Edit

Build an AI-Powered Search System by Using Azure AI Search

Challenge Overview

Understand the scenario

You are a Developer for Hexelo, an organization that needs to build an AI-powered search system by using Azure AI Search.

In this Challenge Lab, you will build an AI-powered search system. First, you will set up the Azure AI Search Service. Next, you will upload data to the index by using a sample dataset, and then you will configure search scoring and ranking. Finally, you will add AI-Powered result summaries.

Navigating the Challenge Lab

▼ Understanding a Cloud Slice

Your Challenge Lab is using a cloud slice that reflects a dynamic, constantly evolving cloud environment. A cloud slice is a subset of a cloud platform subscription that has been assigned to a user account which was provisioned for you to use for the duration of this Challenge Lab. It provides temporary access to a subset of resources available in a cloud subscription so that you can learn the concepts without having to configure your own subscription. A cloud slice has restrictions on the types of administrative activities that are allowed.

As you complete your Challenge Lab, you may find that the provided guidance is not identical to what you encounter in your cloud slice environment. If you encounter a difference between your cloud slice and the Challenge Lab instructions, please let us know by submitting feedback directly to Challenge Labs feedback so that we may update the content in as timely a manner as possible.

▼ Quick tips for navigating the Challenge Lab instructions.

Select the Copy to Clipboard icon to copy the green text.

Select the Type Text icon to insert the green text directly into the Challenge Lab environment.

An Alert tells you that a task requires extra care.

A Note provides additional helpful information for completing a task.

A Hint will guide you through a portion of the Challenge Lab.

A Knowledge block provides a deeper level of knowledge into a subject. It is a great way to solidify your understanding, but it is not strictly necessary to complete the Challenge Lab.

New to Challenge Labs? Click here to learn more.

Set up the Azure AI Search Service

Hints Enabled

No Yes

⚠ **Note About Evolving Technology**

Azure AI technologies are constantly evolving as Microsoft continues to update, refine, and improve its tools and interfaces. As a result, you may notice slight differences between the instructions in this lab and what you see on your screen. Rest assured, we are actively working to keep all tutorials up to date with the latest features and interfaces. We appreciate your patience and understanding, and we apologize for any inconvenience this may cause.

- Sign into the virtual machine as **Admin** using T Passw0rd! as the password.
- Open **Microsoft Edge**, go to T https://portal.azure.com, sign in to the Microsoft Azure portal as T {USERNAME} using T {PASSWORD} as the password, and then dismiss all prompts.

Expand this hint for guidance on signing into the Microsoft Azure portal.

- On the Windows taskbar, in Search, enter **Edge**, and then select **Microsoft Edge** to open a new browser.
- In the Address bar, enter T https://portal.azure.com, and then select **Enter**.
- In the Sign in dialog, enter T {USERNAME}, and then select **Next**.
- In Enter password, enter T {PASSWORD} and then select **Sign in**.
- Dismiss all prompts.

Want to learn more? Review the documentation on the Azure portal.

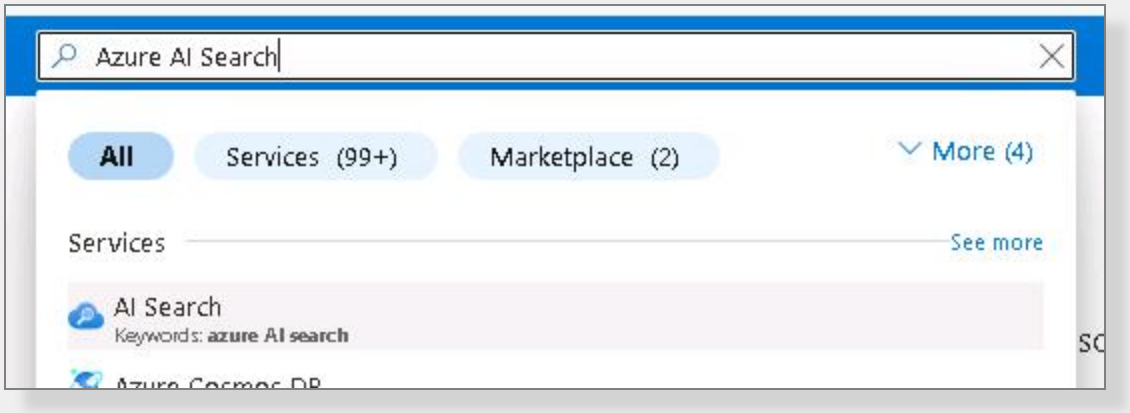
- Create an T Azure AI Search **service** by using the values in the following table. For any property that is not specified, use the default value.

Property	Value
Subscription	**Skillable Original Content Dev 01**

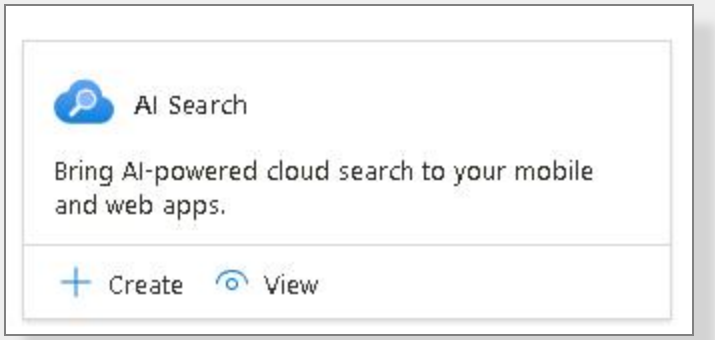
Property	Value
Resource group	**{RESOURCE_GROUP_NAME}**
Service name	T search-realestate{LAB_INSTANCE_ID}
Region	**East US**
Pricing Tier	**Basic**

Expand this hint for guidance on creating an Azure AI Search Service.

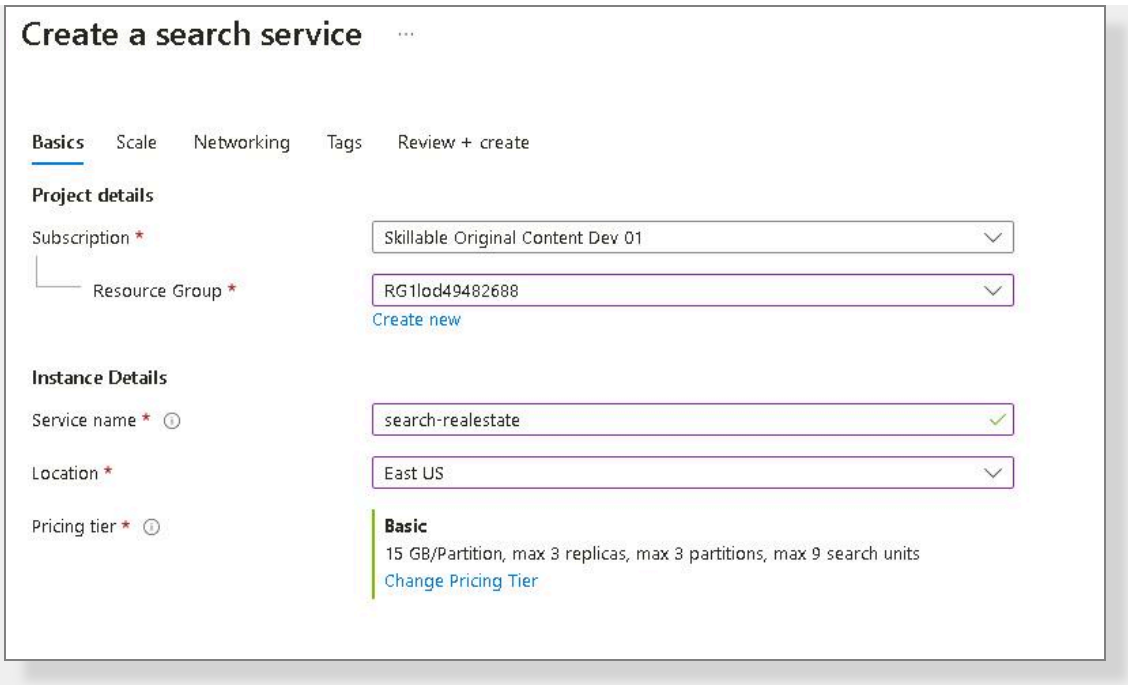
- On the Microsoft Azure portal navigation bar, in *Search resources, services, and docs (G+/)*, enter T Azure AI Search, and then select **AI Search**-*not* Azure AI Search).



- On the Azure AI services blade, on the AI Search page, on the command bar, select **+Create**.



- On the Create a search service blade, on the Basics tab, in Project details, in Resource Group, select **RG1{LAB_INSTANCE_ID}**.
- In Instance Details, in Service name, enter T search-realestate{LAB_INSTANCE_ID}.
- In Location, select **(US) East US**.
- In Pricing tier, select **Change Pricing Tier**.
- On the Select Pricing Tier blade, select **Basic**, and then select **Select**.



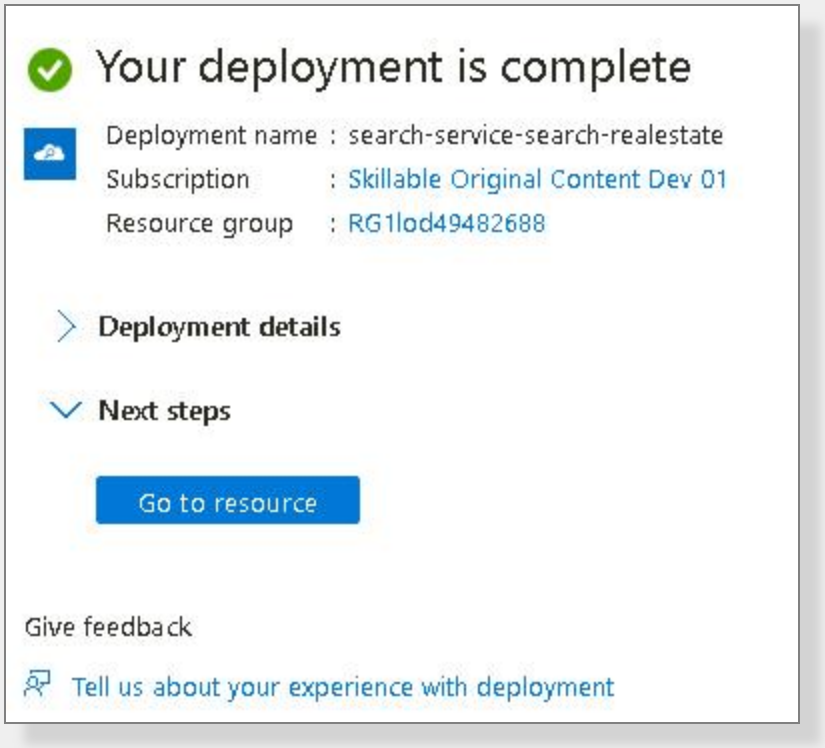
- Select **Review + create**, and then select **Create**.

Want to learn more? Review the documentation on creating an Azure AI Search Service.

- Open the **search-realestate{LAB_INSTANCE_ID}** Search service blade.

Expand this hint for guidance on managing the search service.

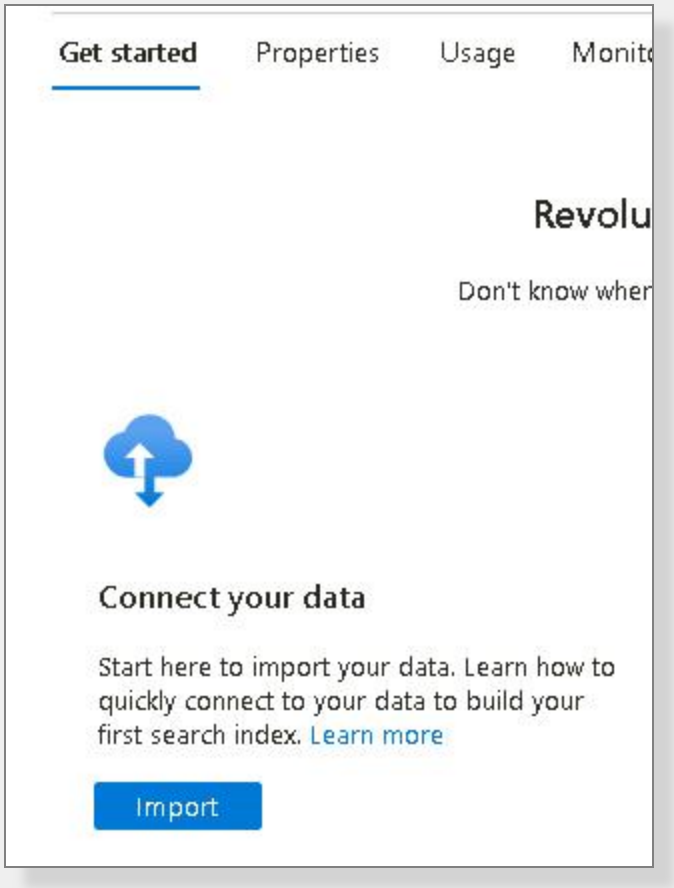
- On the Deployment page, select **Go to resource**.



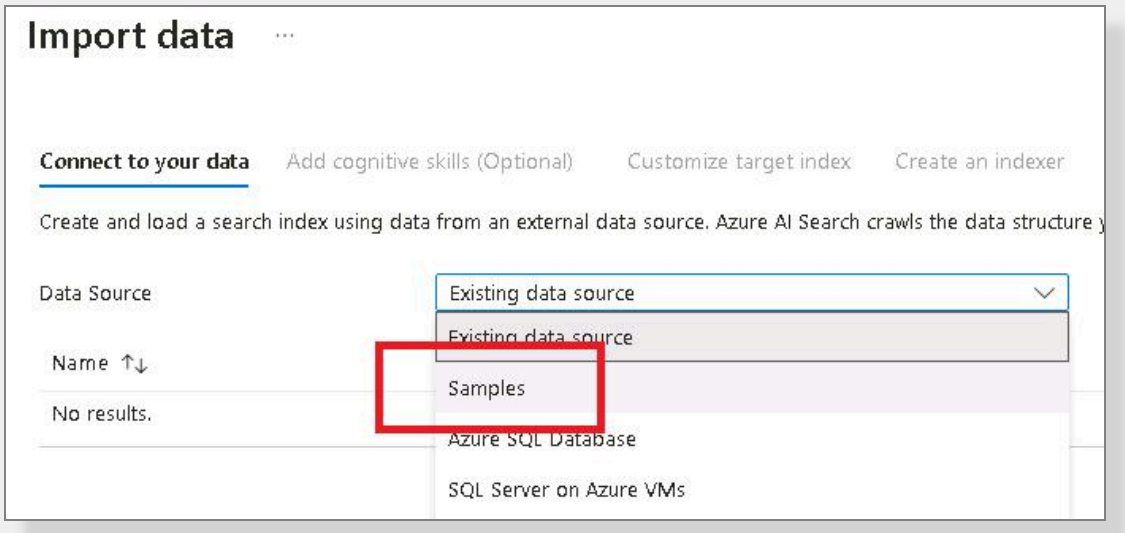
- Import the **realestate-us-sample** Data Source and then connect the data.

Expand this hint for guidance on importing a data source.

- On the search-realestate{LAB_INSTANCE_ID} Search service Overview page, in Get started, in Connect your data, select **Import**.



- On the Import data blade, on the Connect to your data page, in Data Source, select **Samples**.



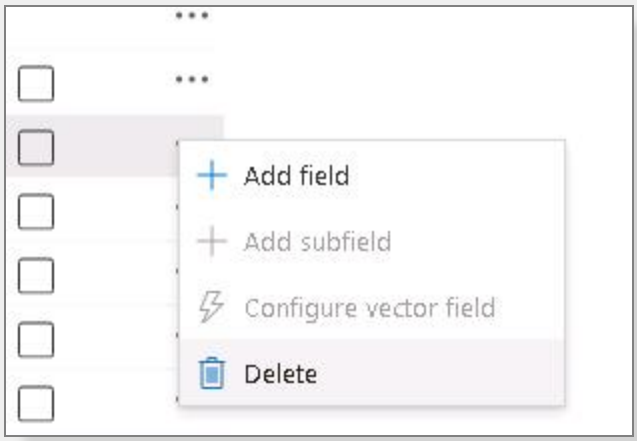
- In the list of data sources, select the **realestate-us-sample**, and then select **Next: Add cognitive skills (Optional)**.

Want to learn more? Review the documentation on importing a data source.

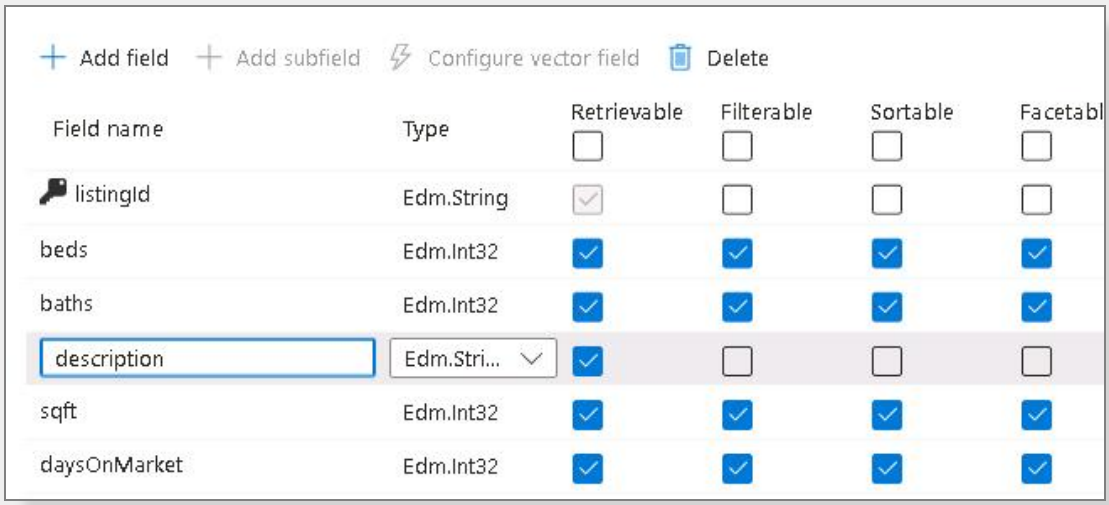
- Create an Index named realestate-us-sample-index, change the Price type to **Edm.Double**, remove all Description fields for other languages, set the remaining Description fields to **Filterable**, **Sortable**, and **Facetable**, and then create an Indexer named realestate-sample-indexer.

Expand this hint for guidance on importing data.

- On the Add cognitive skills (Optional) page, select **Skip to: Customize target index**.
- On the Customize target index page, in Index name, enter realestate-us-sample-index.
- In the list of Indexes, locate the **description_de** field name, select the **Click to open context menu** icon, and then select **Delete**.

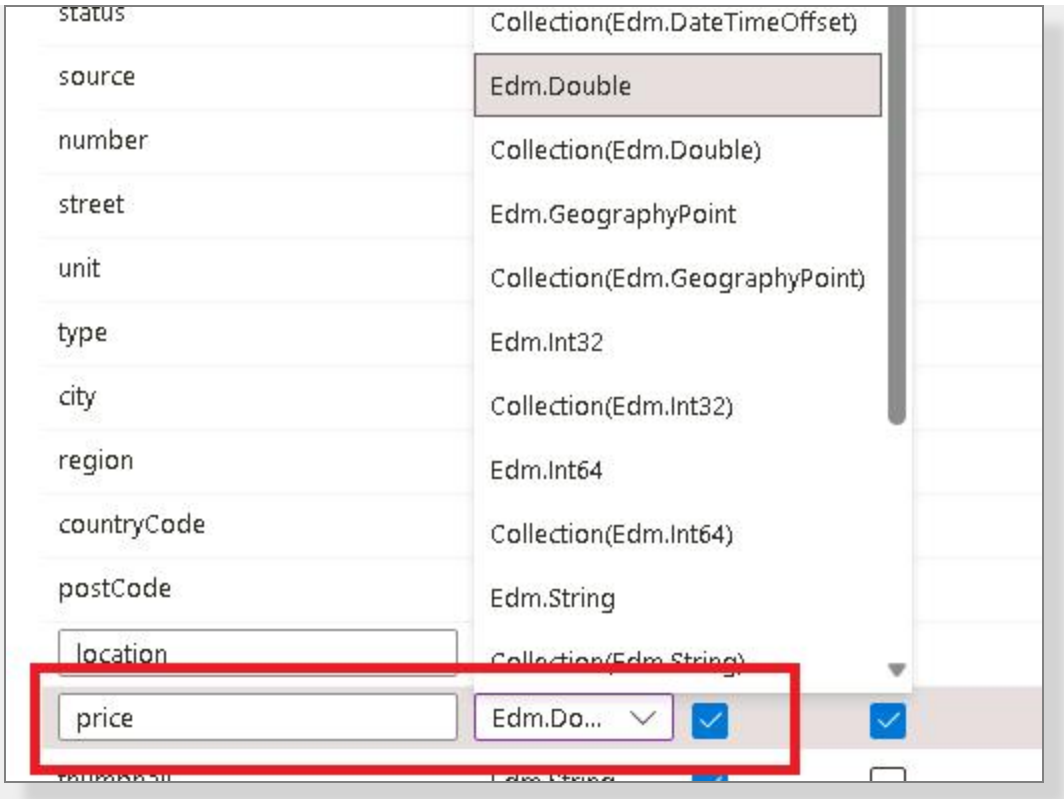


- Repeat the process to delete the following fields: **description_fr**, **description_it**, **description_es**, **description_pl**, and **description_nl**.



- In the **description** field name, select the **Filterable**, **Sortable**, and **Facetable** checkboxes.

- In the **price** field, in Type, select **Edm.Double**, and then select **Next: Create an indexer**.

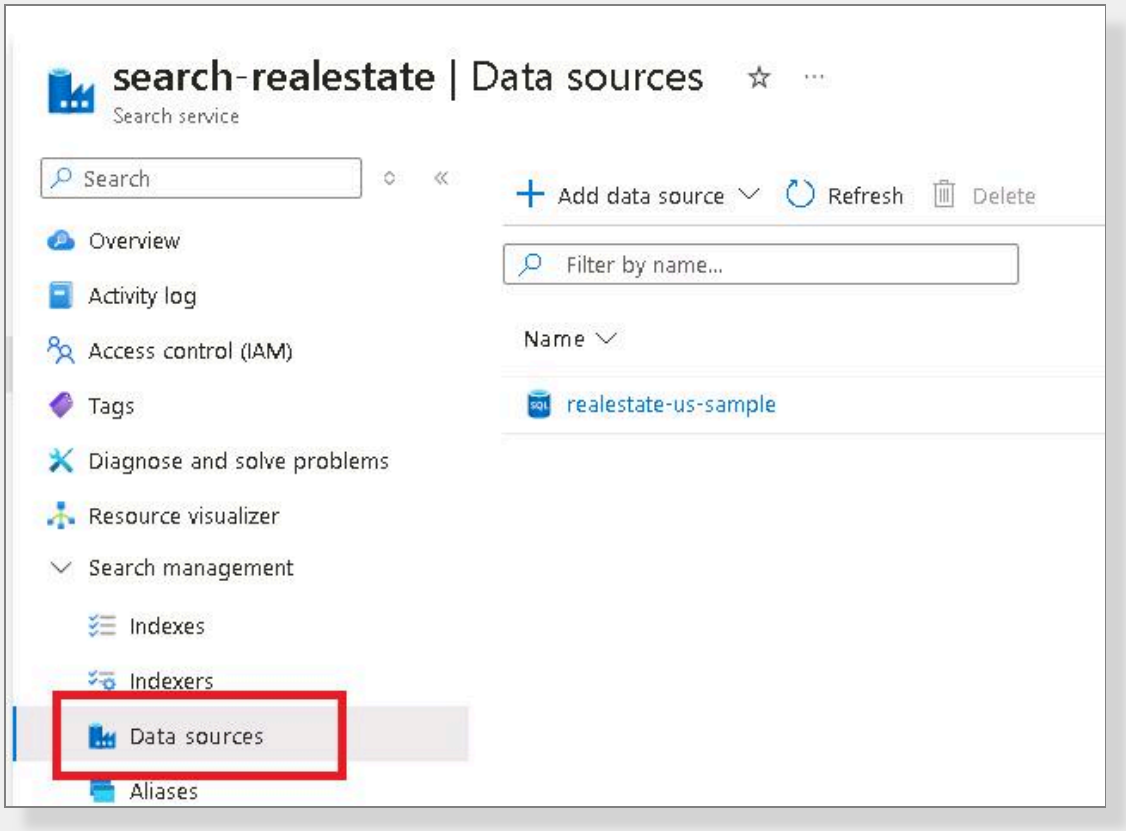


- On the Create an indexer page, in Name, enter realestate-us-sample-indexer, and then select **Submit**.

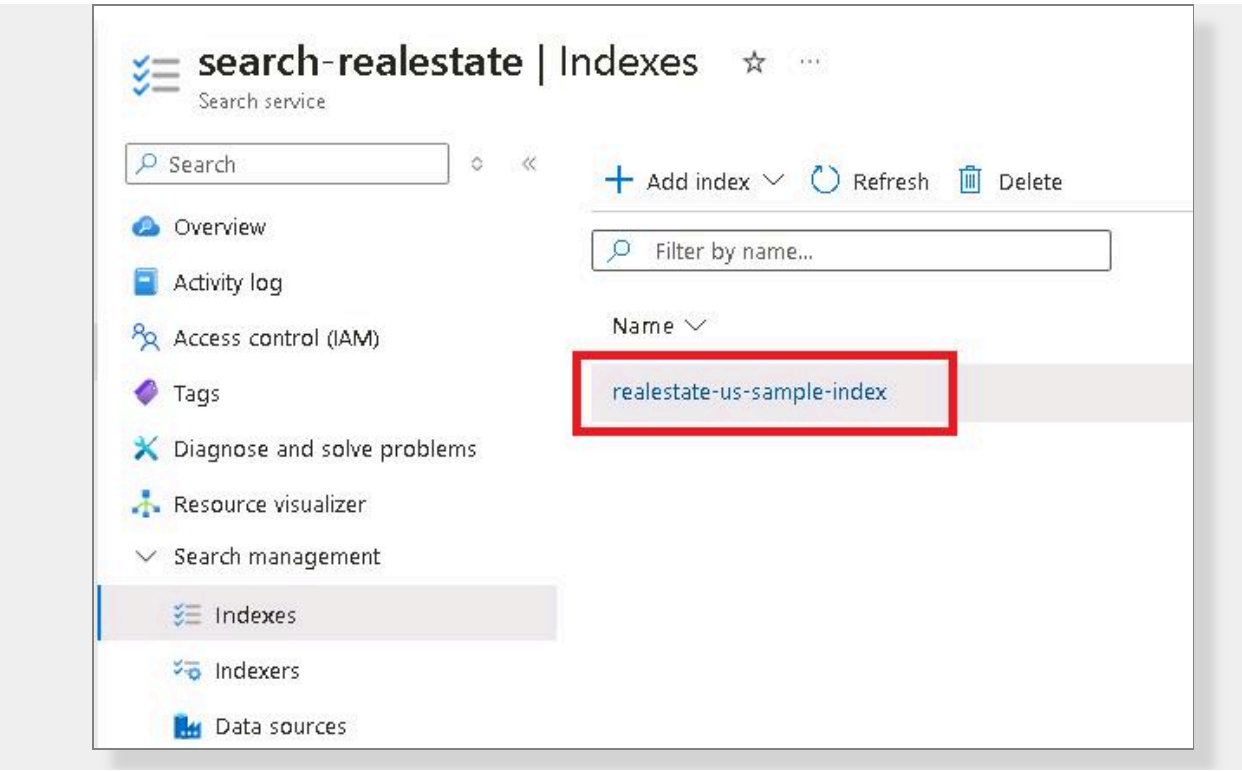
- Confirm that the **realestate-us-sample** data source and **realestate-us-sample-index** index were created.

Expand this hint for guidance on confirming creation of the data source and index.

- On the search-realestate{LAB_INSTANCE_ID} service menu, in Search management, select **Data sources** to display the available Data Sources-you should see the **realestate-us-sample** data source.



- On the search-realestate{LAB_INSTANCE_ID} service menu, in Search management, select **Indexes** to display the available Indexes.

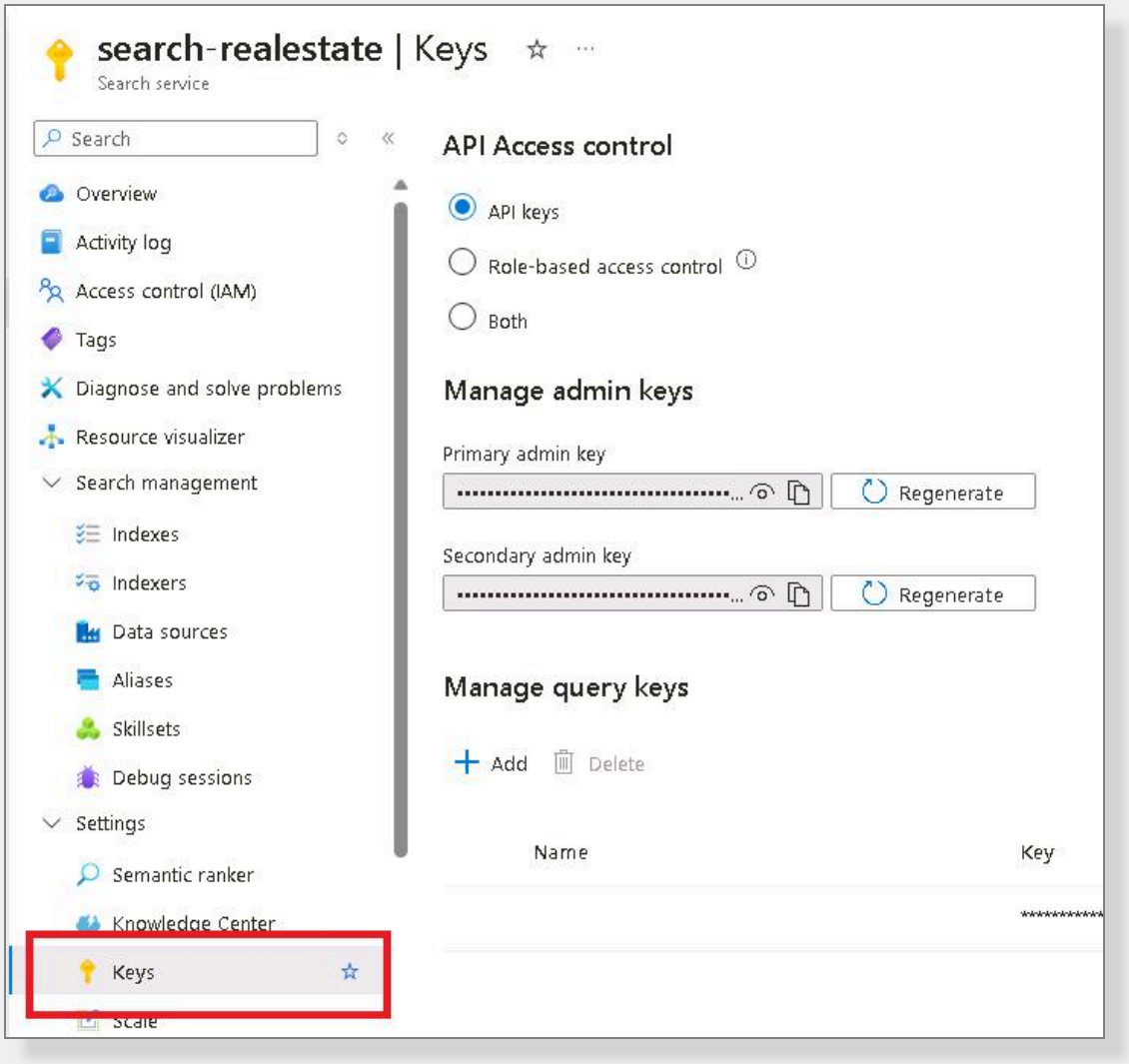


- Record the API Key in the following **API key** text box:

API key

Expand this hint for guidance on locating the API Key.

- On the search-realestate{LAB_INSTANCE_ID} service menu, in Settings, select **Keys**.
- Select the copy-to-clipboard icon to the right of **Primary admin key** and then paste the copied KEY into the **API Key** text box in the Challenge Lab instructions.



Check your work

Verify

Perform a basic search query

Hints Enabled

No Yes

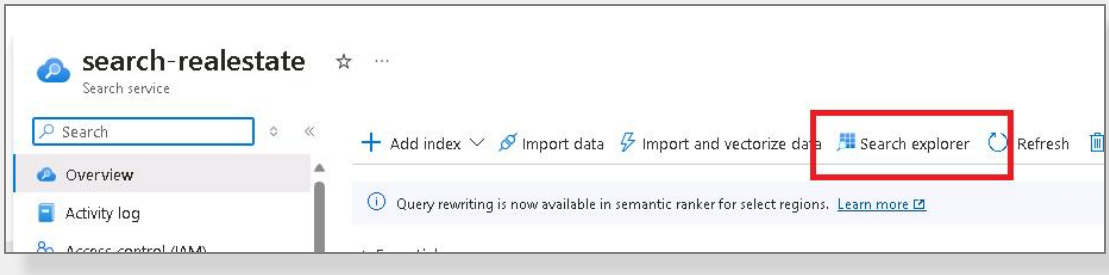
- Retrieve apartment listings from the **realestate-sample** data set by using the following query, and then record the **odata.count** from your search in the following **Apartment odata.count** text box:

```
search=apartment
```

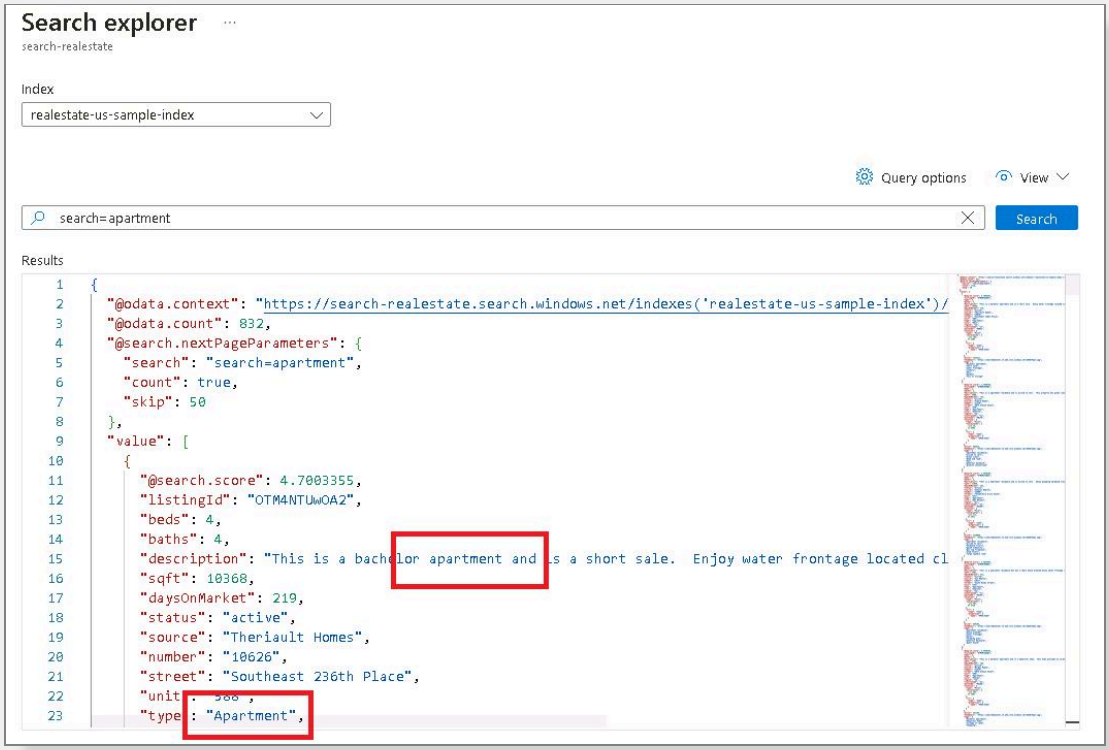
Apartment odata.count

Expand this hint for guidance on performing a basic search query.

- On the search-realestate{LAB_INSTANCE_ID} service menu, select **Overview**, and then on the command bar, select **Search explorer**.



- On the Search explorer blade, in Index, confirm that **realestate-us-sample-index** is selected, in Search, enter search=apartment, and then select **Search**.
- Review the results-listings containing **apartment** in the description, address, or type should appear.



- Record the **odata.count** from your search in the **Apartment odata.count** text box in the Challenge Lab instructions.

Want to learn more? Review the documentation on performing a basic search query.

- Filter listings by price to retrieve only the listings that have a price less than $500,000 by using the following query, and then record the **odata.count** value from your search in the following **Price odata.count** text box:

```
search=* & $filter=price lt 500000
```

Price odata.count

Expand this hint for guidance on filtering listings by price.

- On the Search explorer page, in Search, enter search=* & $filter=price lt 500000, and then select **Search**:
- Review the results.

- Record the **odata.count** value from your search in the **Price odata.count** text box in the Challenge Lab instructions.

Want to learn more? Review the documentation on filtering listings.

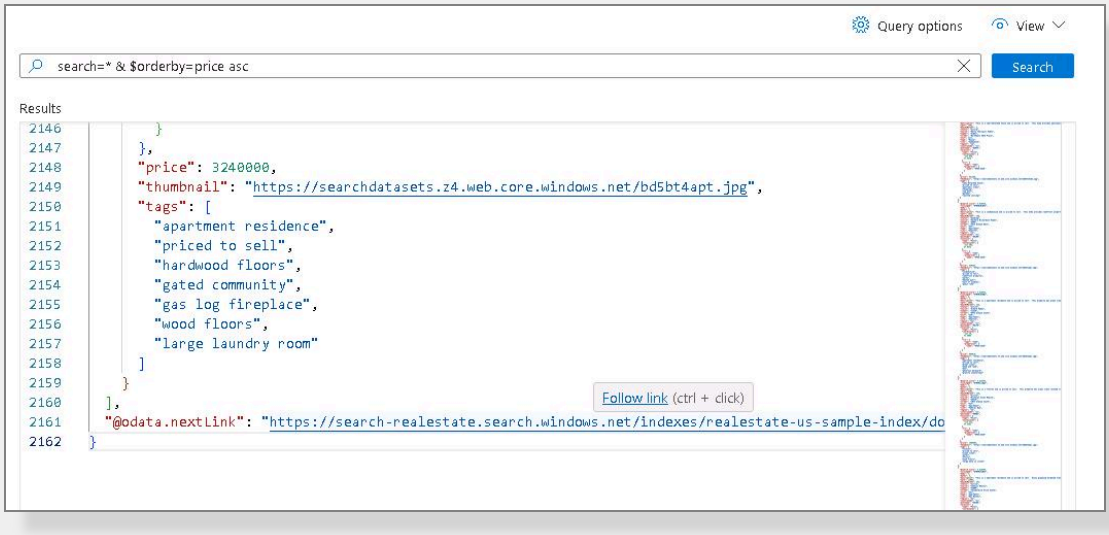
- Implement sorting by price to sort results by price in ascending order by using the following query, and then record the price of the first house listed in the search results in the following **1st House Price When Sorted** text box:

```
search=* & $orderby=price asc
```

1st House Price When Sorted

Expand this hint for guidance on sorting listings by price.

- On the Search explorer page, in Search, enter search=* & $orderby=price asc, and then select **Search**:
- Review the results-listings should now be order from least to greatest, in ascending order.



- Record the price of the first house listed in the search results in the **1st House Price When Sorted** text box in the Challenge Lab instructions.

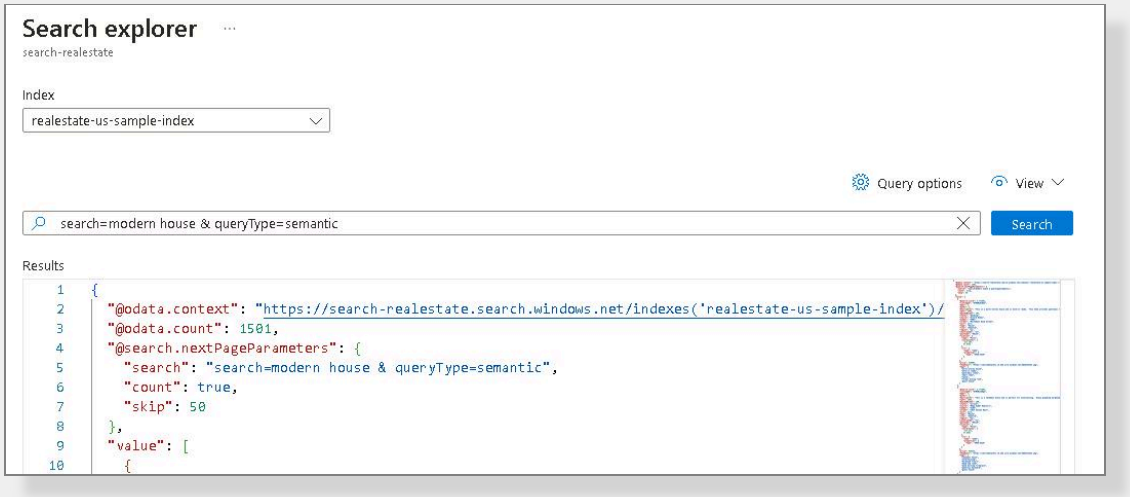
- Use AI-Powered Semantic Search to enable semantic ranking for smarter search results by using the following query, and then record the **odata.count** from your search in the following **Semantic odata.count** text box:

```
search=modern house & queryType=semantic
```

Semantic odata.count

Expand this hint for guidance on using AI-Powered Semantic search to enable semantic ranking.

- On the Search explorer page, in Search, enter search=modern house & queryType=semantic, and then select **Search**.
- Review the results-more relevant results are based on meaning, not just keywords.



- Record the **odata.count** from your search in the **Semantic odata.count** text box in the Challenge Lab instructions.

Want to learn more? Review the documentation on using AI-Powered Semantic search to enable semantic ranking.

Check your work

Verify

Create a demo application

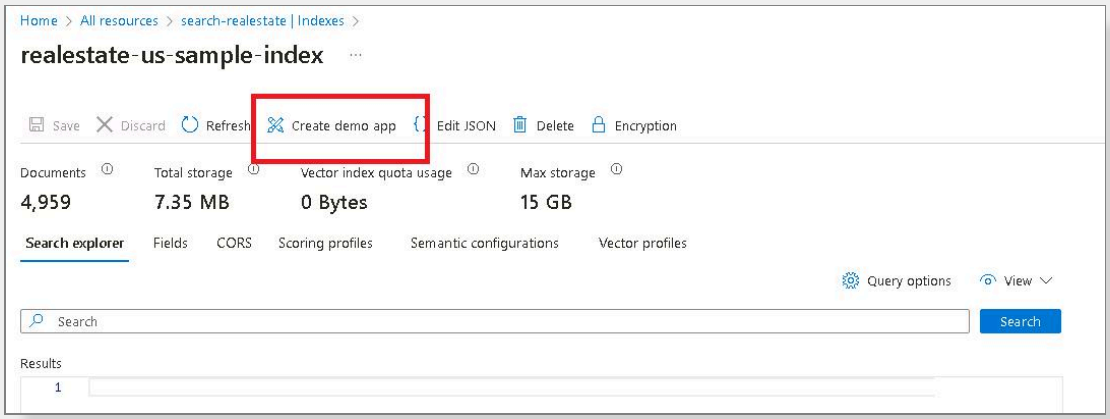
Hints Enabled

No  Yes

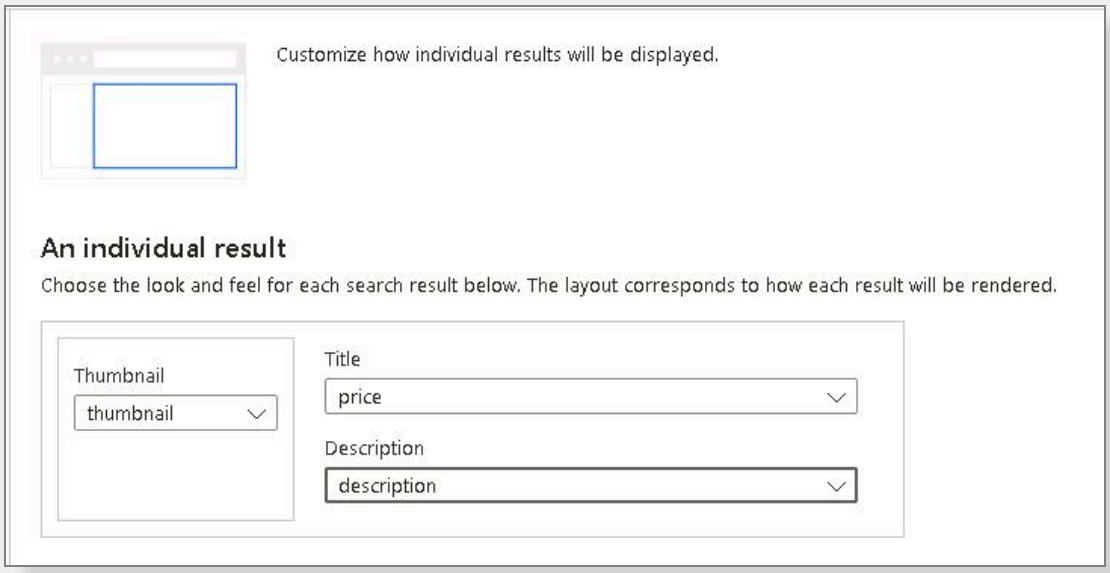
- Create a **Thumbnail** demo app based on the **realestate-us-sample-index** index file in the **search-realestate{LAB_INSTANCE_ID}** Search service that uses **price** in the title and **description** in the description and add **sqft** and **price** as suggestions of the search box.

Expand this hint for guidance on creating a demo app.

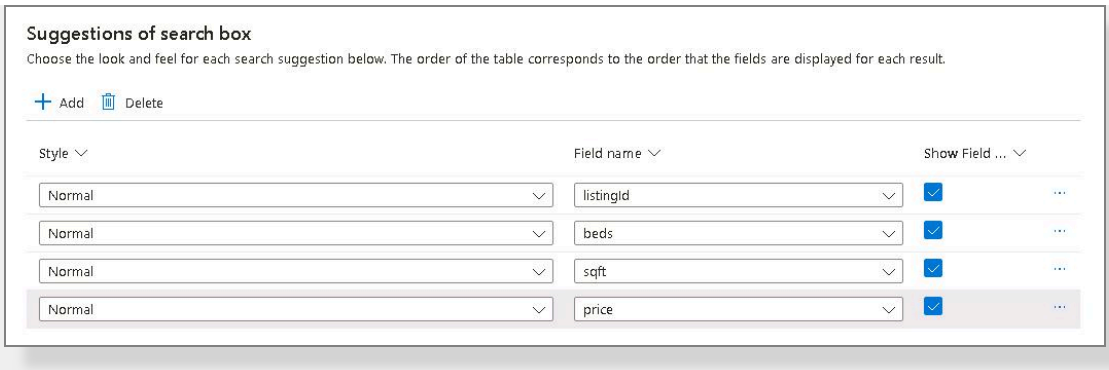
- On the breadcrumb menu, select **search-realestate{LAB_INSTANCE_ID}**.
- On the search-realestate{LAB_INSTANCE_ID} service menu, in Search management, select **Indexes**, and then select the **realestate-us-sample-index** index file.
- On the realestate-us-sample-index blade, on the command bar, select **Create demo app**.



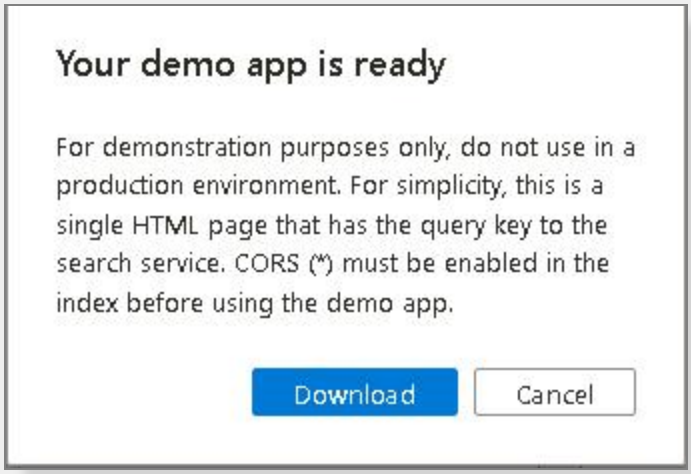
- In the Create demo app dialog, select **Enable CORS and continue**.
- On the Create demo app blade, in An individual result, in Thumbnail, select **Thumbnail**.
- In Title, select **price**, in Description, select **description**, and then select **Next**.



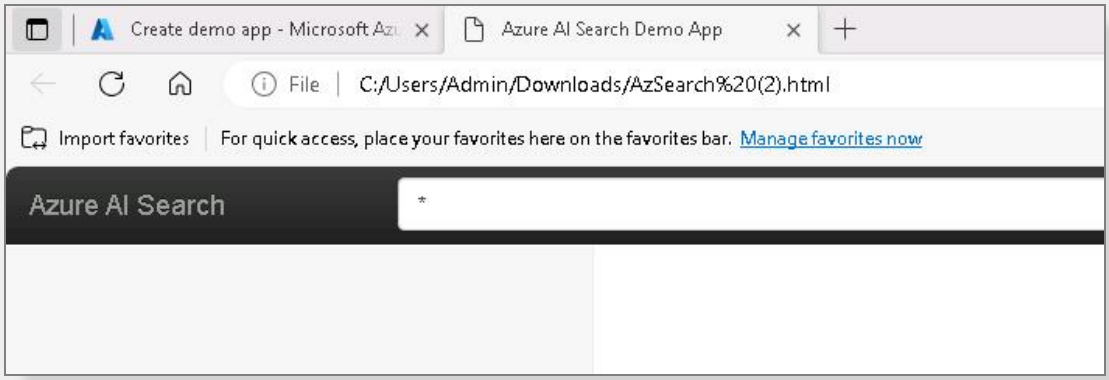
- On the Customize sidebar page, review the selections, and then select **Next**.
- On the Customize suggestions page, in Suggestions of search box, select **+ Add**.
- In Field name, select **sqft**.
- Select **+ Add**, and then in Field name, select **price**.



- Select **Create demo app**.
- In the Your demo app is ready dialog, select **Download**, and then select the **Show in folder** icon.



- In the Downloads dialog, right-click **AzSearch.html** and then select **Open file** to open with Microsoft Edge.

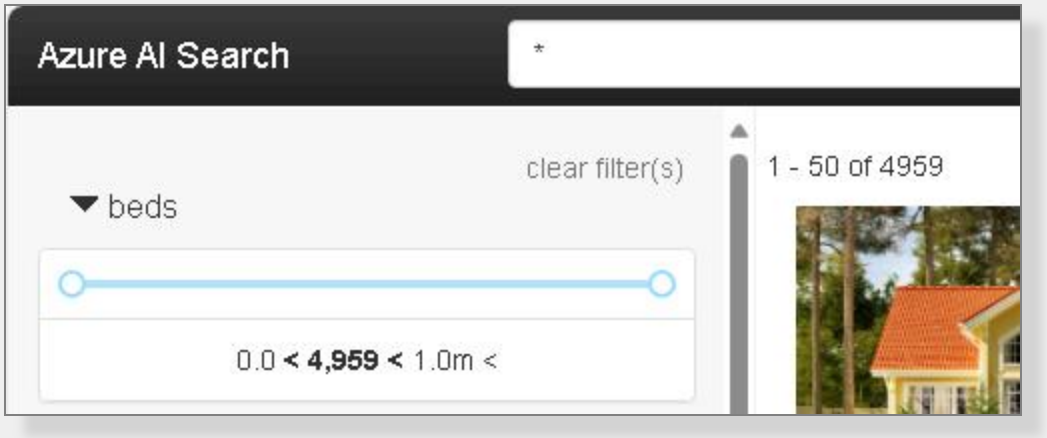


Want to learn more? Review the documentation on creating a demo app.

- Search the data source for all listings in the data source by using the Azure AI Search demo app.

Expand this hint for guidance on using a demo app.

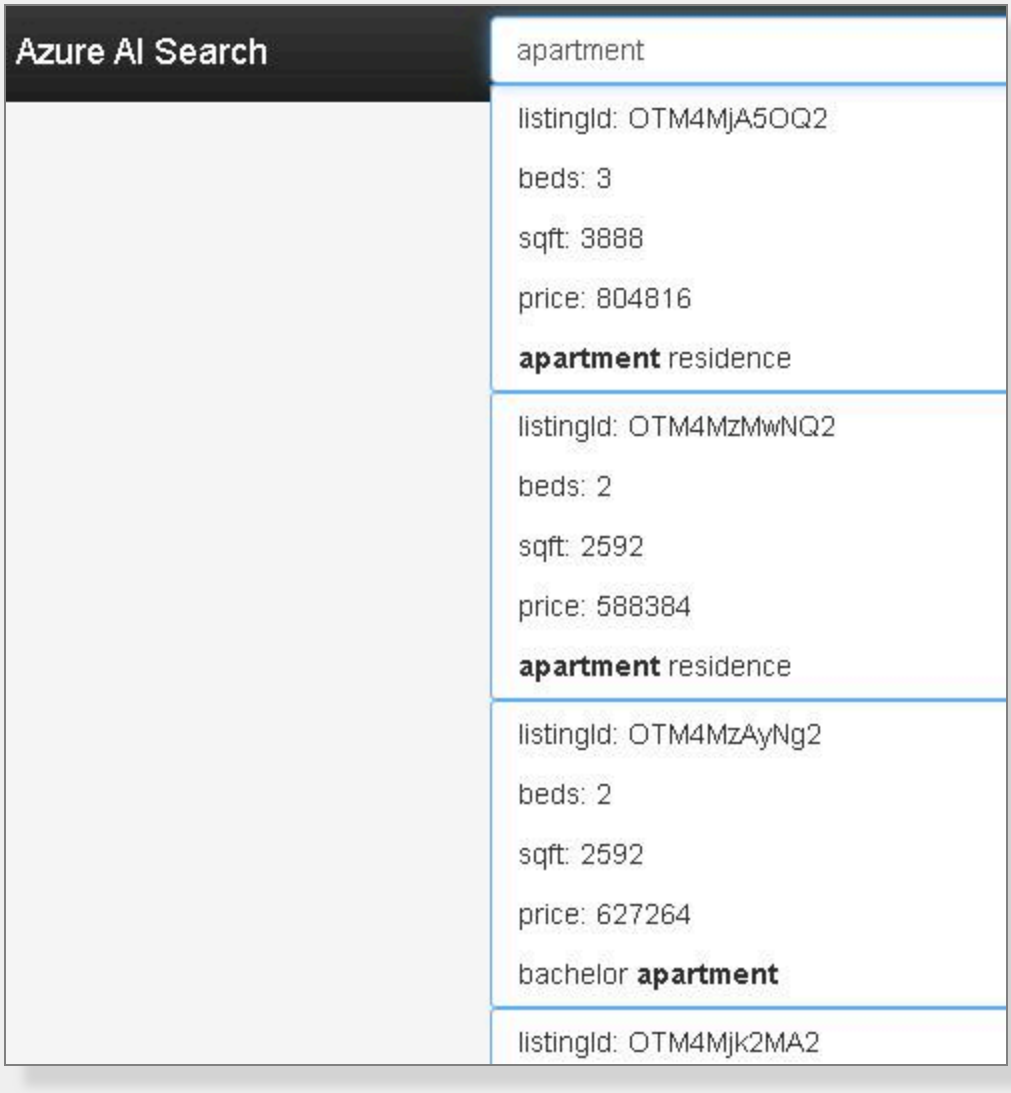
- On the Azure AI Search browser tab, in the Search field, enter T * and then select the search button to display all items available in the data source.



- Search the data source for listings containing the term T apartment by using the Azure AI Search demo app

Expand this hint for guidance on using a demo app.

- On the Azure AI Search browser tab, in the Search field, enter T apartment to display all containing the term **apartment**.

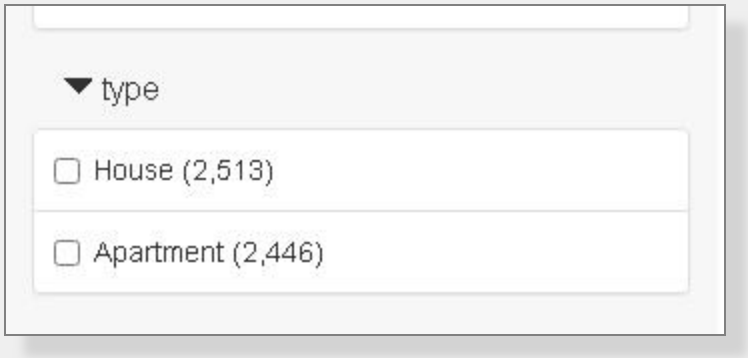


- Display only **Houses** available in the **98118** postCode with **a huge bonus room**, and then record the number of results in the following **Houses with a Bonus Room.** text box:

Houses with a Bonus Room

Expand this hint for guidance on using the demo app.

- On the Azure AI Search Demo App browser tab, in the Search field, enter T *to display all properties, and then in the left pane, scroll down until you see **type**.



- Select the **House** checkbox, locate postCode, and then select the **98118** checkbox.
- In tags, select the **huge bonus room** checkbox.
- Review the results.
- Enter the number of results in the **Houses with a Bonus Room** text box in the Challenge Lab instructions.

Check your work

Verify

Summary

Congratulations, you have completed the **Build an AI-Powered Search System by Using Azure AI Search** Challenge Lab.

You have accomplished the following:

- Set up an Azure AI Search.
- Performed a Basic Search Query.
- Created a Demo application.

Ending your lab

To ensure your lab is recorded as complete, select **Submit** or **End** below. Exiting [X] the lab will result in an incomplete status.

⚠ Once you select **Submit** or **End**, you will not be able to return to this Challenge Lab.

Your feedback is important!

As you end your Challenge Lab, please take a few minutes to complete the short survey that will appear in the next window. Alternatively, you may provide your feedback directly to Challenge Labs feedback.

Looking for your next Challenge Lab?

Below are recommended Challenge Labs to try next.

- Manage Azure Resource Deployment by Using an Azure Resource Manager Template [Guided]
- Manage Azure Resource Groups [Guided]
- Create an Azure Function App [Guided]
- Create an Azure Logic App [Guided]
- Configure an Azure Distributed Denial of Service Protection Plan [Guided]
- Manage Encryption by Using an Azure Key Vault [Guided]
- Configure Azure Role-Based Access Control [Guided]

- Configure an Azure Lock [Guided]
- Configure Monitoring by Using Azure Monitor [Guided]
- Deploy an Azure Virtual Machine [Guided]
- View Azure Service Health Options [Guided]
- Manage Microsoft Entra Users and Groups [Guided]
- Implement a Network Security Group [Guided]
- Azure Cost Management [Guided]