**Azure AI Language Services**

Azure AI Language is a cloud-based service that **provides Natural Language Processing (NLP) features for understanding and analyzing text**. Use this service to help build intelligent applications using the web-based Language Studio, REST APIs, and client libraries.

A screenshot of a computer

Description automatically generated

**Available features**

This Language service unifies the following previously available Azure AI services:

* Text Analytics
* QnA Maker
* Language Understanding (LUIS)

The Language service also provides several new features as well, which can either be:

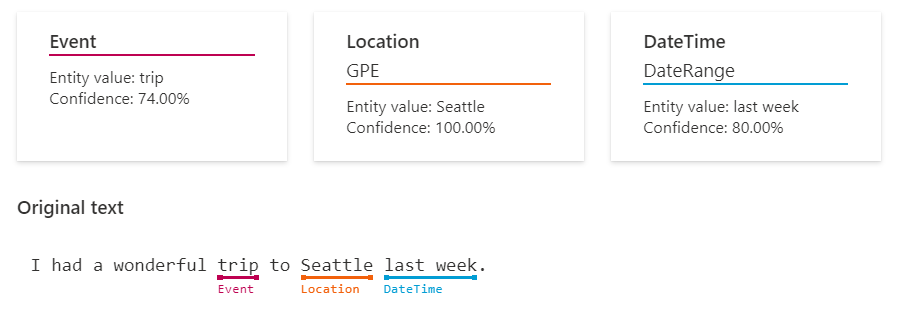
* **Preconfigured**, which means the AI models that the feature uses are not customizable. You just send your data and use the feature's output in your applications.
* **Customizable**, which means you'll train an AI model using our tools to fit your data specifically.

**Language studio**is the platform to try several language service features, and see what they return in a visual manner.

A screenshot of a computer

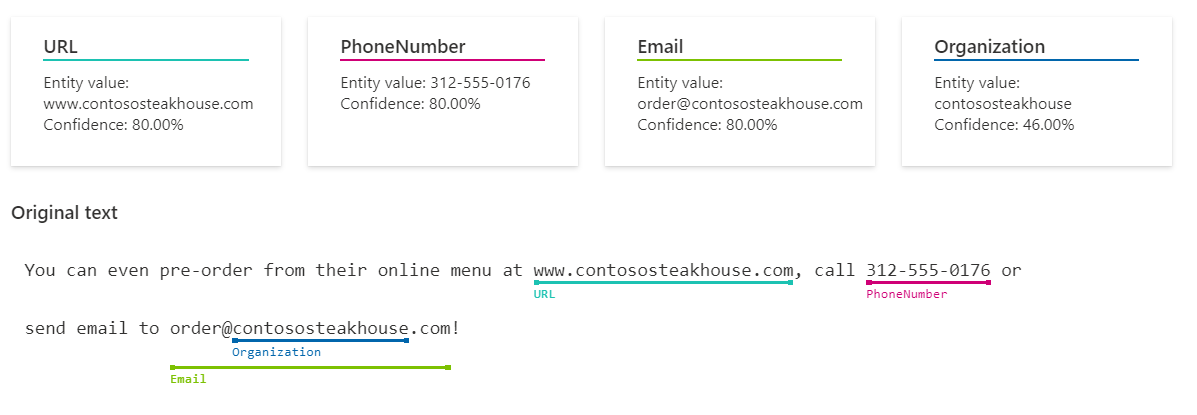
Description automatically generated

**Named Entity Recognition (NER)**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/named-entity-recognition.png#lightbox)

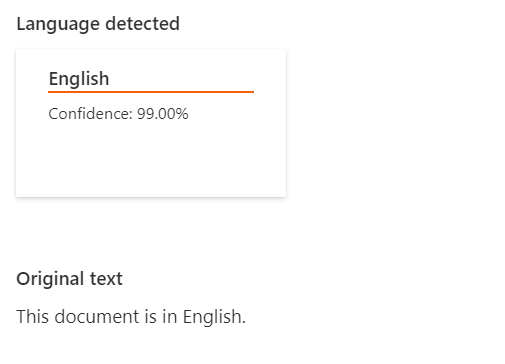
[Named entity recognition](https://learn.microsoft.com/en-us/azure/ai-services/language-service/named-entity-recognition/overview) is a preconfigured feature that **categorizes entities** (words or phrases) in unstructured text across several predefined category groups. For example: people, events, places, dates, [and more](https://learn.microsoft.com/en-us/azure/ai-services/language-service/named-entity-recognition/concepts/named-entity-categories).

**Personally identifying (PII) and health (PHI) information detection**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/personal-information-detection.png#lightbox)

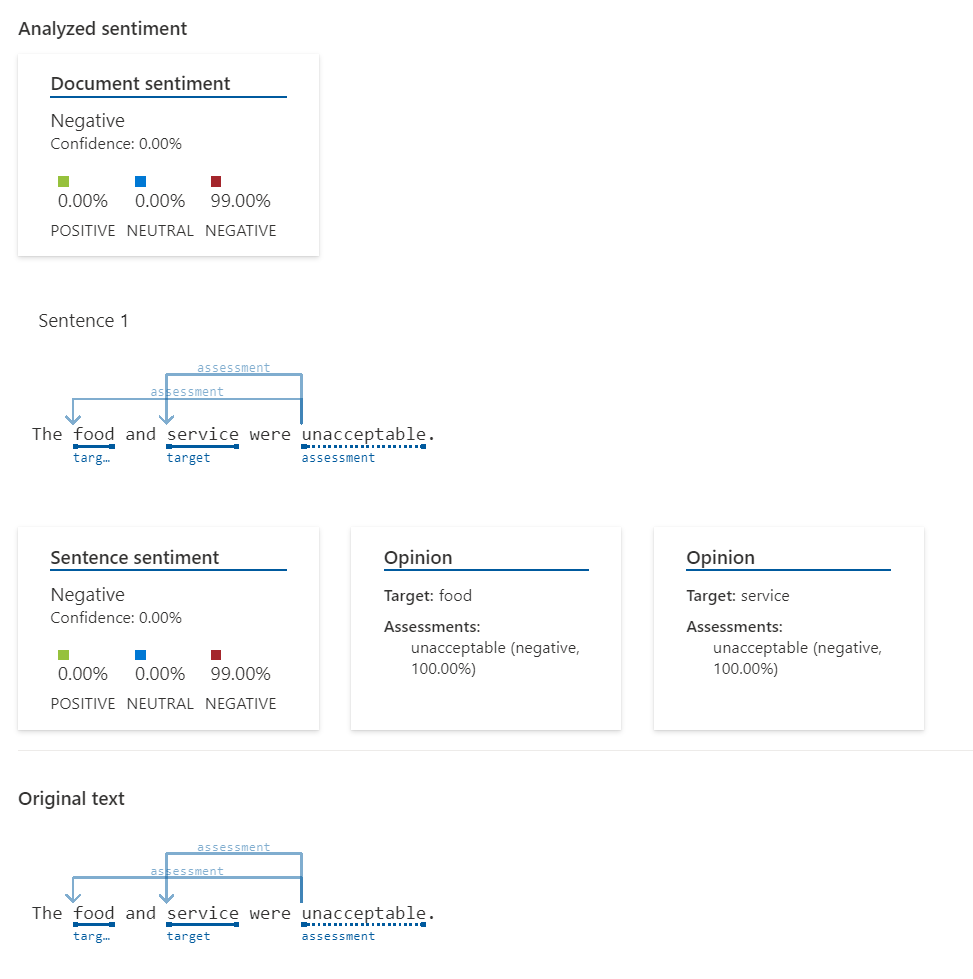
[PII detection](https://learn.microsoft.com/en-us/azure/ai-services/language-service/personally-identifiable-information/overview) is a preconfigured feature that **identifies, categorizes, and redacts sensitive information** in both [unstructured text documents](https://learn.microsoft.com/en-us/azure/ai-services/language-service/personally-identifiable-information/how-to-call), and [conversation transcripts](https://learn.microsoft.com/en-us/azure/ai-services/language-service/personally-identifiable-information/how-to-call-for-conversations). For example: phone numbers, email addresses, forms of identification, [and more](https://learn.microsoft.com/en-us/azure/ai-services/language-service/personally-identifiable-information/concepts/entity-categories).

**Language detection**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/language-detection.png#lightbox)

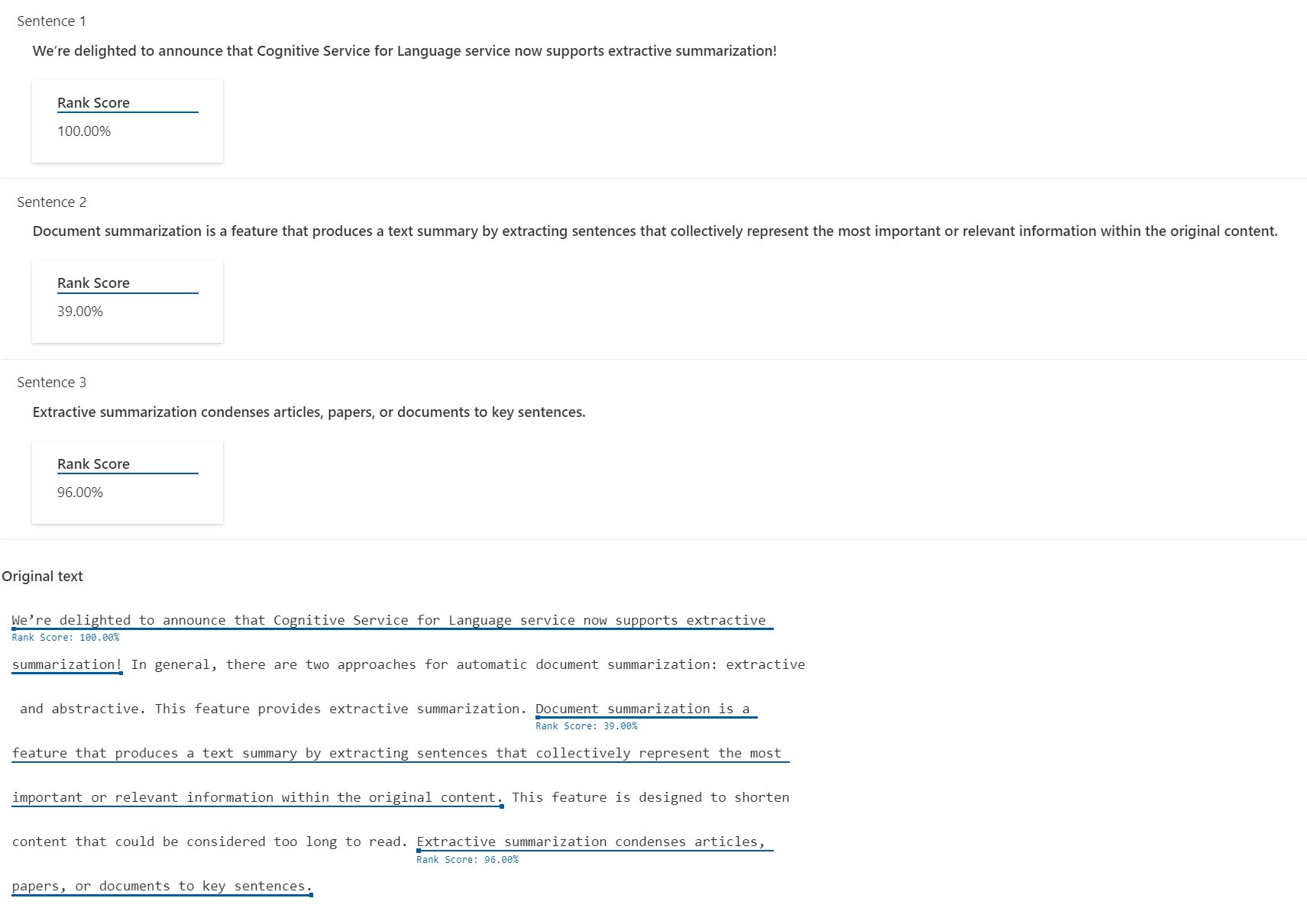
[Language detection](https://learn.microsoft.com/en-us/azure/ai-services/language-service/language-detection/overview) is a preconfigured feature that can **detect the language** a document is written in and returns a language code for a wide range of languages, variants, dialects, and some regional/cultural languages.

**Sentiment Analysis and opinion mining**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/sentiment-analysis-example.png#lightbox)

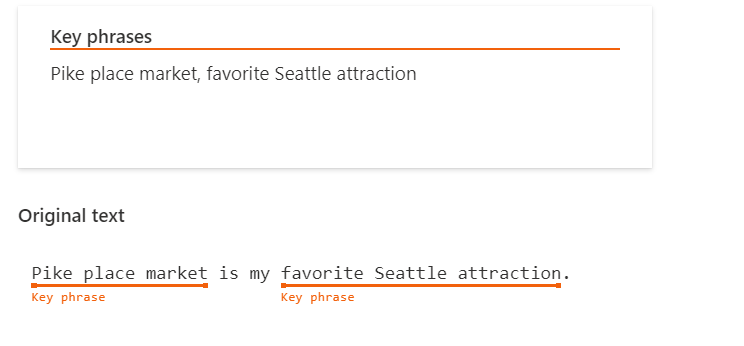
[Sentiment analysis and opinion mining](https://learn.microsoft.com/en-us/azure/ai-services/language-service/sentiment-opinion-mining/overview) are preconfigured features that help you **find out what people think of your brand or topic** by mining text for clues about **positive or negative sentiment** and can associate them with specific aspects of the text.

**Summarization**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/summarization-example.png#lightbox)

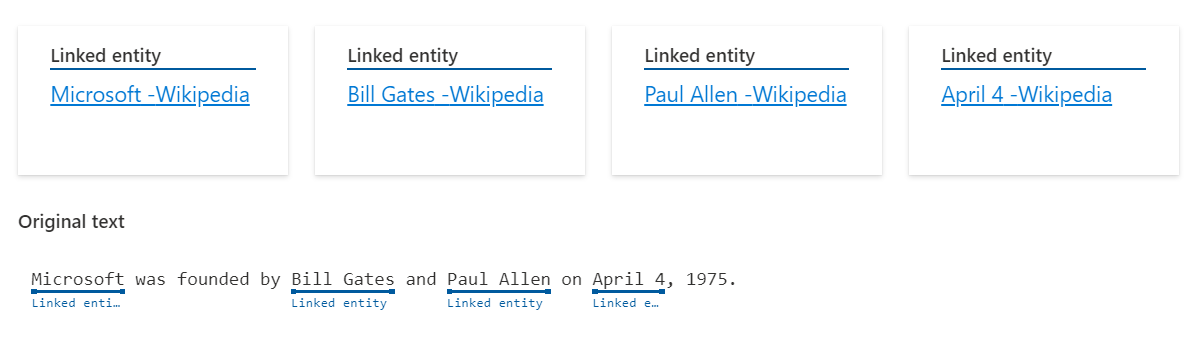
[Summarization](https://learn.microsoft.com/en-us/azure/ai-services/language-service/summarization/overview) is a preconfigured feature that **uses extractive text summarization to produce a summary of documents and conversation transcriptions**. It extracts sentences that collectively represent the most important or relevant information within the original content.

**Key phrase extraction**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/key-phrases.png#lightbox)

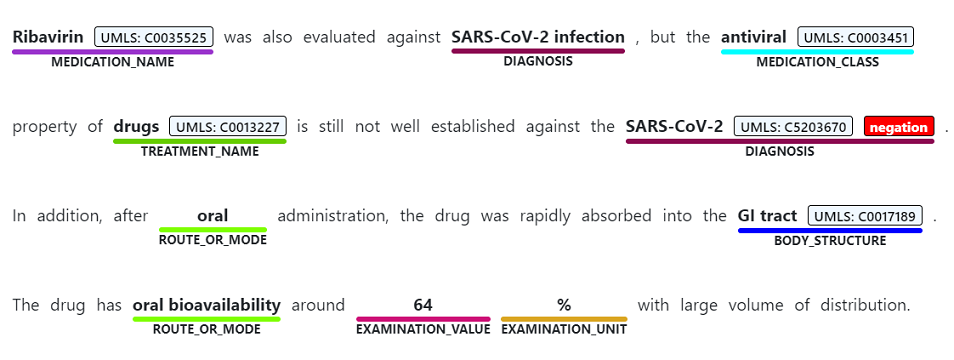
[Key phrase extraction](https://learn.microsoft.com/en-us/azure/ai-services/language-service/key-phrase-extraction/overview) is a preconfigured feature **that evaluates and returns the main concepts** in unstructured text and **returns them as a list**.

**Entity linking**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/entity-linking.png#lightbox)

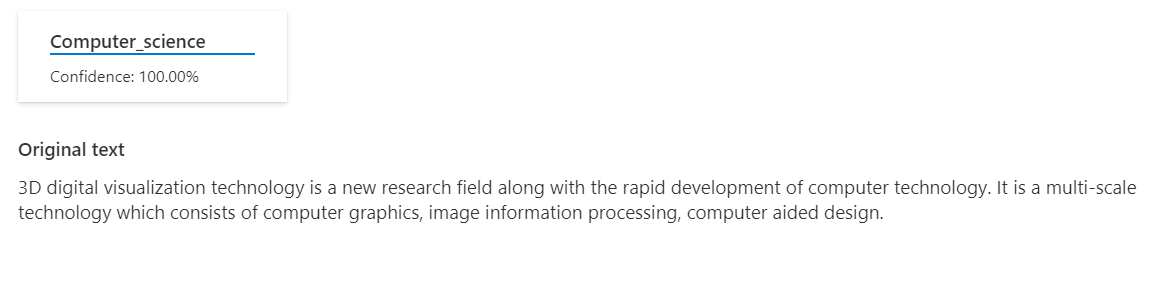
[Entity linking](https://learn.microsoft.com/en-us/azure/ai-services/language-service/entity-linking/overview) is a preconfigured feature that disambiguates the **identity of entities** (words or phrases) found in unstructured text and **returns links to Wikipedia**.

**Text analytics for health**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/text-analytics-for-health/media/call-api/health-named-entity-recognition.png#lightbox)

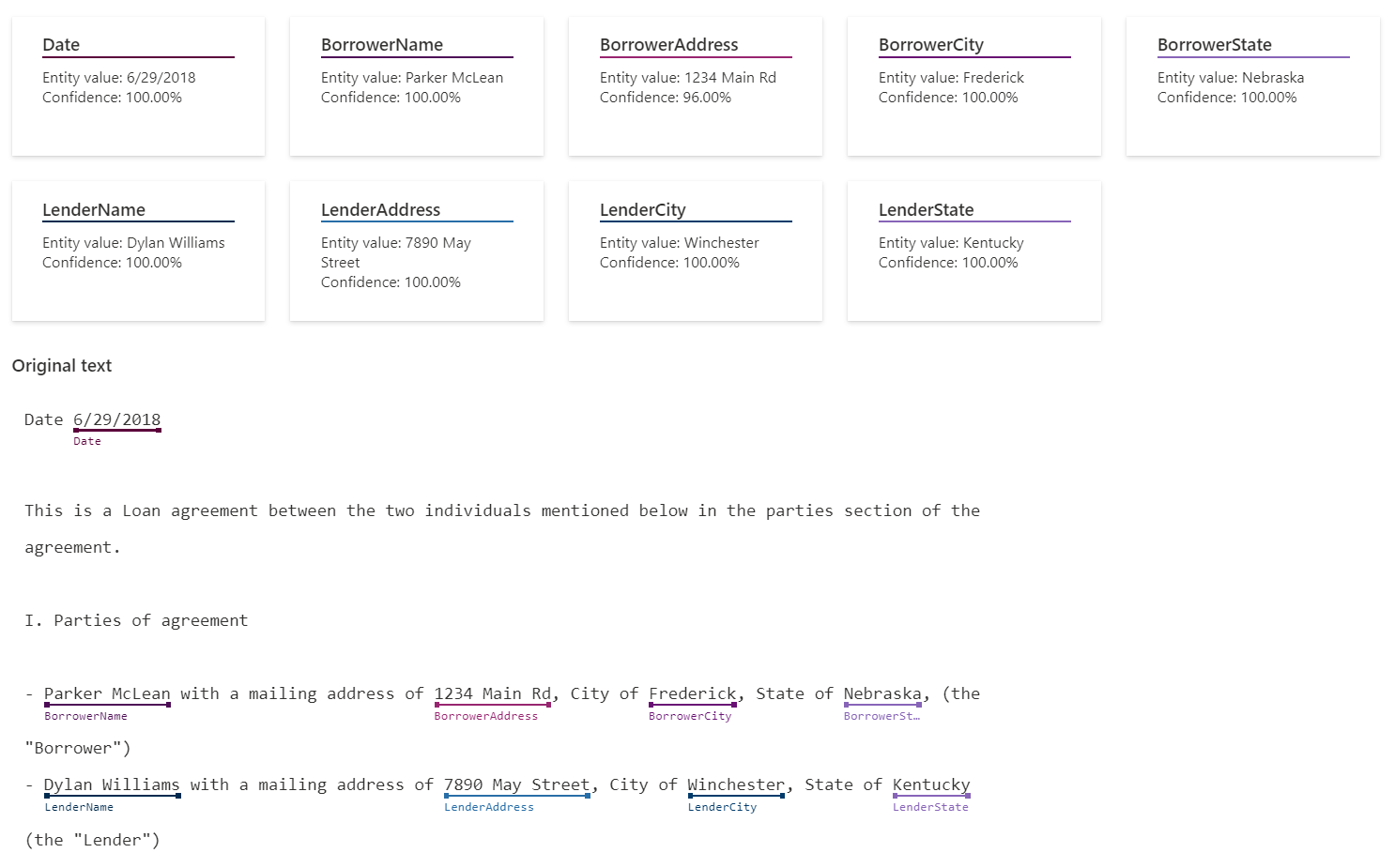
[Text analytics for health](https://learn.microsoft.com/en-us/azure/ai-services/language-service/text-analytics-for-health/overview) is a preconfigured feature that **extracts and labels relevant medical information** from unstructured texts such as doctor's notes, discharge summaries, clinical documents, and electronic health records.

**Custom text classification**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/single-classification.png#lightbox)

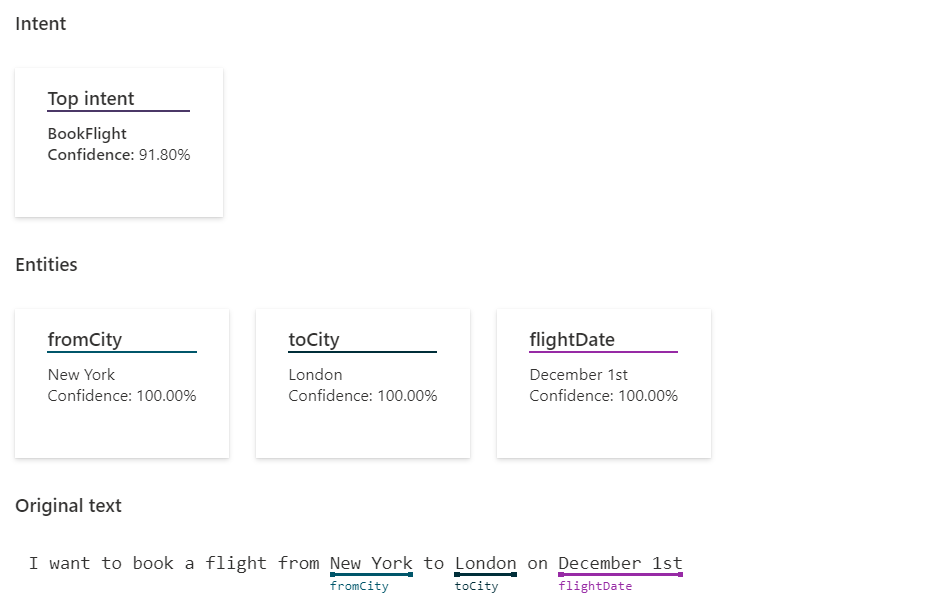
[Custom text classification](https://learn.microsoft.com/en-us/azure/ai-services/language-service/custom-text-classification/overview) enables you to **build custom AI models** to classify **unstructured text documents into custom classes you define.**

**Custom Named Entity Recognition (Custom NER)**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/custom-named-entity-recognition.png#lightbox)

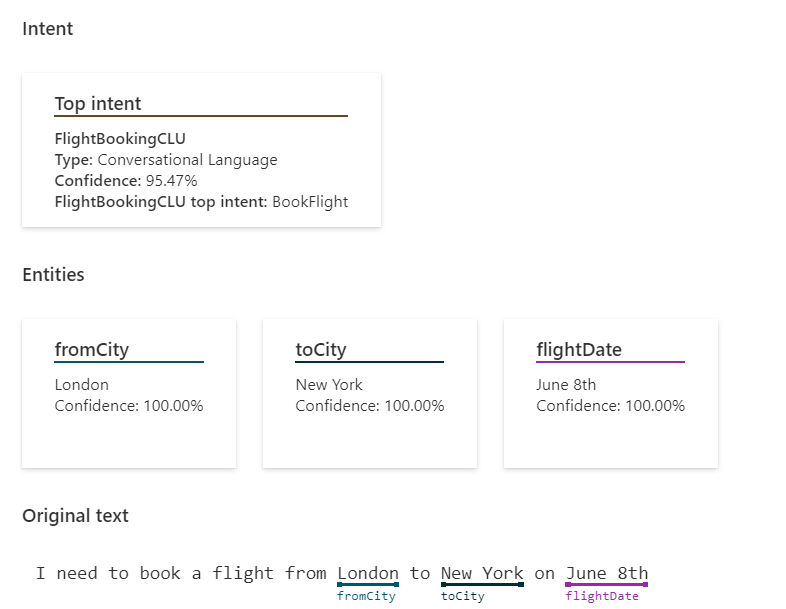
[Custom NER](https://learn.microsoft.com/en-us/azure/ai-services/language-service/custom-named-entity-recognition/overview) enables you to build custom AI models to **extract custom entity categories** (labels for words or phrases), using unstructured text that you provide.

**Conversational language understanding**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/conversational-language-understanding.png#lightbox)

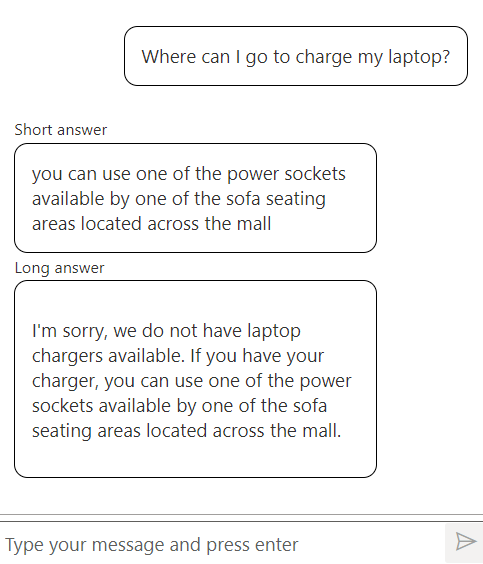
[Conversational language understanding (CLU)](https://learn.microsoft.com/en-us/azure/ai-services/language-service/conversational-language-understanding/overview) enables users to build custom natural language understanding models **to predict the overall intention of an incoming utterance and extract important information from it**.

**Orchestration workflow**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/orchestration-workflow.png#lightbox)

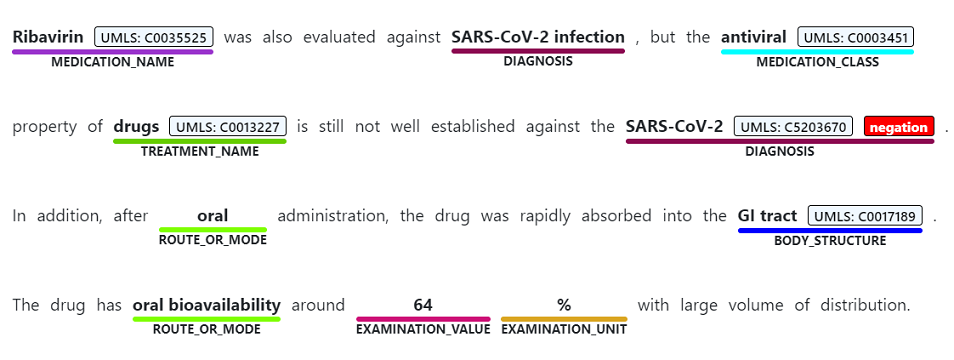
[Orchestration workflow](https://learn.microsoft.com/en-us/azure/ai-services/language-service/language-detection/overview) is a custom feature that enables you to connect [Conversational Language Understanding (CLU)](https://learn.microsoft.com/en-us/azure/ai-services/language-service/conversational-language-understanding/overview), [question answering](https://learn.microsoft.com/en-us/azure/ai-services/language-service/question-answering/overview), and [LUIS](https://learn.microsoft.com/en-us/azure/ai-services/luis/what-is-luis) applications.

**Question answering**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/media/studio-examples/question-answering.png#lightbox)

[Question answering](https://learn.microsoft.com/en-us/azure/ai-services/language-service/question-answering/overview) is a custom feature that finds the most appropriate answer for inputs from your users, and is commonly used to build conversational client applications, such **as social media applications, chat bots, and speech-enabled desktop applications**.

**Custom text analytics for health**

[](https://learn.microsoft.com/en-us/azure/ai-services/language-service/text-analytics-for-health/media/call-api/health-named-entity-recognition.png#lightbox)

[Custom text analytics for health](https://learn.microsoft.com/en-us/azure/ai-services/language-service/custom-text-analytics-for-health/overview) is a custom feature that extract healthcare specific entities from unstructured text, using a model you create.

**Which Language service feature should I use?**

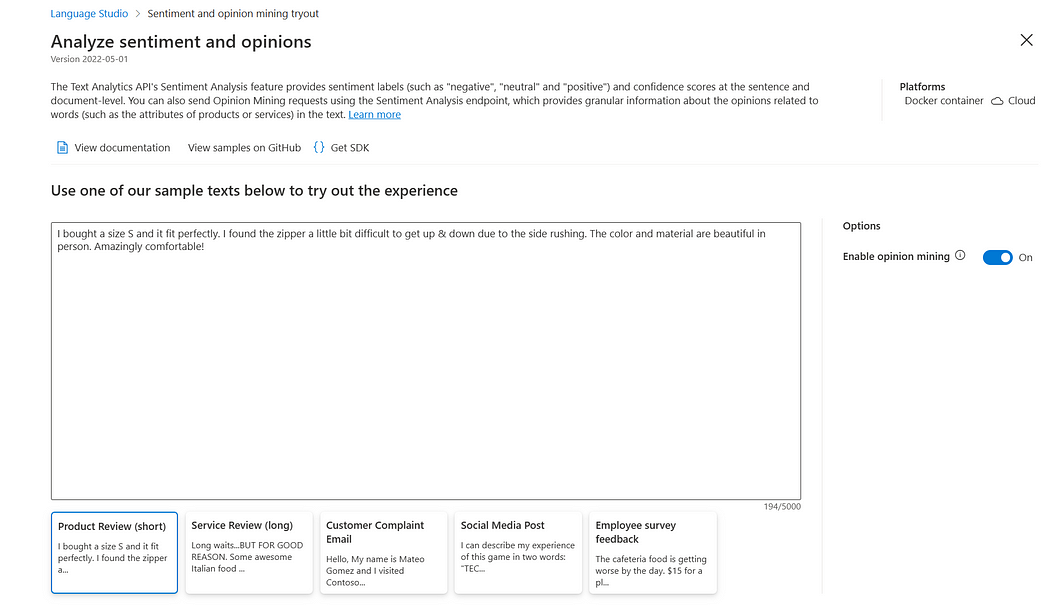
A screenshot of a computer

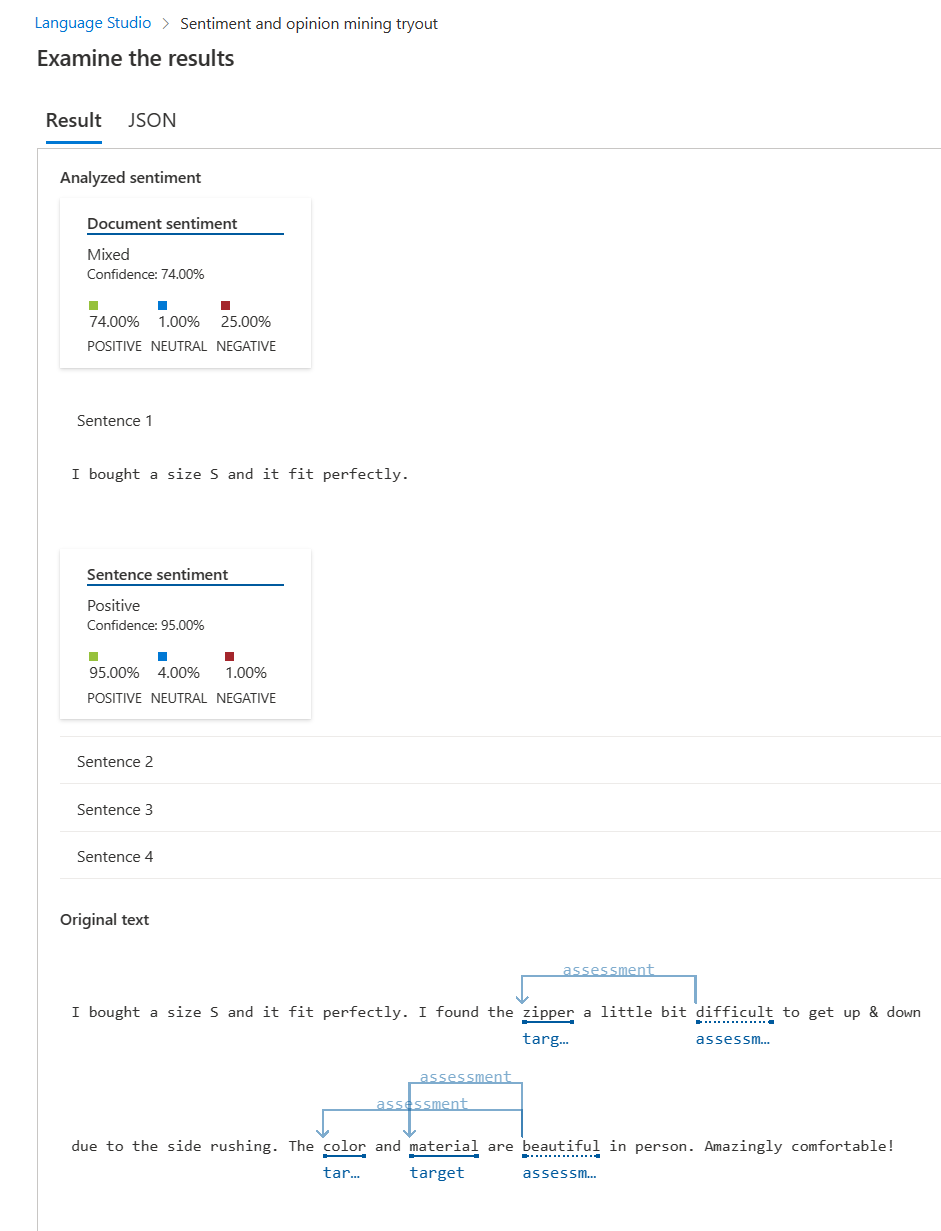
Description automatically generated



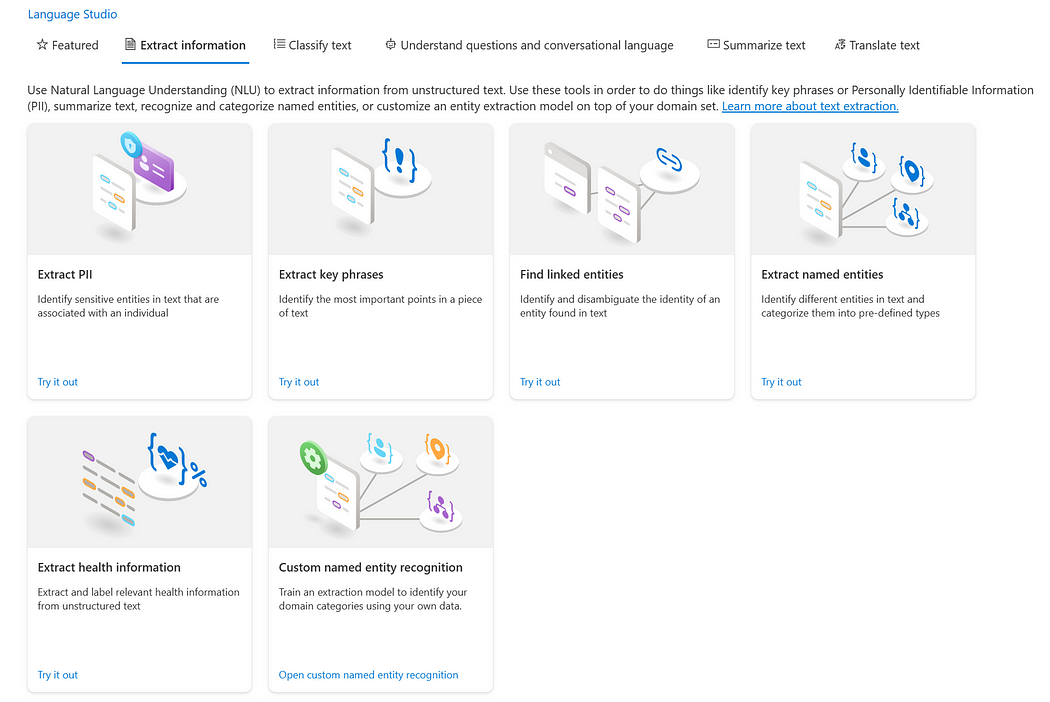
**Text Analytics (Sentiment Analysis, Key Phrase Extraction, Language Detection)**— Azure Text Analytics service allows you to extract insights from unstructured text data. It includes a set of APIs for sentiment analysis, key phrase extraction, named entity recognition, language detection, and more. These services leverage machine learning models to process text and provide valuable information for tasks such as social media monitoring, customer feedback analysis, and content categorization. Let me show you what each service looks like when you access it.



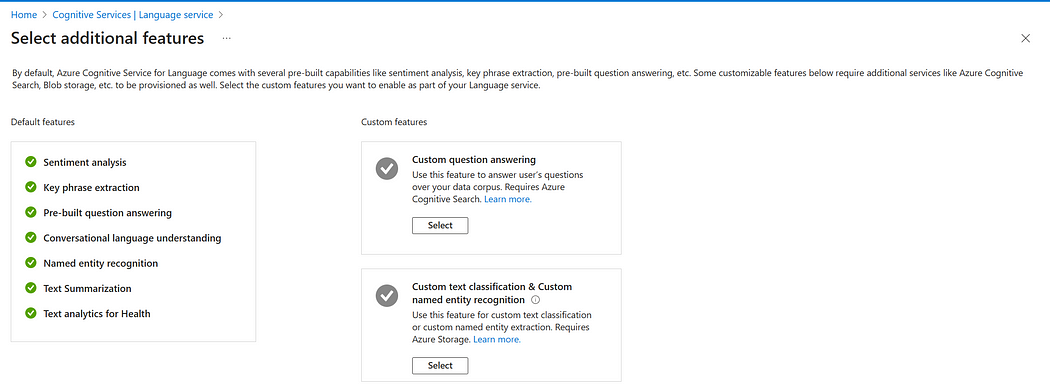


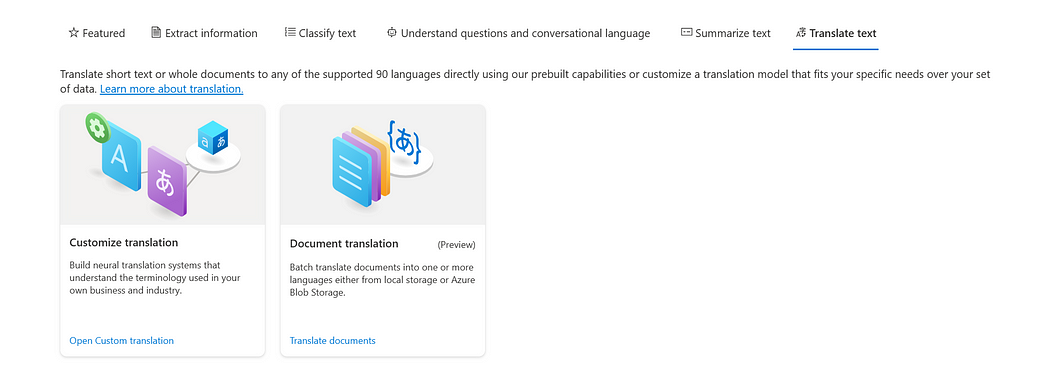


**Language Understanding (LUIS) :**Azure Language Understanding Intelligent Service (LUIS) is an AI service that enables the creation of natural language understanding models for applications. LUIS allows developers to define intents, entities, and utterances and then uses machine learning to train the model to understand and interpret user inputs. LUIS can be used in various scenarios such as chatbots, voice assistants, and smart applications that require understanding and processing of natural language.

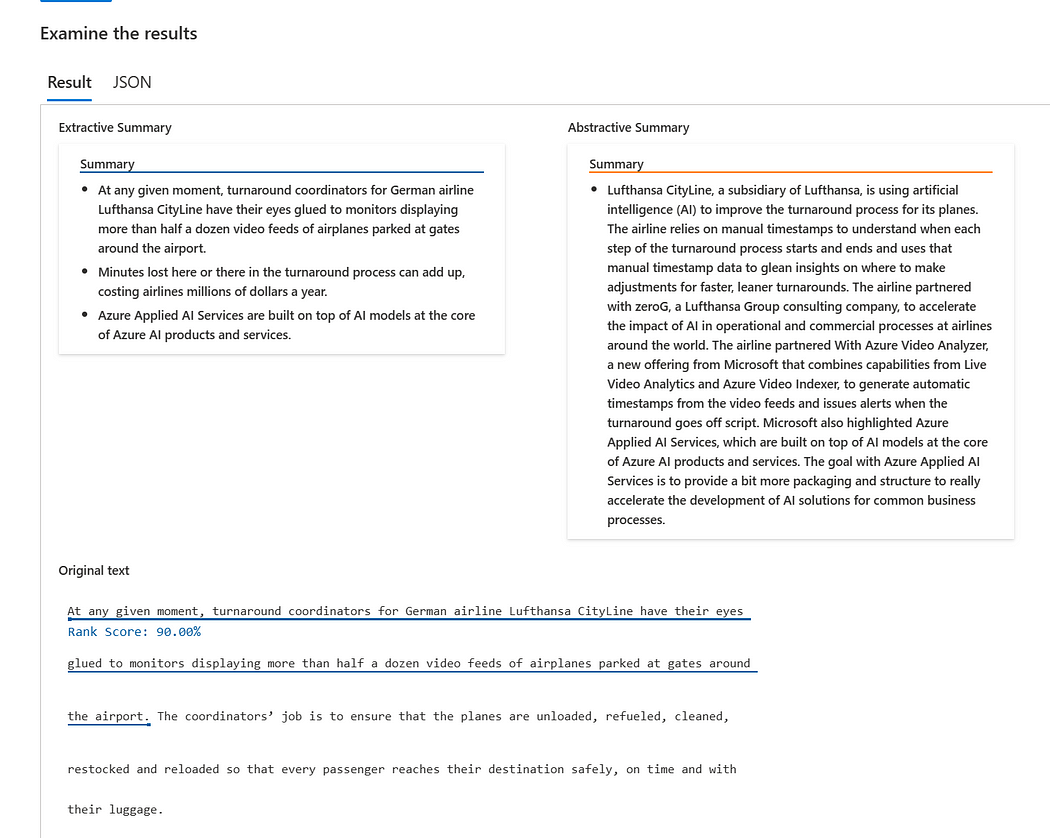


**Named Entity Recognition (NER), Text Translation & Summarizer :**Several options for custom NER and custom Text Translation are also available in Azure. Take a look at this below

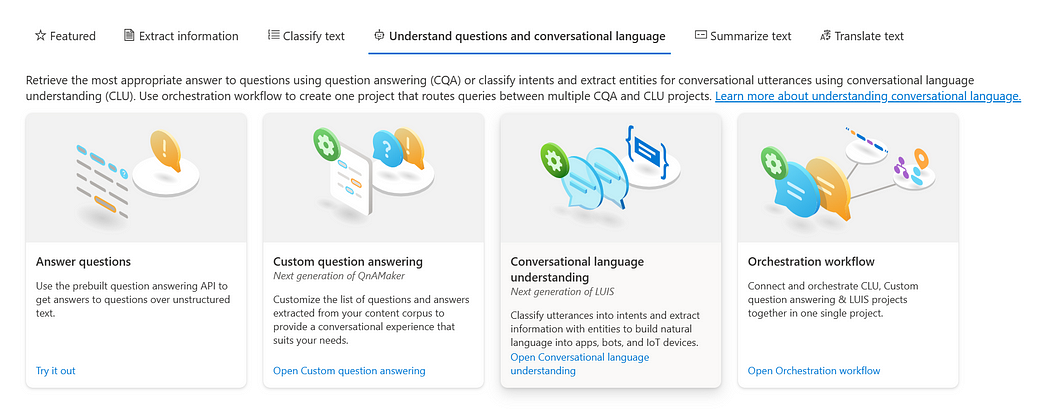








**QnA Maker** — Azure QnA Maker is a service that allows you to easily create question-and-answer systems from your existing content. It enables you to transform FAQs, product manuals, support documents, and other textual information into a knowledge base that can provide accurate answers to user queries. QnA Maker leverages machine learning to understand user questions and retrieve the most relevant answers from the knowledge base. ***QnA Maker service is being retired on 31st March 2025. A newer version of this capability is now available as a part of Azure Cognitive Service for Language called question answering, we read about it in the previous section.***



* **Personalizer:**Azure Personalizer is an AI service that helps your applications make smarter decisions at scale. It uses reinforcement learning to analyze information about your application, the situation, and users to determine the best decision to make. By receiving feedback from your application, Personalizer learns and improves its decision-making ability in near-real time.

**Personalizer**can help in various scenarios to determine the best actions to take:

* **E-commerce:** It can decide which product to show to customers to increase the chances of a purchase.
* **Content recommendation:** It can recommend the most suitable article to improve the click-through rate.
* **Content design:** It can determine the optimal placement of advertisements to enhance user engagement on a website.
* **Communication**: It can suggest the right timing and method to send notifications for maximizing the likelihood of a response.

Azure Personalizer has two primary APIs: Rank API and Reward API.

The Rank API helps you make decisions by obtaining the best action, while the Reward API allows you to provide feedback on the suggested action’s performance, using examples like article clicks or product purchases.

For example, Rank API can provide recommendations of relevant news articles to the user, and Reward API will consider the feedback of whether the user clicked on the suggested news articles

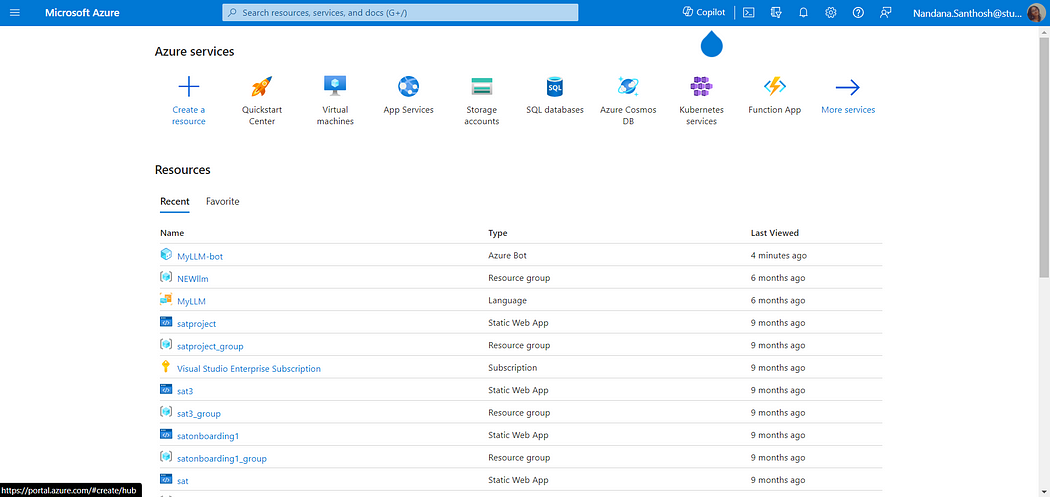
A screenshot of a computer

Description automatically generated

**Azure Language Services: A Guide to Creating and Deploying Low-Code Chatbots with Microsoft Azure.**

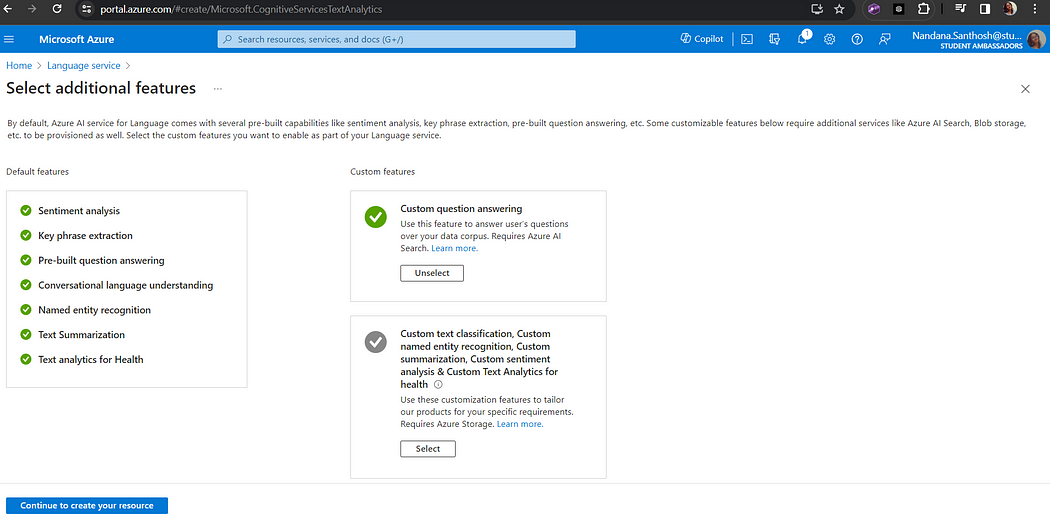
**[Step 1: Setting Up Azure Cognitive Services Language Resource](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)**

1. [Navigate to the](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)[[Azure Portal](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)](https://azure.microsoft.com/en-in?wt.mc_id=studentamb_257120)[and create a new resource.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[2. Then search for Azure Language services and click on “ CREATE”.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[3. Next click on “ Custom Question and Answering” and then continue to create your resource.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

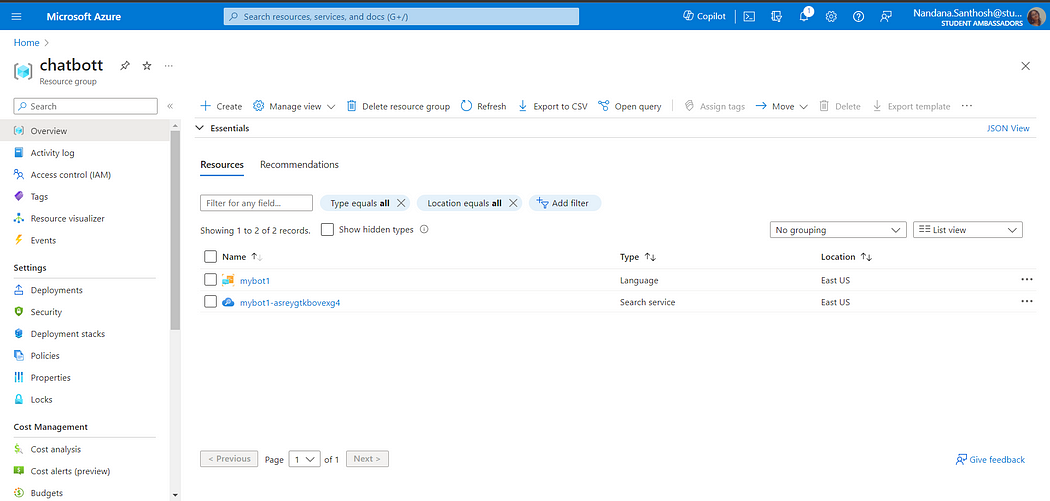
[4. Configure basic settings like subscription, resource group, and pricing tier then click on “Review + Create”.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

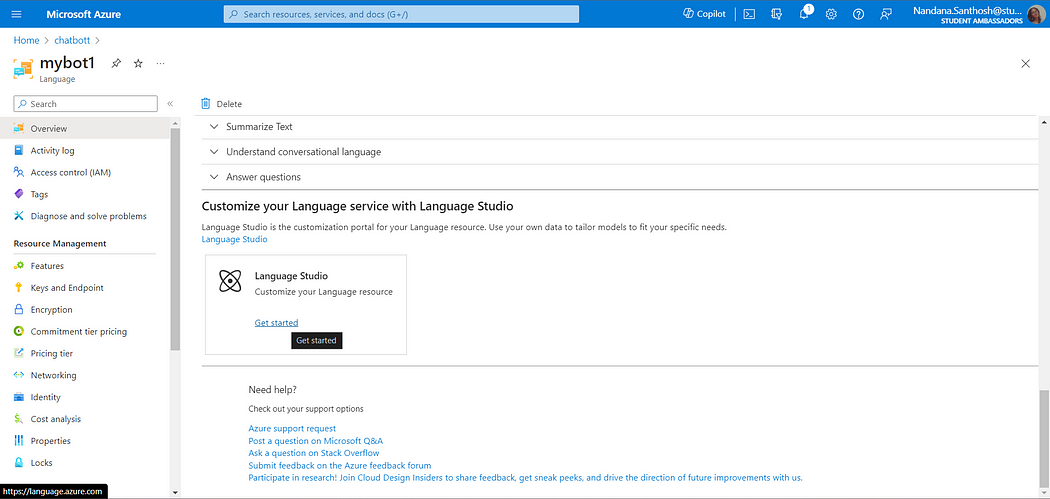
Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

**[Step 2: Creating a Custom Question and Answering Project](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)**

1. [Now go back to your resources and choose your created resource.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

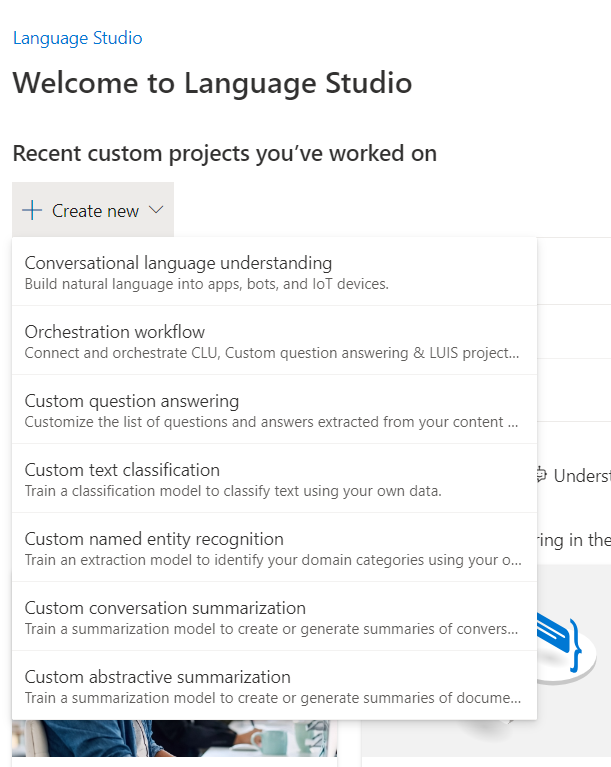
[2. Lead to Language Studio in Azure and create a new custom project.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[3. Select “Custom Question answering” and create the project.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

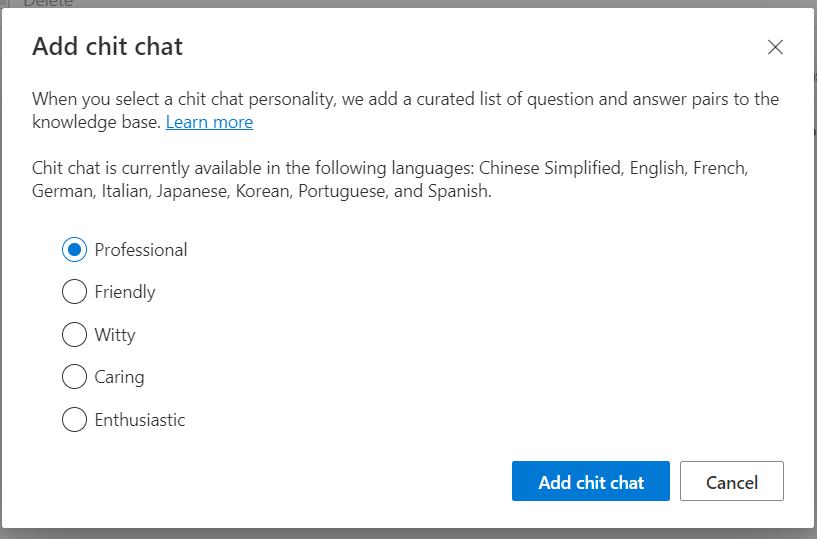
Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[4. Add sources for question-answer pairs, you can add—](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

* [URLs for web pages containing FAQs.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)
* [Files containing structured text from which questions and answers can be derived.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)
* [Predefined](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)*[chit-chat](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)*[datasets that include common conversational questions and responses in a specified style.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[Here’s an](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)[[example](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbVRVa2VDLWhYRkdWMEl3ZXRHcjJRMUR4QmVXZ3xBQ3Jtc0trenhaMmdCbFJhZGZWQVYyRlhMSUZ0WUtTaGVSY1pjZGVjckQxMHhXeTdnVmZPXzVMdUFqU29NX2VjdEdRRl9HNmlHQ3F6amJlQzRmUHNPNWhid3Q2WTJzcUJCSURZZUdwTGpIZ2RGWGlFY3FSamY1Zw&q=https%3A%2F%2Fraw.githubusercontent.com%2FMicrosoftLearning%2FAI-900-AIFundamentals%2Fmain%2Fdata%2Fqna%2Fmargies_faq.docx&v=Vrr_KYqUDyU)[file you can use.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[You can also use “chit-chat” like I did which already has questions that you can edit.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[chitchat](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[It had 90 pair questions, and you can add your own too!](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

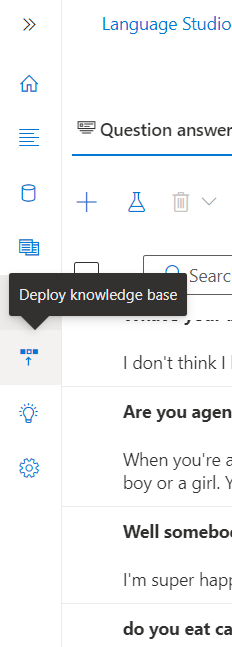
Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[You can also test it before deploying.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[4. Deploy your knowledge base.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[deploying your knowledge base](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[5. Check “Review suggestions” to see if there are any suggestions for questions you can add.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

**[Step 3: Setting Up the Azure Bot](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)**

1. [Now that we have our knowledge base we click on “Create a bot” and come back to our Azure portal.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

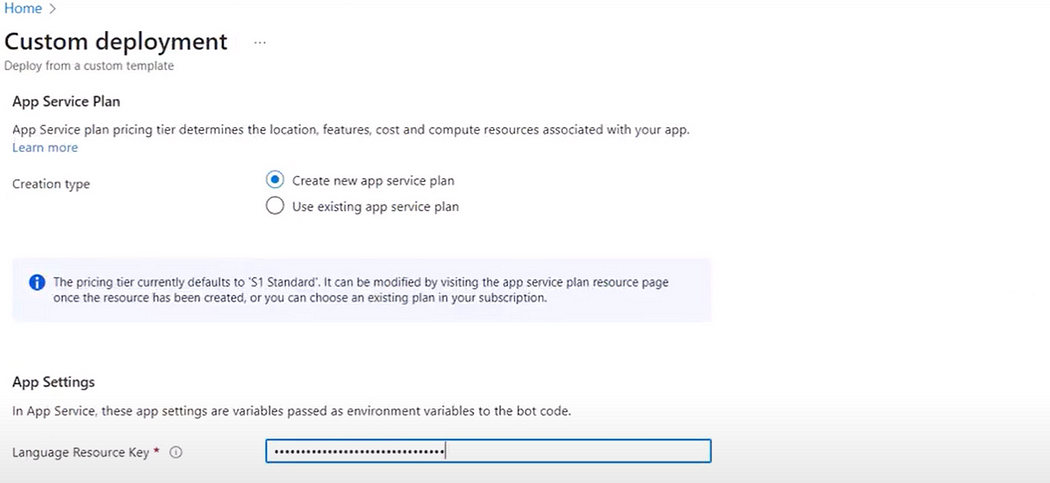
Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[2. Now for the resource key, you can find it within the resource group.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[Now copy either one of the keys and paste it back into the “Language resource key” section.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

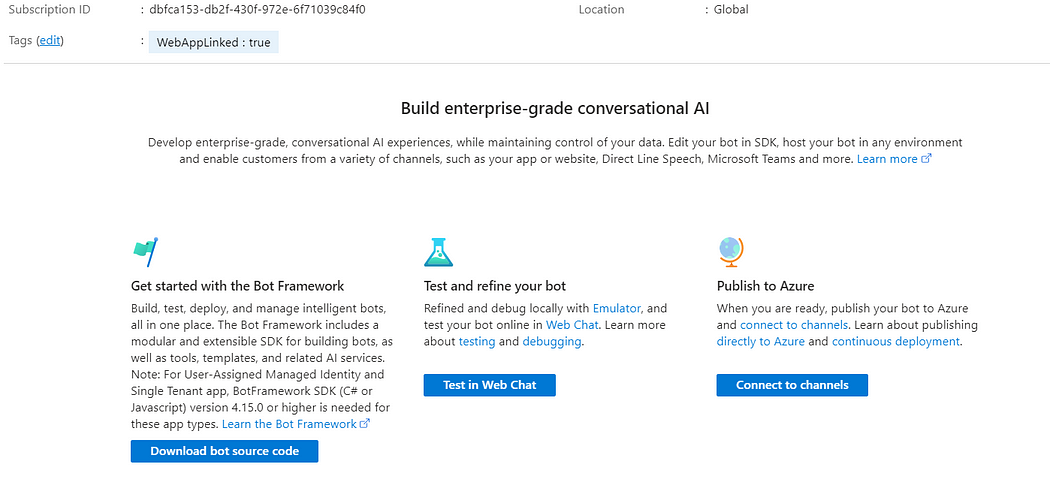
[3. Now Deploy it and wait till it’s done. Once the validation is done you can click on “Create”.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[After it’s created you have 3 options:](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[1. You can download the source code.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[2. Test in WebChat](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

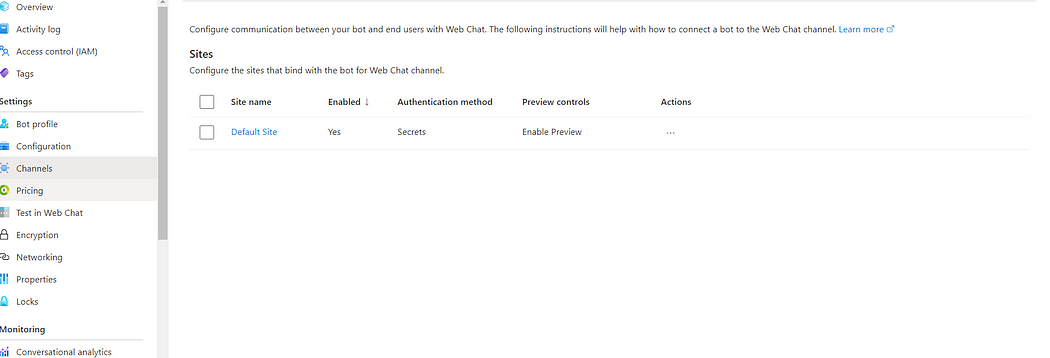
[3. Publish to Azure.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[2. You can test it using the Webchat option.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

**[Step 4: Integrating the bot with Web Chat](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)**

1. [Now click on “Channels” and click on web app.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[2. Next click on “ Default Site” and copy the HTML code](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[A screenshot of a computer

Description automatically generated](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

*[<iframe src='https://webchat.botframework.com/embed/MyLLM-bot?s=YOUR\_SECRET\_HERE' style='min-width: 400px; width: 100%; min-height: 500px;'></iframe>](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)*

[Now go back and copy the secret key and paste it in the HTML code.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

[3. Now use this iframe code in your webpage to make your bot accessible to everyone.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)

**[Step 5: Enhancing Your Chatbot](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)**

1. [Make an Interactive webpage/website for your bot.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)
2. [Explore additional features in the Azure Bot resource, such as adding an icon for your chatbot.](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)
3. [Here’s mine:](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)[[ChatBot](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)](https://mychatbot101.000webhostapp.com/)[, you can have a casual chat with this, don’t forget to ask it “ Who Programmed You?”](https://medium.com/@nndna9?source=post_page---byline--0cde84f81a21--------------------------------)