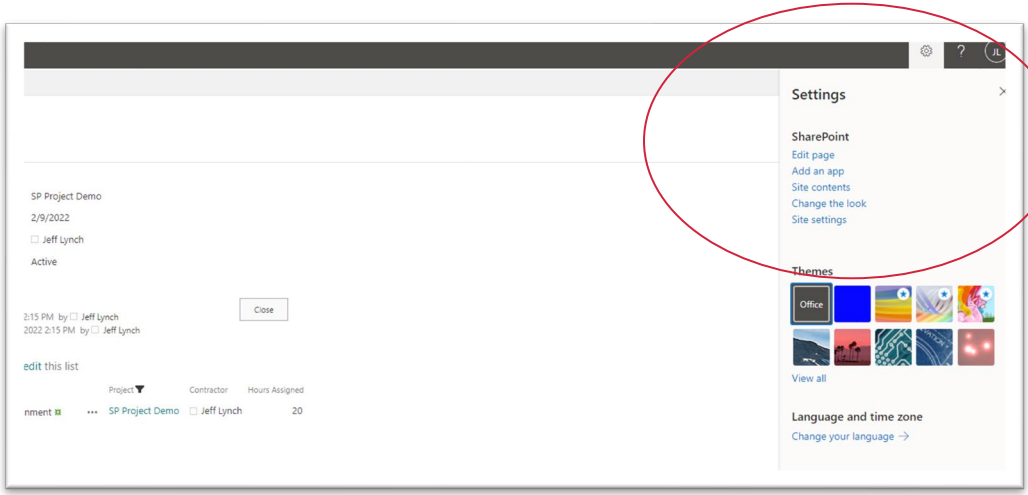


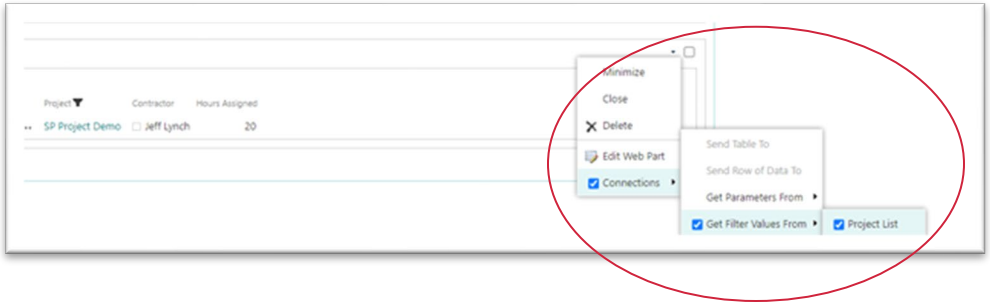


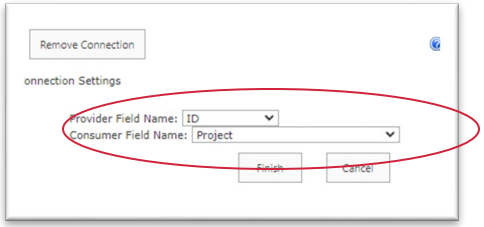
Connect the Project List and Assignments List

The purpose of this is to display all assignments on the edit and display pages for a project

- This method requires you to use Classic SharePoint
- Click either the edit or the title field of a project. You will do the other with the same steps afterwards
- Click in top right cog the Edit Page option
- Add a Web Part – Select the Assignments List
- Move that to the bottom of the page and then click the small black down arrow on the right and “Connections” > “Get Filter Values From”>”Project List”.
- In the pop up enter the Project column in the Consumer Field Name dropdown (note, you may need to allow pop ups to see the control).



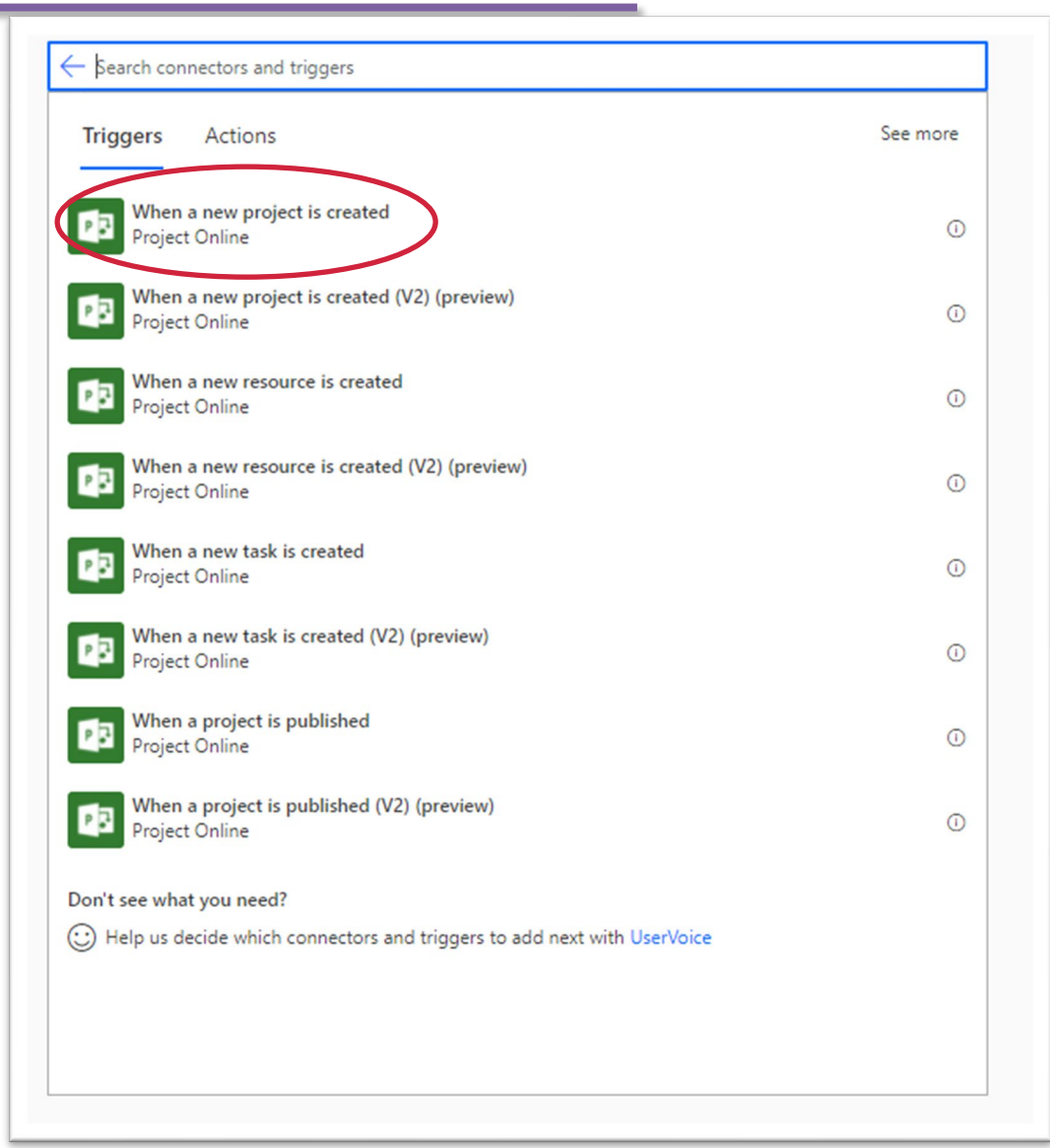




Create a Flow to Create Projects – Project Online

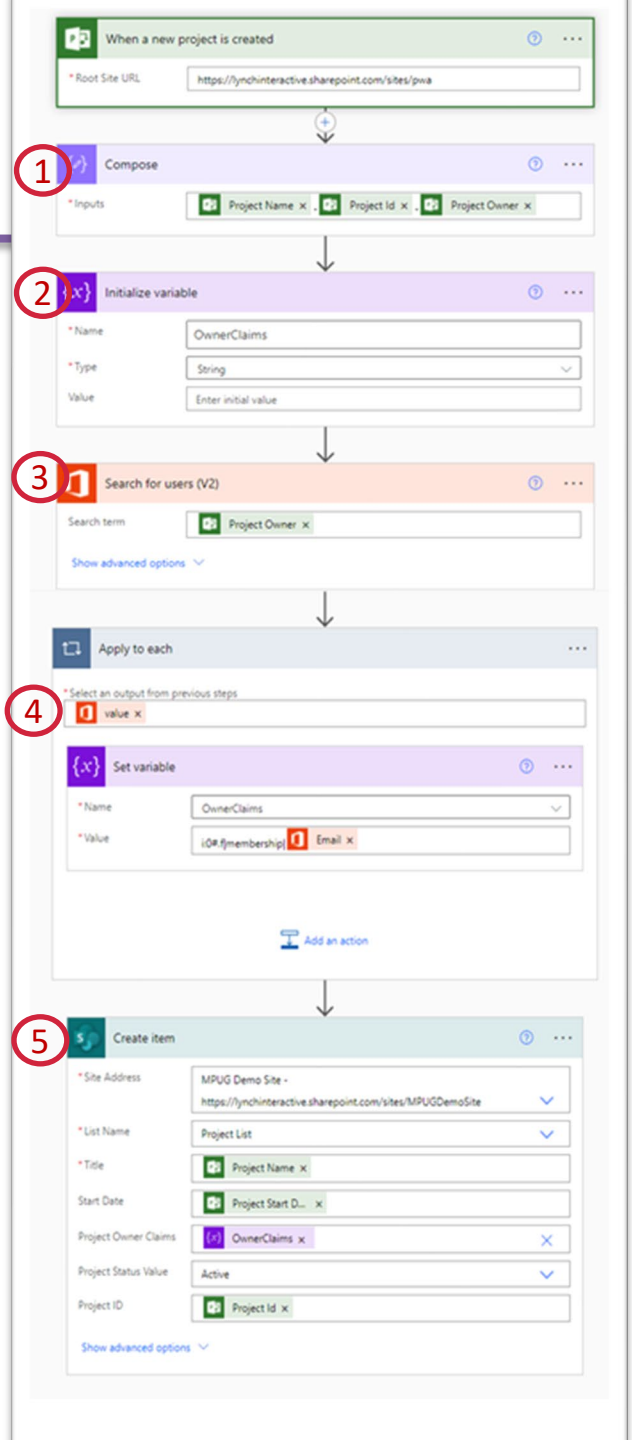
Project Online provides specific “Triggers” to use out of the box.

We will use the “When a new project is created” for this demo.



Create a Flow to Create Projects – Project Online

1. Compose – This step creates the Title we will use when creating the Project in SharePoint
2. Initialize Variable – we need a vessel to store the owner's information – we have to initialize a variable like this outside of a sub routine
3. Search for User – SharePoint uses the "Claims" for a user, which is a specially formatted string with their information. We use the Search for User because it allows us to use their name, and it will return their email address.
4. Apply to each/Set Variable – Power Automate doesn't know there is only one Jeff Lynch so it asks you to loop through all of them (even if there is just one) because the name is not necessarily unique. We then set the claims with the string "i:0#.f|membership|{email}"
5. Create item – finally we create the project in SharePoint that will be used for our assignment tracker. Note that we add a field for Project ID so that when it's updated later, we can correctly match the Project with SharePoint. Also, we use the variable set for the Project Owner Claims field.



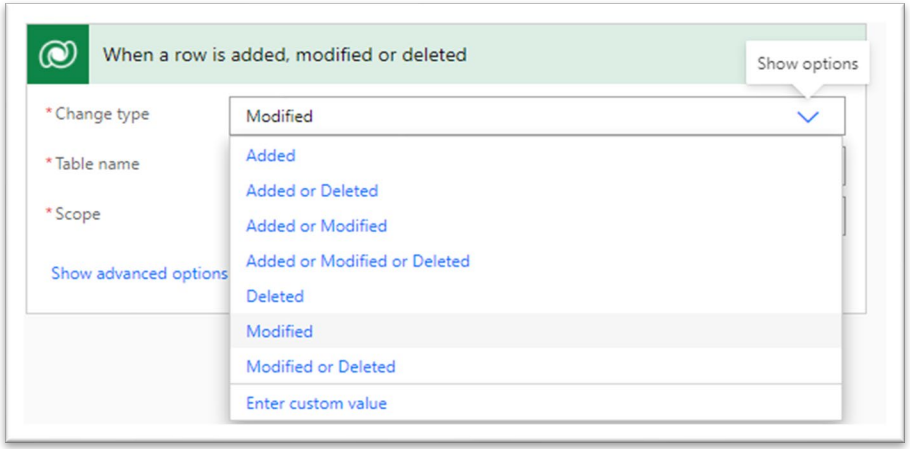
Create a Flow to Create Projects – Project for the web

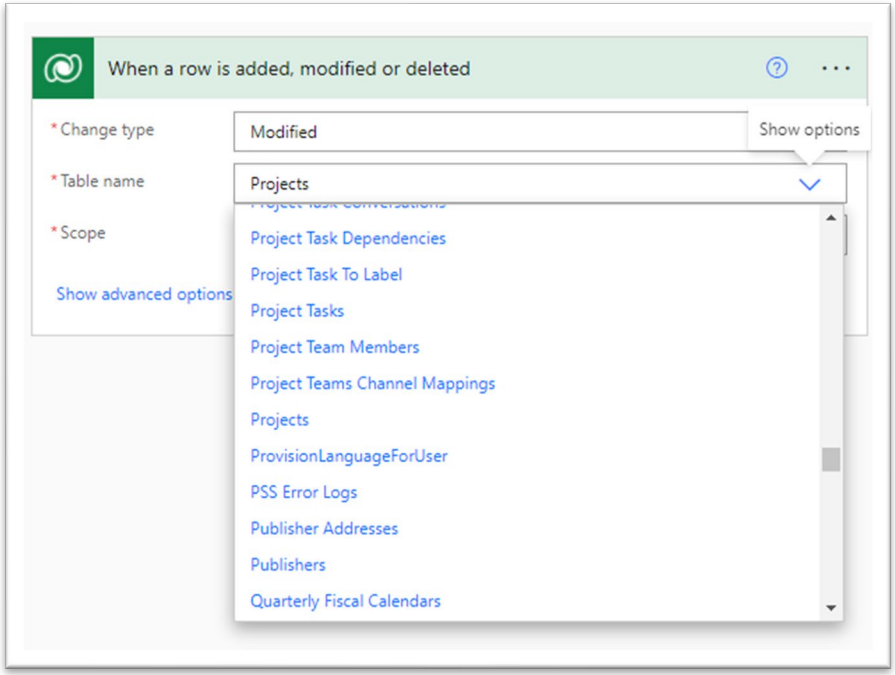
Project for the web works differently. P4w uses the Microsoft Dataverse to store all the project information.

The triggers used are similar but instead of being specific, they are general.

In this case we use the “When a row is added, modified or deleted” trigger.

Instead of simply entering our domain, we select the type of change (added, modified or deleted), the Table and the Scope





Create a Flow to Create Projects – Project for the web

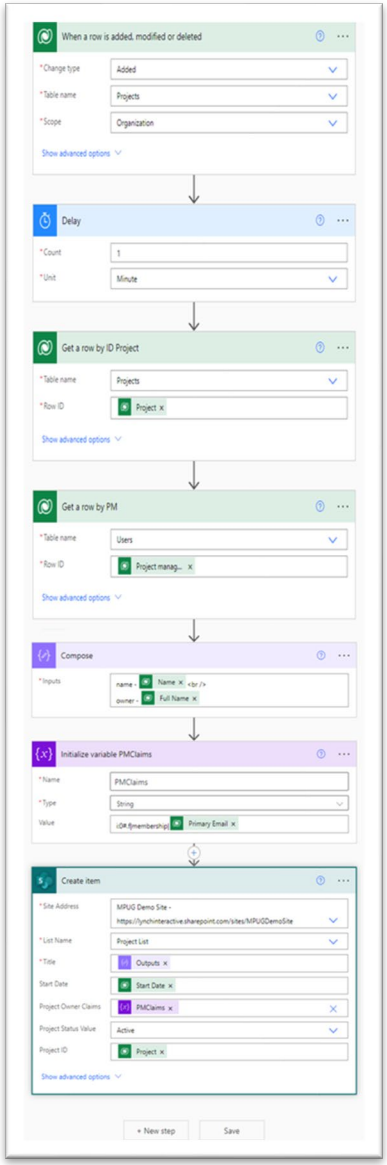
P4W uses the Dataverse. The Dataverse is updated every time you do something in the project, and the project is created at the time you click the new project button, not when you click a save button.

What this means is that when you click the button and it's called "untitled project" that is the name of the project at creation. If we used the Modified trigger, it would run every time you updated anything in the project.

To solve this, we add a delay, and then after the 1 minute we get the row that was created and use that to fill in the SharePoint information. This makes it so the flow only runs once when the project is created but it uses data from the modified title. It also means the first thing you need to do is name the project and assign a PM.

Next, we get the user from the Dataverse users table so that we can get their email address for the claims.

Finally, we create the project in SharePoint with the data we have gathered.



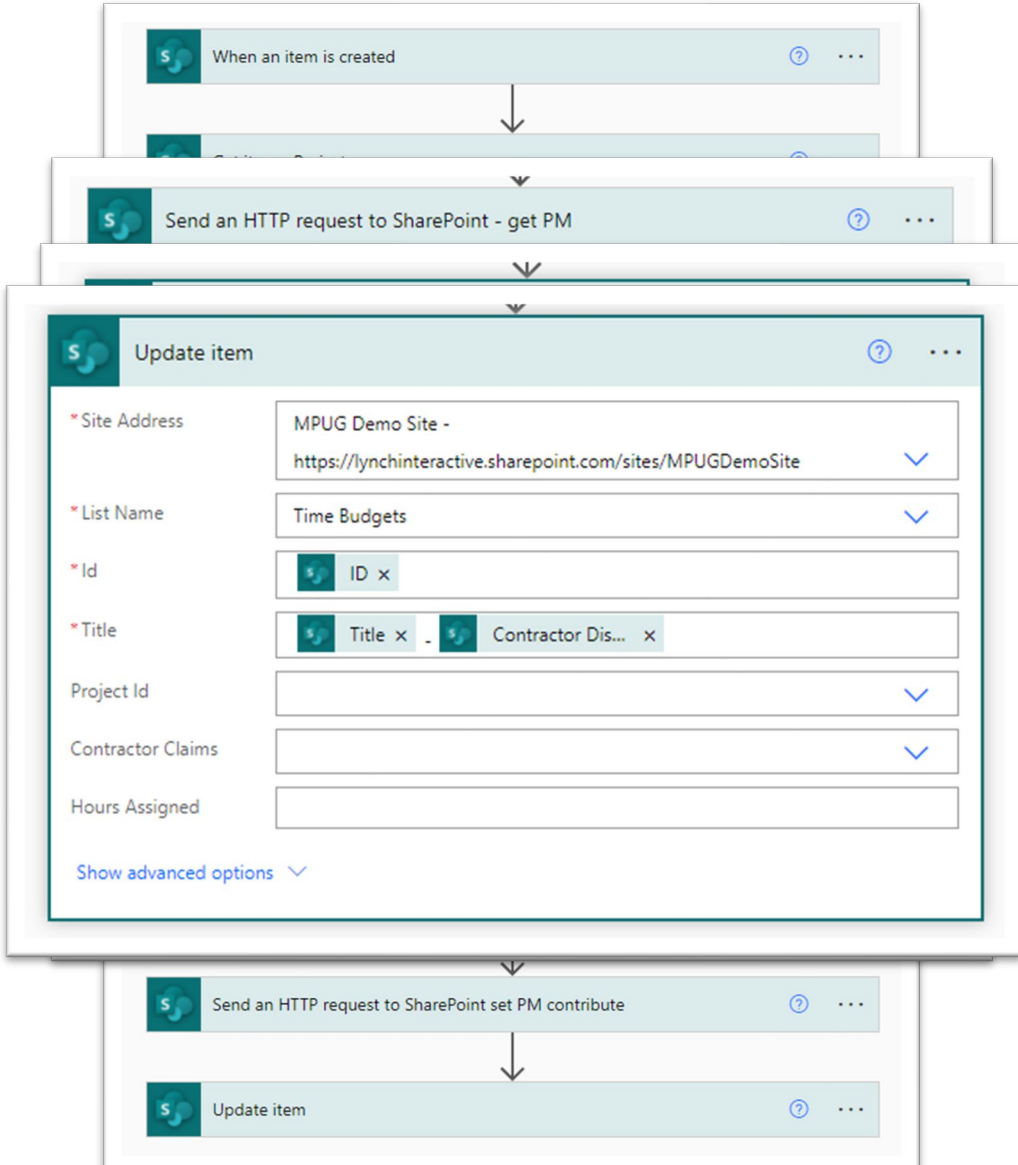
Create a Flow to Set Permissions on New Assignments

Setting permissions on an item involves 3 simple steps:

1. Get the SharePoint ID of the group or user
   A. We use a variable (Integer) to format that ID from the value returned in the HTTP request.
2. Break inheritance of permissions
3. Assign new permissions

We use the “http request to sharepoint” action to achieve all 3.

Finally, Update the assignment with a Title that is consistent and formatted.



Set Permissions – Cheat Sheets

Use a cheat sheet to keep the frequently used uri calls.

Here are my permission cheat sheets.

Permission URI Commands

get user
_api/web/SiteUsers/getByEmail('name@company.com')
requesterID - body('GetRequesterID')**['d']['id']**
for use in permission assignment - variable is Integer

break inheritance
_api/lists/getByTitle('List Name')/items(Item ID)/breakroleinheritance(copyRoleAssignments=false,clearSubscopes=true)

Set permission
_api/lists/getByTitle('MyList')/items(1)/roleassignments/addroleassignment(principalid=12,roledefid=1073741827)

OOTB Permission Codes

Full Control	1073741829
Contribute	1073741827
Read	1073741826

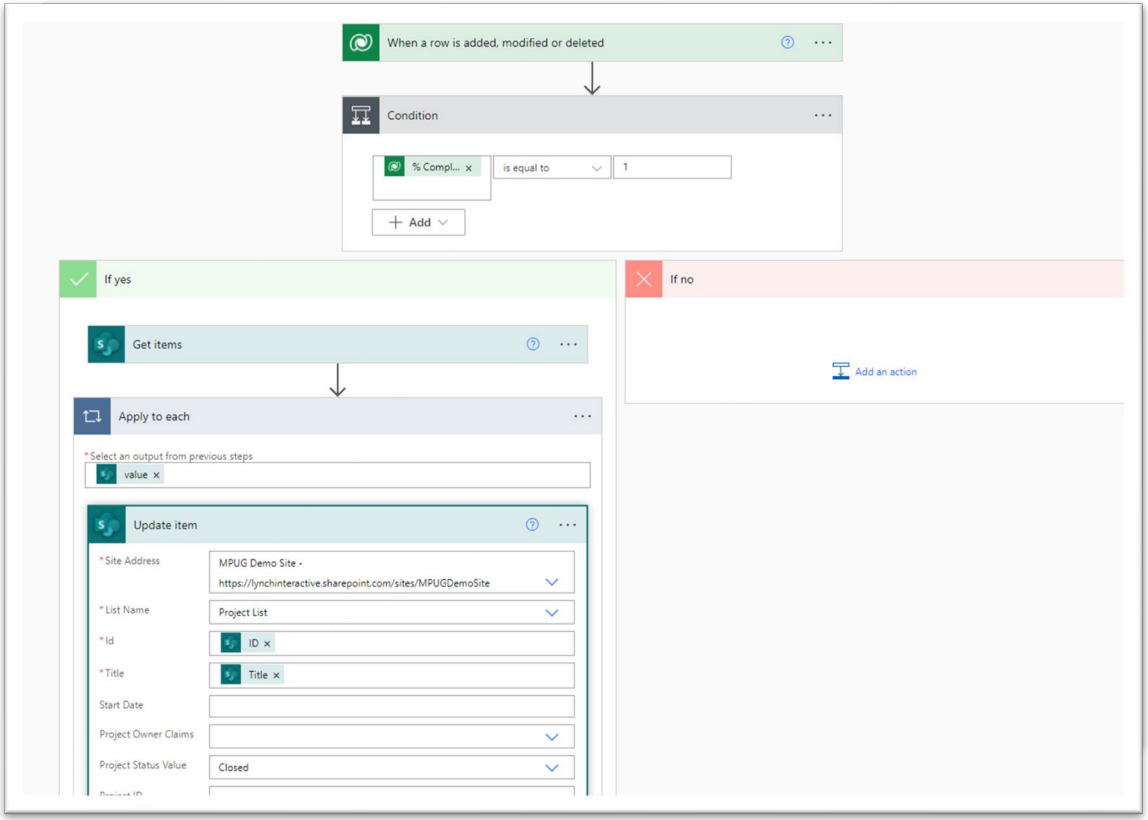
Create a Flow to Set Projects to Complete when Updated in Project

Project Online has a trigger for when a project is published.

P4W we use a trigger for when a row is modified in Dataverse.

Use a condition to check if the Project Percent Complete is 100 in the case of Project Online and 1 for P4W.

If it is, update the SP list to show the project closed.



Automating Information between Microsoft Project and SharePoint - Summary

1. There are endless possibilities to mimic your company processes using SharePoint in conjunction with Project
2. Power Automate provides triggers and actions that work with SharePoint, Project Online and P4W.
3. Understanding the condition of data at the time you are working with it is critical to a successful and reliable program.
4. Understanding the differences between P4W (Dataverse) and Project Online (classic SharePoint) and SharePoint will provide clarity as you plan your next project!

Thank You!

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