

Introduction

Data: <https://github.com/tiger-openai-hackathon/ai-build/tree/main/data>.

Data Description: The data concerns the role of recycling in resource conservation and environmental impact. Three PDF documents discussing this topic are available in the data link added above. They contain text in various formats, such as bullet points, images, and tables.

Problem statement: We want to develop an interactive AI-powered chatbot that will educate users on the benefits of Recycling and answer questions related to it.

Overview: We'll build a chatbot powered by Azure AI services such as Azure AI Search, Azure Open AI, and Azure AI Studio. This chatbot will be capable of ingesting any type of document, responding to questions based on only the information available in the documents, and handling multi-turn conversations. Assuming this is our first AI chatbot project, we will walk through the steps in detail. We'll use Azure AI Studio to develop this solution and deploy a sample interactive web application.

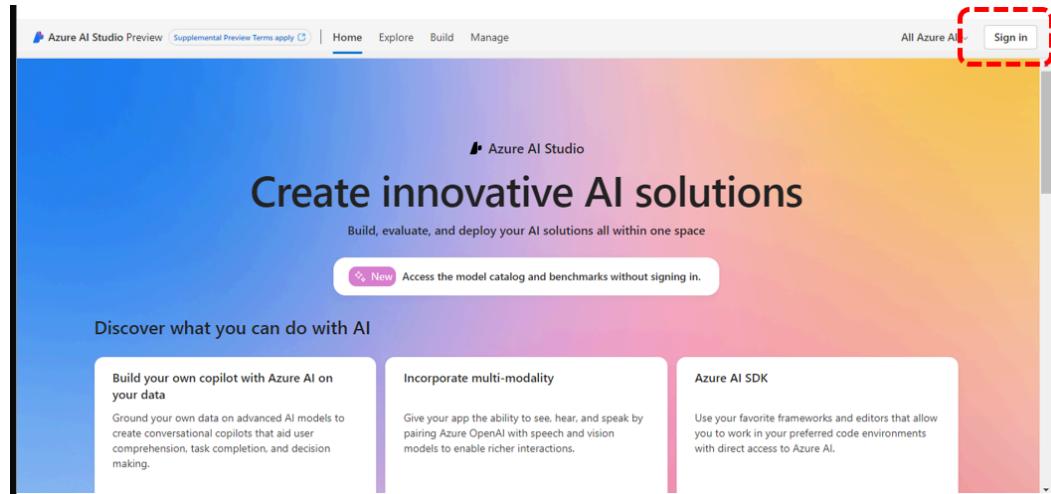
If time persists, we'll also look into how to change prompts, and parameters like top_k and what impact it will have on the responses and we will try to give you a glance at other developer features such as prompt flow, and evaluation flow.

Steps for creating your first AI project

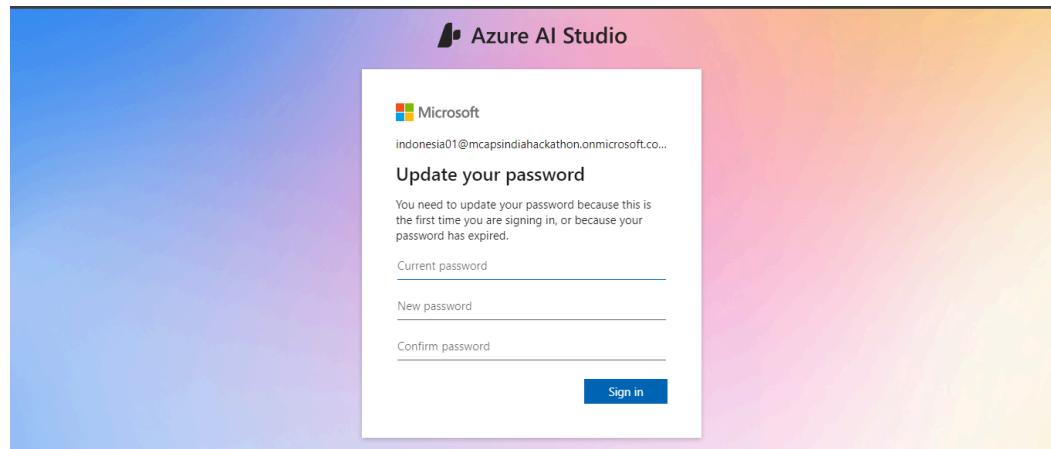
1. Log in to the Azure AI Studio Portal

- a. Please go to [Azure AI Studio Portal](#) from your browser (please use Incognito/ private mode to avoid clashes with your work profile)

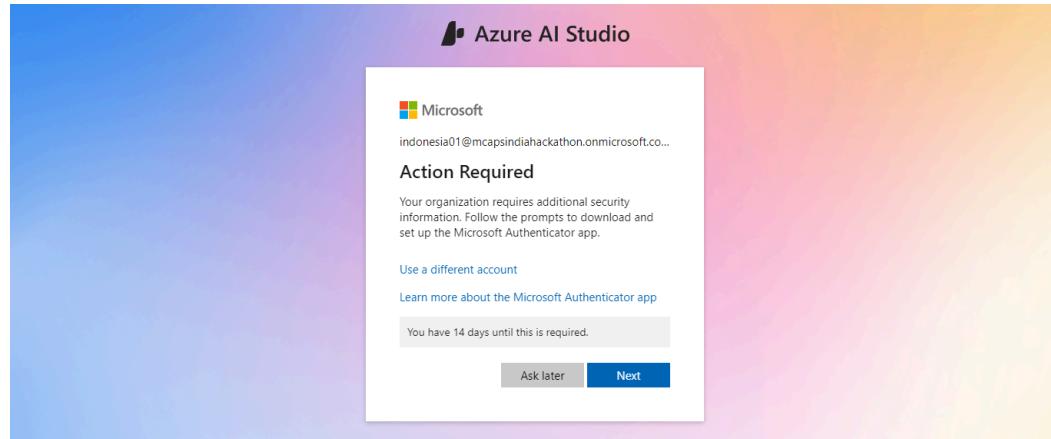
- b. Click on the Sign-in Button



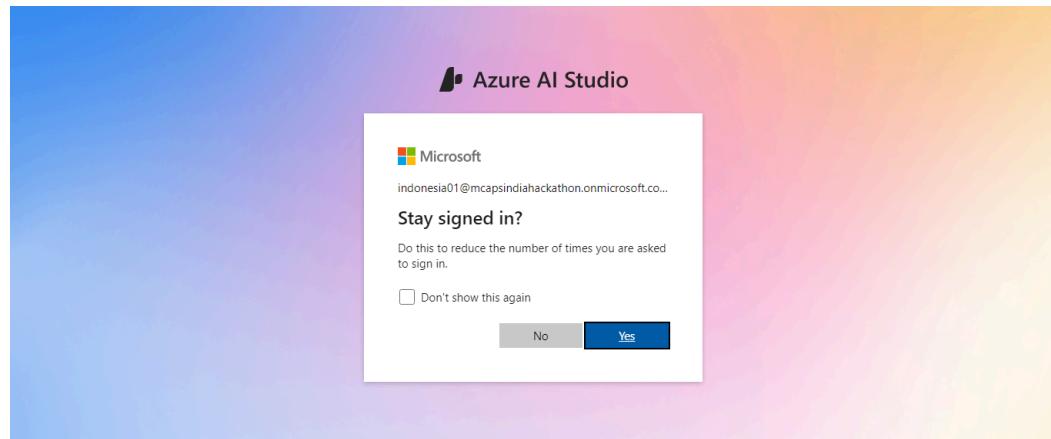
- c. Enter the credentials shared with you at the registration desk. (Please keep your slip with you till the end of the event).
- d. Setup a new password



Setup MFA/authenticator : Skip this step by clicking on “Ask Later”



- e. Click on **Yes** in the next step



2. Create a new project

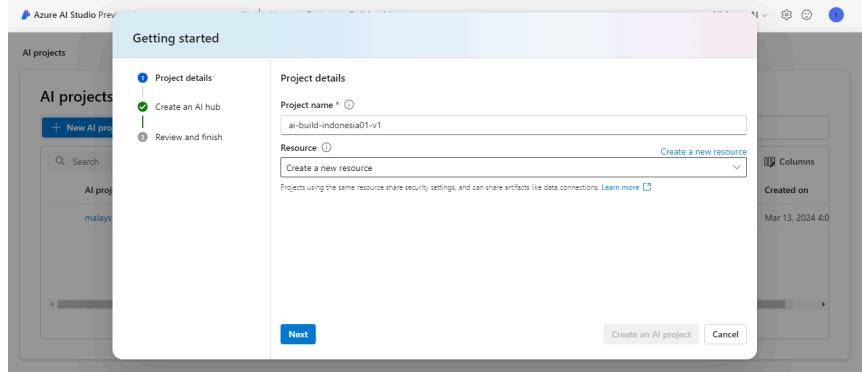
- a. Go to the **Build** tab on the top and click on the **New AI Project** button

AI project	Resource	Description	Region	Created on
malaysia-user-test	malaysia-test		eastus2	Mar 13, 2024 4:00:00 AM

- b. In the **Project details** tab

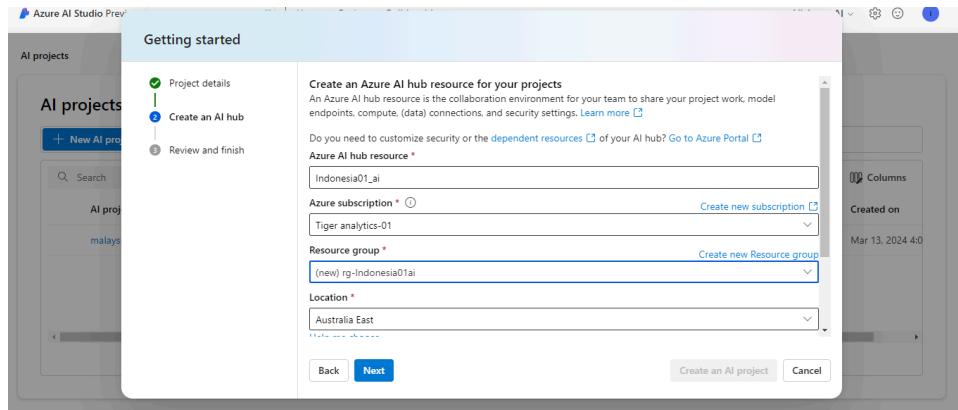
- i. Add an appropriate project name ("ai-build-" + login ID + version number. Ex: "ai-build-malaysia01-v1")

- Under the **Resource**, click on **Create a new resource**. It should take you to **Create an AI hub** section



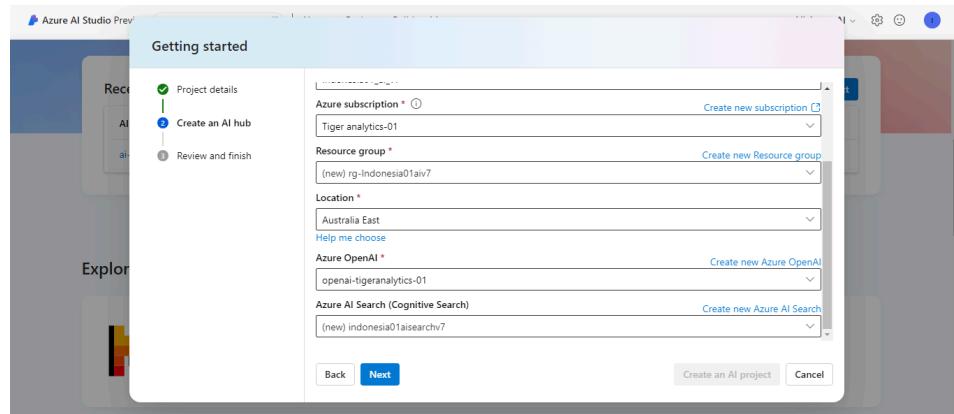
C. In the **Create an AI hub** tab

- Under the **Azure AI hub resource**, by default it will be populated with your user ID, If not please add an appropriate resource name (userid+“_ai”). Ex: “Indonesia01_ai”)
- Under the **Azure subscription**, select the default entry (It will look like **Tiger analytics-<number>**, Ex: Tiger analytics-01)
- Under the **Resource group**, select “(new) + <the name you added in the **Azure AI hub resource**>” which will be displayed by default
- Under the **Location**, select **Australia east**

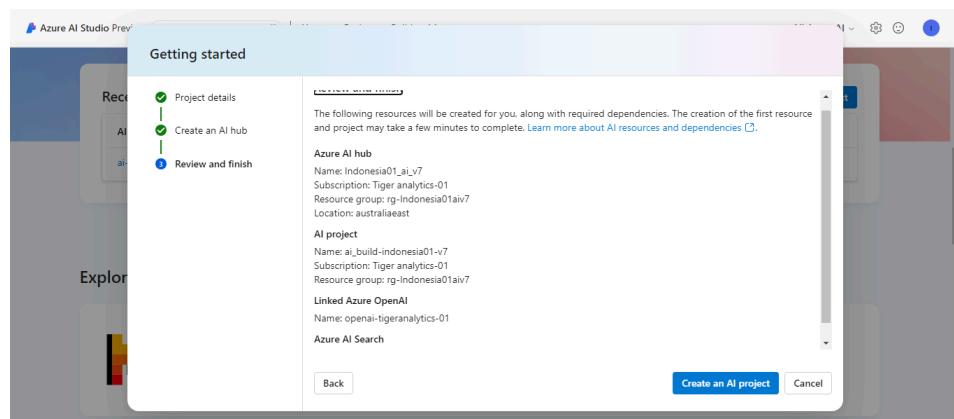


- Under the **Azure OpenAI**, select the dropdown and select **the available Azure Open AI resource**. It will be in a format **openai-tigeranalytics-<number>** Ex: **openai-tigeranalytics-01**
- Under **Azure AI search (Cognitive Search)**, click on “**Create new Azure AI Search**”, Add the Azure AI search Name in the following format “**useridaisearch**”. Ex:

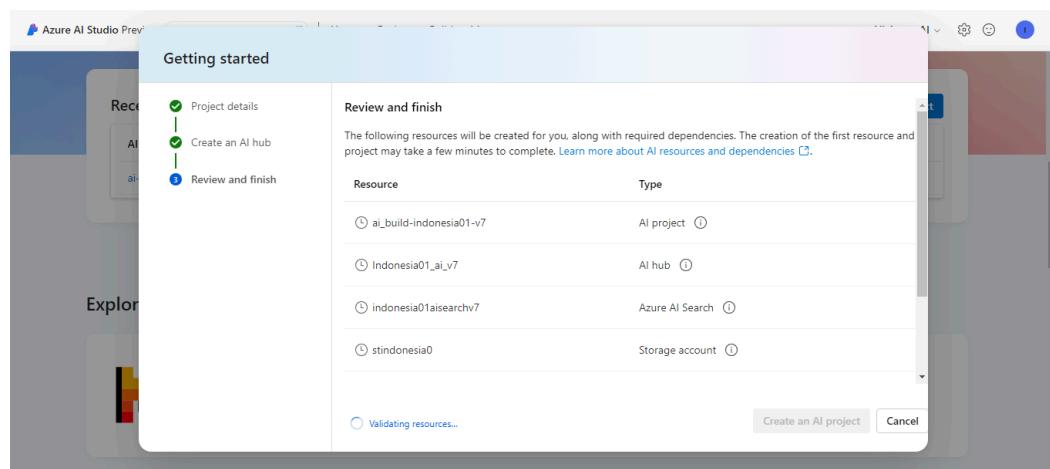
“Indonesia01aisearch” and click “Next”



vii. Review the details and Click on “Create an AI project”.



- d. In the **Review and Finish** tab please wait while the Azure services are created for you. This might take a couple of minutes



- e. It will automatically redirect you to the Project **Overview** page. Click on the **Playground** to start with the next step

- f. You will see the Playground in the screenshot below

3. Confirm a connection to the Azure OpenAI service

- On the right-hand side panel of the project playground, make sure the **mode** is set to **chat**, click on the button deployment and select the model from the dropdown **gpt-35-turbo16k** and change the **past messages to include** to **10**.

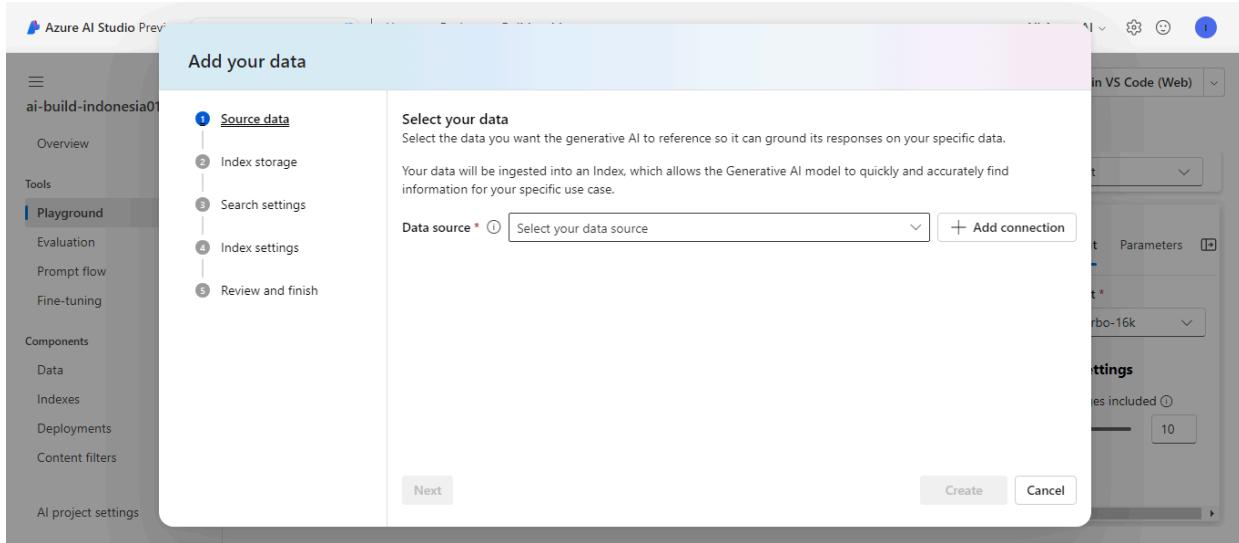
4. Add your data

- On the left-hand side of the playground go to **Add your Data** and click on **Add your Data**

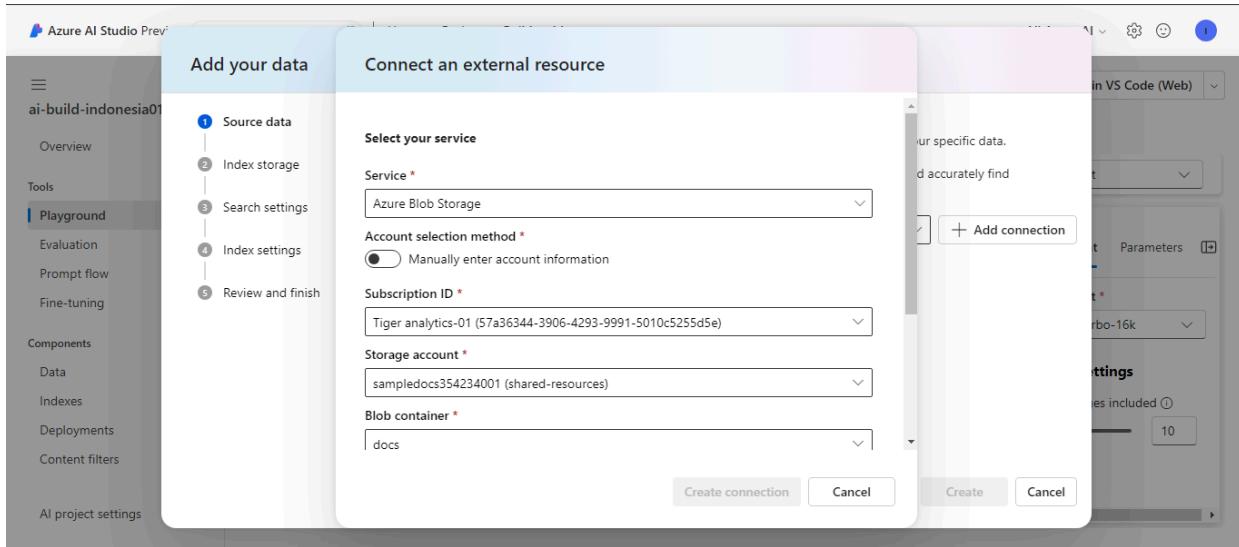
The screenshot shows the Azure AI Studio Preview interface. The top navigation bar includes 'Azure AI Studio Preview', 'Supplemental Preview Terms apply', 'Home', 'Explore', 'Build', 'Manage', and 'All Azure AI'. The main area is titled 'Playground' under 'Build / indonesia01_ai_v8 / ai-build-indonesia01-v8'. On the left, a sidebar lists 'Overview', 'Tools' (selected), 'Playground' (highlighted in blue), 'Evaluation', 'Prompt flow', 'Fine-tuning', 'Components' (Data, Indexes, Deployments, Content filters), and 'AI project settings'. The main content area has tabs for 'Manual evaluation', 'Deploy to a web app', 'Import', 'Export', 'View Code', and 'Mode Chat'. It features a 'System message' section with a button to 'Add your data', a 'Replay chat' button, and a 'Clear chat' button. A 'Playground Settings' section includes a toggle for 'Show JSON'. On the right, there's a 'Deployment' section with a dropdown set to 'gpt-35-turbo-16k' and a 'Session settings' section with a slider for 'Past messages included' at 10.

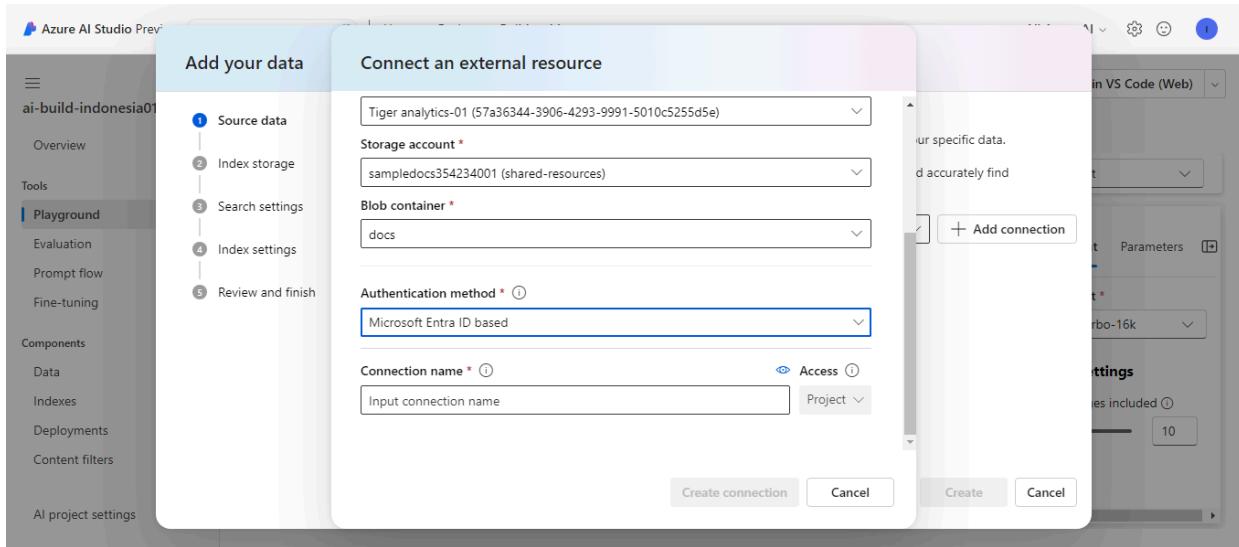
This screenshot is similar to the one above, but the 'Add your data' button in the 'System message' section is expanded, revealing three options: '+ Add your data', '+ Add your data', and 'Connect external index'.

b. Click on **Add Connection**

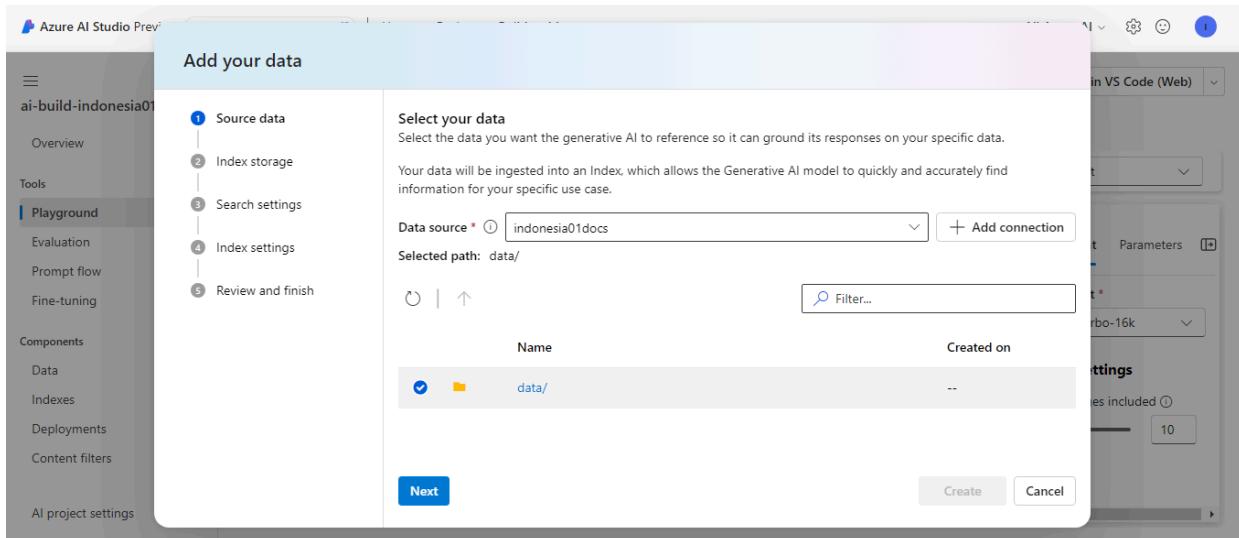


- C. The **subscription id** will be populated by default , select the **storage account** which will be in the format **aisampledocs<numericid>** and **blob container** as **docs**, select the **Authetication method** as **Microsoft Entra Based Id** . Enter the **connection name** appropriately “**userid + document**”. Example “**Indonesia01docs**”.

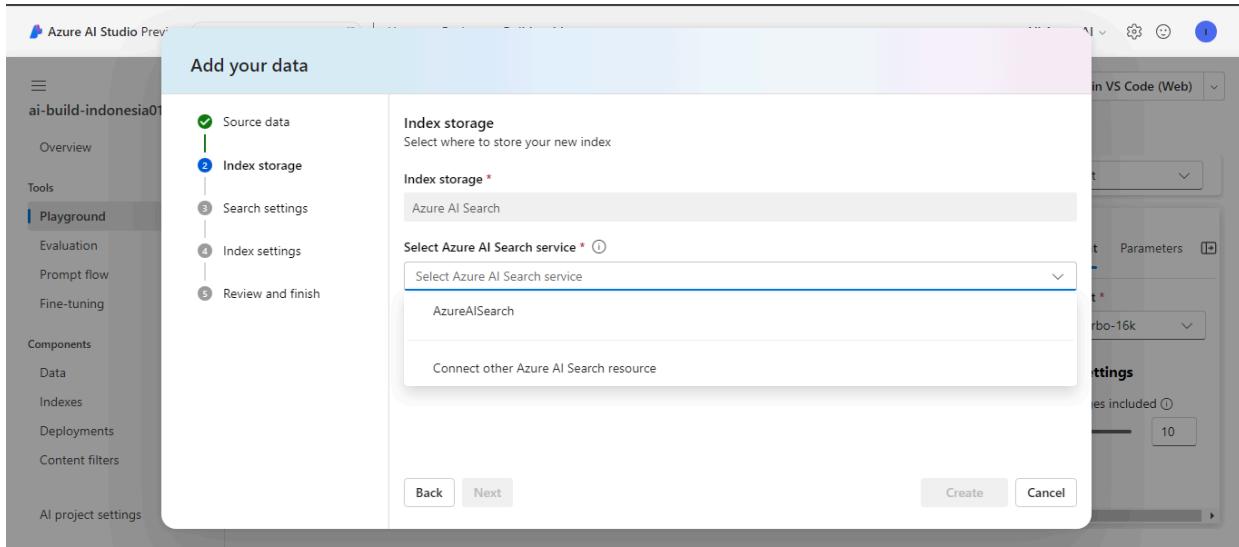




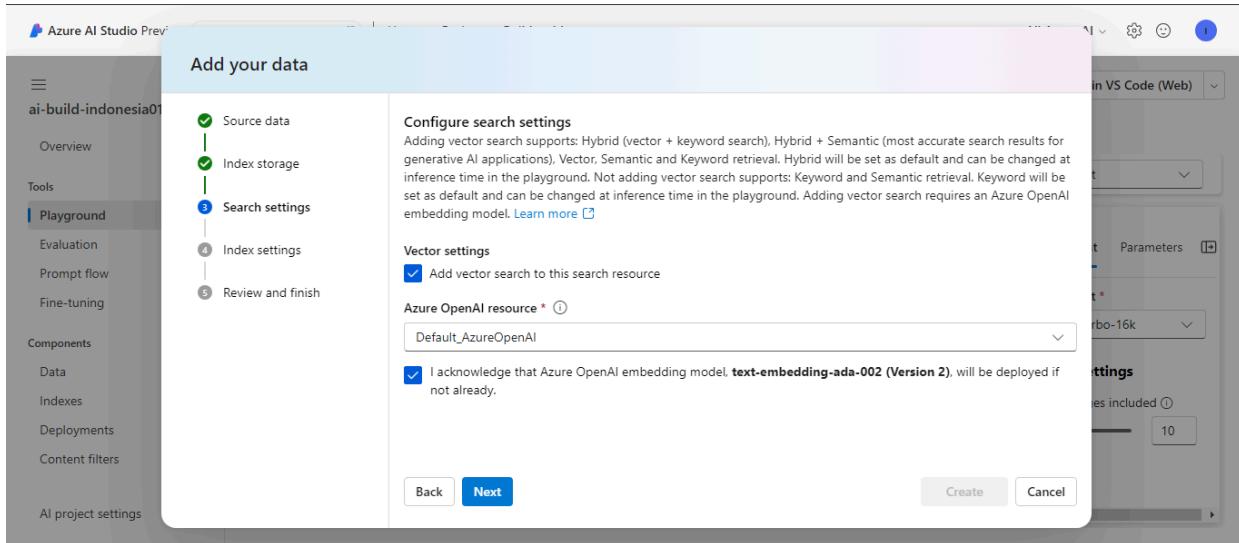
- d. Select the **data source** from the connections and then select the **data** folder and click **next**



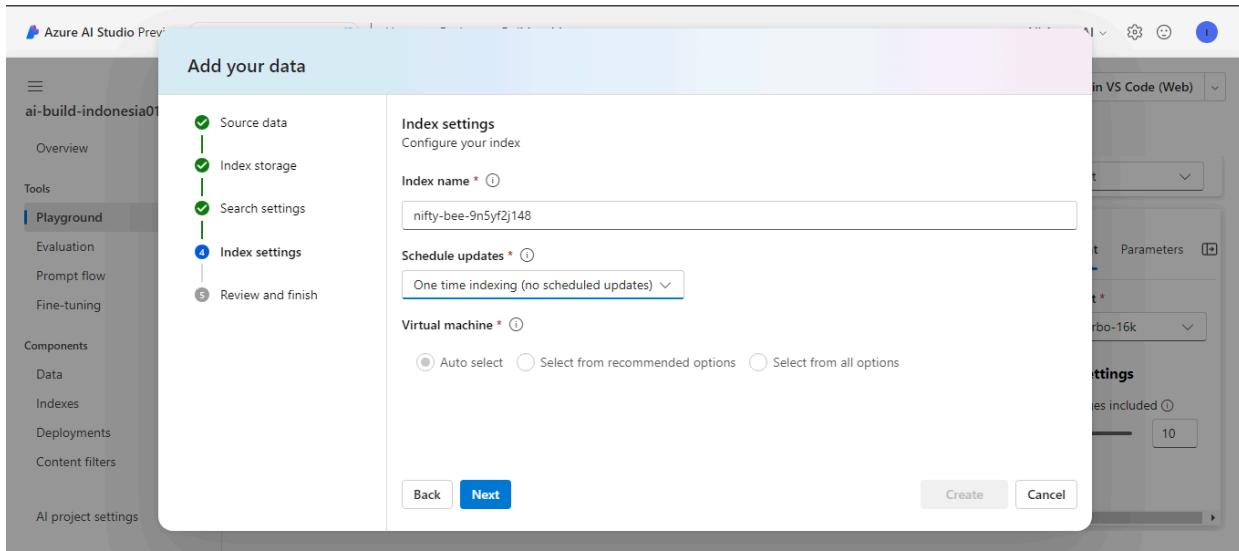
- e. Select the **AzureAIsearch** and click **next**



- f. Select the check boxes and to **Add Vector Search** and **acknowledgement** and click **next**

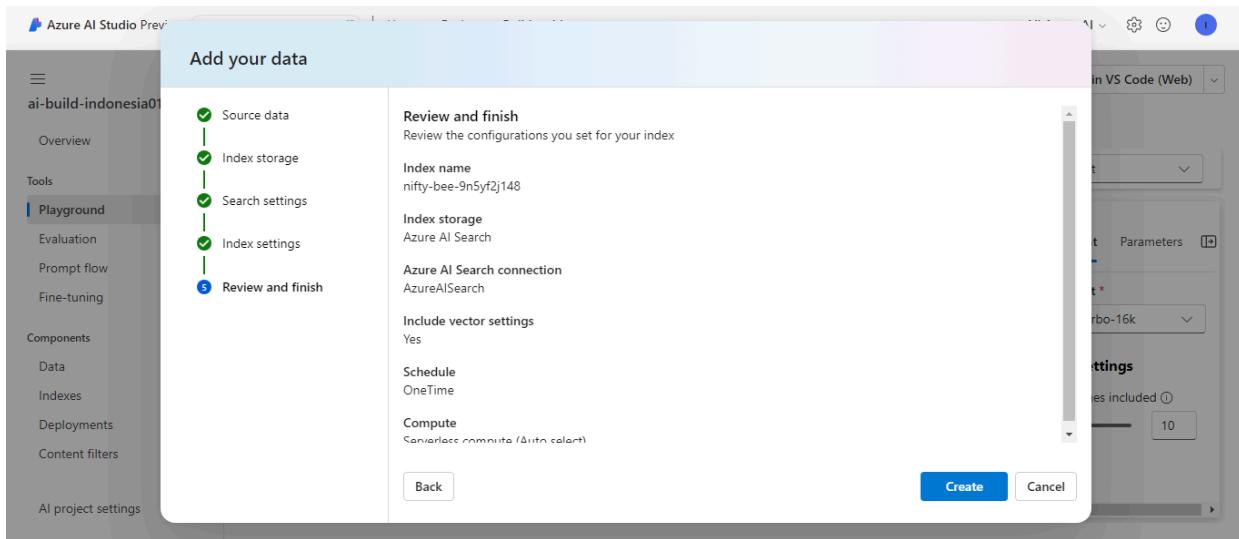


- g. In the **Index Settings** use the index name as follows “ai-build-<userid>-index-<version>. Example **ai-build-indonesia01-index-v8**.



- h. Review the steps and click on **create** and wait for few minutes to finish

Note: After returning to the playground it takes too long to load the indexed data, please try the following steps 1) Refresh the browser. 2) Clear cookies 3) Close the browser and login again and navigate back to the project you have created



- i. In the playground select the **index** as you have created , Example **ai-build-indonesia01-index-v8**,
- j. Under the **Search type** dropdown, select **Hybrid (vector + keyword)**

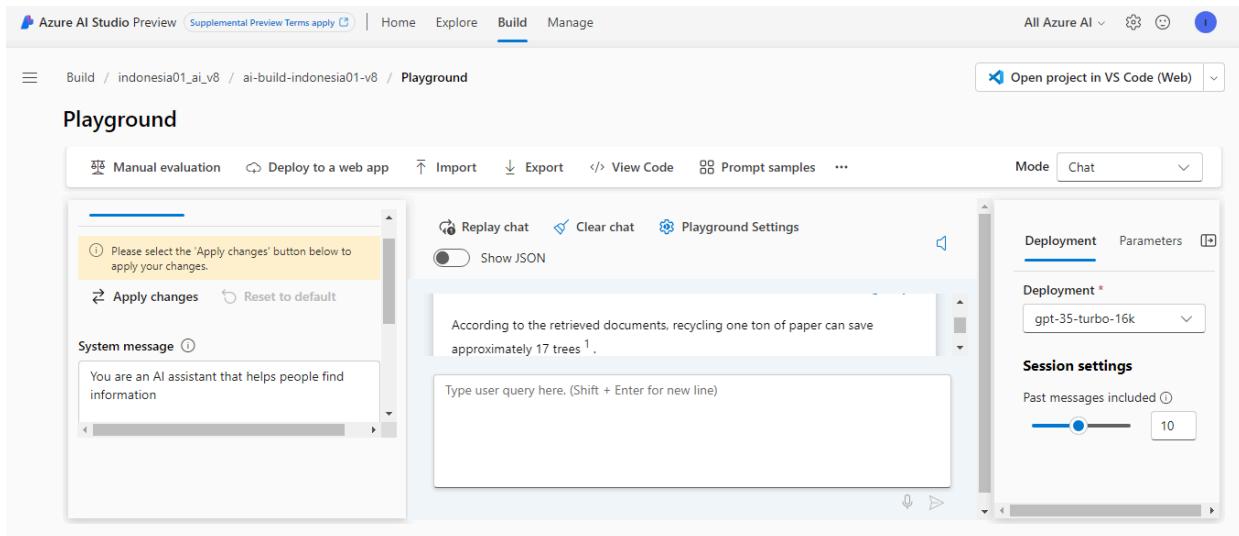
5. Test the connection

- Ask a question in the playground chat box (Ex: "How many trees can be saved by recycling one ton of paper")
- If you get a system response, the connection is set, and we're good to go to the next step

- The system is now set up to respond to general user questions. We can add our data in the backend to unlock the power of Azure AI studio, which is the ability to generate responses from the sources provided by the user

6. Prompt

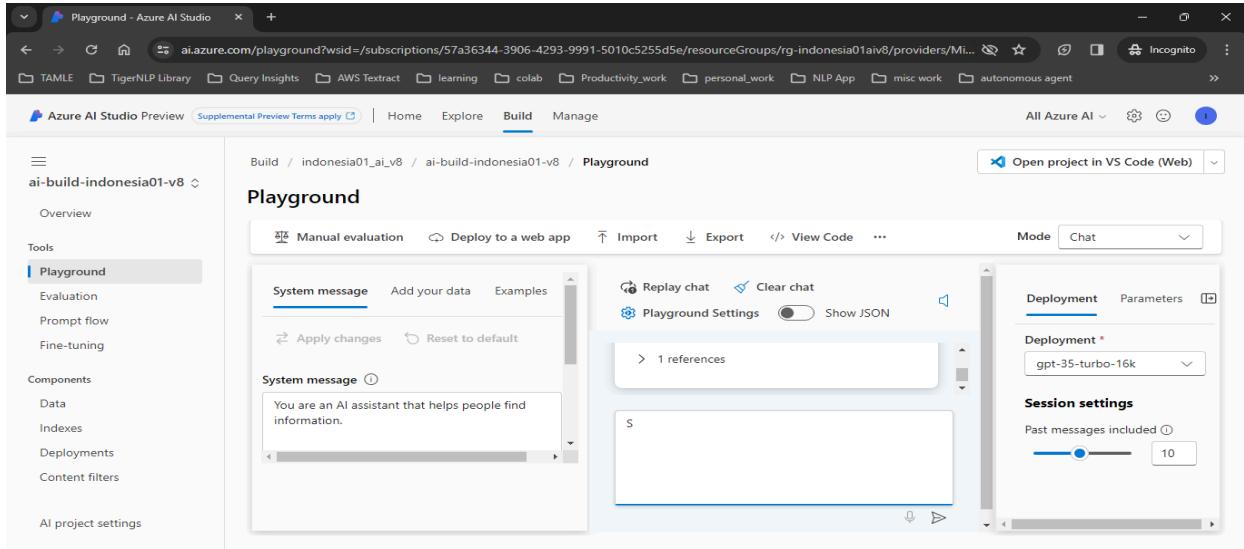
- Define the system prompt in the prompt box and click on **Apply changes** for the changes to be reflected in the system responses



b. Sample prompts can be found in **Explore** tab and **Prompt catalogue** section

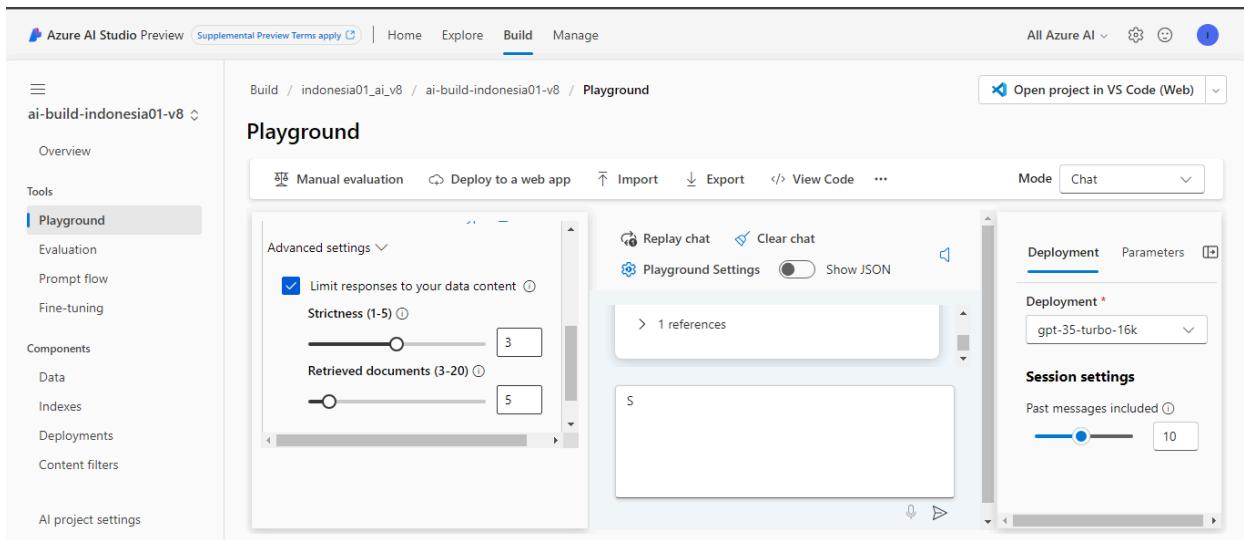
7. Start asking questions

- Check on the responses from the data and ask questions. Some sample questions on the data can be found [here](#) (Please clone the repository or download the zip and navigate to the sample QnA spreadsheet in **Data** folder to view sample questions).
- Please make sure to click on the **Clear chat** button before asking an unrelated follow-up question in the chat box



8. Tweak the parameters

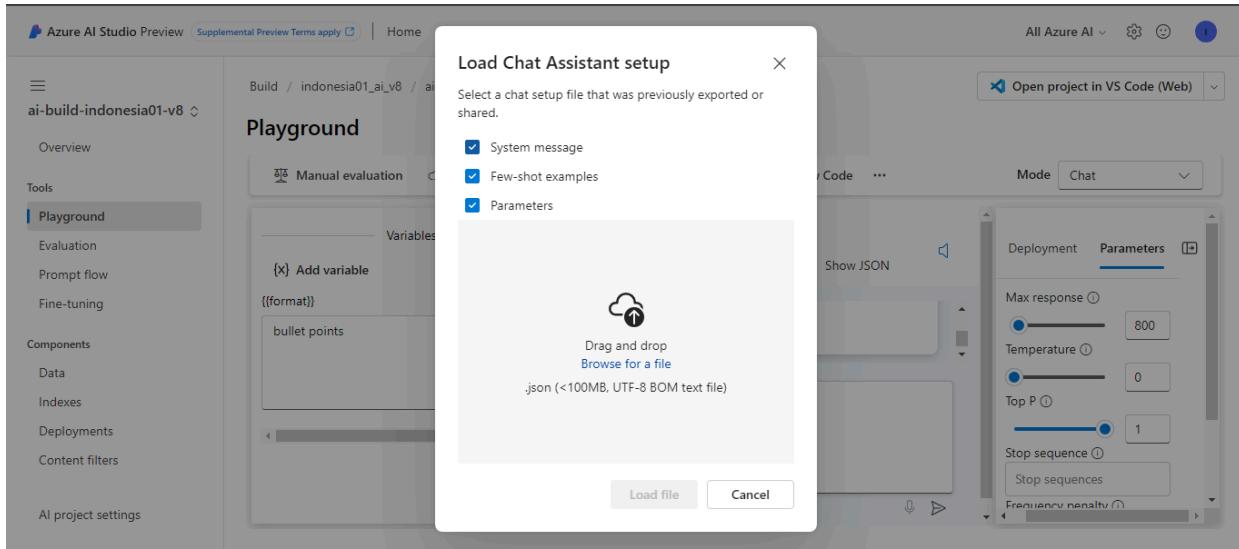
- If you want the responses to come not only from the source data alone but also from the external knowledge of the Azure OpenAI models, you can click on **Advanced settings** under **Add your data** tab and uncheck **Limit responses to your data content**
- Strictness** helps you set the threshold for relevant documents and **Retrieved documents** help you set the number of chunks/documents that will be retrieved to answer the questions



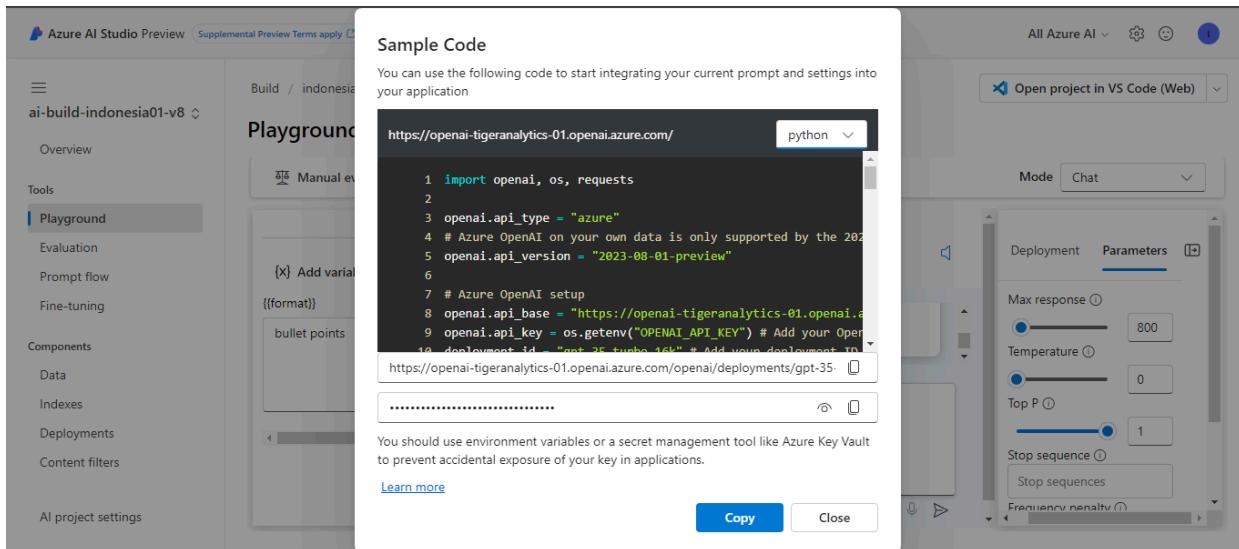
- Please check this guide on [how to generate text with Azure OpenAI Service - Azure OpenAI | Microsoft Learn](#)

- d. Tweak the model parameters from the **Parameters** tab, you can find the definition of the parameters [here](#).
- e. Make changes to the prompts to change the response to the way you like (Ex: We can add to give the response in bullet points or a happy tone). Remember to click on **Apply changes** after changing the prompt. You can click on the **Replay chat** button to get the responses to the existing questions on the updated prompt
- f. Define variables by using the **Add variable** section for easy prompt changes. For example, tone can be set as a variable in the prompt whose value can be changed easily across different runs. Example **{{format}}**

- g. You can also **import** and **export** the chat settings (prompts, examples, parameters) to a json. You can try the same using this json (add json link). This feature is useful for sharing your workspace settings while working as a team



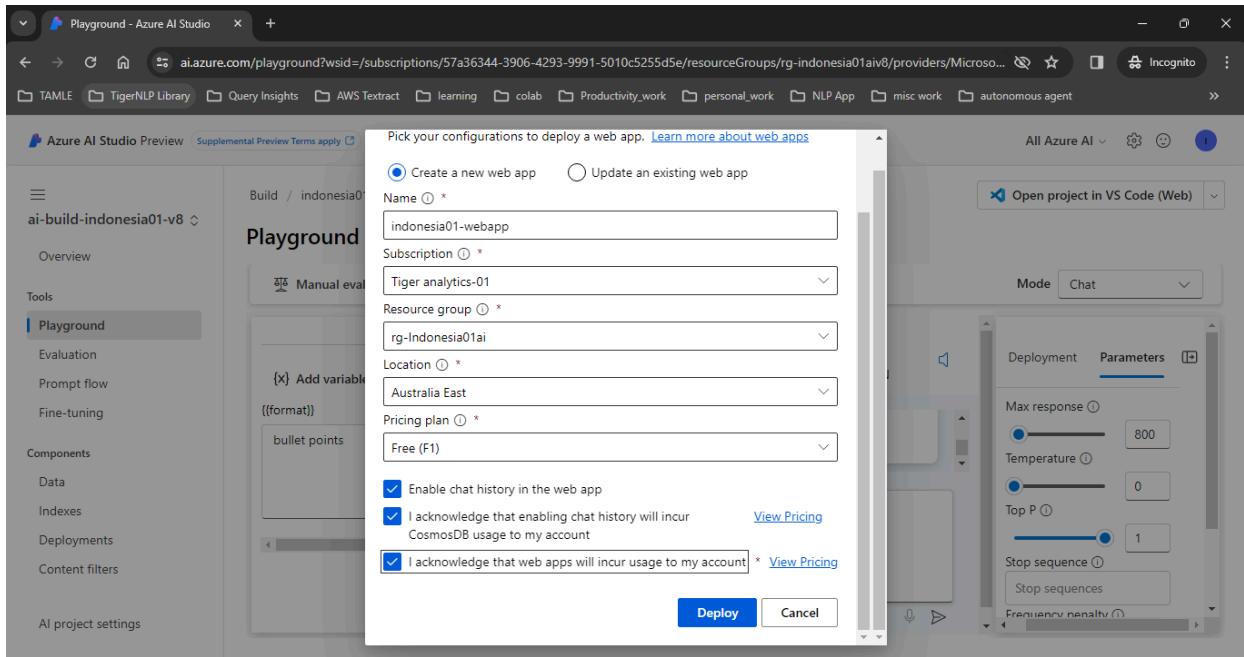
- h. You can also click on View Code to get an executable code in the programming language of your choice with the Azure OpenAI, data, and index connections set already



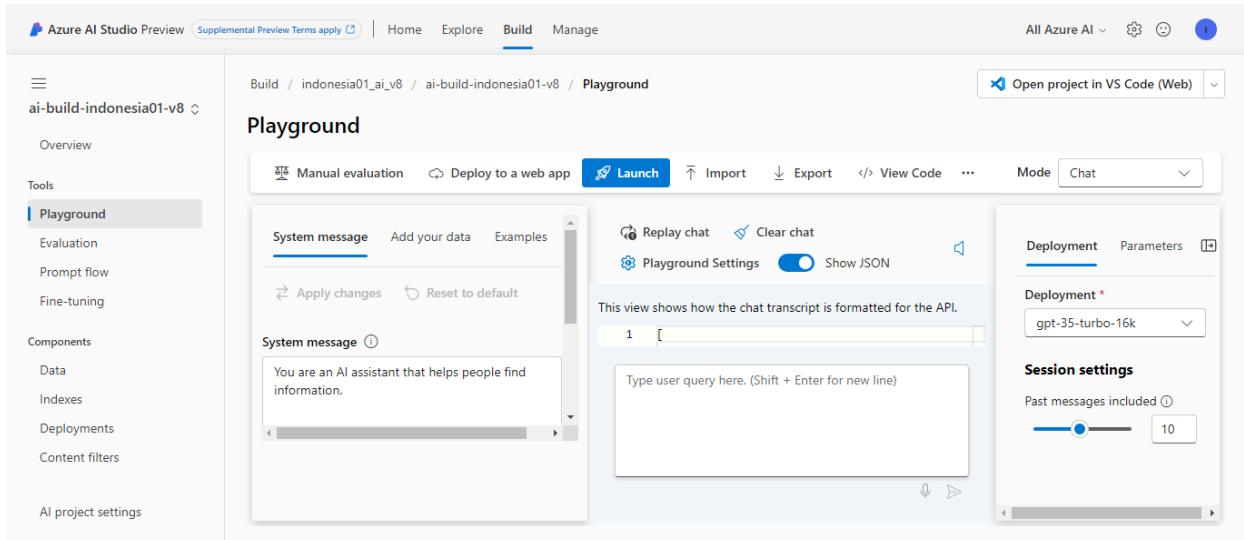
9. Deploy the model as a web application

- a. Click on “Deploy as a web App”
- b. Enter a name for the web app in the format “**userid-webapp**”. Example **“Indonesia01-webapp”**
- c. Select the subscription which gets populated by default , Example **“Tiger analytics-01”** , resource group as the one you have created during creation of AI hub generally it will be of format “rg-<userid>ai” Example **“rg-Indonesia01ai”** , and location as **“Australia East”**
- d. Select the **“Free”** pricing plan
- e. Check all the boxes including the acknowledgment related to pricing
- f. Click the **deploy** and wait for a few minutes (this might take ~10 minutes) till the deployment is complete

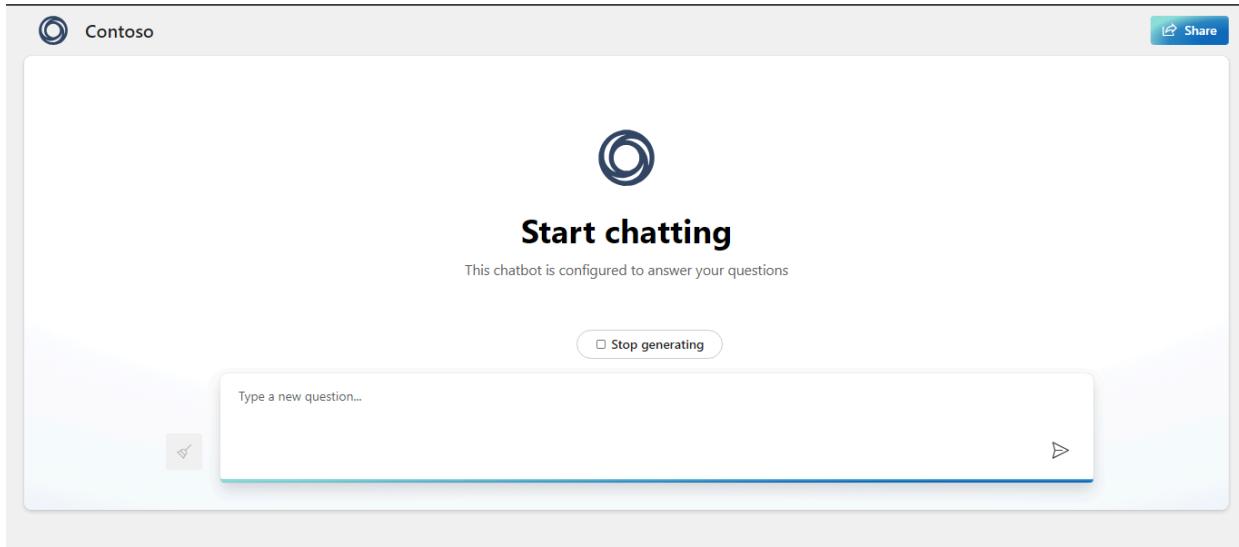
g. Note : deploy the app first and then do the prompt engineering



h. After the deployment click on the “Launch” button

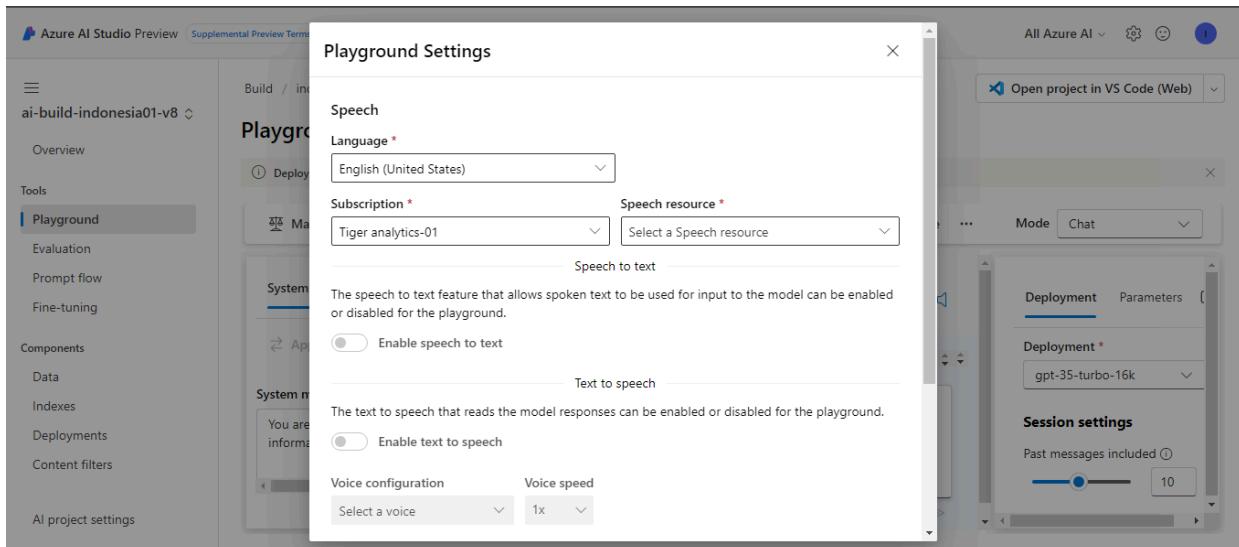


- Once you open the URL, you will be asked to “Accept” the invitation, please do and proceed forward. If you see an error about the “Authentication”, please wait for a few minutes and you will be able to see a sample web application and shown in the **screenshot** below. You can start asking questions in the web application. People who have access to your AI Studio project will also be able to access the application via URL and ask questions. All the logs, user questions, and system responses are stored in a database

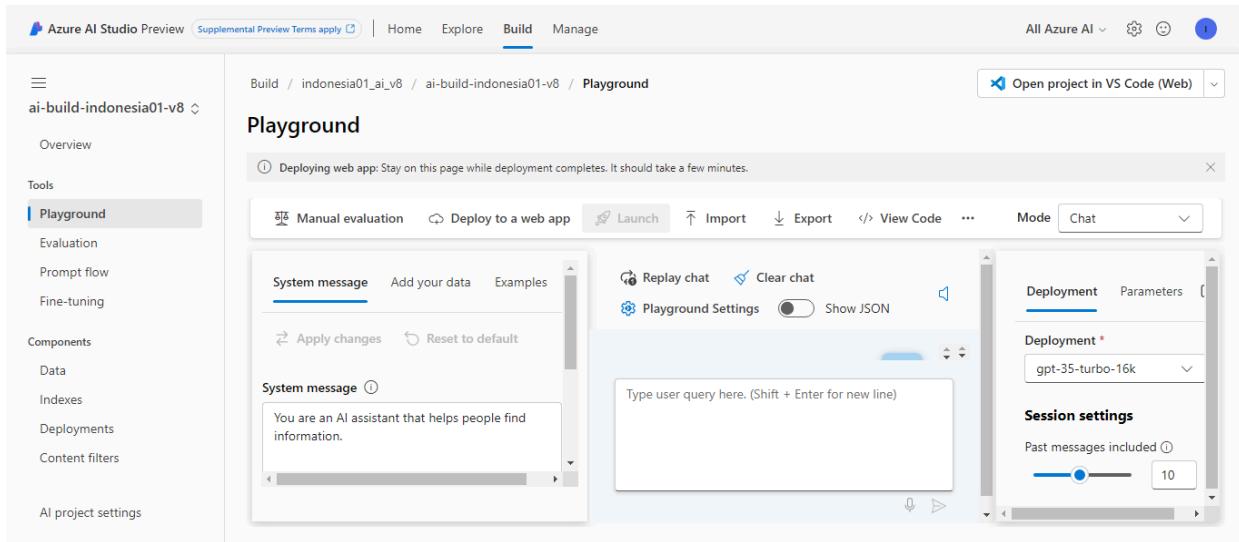


10. Additional Playground Features

- You can change the language, and enable speech-to-text, and text-to-speech capabilities in the Playground settings tab. These use Azure AI services in the backend



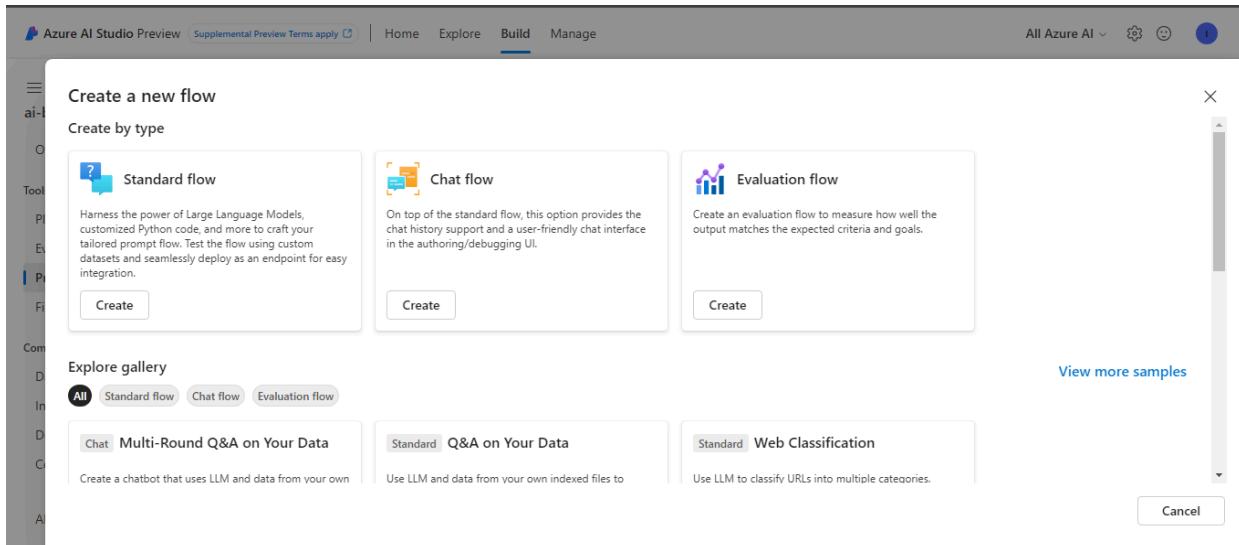
- You can also view the entire project in VSCode web IDE and get responses in the terminal using the button “**Open project in VS code(Web)**” on the **upper right hand corner** of the playground



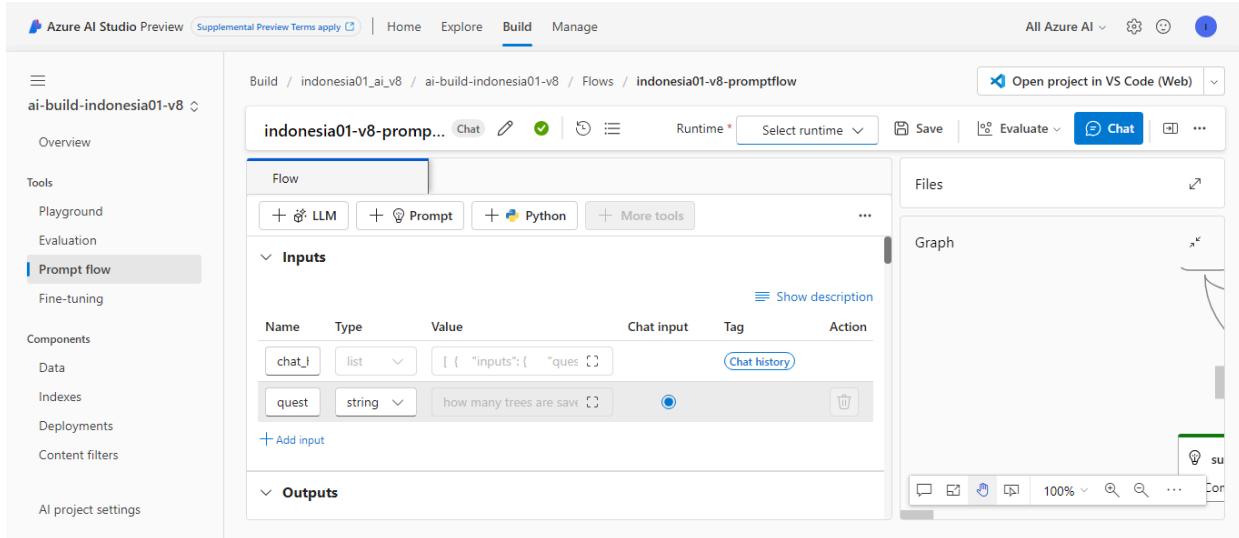
c. You can look at the JSON of the chat transcript. This is formatted for the API calls

11. Prompt flow

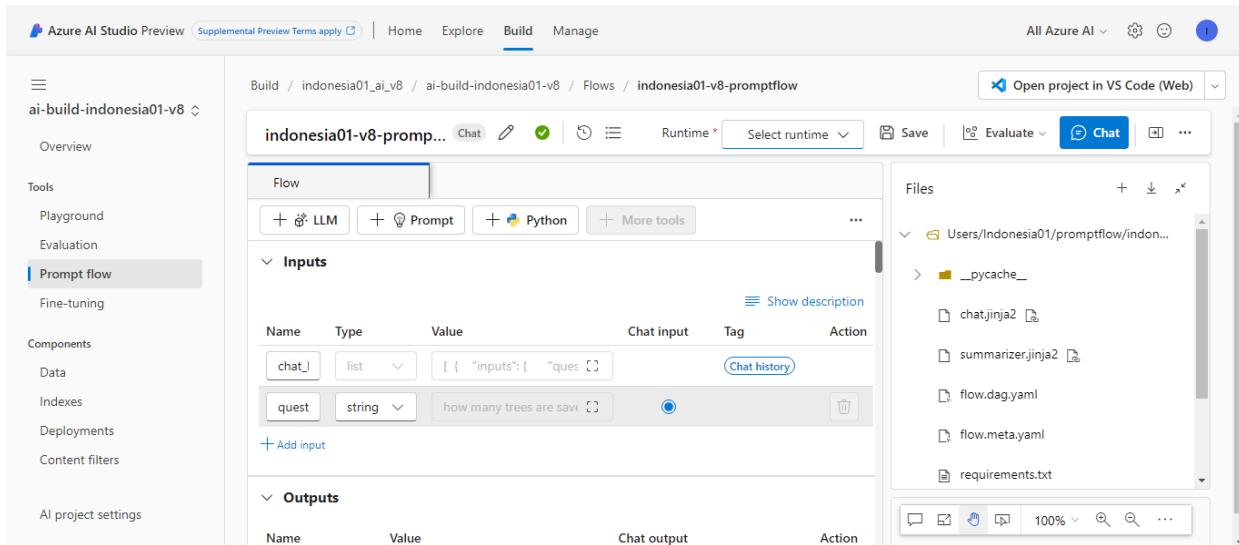
- a. Go to prompt flow and click on “**create**” to create a new prompt flow , you will find certain types of flows to be created as well as some of the “**Example Flows**” which you can clone and explore for further understanding.



- b. In the prompt flow , you will be able to see the “**graph**” which gives you the bird’s eye view of the whole flow and the “**Files**” which lets you download the prompt flow files to share your work.



- C. You will also see the different tools which are available as the part of prompt flow such as “**LLM**”, “**Prompt**” , “**Python**” nodes which will help you in development.To run the flow, and chat with the application select the “**Automatic Runtime**” and start it ,then click on the **chat** button to start conversing with the application.



12. Evaluation

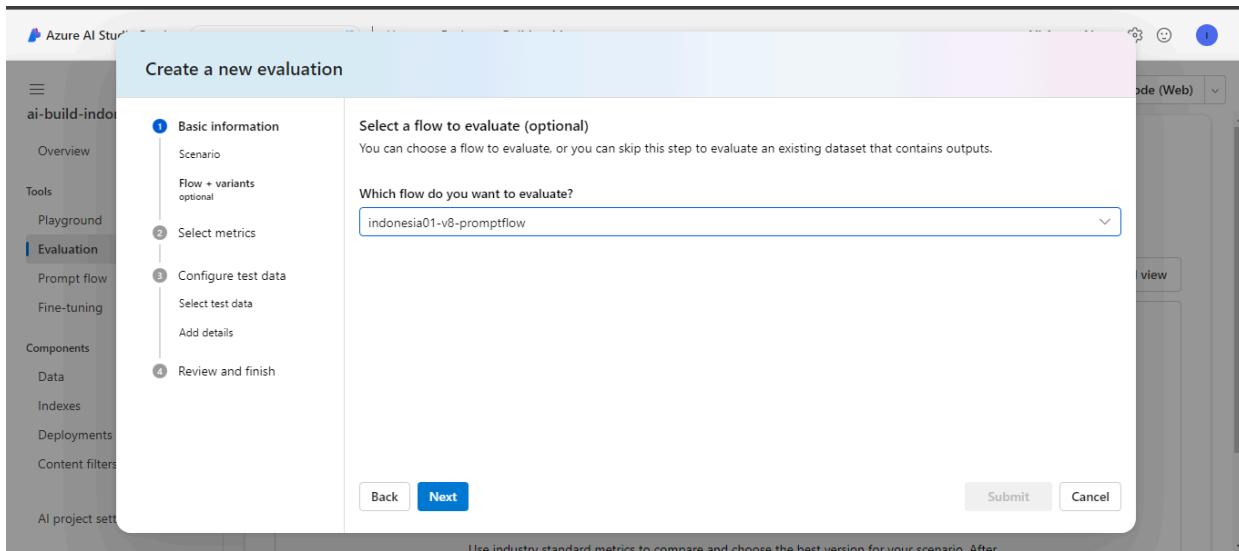
- a. To create a new evaluation flow , go to the evaluation section of the playground and click on the **new evaluation** button .

The screenshot shows the Azure AI Studio Preview interface. The left sidebar has a tree view with 'ai-build-indonesia01-v8' selected. Under 'Evaluation', there are tabs for 'Metric evaluations' (selected) and 'Manual evaluations'. A sub-section titled 'Assess and compare AI application performance' contains a button '+ New evaluation', a refresh button, and a delete button. Below these are sections for 'Evaluate what's important for your scenario' and 'Evaluate your model performance with industry standard metrics to compare and choose the best version based on your need'. A 'Switch to dashboard view' button is also present.

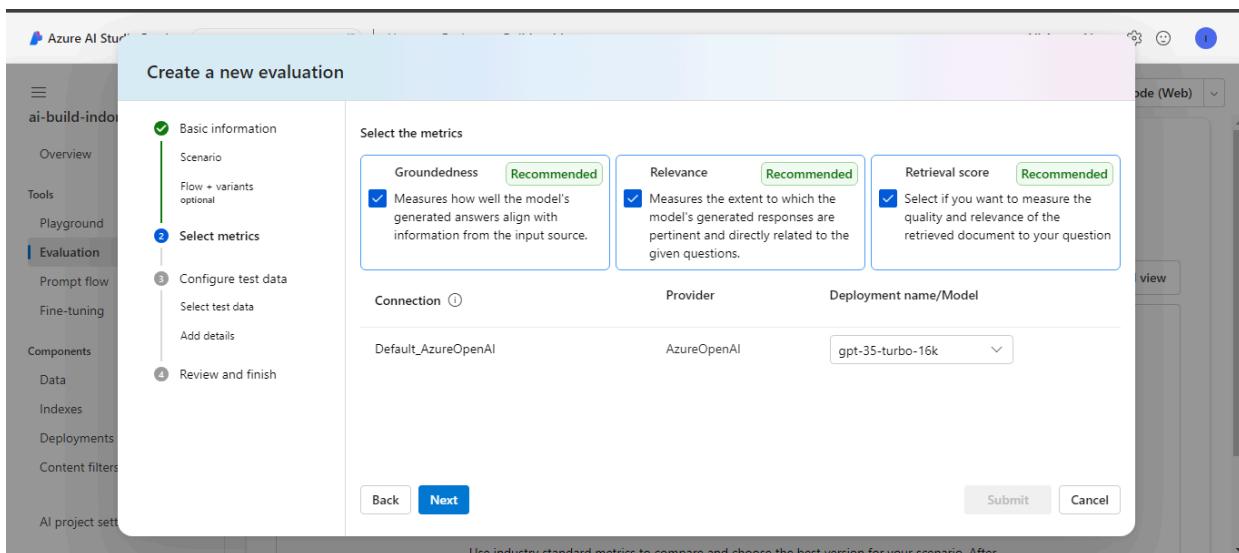
- b. Select the appropriate scenario to evaluate , here we will be evaluation the second scenario which is **Question and answers with retrieval augment generation**.Then click **Next**

The screenshot shows the 'Create a new evaluation' wizard. Step 1: Basic information. It asks for an 'Evaluation name' (set to 'strong_jelly_cvb4xcbws') and the type of scenario ('Question and answer pairs with retrieval-augmented generation'). The right side shows a preview of the evaluation configuration. Buttons at the bottom include 'Next', 'Submit', and 'Cancel'.

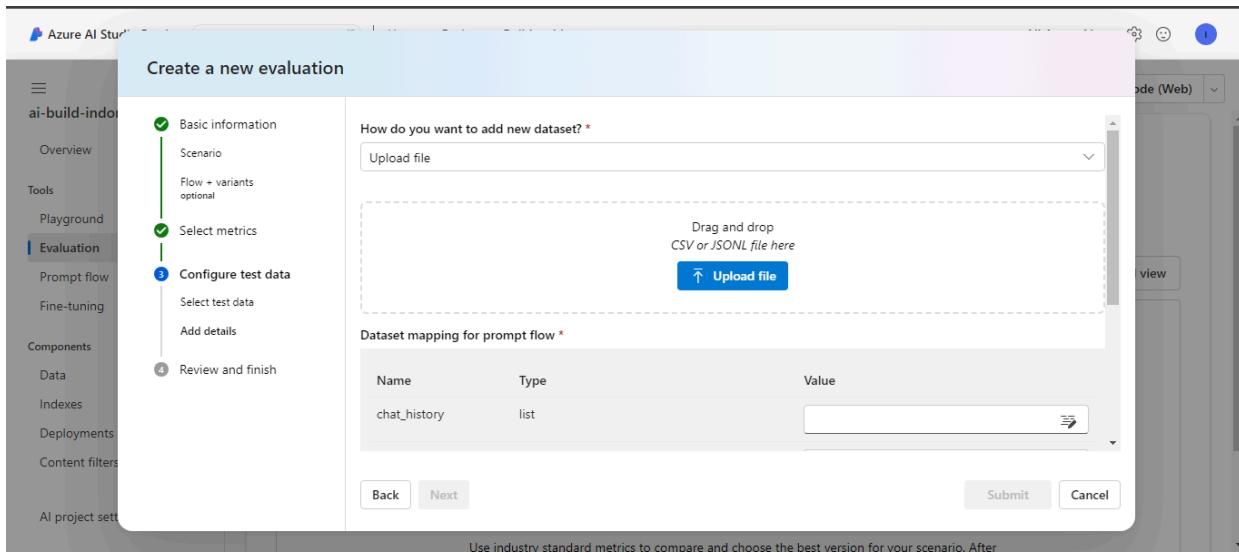
- c. Select the flow which you want to evaluate from the dropdown and click Next



- d. Select the metrics which you want to use for the evaluation based on the definition and click next.



- e. You can add a new **dataset** or choose an **existing dataset**. Then click next. You can add **CSV** or **JSONL** files. irrespective of existing data or new data you need to map the input fields in your data with the variables present in the prompt flow. Once done, click next, review and finish the flow.



f. You can also run **manual evaluations** from the evaluation flow

g. Click on the **new manual evaluation** and you can import the data and setup the prompt to populate the outputs and do the manual evaluation using **Thumbs up/down**.

Azure AI Studio Preview | Home | Explore | Build | Manage | All Azure AI |

ai-build-indonesia01-v8

Overview

Tools

Evaluation

Prompt flow

Fine-tuning

Components

Data

Indexes

Deployments

Content filters

AI project settings

Build / indonesia01_ai_v8 / ai-build-indonesia01-v8 / Evaluation / Manual evaluation

gpt-35-turbo-16k

Max response 800

Temperature 0.7

Manual evaluation result

Run Import test data Export Metric evaluation Save results Columns

Input Expected response Output

Run to see the model response

+ Add input

- h. Navigate to prompt flow, click on **create**, and scroll down to **Explore Gallery** section to find some example flows which are pre-build on some common use cases, you can **clone** them and use them for your understanding or build on top of it.

Azure AI Studio Preview | Home | Explore | Build | Manage | All Azure AI |

Create a new flow

Explore gallery

All Standard flow Chat flow Evaluation flow

View more samples

Multi-Round Q&A on Your Data

Q&A on Your Data

Web Classification

Chat with Wikipedia

Use GPT Function Calling

Classification Accuracy Evalu...

View detail Clone

View detail Clone

View detail Clone

Cancel

Note: The Azure service accesses used in this event are only valid during the event. Please contact your respective Microsoft account teams to follow up on the continued access or further questions.