



Project Management in SharePoint

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Agenda

- Project Management Activities
- SharePoint Information Architecture
- Managing the Project
- SharePoint Search
- Power BI reporting

Project Management Activity

Planning is a
life skill



Typical Project Lifecycle

Initiation

Summary

Project kickoff and setting expectations.

Assets

- Project Site
- Documents

Planning

Summary

Meet with stakeholders and gather requirements and build the project plan.

Assets

- Documents
- Tasks
- Risks

Execution

Summary

Build the solution using the requirements.

Assets

- Documents
- Tasks
- Issues
- Risks

Support and Close Out

Summary

Deliver the solution to the customer.

Assets

- Documents
- Issues
- Risks



Project Dashboard

- One place for users and project managers to view project information
- Displays only tasks/issues assigned to you across projects
- Refiners for easily find specific projects
- All Search/content type driven

The screenshot displays the 'Projects' dashboard. At the top, there are navigation links for 'Accounting', 'Human Resources', and 'Information Technologies'. The left sidebar contains navigation options: Home, Project Document Templates, Calendar, Pages, Non-ProjectRisks, Recent (highlighted), and Site contents. The main content area is divided into several sections:

- Project Refiner Author:** Lists 'Steve Pucelik' and 'Lisa Pucelik' with a 'SHOW MORE' link.
- Modified date:** A bar chart showing activity from 'One Year Ago' to 'Today' with a timeline slider below it.
- Project Status:** A list of status options: Pending, Open, and Active.
- Division:** A list of division options: West, East, and Central.
- Project Dashboard:** A table listing projects with columns for Project Title, Project Status, and Division. The data is as follows:

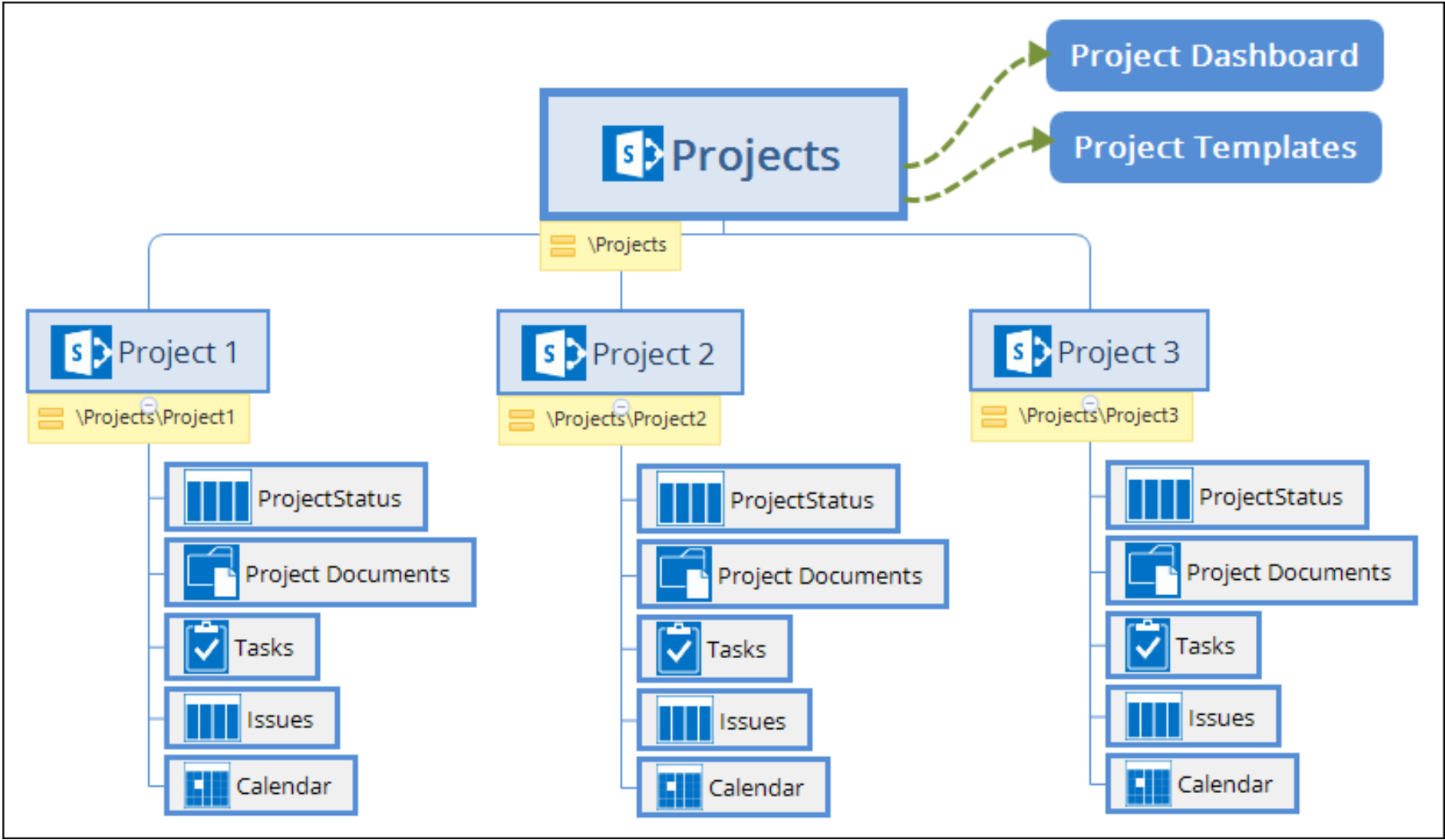
Project Title	Project Status	Division
OIT Migration	Pending	Central
Data Center Migration	Active	Central
O365 Governance Plan	Active	Central
ProjectSiteTemplate	Open	
Exchange Migration	Active	West
Teams Rollout	Active	East
- Tasks Assigned To Me:** A table listing tasks assigned to the user. The data is as follows:

Task Name	Project Name	Task Status	Assigned To
Develop WBS	Datacenter Migration	In Progress	Steve Pucelik
- Issues Assigned to Me:** A table listing issues assigned to the user. The data is as follows:

Issue Title	Project Title	Issue Status	Assigned To
Data center access	Datacenter Migration		Steve Pucelik

Information Architecture

Site Hierarchy



Content Type Structure

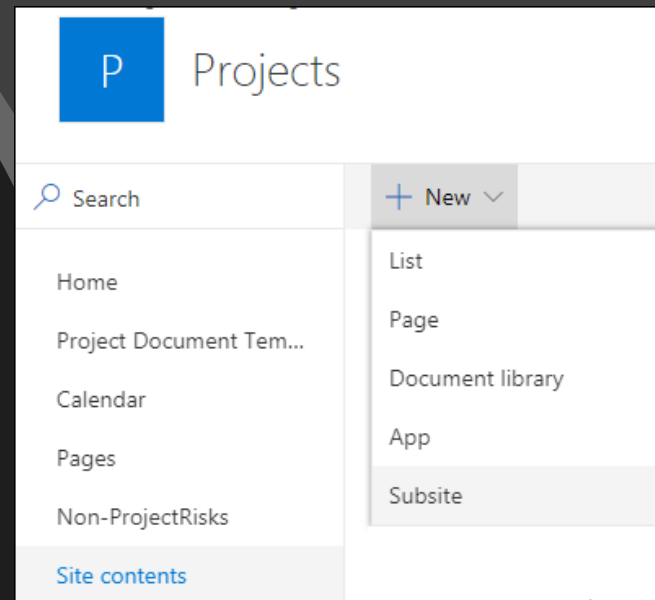
- Created at the site collection root
- Standard Site Columns/Content types
- Used SharePoint site columns where you can
- This is CRITICAL for a targeted search experience

Projects	
ProjectIssues	Issue
ProjectRisks	Item
ProjectStatus	Item
ProjectTasks	Task

ProjectIssues	
IssueDescription	Multiple lines of text
IssueStatus	Choice
ProjectRisks	
ActionCompleted	Date and Time
DateRiskIdentified	Date and Time
Impact	Choice
Likelihood	Choice
OverallRiskScore	Calculated
PlannedAction	Multiple lines of text
ProjectOffice	Choice
RiskComments	Multiple lines of text
RiskCriteria	Choice
RiskIdentifiedBy	Person or Group
RiskManager	Person or Group
RiskOwner	Person or Group
RiskPriority	Choice
RiskPriorityValue	Calculated
RiskResponse	Choice
RiskStatement	Multiple lines of text
RiskStatus	Choice
RiskTitle	Single line of text
RiskType	Choice
SignificanceLevel	Calculated
UpdatedAction	Multiple lines of text
ProjectStatus	
CompletionDate	Date and Time
Division	Choice
ExecutiveSponsor	Person or Group
ProjectManager	Person or Group
ProjectStatus	Choice

Project site template

- Standard way of creating new project sites
- Created using standard SharePoint subsite creation process
- Project Template contains all lists/libraries/content types
- Does not carry forward branding/logos
- Typically created in the \projects site but not required
- Security can be set at the site level or inherited depending on the project sensitivity

A screenshot of the 'New SharePoint Site' form. The title is 'Site contents > New SharePoint Site'. The form is divided into three sections: 'Title and Description', 'Web Site Address', and 'Template Selection'. In the 'Title and Description' section, the 'Title' field contains 'New Project' and the 'Description' field is empty. In the 'Web Site Address' section, the 'URL name' field contains '/sites/dem.../ NewProject'. In the 'Template Selection' section, the 'Select a language:' dropdown is set to 'English'. The 'Select a template:' section shows a list of templates: 'Collaboration', 'Enterprise', 'Publishing', 'Duet Enterprise', and 'Custom'. The 'ProjectTemplate' option is highlighted with a red box.

Managing the project

Project Status List

- Every project has this list
- 1 item list using the ProjectStatus content type
- Project managers should update this with project demographics
- Uses the ProjectStatus Content type – critical for rolling up information using search

Home		ProjectStatus					
Project Document Templates	Current View	...	Find an item				
Tasks	✓ Title	CompletionDate	ExecutiveSponsor	ProjectManager	ProjectStatus	Division	
IssueTracking	Data Center Migration	...	10/27/2017	<input type="checkbox"/> Lisa Pucelik	<input type="checkbox"/> Steve Pucelik	Active	Central
ProjectRisks							

Tasks are tasks...issues are issues...

- Manage tasks, issues and risks like you normally would.
- Documents are documents that every project has and is essential for a successful implementation.
- Keep it simple and don't over engineer it. This is where people start to get confused and shut down.

Tasks

Timeline view showing months: October 2018, Today, November 2018, December 2018.

Add tasks with dates to the timeline

+ new task or edit this list

All Tasks | Calendar | Completed | ... | Find an item

✓	☑	Task Name	Due Date	Assigned To	% Complete	Description	Priority	Start Date	Task Status
	☐	Develop WBS	...	☐ Steve Pucelik	50 %	Use Excel	(1) High		In Progress

Issue Tracking

Title	IssueDescription	Assigned To	Priority	Due Date	Comments
Data center access	Make sure we have access to the DS.	Steve Pucelik	(2) Normal	10/26/2018 12:00 AM	View Entries

SharePoint Search

Project Dashboard

- Content Search web part is your friend
- Managed Properties for the columns displayed need to be setup
- Display templates control the presentation
- Everything is content type driven.

The screenshot shows a SharePoint 'Projects' dashboard. At the top, there are navigation links for Accounting, Human Resources, and Information Technologies. The main content area is divided into several sections:

- Project Refiner:** A filter section with 'Author' (listing Steve Pucelik and Lisa Pucelik) and 'Modified date' (with a bar chart and a date range slider from 'One Year Ago' to 'Today').
- Project Dashboard:** A table listing projects with columns for Project Title, Project Status, and Division.

Project Title	Project Status	Division
OIT Migration	Pending	Central
Data Center Migration	Active	Central
O365 Governance Plan	Active	Central
ProjectSiteTemplate	Open	
Exchange Migration	Active	West
Teams Rollout	Active	East
- Tasks Assigned To Me:** A table listing tasks with columns for Task Name, Project Name, Task Status, and Assigned To.

Task Name	Project Name	Task Status	Assigned To
Develop WBS	Datacenter Migration	In Progress	Steve Pucelik
- Issues Assigned to Me:** A table listing issues with columns for Issue Title, Project Title, Issue Status, and Assigned To.


Issue Title	Project Title	Issue Status	Assigned To
Data center access	Datacenter Migration		Steve Pucelik


Managed Properties

- Map the crawled property to a managed property
- Use the Refinable* managed properties.
- Refiners rely on these
- Re-index the list/library if you're properties don't show up

Filter

Managed property



 [New Managed Property](#)

PROPERTY NAME	TYPE	MULTI	QUERY	SEARCH	RETRIEVE	REFINE	SORT	SAFE	MAPPED CRAWLED PROPERTIES
RefinableString00	Text	Multi	Query	-	Retrieve	Refine	Sort	Safe	ows_ProjectStatus , ows_q_CHCS_ProjectStatus
RefinableString01	Text	Multi	Query	-	Retrieve	Refine	Sort	Safe	ows_Division , ows_q_CHCS_Division
RefinableString02	Text	Multi	Query	-	Retrieve	Refine	Sort	Safe	ows_ProjectManager , ows_q_USER_ProjectManager

Reindex List

Click the Reindex List button to reindex all of the content in this document library during the next scheduled crawl.

Reindex List

KQL targets the content types

Build Your Query

BASICS REFINERS SORTING SETTINGS TEST [Learn how to build your](#)

Switch to Quick Mode

Select a query
Choose what content you want to search by selecting a [result source](#).

Local SharePoint Results (System)

Keyword filter: Query from the search box [Add keyword filter]

Property filter: Select property [Contains] [Select value] [Add property filter]

Query text
ContentType:ProjectStatus

Test query

SEARCH RESULT PREVIEW

RelevantResults (6)

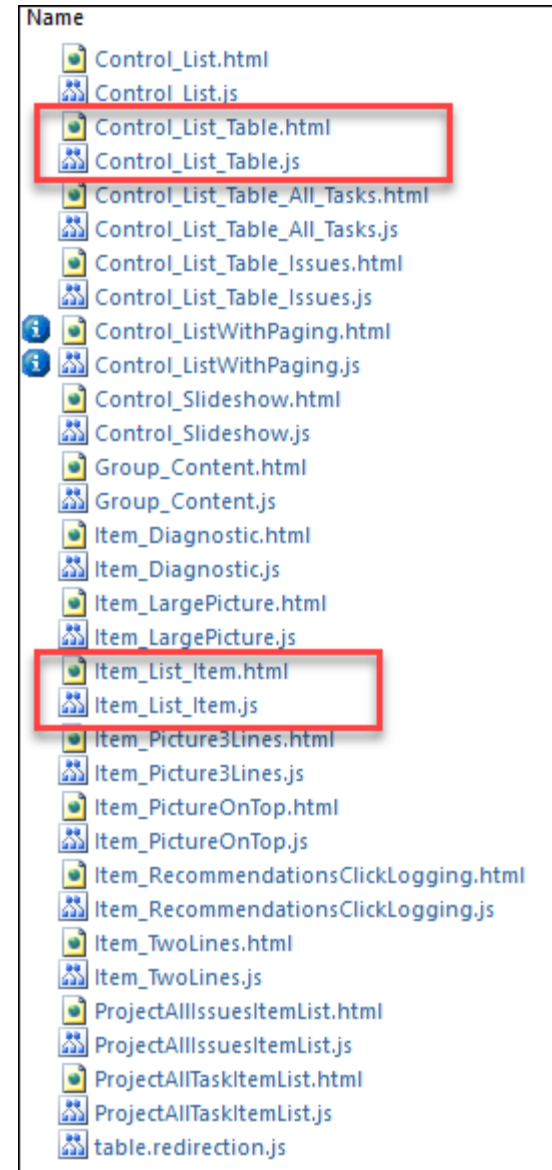
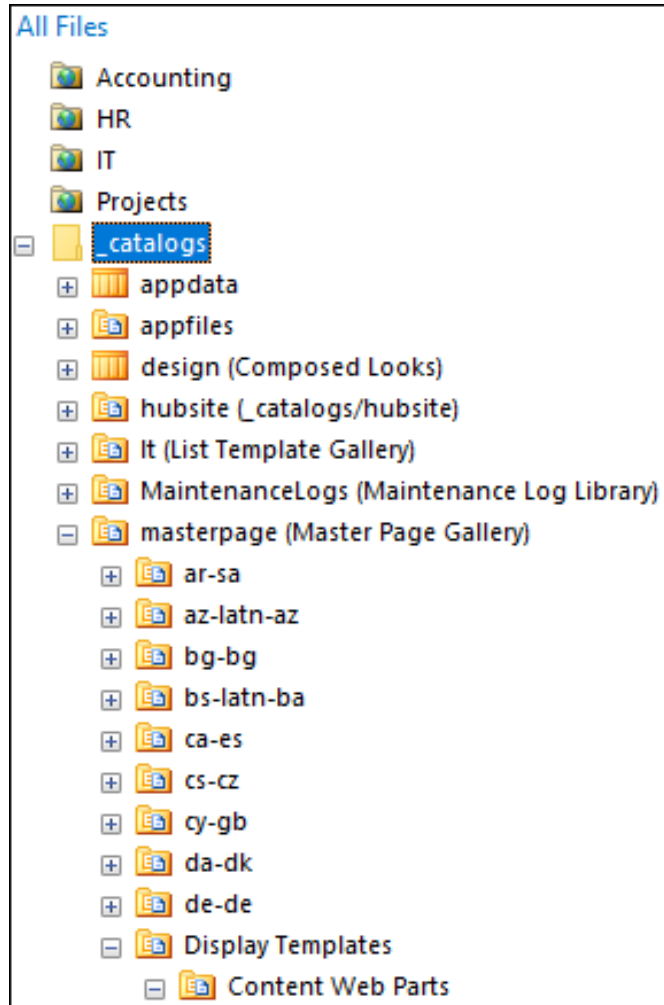
- Data Center Migration
- OIT Migration
- O365 Governance Plan
- ProjectSiteTemplate
- Teams Rollout
- Exchange Migration

Query text

```
ContentType="ProjectTasks" AssignedTo={User.Name}
```

Display Templates - Design

- Edit both the control and item templates in SharePoint Designer
- Managed properties drive the display values
- Publishing feature needs to be enabled to generate the .js file
- A little HTML/JavaScript and you're done!



Item Template

```
<html xmlns:mso="urn:schemas-microsoft-com:office:office" xmlns:msdt="uuid:C2F41010-65B3-11d1-A29F-00AA00C14882">
<head>
<title>List Table Item</title>
<!--[if gte mso 9]><xml>
<mso:CustomDocumentProperties>
<mso:TemplateHidden msdt:dt="string">0</mso:TemplateHidden>
<mso:ManagedPropertyMapping msdt:dt="string">ListID', 'ListItemID', 'ContentTypeId', 'Link URL': 'Path', 'Property 1': 'Title', 'Property 2': 'RefinableString00', 'Property 3': 'RefinableString01', 'Property 4': 'RefinableString02'
<mso:MasterPageDescription msdt:dt="string">This is the item row template, use this template in combination with the List Table Control template.</mso:MasterPageDescription>
<mso:ContentTypeId msdt:dt="string">0x0101002039C03B61C64EC4A04F5361F385106603</mso:ContentTypeId>
<mso:TargetControlType msdt:dt="string">#SearchResults;#Content Web Parts;#</mso:TargetControlType>
<mso:HtmlDesignAssociated msdt:dt="string">1</mso:HtmlDesignAssociated>
<mso:HtmlDesignConversionSucceeded msdt:dt="string">True</mso:HtmlDesignConversionSucceeded>
<mso:HtmlDesignStatusAndPreview msdt:dt="string">https://demo/_catalogs/masterpage/Display Templates/Content Web Parts/Item_List_Item.html, Conversion successful.</mso:HtmlDesignSt
<mso:CrawlerXSLFile msdt:dt="string"></mso:CrawlerXSLFile>
<mso:HtmlDesignPreviewUrl msdt:dt="string"></mso:HtmlDesignPreviewUrl>
</mso:CustomDocumentProperties>
</xml><![endif]-->
</head>
```

- Change the <title> to something more descriptive. This is what users will see when selecting an item template in the web part properties pane
- Add the managed properties from the content type
- The names MUST match the managed property value in the search schema

Control Template

```
<html xmlns:mso="urn:schemas-microsoft-com:office:office" xmlns:msdt="uuid:C2F41010-65B3-11d1-A29F-00AA00C14882">
<head>
<title>List Table Control</title>
<!--[if gte mso 9]><xml>
<mso:CustomDocumentProperties>
<mso:TemplateHidden msdt:dt="string">0</mso:TemplateHidden>
<mso:MasterPageDescription msdt:dt="string">This is the table layout control template.</mso:MasterPageDescription>
<mso:ContentTypeId msdt:dt="string">0x0101002039C03B61C64EC4A04F5361F385106601000CEA54CD9CE6C64A82191969F3DF8A0A</mso:ContentTypeId>
<mso:TargetControlType msdt:dt="string">#Content Web Parts;#</mso:TargetControlType>
<mso:HtmlDesignAssociated msdt:dt="string">1</mso:HtmlDesignAssociated>
<mso:HtmlDesignConversionSucceeded msdt:dt="string">True</mso:HtmlDesignConversionSucceeded>
<mso:HtmlDesignStatusAndPreview msdt:dt="string">https://[redacted]/demo/_catalogs/masterpage/Display Template
<mso:CrawlerXSLFile msdt:dt="string"></mso:CrawlerXSLFile>
<mso:HtmlDesignPreviewUrl msdt:dt="string"></mso:HtmlDesignPreviewUrl>
<mso:ManagedPropertyMapping msdt:dt="string"></mso:ManagedPropertyMapping>
</mso:CustomDocumentProperties>
</xml><![endif]-->
</head>
```

```
// Retrieve the property mappings
var cc = ctx.ClientControl;
var properties;
if (!Src.U.n(cc)) {
    // The property mappings variable must manually be maintained for the Search Results WP. Use the same mappings as in the item template.
    var propertyMappings = "ListID,ListItemID,ContentTypeId,Link URL:Path,Property 1:Title,Property 2:RefinableString00,Property 3:RefinableString01,Property 4:RefinableString02,Property 5:
    if (!Src.U.n(propertyMappings) && !Src.U.w(propertyMappings)) {
        properties = Src.Result.parsePropertyMappingsString(propertyMappings);
    }
}
```

Property Mappings

- The mappings that you specify on the Item template populate the property mapping in the web part properties
- These must match what is in the mapping properties element of the item template

The screenshot shows a SharePoint web part configuration interface. The main area displays a 'Project Dashboard' web part with the following table:

Project Title	Project Status	Division
Data Center Migration	Active	Central
OIT Migration	Pending	Central
O365 Governance Plan	Active	Central
ProjectSiteTemplate	Open	
Teams Rollout	Active	East
Exchange Migration	Active	West

Below the table are two other web parts: 'Tasks Assigned To Me' and 'Issues Assigned to Me'. The 'Issues Assigned to Me' web part displays the following table:

Issue Title	Project Title	Issue Status	Assigned To
Data center access	Datacenter Migration		Steve Pucelik

The 'Properties' pane on the right shows the configuration for the 'Project Dashboard' web part. The 'Property Mappings' section is highlighted in red and contains the following settings:

- Link URL: Path
- Property 1: Title
- Property 2: RefinableString00
- Property 3: RefinableString01

Refiners

- The Refinable* managed properties will be available in addition to the SharePoint reserved properties
- Review the Sample Values to make sure you have the right one
- Provide a friendly name for the Display name

Refinement configuration for 'Project Refiner'

The refiners will be displayed in the order listed.

Available refiners

AttachmentType
Audiences
AutoTagClassificationId
BaseOfficeLocation
ClassificationLastScan
ClassificationType
companies
ComplianceTag
ComplianceTagWrittenTime
ContentSource

Add >

< Remove

Move up

Move down

Selected refiners

FileType
contentclass
ContentTypeId
WebTemplate
DisplayAuthor
LastModifiedTime
RefinableString00
RefinableString01

Configuration for: RefinableString01

Sample values	Central	(3)	Show more values
	East	(1)	
	West	(1)	

Type Text

Aliases

Display name

Display template

Sort by

Sort direction

Maximum number of refiner values:

Power BI

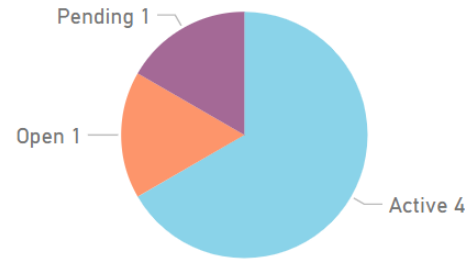
Project Summary

Project Tracker

Last Refreshed

9/19/2018 10:34:59 PM

Project Status



Total Projects

6

Author

- Lisa Pucelik
- Steve Pucelik

Project Detail

Title	Author	Project Status	Project Description	LastModifiedTime
Data Center Migration	Steve Pucelik	Active		8/23/2017 7:07:29 PM
O365 Governance Plan	Steve Pucelik	Active		9/19/2018 10:57:08 PM
Exchange Migration	Steve Pucelik	Active		10/16/2018 2:42:20 PM
Teams Rollout	Lisa Pucelik	Active		10/17/2018 3:52:03 PM
ProjectSiteTemplate	Steve Pucelik	Open	<div class="ExternalClass54E73E527A4F40218085483DE72DFE4F">DO NOT USE </div>	3/14/2018 9:25:42 PM
OIT Migration	Steve Pucelik	Pending		12/18/2017 10:53:34 AM

Task Summary

Task Status



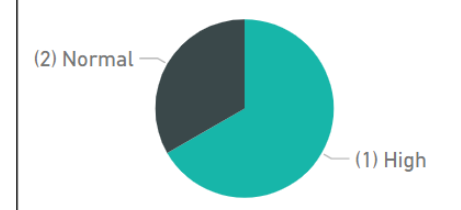
Task Assigned To

- AssignedTo
- (Blank)
 - Lisa Pucelik
 - Steve Pucelik

Project Site

- SiteTitle
- Datacenter Migration
 - Teams Rollout

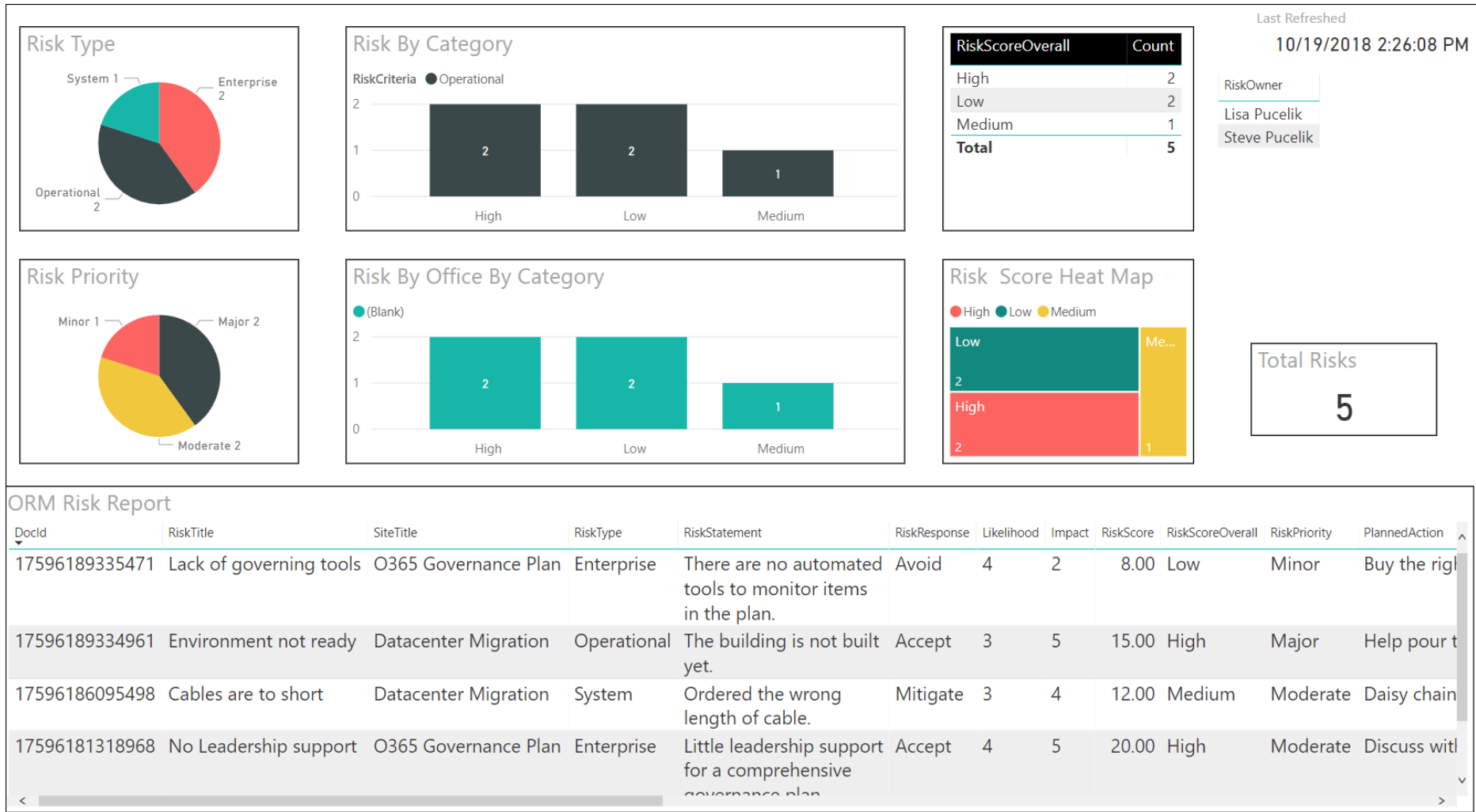
Task Priority



Task Details

SiteTitle	Title	AssignedTo	Status	DueDate	Priority	Created	Desc
Teams Rollout	Deploy desktop install to customers		Not Started	2018-10-30T07:00:00Z	(2) Normal	10/19/2018 2:24:05 PM	
Datacenter Migration	Develop WBS	Steve Pucelik	In Progress		(1) High	10/17/2018 9:28:25 AM	
Teams Rollout	Enable within the tenant	Lisa Pucelik	Not Started	2018-10-29T07:00:00Z	(1) High	10/19/2018 2:23:55 PM	

Risk Summary



It's all REST based

- Each data source has a parameter for the REST query you want to execute
- Querystring based parameters against the search API
- Query parameter is the KQL
- SelectProperties – managed properties that become “table” fields

https://<SiteCollection>/Projects/_api/search/query?querytext='contenttype:ProjectStatus'&selectproperties='Path,Filename,Title,Author,ProjectTitleOWSTEXT,ProjectStatusOWSCHCS,ProjectPriorityOWSCHCS,DeadlineOWSDATE,AssigneeOWSUSER,CurrentUpdateOWSMTXT,PercentCompleteOWSNMBR,ProjectStartDateOWSDATE,Created,LastModifiedTime,ProjectEndDateOWSDATE,WebTemplate,ProjectRequestor123OWSUSER,ProjectDescriptionOWSMTXT'&rowlimit=500

The screenshot displays a SharePoint REST API interface. On the left, a list of queries is shown under the heading "Queries [21]". The list includes:

- ProjectStatusRESTQuery (...)
- ProjectStatusSPSearch
- ProjectStatusSearchResu...
- ProjectStatusKeyValue_C...
- ProjectStatusSearchResult
- LastRefresh
- RiskRESTQuery (https://p...
- RiskSPSearch
- RiskSearchResults_Stage
- RiskSearchResult
- RiskKeyValue Count
- IssuesRESTQuery (https://...
- IssuesSPSearch
- IssuesSearchResults_Stage
- IssuesSearchResult
- IssuesKeyValue Count
- TaskRESTQuery (https://p...
- TaskSPSearch
- TaskSearchResults_Stage
- TaskSearchResult
- TaskKeyValue_Count

On the right, the "Current Value" section shows a text input field containing the URL: `https://sites/demo/Projects/_api/search/query?querytext='content'`. Below the input field is a "Manage Parameter" button.

Transforming the JSON Response

The screenshot displays the Power BI interface. On the left, a list of queries is shown, with 'ProjectStatusSPSearch' selected. The main area shows a table with 16 rows and 2 columns: 'Key' and 'Value'. The 'Key' column contains various project-related fields, and the 'Value' column contains their corresponding values. On the right, the 'QUERY SETTINGS' pane is open, showing the query name 'ProjectStatusSPSearch' and a list of applied steps: Source, Navigation, Converted to Table, Expanded Column1, Expanded Column1.Cells, Expanded Column1.Cells.results, Removed Other Columns, and Renamed Columns.

Key	Value
1 Rank	16.3854541778564
2 DocId	621347783
3 Path	/Projects/DataC...
4 Filename	DispForm.aspx
5 Title	Data Center Migration
6 Author	Steve Pucelik
7 ProjectTitleOWSTEXT	null
8 ProjectStatusOWSCHCS	Active
9 DeadlineOWSDATE	null
10 PercentCompleteOWSNMBR	null
11 Created	2017-08-23T23:07:29.0000000Z
12 LastModifiedTime	2017-08-23T23:07:29.0000000Z
13 WebTemplate	null
14 ProjectDescriptionOWSMTXT	null
15 OriginalPath	/Projects/DataC...
16 ProjectPriorityOWSCHCS	null

- All REST responses are in the JSON format.
- Within Power BI we can “tablefy” the results (get it into rows and columns)
- The resulting table can be used in our dashboards and reports

Transforming the JSON Response

The screenshot displays the Power BI Desktop interface. On the left, a list of 21 queries is shown, with 'ProjectStatusSearchResult' selected. The main area shows a table with 6 rows and 4 columns: Path, Title, Author, and Project Status. The 'Project Status' column is highlighted in yellow. On the right, the 'QUERY SETTINGS' pane is open, showing the 'APPLIED STEPS' section with a list of transformations including 'Removed Columns1'.

	ABC 123 Path	ABC 123 Title	ABC 123 Author	ABC 123 Project Status
1		/demo/Projects/DataC... Data Center Migration	Steve Pucelik	Active
2		/demo/Projects/OITMi... OIT Migration	Steve Pucelik	Pending
3		/demo/Projects/O365G... O365 Governance Plan	Steve Pucelik	Active
4		/CommunicationSite/pr... ProjectSiteTemplate	Steve Pucelik	Open
5		/demo/Projects/Teams... Teams Rollout	Lisa Pucelik	Active
6		/demo/Projects/Excha... Exchange Migration	Steve Pucelik	Active

QUERY SETTINGS

PROPERTIES

Name
ProjectStatusSearchResult

[All Properties](#)

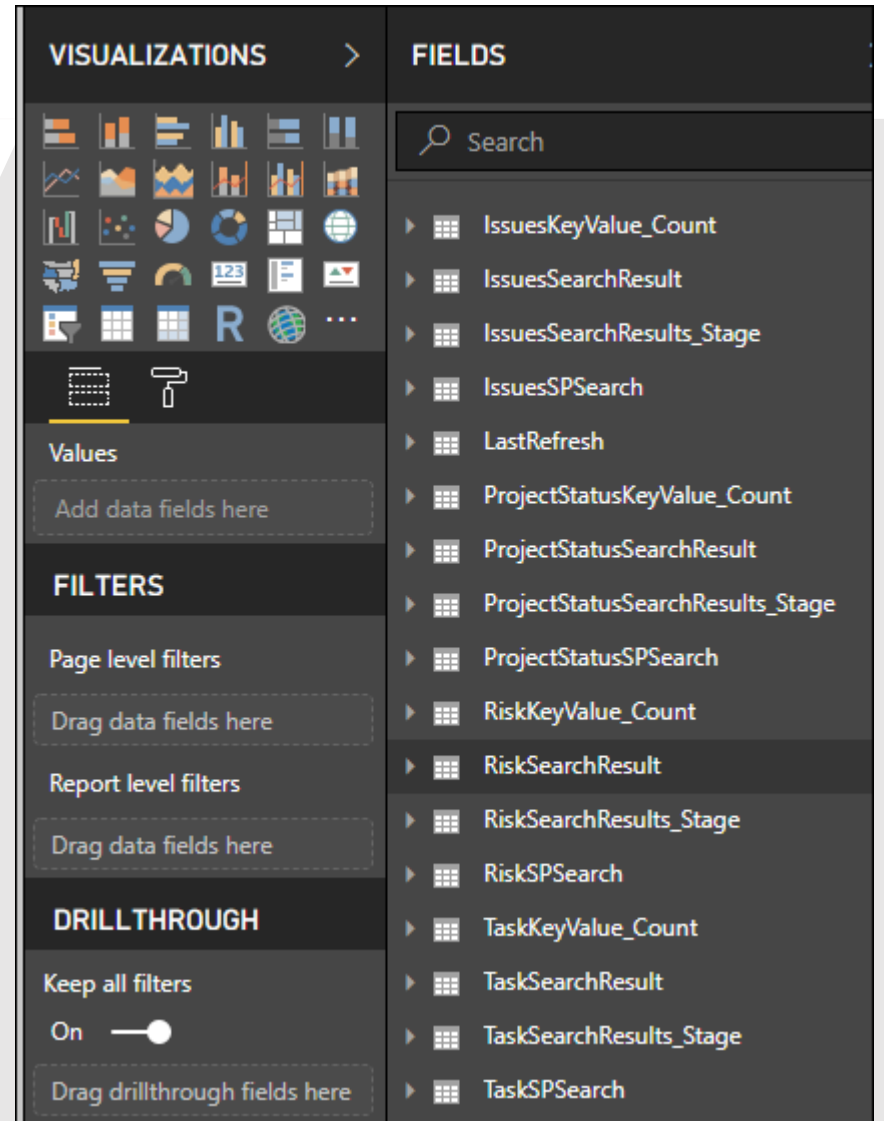
APPLIED STEPS

- Source
- Added Index
- Inserted Integer-Division
- Removed Columns
- Pivoted Column
- Removed Other Columns
- Changed Type3
- Changed Type2
- Split Column by Delimiter
- Changed Type
- Renamed Columns
- Changed Type1
- Split Column by Delimiter1
- Changed Type4
- Renamed Columns1
- Removed Columns1**

- End result is rows and columns
- Use this in your Power BI dashboards and reports
- Power BI takes care of all the “plumbing”. All you need to do is get the REST query right

Work with the results

- Focus on using the *SearchResult “table” for your dashboards and reports
- Normal PowerBI functionality applies
- Simply refresh the data sources for current results from the search index.



References

- [Display Templates in GitHub](#)
- [KQL Cheat Sheet](#)
- [PowerBI template for any REST query](#)

Questions

