MODULE 11 Finding Information Using Search

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Module Overview

This module explains how to find information quickly and easily. Users can use the Search function within SharePoint 2016 to search across a variety of content sources including documents, people and line of business applications with little to no additional configuration. With a small amount of effort, organizations can create a robust search experience that is in alignment with their business needs.

After completing this module, students will be able to:

• Create an enterprise Search Center
• Customize the Search Center

Lesson 1: Exploring the Search Features in SharePoint 2016

Many organizations lose a significant amount of productivity to people who are inefficiently looking for the information they need. SharePoint has a number of features to enhance the “findability” of content. Findability is defined as the effort required to locate desired information within a larger repository of content.

Within the realm of information architecture, site collection administrators can make design decisions to enhance the findability of content. Site structure identifies a logical relationship between containers of information such as libraries and lists. Metadata requirements enhance the value of the content by associating keywords and other properties with the data. But when users who are new to the environment have yet to learn the site structure and metadata available, the SharePoint Search feature can quickly connect them with the information for which they are looking. The easier it is to find content; the less time is spent looking for it. This allows for greater productivity and less frustration on the part of the users.

Managing the search service in SharePoint is done at two levels. At the server level, the server administrator schedules the crawl and query processes to build a full-text index of the site content to be included in the search results. At the site level, site collection administrators can choose to “opt out” their sites as well as configure how the search results are processed and displayed for their users. This module will focus on the tasks of the site collection administrator.

Search Components

The following table describes the different components that work together to provide and support the SharePoint search service:
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SharePoint Indexing Service</td>
<td>This service receives the processed items from the content processing component and writes them to the search index. It also handles incoming queries, retrieves information from the search index and sends back the result set to the query processing component.</td>
</tr>
<tr>
<td>Promoted Results</td>
<td>Formerly called Best Bets, these appear above ranked results.</td>
</tr>
<tr>
<td>Metadata</td>
<td>This information is associated with content that resides within SharePoint that is picked up by the search.</td>
</tr>
<tr>
<td>Result Sources</td>
<td>These limit search results to certain content or to a subset of search results and are formerly known as Search Scopes.</td>
</tr>
<tr>
<td>Search Visibility</td>
<td>This is the ability to control what content is visible within search results.</td>
</tr>
<tr>
<td>Metadata Refinement (Faceted Search)</td>
<td>This includes additional properties on content allowing visitors to narrow down their results by clicking on an item.</td>
</tr>
<tr>
<td>Boolean and Wildcard</td>
<td>These query syntaxes allow visitors to broaden or narrow their search.</td>
</tr>
</tbody>
</table>

This section will discuss specific components in greater detail.

- **Search Site**: This is a special site which displays the search results as returned from the server. It can be customized to provide a more targeted experience for the user.

- **Metadata Refinement**: This allows for displayed search results to be pruned based on a keyword selected by the user.

- **Crawled Properties and Managed Properties**: These allow for the refinement of the search query issued by the user.

**Result Sources**: These can be configured to limit the number of results displayed in the search based on the scope requested or selected by the user.

### Setting Up a Search Site

Searching within SharePoint is much like searching on the internet. A search bar is located in the global navigation area. By default, the search bar will return results located within the same SharePoint site collection.

All results are displayed in a SharePoint site called a Search Center site. There are two different types of search centers depending on which version of SharePoint is installed:

- **Basic Search**: Found in all versions of SharePoint 2016, it supports the ability to search within a single site, list or library.

- **Enterprise Search Center**: Found only in Enterprise installations of SharePoint 2016, it includes the ability to create multiple search center pages and searches across multiple web applications or site collections.
Creating an Enterprise Search Center

1. Navigate to the top level site.
2. Click Settings > Site Settings > Site Collection Administration > Site Collection Features.
3. Click Activate next to the SharePoint Server Enterprise Site Collection features, SharePoint Server Publishing Infrastructure and SharePoint Server Standard Site Collection Features (if not already active).
4. Click Settings > Site Contents.
5. Click new subsite.
6. Type a Title.
7. Type the URL.
8. Click the Enterprise tab.
9. Select Enterprise Search Center as the template.
Creating an Enterprise Search Center

10. Keep the remaining settings set to their default values and then click **Create**.

**Metadata Refinement**

Metadata refinement, also known as faceted search, allows a SharePoint user to further refine the search to single out the information desired. This is automatically available in the left margin of a Search Results window and will offer refinement properties such as:

- Result Type (e.g. file type)
- Author
- Modified Date
- Managed Metadata (if implemented)
**Boolean and Wild Card Search**

SharePoint search supports the ability to use Boolean and wildcards. Boolean search provides SharePoint users with operators such as **And**, **Or** and **Not**. For example, a user could search for **Project and IT**, and would receive both sets of information back. Conversely, if they use “Project” **not** “IT”, the resulting information would exclude information from IT in the Project area.

Microsoft has included the ability to use other operators such as **=**, **<**, **>**, **<=**, **>=**. Taking into account the ability to use metadata refinement, SharePoint users have a much better chance at finding information or people they are looking for.

SharePoint search also supports using keywords or properties within a search query. To do so, the property name must be followed by a colon and then the desired value. For example, if a user enters **Project author:Bob** it will return all items with the keyword **project** and an **author** whose name begins with **Bob**.

**Crawled Properties and Managed Properties**

A crawled property is content or metadata that is extracted from an item during a crawl. A crawled property can be an author, title, subject or custom column associated with an item. Crawled properties are automatically created as content is crawled and indexed. In order to include the content and metadata of crawled properties in the search index, the crawled property must be mapped to a managed property.

Managed properties can have a variety of settings that determine how the contents are shown in search results. The search schema contains the attributes on managed properties and the mapping between crawled properties and managed properties.

Having the ability to customize the search experience allows organizations to create a robust search experience. Crawled properties and managed properties are two elements within the search schema that site collection administrators can customize to control the behavior of the search index. Once crawled properties and managed properties are indexed, they can be used in conjunction with custom result sources, Content Search web parts and more.
Managed properties determine how contents can be shown in search results. They consist of one or more crawled properties. Site collection administrators have the ability to create a new managed property or leverage one of the default properties already created with in SharePoint 2016.

There are many empty default properties for text, date and number attributes. A full listing of default managed properties can be found here: http://tinyurl.com/managed-properties.

Another benefit of managed properties is the ability to map a single managed property to multiple custom columns created by users in their lists and libraries. For example, a site collection administrator can create a managed property of *FiscalYear* and map it to the *Fiscal Year* property in one library, the *FY* property in another and *FiscalYr* in a third list.

Let us use an example of creating a managed property that maps to the Skills column, which is part of a person's profile in SharePoint. The intent of this managed property is to create a custom result source that will help people find experts for a particular skill set.

When creating a new managed property in a site collection, the option to mark the managed property as refinable and sortable are not available. To leverage these features, use one of the unused default managed properties.

1. Navigate to the root of the Learning Lake site collection.
2. Click **Settings > Site Settings**.
3. Click **Site Collection Administration > Search Schema**.
4. Search the Managed property box for the existing property named **refinablestring01**.
Managed Metadata

5. Click the RefinableString01 link to view the properties.

Managed Property Settings Overview

The following table describes the different settings and whether they are available for editing at different administrator levels.

<table>
<thead>
<tr>
<th>Managed property setting</th>
<th>What it does</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Searchable</td>
<td>Enables querying against the content of the managed property. The content of this managed property is included in the full-text index.</td>
<td>If the property is Author, a simple query for Smith returns items that contain the word Smith and items whose author property contains Smith.</td>
</tr>
<tr>
<td>Queryable</td>
<td>Enables querying against the specific managed property.</td>
<td>If the managed property is Author, the query must contain author:Smith.</td>
</tr>
<tr>
<td>Retrievable</td>
<td>Enables the content of this managed property to be returned in search results.</td>
<td></td>
</tr>
<tr>
<td>Allow multiple values</td>
<td>Allows multiple values of the same type in this managed property.</td>
<td>If this is the Author managed property, and a document has multiple authors, each author name will be stored as a separate value in the managed property.</td>
</tr>
<tr>
<td>Refinable</td>
<td>Yes – active: Enables using the property as a refiner for search results in the front end.</td>
<td>If the Author managed property is set to Refinable, it can be used as a refiner in the search front-end.</td>
</tr>
<tr>
<td>Sortable</td>
<td>Yes – active: Enables sorting the result set based on the property before the result set is returned. Yes – latent: Enables switching sorting to active later without having to do a full re-crawl. Both options require a full crawl to take effect.</td>
<td>Sortable is used for large result sets that cannot be sorted and retrieved at the same time.</td>
</tr>
<tr>
<td>Alias</td>
<td>This setting defines an alias for a managed property to use the alias instead of the managed property name in queries and in search results.</td>
<td>Alias bypasses creating a new managed property.</td>
</tr>
</tbody>
</table>


6. Scroll to the Mappings to crawled properties.
7. Type **Classification** in the Alias box.

8. Scroll to the **Mappings to crawled properties**.

9. Click the **Add a Mapping**.

![Add a mapping](image)

10. In the **filter on a category** drop-down menu, select **SharePoint**.

![Crawled property selection](image)

11. In the search for crawled property, type **classification** and click **Find** to filter the list.

12. Click to select the property **ows_Classification**.

13. Click **OK**.

14. Scroll to the bottom of the page and click **OK**.

**Result Sources**

Result sources are used to scope search results, narrowing them down by a rule such as **From this site only** or **People search**. Result sources can associate queries to external sources, meaning that the search query can be forwarded to internet search engines. After defining a result source, the search web parts and query rules can be configured to use a specific result source. Result sources are also useful to restrict search results based on managed properties, thus making it easier for people to narrow the content being searched.

1. Navigate to the root of the Learning Lake site collection.

2. Click **Settings > Site Settings**.

3. Click **Search Result Sources** under **Site Collection Administration**.

![Result Sources](image)
4. Click **New Results Source**.

![Site Collection Administration - Manage Result Sources](image)

**Creating a new result source.**

5. Type a name for the **Results Source**.

6. Under **Protocol**, keep the selection of **Local SharePoint**.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local SharePoint</td>
<td>The default protocol provides results from the search index for this Search service application.</td>
</tr>
<tr>
<td>Remote SharePoint</td>
<td>This result source provides results from the index of a search service in another farm.</td>
</tr>
<tr>
<td>OpenSearch 1.0/1.1</td>
<td>This provides results from a search engine that uses the OpenSearch 1.0 /1.1 protocol.</td>
</tr>
<tr>
<td>Exchange</td>
<td>This provides results from Microsoft Exchange Server.</td>
</tr>
</tbody>
</table>

7. Under **Type**, select **SharePoint Search Results**.

8. In **Query Transform**, click **Launch Query Builder**.

9. Under **Basics**, click **Property filter > Show All Managed Properties**.

![TIP](image)
The list of available managed properties is based upon those defined in the Search Schema.

10. Select **RefinableString01** as the field from the **Property filter** drop-down menu.

11. In the operator field, select **Contains**.

12. In the drop-down to the right of the operator field, select **Manual value** and type **Department** below. Documents tagged with **Department** should show in the preview pane.

13. Click **OK**.
Lesson 2: Configuring Search Settings

The search center that comes with SharePoint requires little configuration. However, with a few adjustments, site collection administrators can create a robust search experience that is tailored to the needs of the organization.

This section will address the following settings:

• Search Web Parts
• Search Visibility
• Search Navigation

Search Web Parts

Recall that web parts are placeholders for content, which is to be displayed on a page. Search web parts are no different. They can be configured to display the search results and other related information, such as Visual Best Bets. The page can be edited, so the web parts can be rearranged on a page. For the most part, site collection administrators and site owners work with the properties of the search web part in order to customize the search experience for their users.

2. Click Settings > Add a page.

3. Type Departments as the page name.

4. Click Create.

5. Locate the Search Results web part and hover over the Web Part menu and click Edit Web Part.

6. Expand the Search Criteria section.

7. Click Change query.

8. Under Select a query, pick the custom result source created earlier.
Selecting a result source

9. Click the **Sorting** tab.

10. Next to **Sort by** select **Rank** for the property.

Sorting query results

11. Click **OK**.

12. Expand the **Settings** section in the web part properties panel.

13. Click the box next to **Show link to search center** in **Search Settings**.

14. Click **OK** in the web part properties to save the changes.

Updating the Refinement Panel

The Refinement Panel is a web part displayed on the left side of the page. It allows visitors to quickly narrow down their search results without having to perform additional searches. For example, if searching through annual reports, there may be a refinement category for *Department* that displays a list of departments. When clicking on a department name, this will narrow the search results further and display only those with a matching department property.

1. Locate the **Refinement** web part.

2. Hover over the **Web Part** menu, and click **Edit Web Part**.
3. Click **Choose Refiners**.

4. Under **Available refiners**, locate **RefinableString01**, and double-click to add it to the **Selected refiners** section. The **Sample values** section should render a small portion of content that matches the refiner.
Refinement configuration

5. To change the order of the items in the refinement panel, select the item and choose the Move Up button.

6. To remove unwanted refiners, click the item and select Remove. It will then be deleted from the Selected refiners section.

Selecting refiners

7. In the Configuration panel, type Classification as the Display name.
This document belongs to Ankur Jain.

ankur.jain@koenig-solutions.com

No unauthorized copies allowed!

Setting a display name

8. Click OK.

9. Click Publish > Publish > Continue to switch out of edit mode and publish the page.

10. Perform a search and test the refiners.

Updating Search Navigation

In a SharePoint 2016 Search Center, end users performing a search have the ability to select several options including: Search Everything, Search People, Search Conversations or Videos. These links take end users to a custom search center page similar to the one created previously. Site collection administrators have the ability to add new links, in the search navigation bar, which will customize pages within the search center site.

Search navigation

Adding a Link to the Search Navigation

1. Click Settings > Site Settings > Search > Search Settings.

2. Next to Configure Search Navigation, click Add Link.
Adding a link to navigation

3. Type *Department* in the **Title** box.

4. Click **Browse** by the **URL** box.

5. Click the **Departments** page to select it.

6. Click **Insert** to add the URL.

7. Click **OK** to add the link.

Creating a navigation link

8. Click the **Department** page link.

9. Select the **Move Up** option to move the link directly below **People**.

Moving a link

10. Click **OK**.

Configure Search Visibility

There are many ways in which search can be configured and customized in SharePoint; however, much of the customization involved with search is configured at the SharePoint administrator level. There are a few things that can be configured to improve search results within the site:

- Define which columns are indexed
- Define whether or not a library, list or site can be searched
• Define what site content should be indexed

• Define what site columns should be excluded from indexing

Indexing Columns

Columns within lists or libraries can request to be crawled by the indexing service. Doing so will improve the responsiveness of lists and libraries with large amounts of data that are using views containing those columns. Only 20 columns can be indexed within a given list or library. There is also the option of doing single or compound indexes for the list or library.

• Single indexes: These are columns that are considered very selective in the information that they contain.

• Compound indexes: These should be used when two filters need to be utilized in Metadata Navigation within the list or library.

1. Navigate to the list or library and click Library or List > Library Settings or List Settings from the Settings group.

2. Scroll to the Columns section and select Indexed columns.

3. Click Create a new index.

4. Choose the Primary column and a Secondary column if applicable.

5. Click Create.
6. Continue the process and create other single or compound indexes.

**Exclude a List or Library**

Excluding allows lists or libraries to be hidden from any type of searching that is available. Because it is done at the list level, it will affect both basic and advanced searches.

1. Navigate to the list or library. Click **Library** or **List > Library Settings** or **List Settings** in the **Settings** group and then click **Advanced Settings**.

2. In the **Search** section, choose whether to make it available in search results, and then click **OK**.

**Excluding a list or library from search**

**Exclude Site Columns**

By default, site columns are indexed by SharePoint. However, columns can be excluded from a particular site for compliance reasons.

1. Navigate to the desired SharePoint site and click **Settings > Site Settings > Search > Searchable columns**.

**Setting searchable columns**

2. Select the specific columns to **Exclude** from the SharePoint index and click **OK**.

**Index a Site**
Indexing a site gives the site administrator the ability to dictate what happens with the site content, ASPX pages and search. If the site’s content does not need to be searched, this feature can be turned off.

1. Navigate to the desire SharePoint site and click **Settings > Site Settings > Search > Search and offline availability**.

2. Choose whether to enable or disable **Indexing Site Content** as well as **Indexing of ASPX Page Content**, and then click **OK**.

### Lab: Configuring an Advanced Search Center

Administrators, for the Learning Lake SharePoint site, have found many individuals are performing regular searches trying to locate documents within various departments. To help individuals narrow their search results to forms documents, it is necessary to set up a result source and configure the Search Center to have a custom page allowing visitors to perform searches for just content tagged as forms.

After completing this lab, you will be able to:

- Create and connect to an Enterprise Search Center
- Create custom Managed Properties
- Create a custom Result Source
- Configure additional refiners

Estimated time to complete this lab: 60 minutes

**Exercise 1: Connecting to a Search Center**

In most environments, an Enterprise Search Center is set up by the server administrator and is maintained centrally. For this lab, you will create and manage a search center at [http://intranet.learninglake.com/search](http://intranet.learninglake.com/search). During this exercise, you will update the Learning Lake Intranet site.
collection to use the newly-created Enterprise Search Center, so that employees performing a search have a more robust search experience.


2. Click **Settings > Site contents**.

3. Below **Subsites**, click **new subsite**.

4. Complete the **New SharePoint Site** form using the following values:
   
   a. **Title**: Custom Search Center
   
   b. **Description**: Customizing the Search experience for Learning Lake users
   
   c. **URL name**: search
   
   d. **Select a template**: Enterprise > Enterprise Search Center

5. Scroll to the bottom, and click **Create**. (This may take a moment.)

6. At the new Search site, click **Settings > Site settings**.

7. In the **Site Collection Administration** section, click **Go to top level site settings**.

8. On the **Site Settings** page, scroll down to the **Search** section and click **Search Settings**.

9. In the **Search Center URL** box, type **http://intranet.learninglake.com/search/pages**
Exercise 2: Creating a Managed Property

Learning Lake has a custom document content type that contains a Managed Metadata column, allowing content contributors to tag their documents with departmental information. In order to improve the search experience, a managed property needs to be configured to map to the Managed Metadata column, so that a custom result source can help people find documents tagged for departments.

1. Ensure you are on the Learning Lake Intranet Site settings page.
2. In the Site Collection Administration section, click Search Schema.
3. In the Managed property box, type RefinableString01 and click the green arrow to search for this property.
4. Click RefinableString01 under Property Name.
5. Scroll to the Alias section and in the Alias box, type Classification.
6. Scroll further to the **Mappings to crawled properties** section and click **Add a Mapping**.

7. From the **Filter on a category** drop-down, select **SharePoint**.

8. In the **Search for crawled property** box, type **classification** and click **Find** to filter the list.

9. Click to select the property **ows_Document_x0020_Classification**.

10. Click **OK**.

11. Scroll to the bottom of the page and click **OK**.

**Exercise 3: Creating a Result Source**

Learning Lake would like to offer employees the ability to search for content tagged with a department classification, instead of conducting a broad search across all lists, libraries and people. A custom result source allows Learning Lake to restrict the search results to only content tagged with the department.

1. Click **Settings > Site settings**.

2. Under **Site Collection Administration**, click **Search Result Sources**.

3. Click **New Result Source**.

4. Complete the form using the following:
   a. **Name**: **Category Results**
   b. **Protocol**: **Local SharePoint**
   c. **Type**: **SharePoint Search Results**

5. In **Query Transform**, click **Launch Query Builder**.

6. Under **Basics**, click **Property filter > Show all managed properties**.
7. Select RefinableString01 under the Property filter drop-down.

8. Below the Property filter drop-down, there are two additional drop-downs for operator and value. In the operator field, select Contains.

9. In the Select value drop-down, select Manual Value and type Forms in the box below.

10. Click the Add property filter button.

11. Click Test query. Documents, which were previously tagged as forms, should appear in the Search Result Preview pane on the right.

12. Click OK to save the query.

13. Scroll to the bottom, and click Save to save the result source.
Exercise 4: Configuring the Search Center

The Enterprise Search Center can be customized with a page focused on a specific subset of results.

1. Navigate to the Search Center home page (http://intranet.learninglake.com/search) by clicking the Custom Search Center link in the global navigation.

2. Click Settings > Add a page.

3. Type Documents as the page name and click Create.

4. In the Main Zone, locate the Search Results web part. Hover over the web part menu and click Edit Web Part.

5. In the web part properties, under the Search Criteria section, click Change query.
6. In the **Select a query** drop-down, select **Category Results (Site Collection)**.

![Image](https://skillpipe.com/#/reader/urn:uuid:9e691a33-42d3-4176-b322-412dee76a30f@2022-02-23T14:00:00Z/content)

7. Click the **Sorting** tab.

8. In the **Sort by** drop-down, select **Rank** as the property.

![Image](https://skillpipe.com/#/reader/urn:uuid:9e691a33-42d3-4176-b322-412dee76a30f@2022-02-23T14:00:00Z/content)

9. Click **OK**.

10. Expand the **Settings** section in the web part properties panel.

11. Ensure the box next to **Show advanced link** is selected.

12. Click **OK** in the web part properties to save the changes.

### Exercise 5: Updating the Refinement Panel

The refinement panel in the Enterprise Search Center allows visitors to quickly narrow down their search results without having to perform additional searches.

1. Locate and hover over the **Refinement** web part in the **Navigation Zone** on the left side.

2. Click the web part menu and select **Edit Web Part**.
3. Click the option **Choose Refiners**.

4. Under **Available refiners**, locate the managed property **RefinableString01** and double-click to add it to the **Selected refiners** section. The **Sample values** section should render a small portion of content that matches the refiner.
5. In the list of **Selected refiners** on the right, select **WebTemplate** and click **Remove**.

6. Use the **Move up** button to bring **RefinableString01** to the second position on the right. Your list should look like this:

![Configuration for RefinableString01](image)

7. With **RefinableString01** highlighted, in the **Configuration for** panel, type **Classification** as the **Display Name**.

![Configuration for RefinableString01](image)

8. Click **OK** to save the changes to the refiners.

9. Scroll down and click **OK** to save the changes to the web part properties.

10. On the ribbon, click **Publish > Publish** and click **Continue** to save and publish the page.

11. To test the refiners, in the search box type **forms** and press **[Enter]**. Note the **Classification** refiner appears on the left.
12. Click the Payroll refiner to narrow down the results.

13. Click the All refiner in the Classification section to see all the results again.

Exercise 6: Updating Search Navigation

In order to help individuals perform a specific search for documents by result source, a link to the Documents search page needs to be added.

1. Navigate to the Enterprise Search Center home page (http://intranet.learninglake.com/search) by clicking the SharePoint icon.

2. Click Settings > Site settings.

3. In the Search section, click Search Settings.

4. Next to the Configure Search Navigation, click Add Link.

5. Type Classification in the Title box.

6. Click Browse in the URL box.

7. In the left pane, expand Custom Search Center and select Pages.

8. In the right pane, click Documents.aspx and click Insert to add the URL.
9. Click **OK** to add the link.

10. Click the **Classification** page link.

11. Use the **Move Up** option to move the **Classification** link directly below **People**.

12. Scroll to the bottom and click **OK**.

13. Click the SharePoint logo to return to the main page of the Enterprise Search Center.

14. To test the new link, type **benefits** in the search box and press **[Enter]**. Notice how many search results are returned. Notice also that the **Classification** refiner does not appear on the left.
15. To narrow down the search results to documents with a classification, click **Classification** just below the search box. Notice that the **Classification** refiner appears this time.