

Project Work on
“Pizza Chatbot Development”

Using
Azure QnA Maker Service



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Submitted to
Future Ready Talent



Objective

In this project, I would be using QnA Maker service to make a Chatbot that orders your favourite fast food like Pizzas, Cakes, Ice Creams, Garlic Bread, etc.

Problem Statement

Develop a Chatbot for Pizza which greets the customer and provides the menu to choose from the given menu and it should also mention the parcel services will be soon coming.

Problem Context

The purpose of chat bots is to support and scale business teams in their relations with customers. It could live in any major chat applications like Outlook, Facebook Messenger, Slack, Telegram, Text Messages, etc. Chatbot applications streamline interactions between people and services, enhancing customer experience. At the same time, they offer companies new opportunities to improve the customers engagement process and operational efficiency by reducing the typical cost of customer service.

This project is focussed on building a custom chatbot that will be the fundamental step of the learning curve of building the own professional chatbots. In this project, we would be building an Chatbot service, to which you can talk and communicate. And talking to a chatbot would not be business driven. It would just be casual conversations. Collaborating with these types of APIs is very much critical as in today's world the popular chatbots do much more than simply having a data-driven conversation; to supplement additional user-oriented features.

What is an Azure QnA Maker service?

QnA Maker is a cloud-based Natural Language Processing (NLP) service that allows you to create a natural conversational layer over the data. It is used to find the most appropriate answer for any input from the custom knowledge base (KB) of information.

QnA Maker is commonly used to build conversational client applications, which include social media applications, chat bots, and speech-enabled desktop applications.

QnA Maker does not store customer data. All customer data (question answers and chat logs) is stored in the region the customer deploys the dependent service instances in. For more details on dependent services see [here](#).

This documentation contains the following article types

- The [quickstarts](#) are step-by-step instructions that let you make calls to the service and get results in a short period of time.
- The [how-to guides](#) contain instructions for using the service in more specific or customized ways.
- The [conceptual articles](#) provide in-depth explanations of the service's functionality and features.
- [Tutorials](#) are longer guides that show you how to use the service as a component in broader business solutions.

When to use QnA Maker

- **When you have static information** - Use QnA Maker when you have static information in the knowledge base of answers. This knowledge base is custom to the needs, which you've built with documents such as [PDFs and URLs](#).
- **When you want to provide the same answer to a request, question, or command** - when different users submit the same question, the same answer is returned.
- **When you want to filter static information based on meta-information** - add [metadata](#) tags to provide additional filtering options relevant to your client application's users and the information. Common metadata information includes [chit-chat](#), content type or format, content purpose, and content freshness.
- **When you want to manage a bot conversation that includes static information** - your knowledge base takes a user's conversational text or command and answers it. If the answer is part of a pre-determined conversation flow, represented in your knowledge base with [multi-turn context](#), the bot can easily provide this flow.

What is a Knowledge Base?

QnA Maker imports the content into a knowledge base of question-and-answer pairs. The import process extracts information about the relationship between the parts of your structured and semi-structured content to imply relationships between the question-and-answer pairs. You can edit these question-and-answer pairs or add new pairs.

The content of the question-and-answer pair includes:

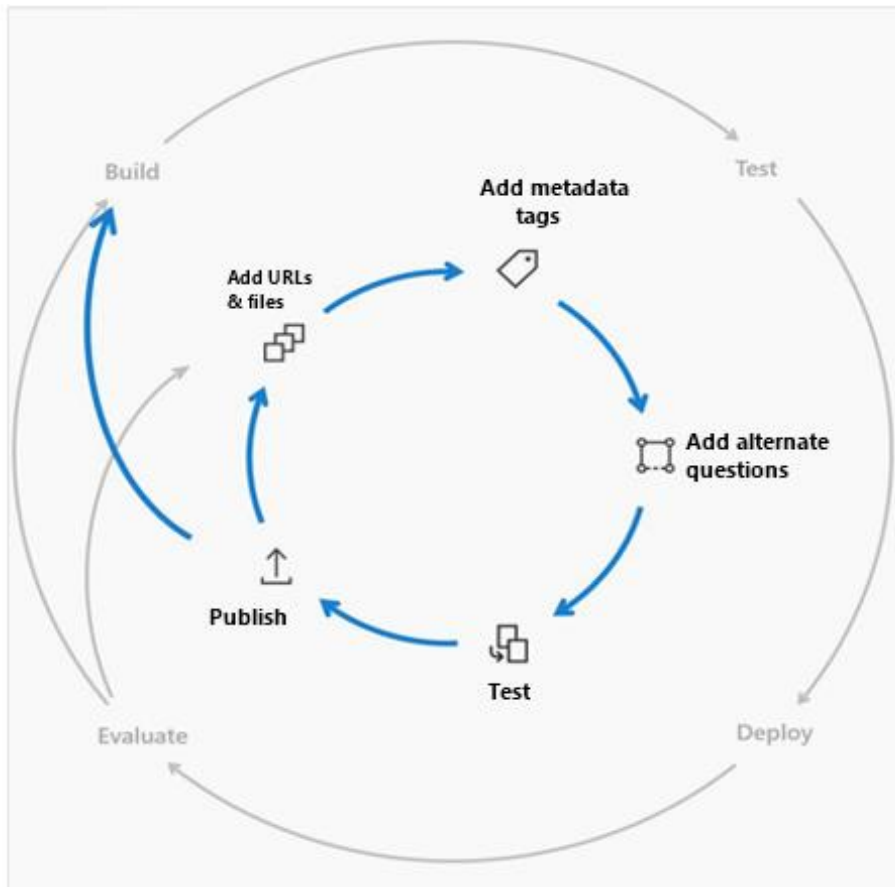
- All the alternate forms of the question
- Metadata tags used to filter answer choices during the search
- Follow-up prompts to continue the search refinement

| Question | Answer | Metadata tags ? |
|--|---|------------------------|
| Original source: https://docs.microsoft.com/en-us/azure/cognitive-services/qnamaker/faqs | | |
| I accidentally deleted a part of my QnA Maker, what should I do? | All deletes are permanent, including question and answer pairs, files, URLs, custom questions and answers, knowledge bases, or Azure resources. Make sure you export your knowledge base from the **Settings** page before deleting any part of your knowledge base. | Type : troubleshooting |
| Can I undo deleted questions and answers? | | Format : text-only |
| | | Nextstep : recover |

After publishing the knowledge base, a client application sends a user's question to your endpoint. QnA Maker service processes the question and responds with the best answer.

Azure QnA Maker Development Cycle

QnA Maker provides authoring, training, and publishing along with collaboration permissions to integrate into the full development life cycle.



Primary Goals

- ✓ Setting up a chatbot that can order your requirements (Pizza, Cakes, Ice creams...).
- ✓ Using a QnA Maker Bot service to build **Pizza** ordering chatbot.
- ✓ Having a real-world chatbot, to which you can chat like you chatting to a real person and ordering Pizza, Cakes.

Input

Below are the few training phrases for validating the bot:

Intents: Training Phrases

greetings: Hello

showMenu: Can you please show me the menu of your restaurant?

itemCost: How much does Pizza Mania cost?

orderStatus: When will I get my order?

provideParcel: Do you provide parcels now?

Output

Hello

Just now

Hello.

show me the menu

3 minutes ago

Dominos's Menu

1. Pineapple Pizza 20\$
2. Cheese Burger Pizza 50\$
3. Cheese Paneer Pizza 75\$
4. Margherita 100\$
5. Tomato Paneer Pizza 75\$

Icecreams 50\$

1. Vanilla
2. Butterscotch
3. Chocolate
4. Strawberry
5. Mango

- Cakes 50\$**

 1. Chocolate Cake
 2. Strawberry Cake
Garlic Bread 75\$

Pizza Mania 200\$

 1. Tomato
 2. Onions
 3. Panner
 4. Golden Corn
 5. Pineapple

How much does Pizza Mania cost?

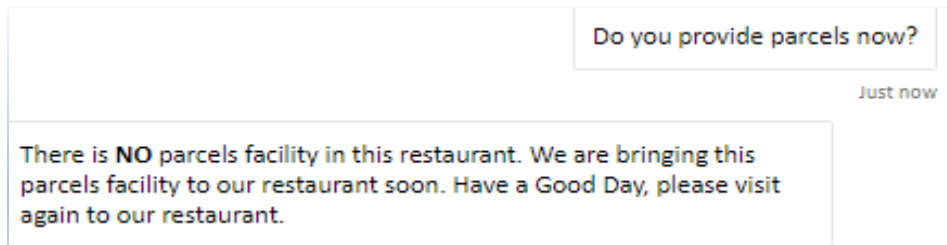
Just now

Its costs 200 US Dollars and we don't have any discount price on this item at this time.

When will I get my order?

Just now

You will be getting your order within 45 mins after your payment to any item on this menu.

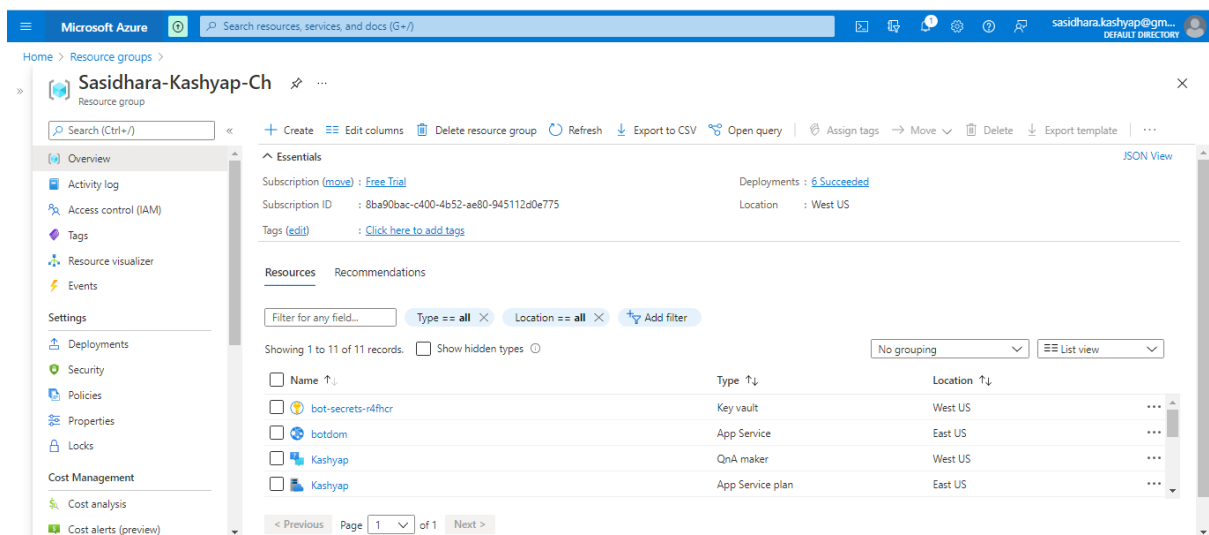


Process

README.md file given in GitHub has the required information and some of the screenshots below.

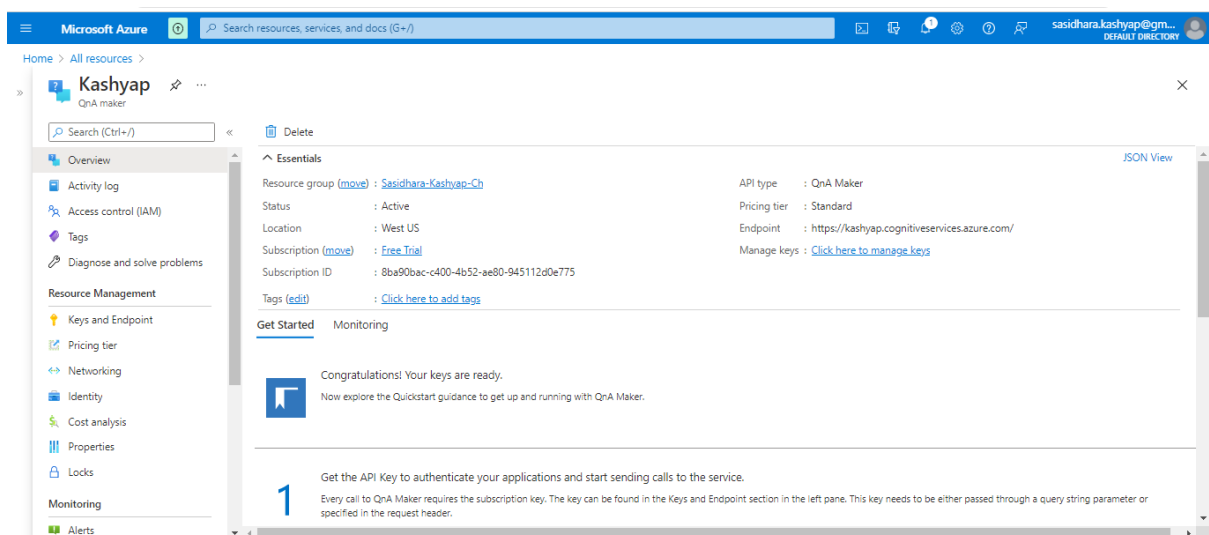
Task 1

✓ Create a Resource Group on Azure



Task 2

✓ Create a QnA Maker Service on Azure



Task 3

✓ Create a Knowledge Base on Azure

The screenshot shows the 'Knowledge base' section of the Azure Bot Service interface. At the top, there's a search bar labeled 'Search the KB' and a count of '94 QnA pairs'. Below this is a toggle for 'Enable rich editor' and a pagination control showing '1' as the current page. The main area is divided into 'Question' and 'Answer' columns. The first question is 'Do you provide parcels now?' with a source of 'Editorial'. The answer is 'There is NO parcels facility in this restaurant. We are bringing this parcels facility to our restaurant soon. Have a Good Day, please visit again to our restaurant.' Below the question, there are options to 'Add alternative phrasing' and 'Add follow-up prompt'. The second question is 'When will I get my order?' and the answer is 'You will be getting your order within 45 mins after your payment to any'.

Task 4

✓ Create an App Service on Azure

The screenshot shows the 'pizz-bot' App Service overview in the Microsoft Azure portal. The left sidebar contains navigation links for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Security, Events (preview), Deployment, Quickstart, Deployment slots, Deployment Center, Settings, Configuration, Authentication, and Application Insights. The main content area is titled 'Essentials' and displays various properties of the App Service, including Resource group, Status, Location, Subscription, and Subscription ID. It also shows the URL, Health Check, App Service Plan, FTP/deployment username, FTP hostname, and FTPS hostname. Below the Essentials section, there are three cards: 'Diagnose and solve problems', 'Application Insights', and 'App Service Advisor'. At the bottom, there are three data boxes: 'Http 5xx', 'Data In', and 'Data Out'.

Task 5

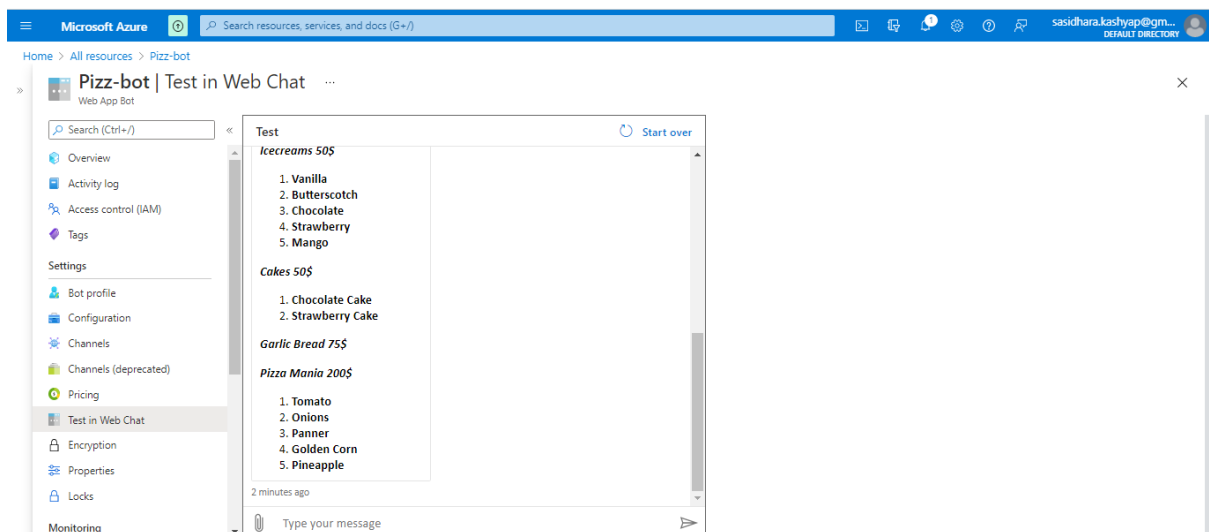
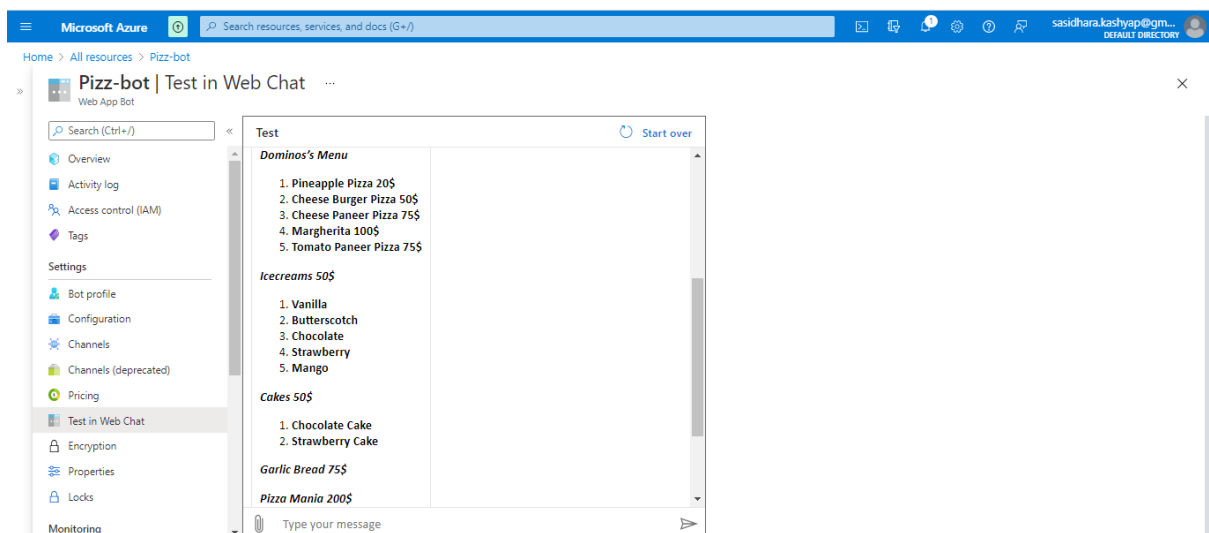
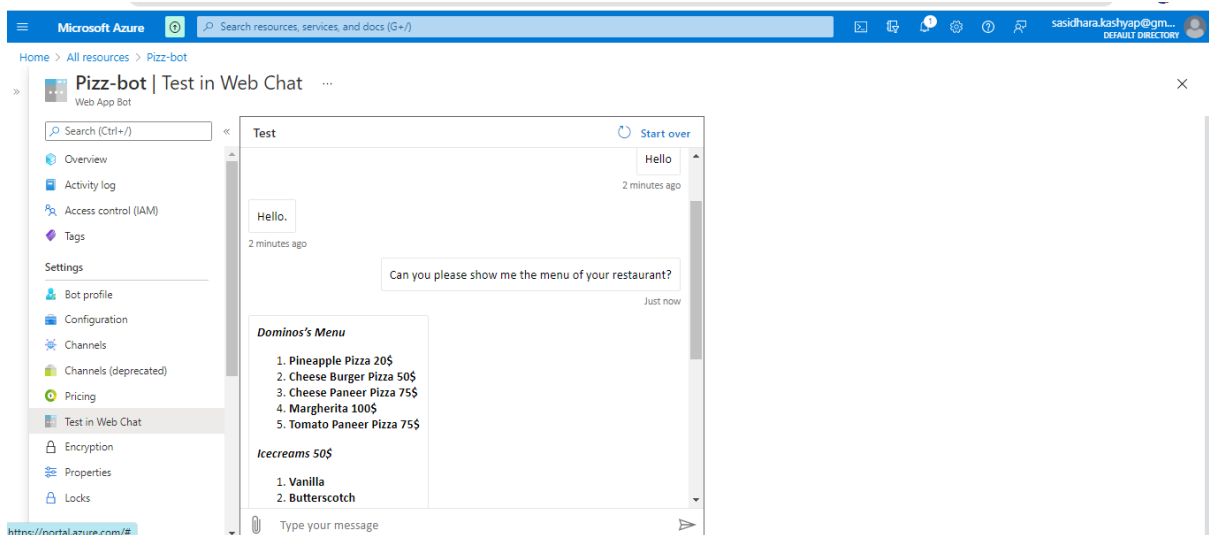
✓ Create a Web App Bot on Azure

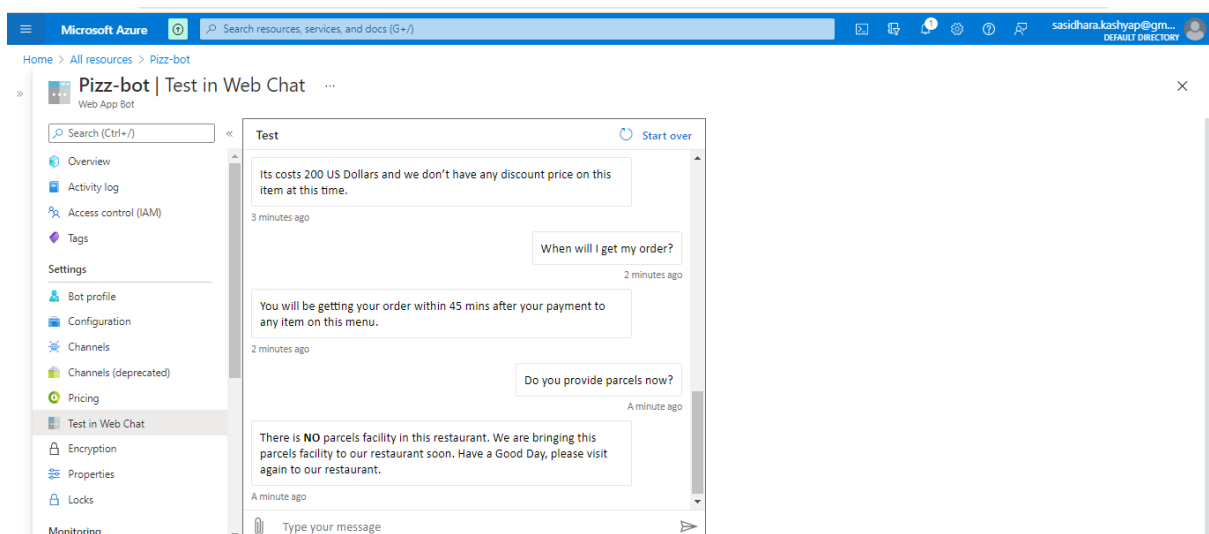
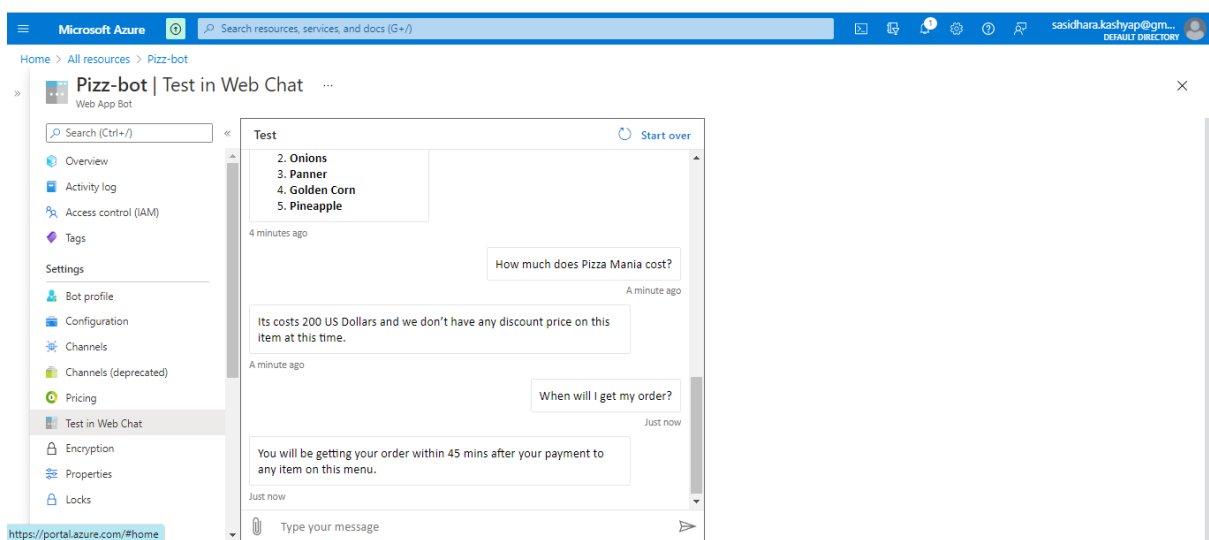
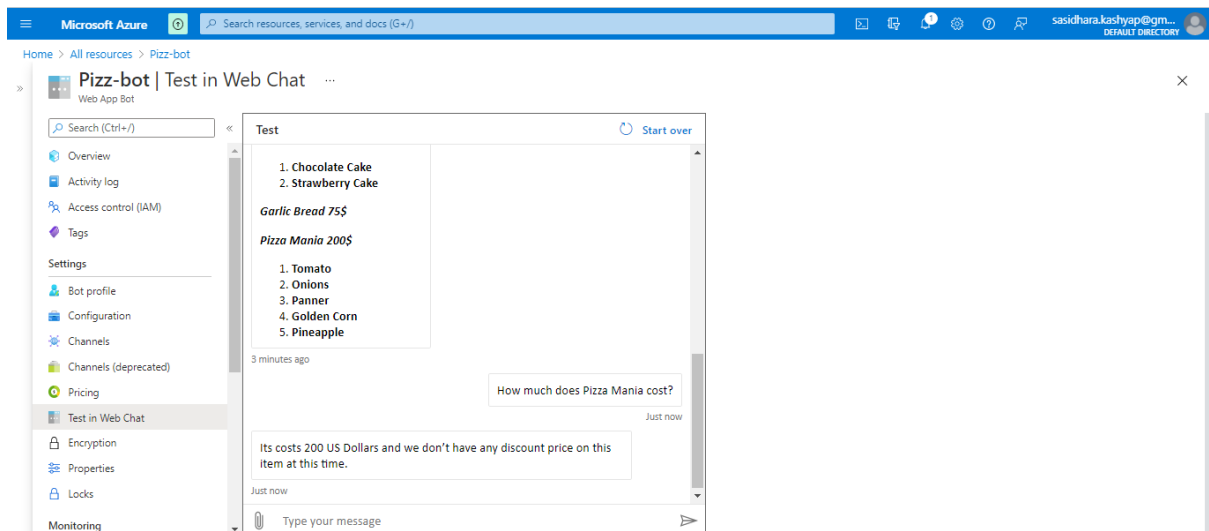
The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information. The left sidebar contains a navigation menu with options like Overview, Activity log, Access control (IAM), Tags, Settings, Bot profile, Configuration, Channels, Channels (deprecated), Pricing, Test in Web Chat, Encryption, Properties, Locks, and Monitoring. The main content area displays the 'Pizz-bot' Web App Bot overview page. It includes a search bar, a 'Download bot source code' button, and a 'Refresh' button. A survey prompt asks for feedback on Bot Service. The 'Essentials' section lists key information: Resource group (Sasidhara-Kashyap-Ch), Subscription (Free Trial), Subscription ID (8ba90bac-c400-4b52-ae80-945112d0e775), Bot Service pricing tier (S1), Messaging endpoint (https://pizz-bot.azurewebsites.net/api/messages), and Linked app service (pizz-bot). A 'JSON View' link is also present. Below this, a section titled 'Build enterprise-grade conversational AI' provides information about developing AI experiences and links to learn more.

Task 6

✓ Testing my Bot on Azure

The screenshot shows the Microsoft Azure portal interface, specifically the 'Pizz-bot | Test in Web Chat' page. The left sidebar is the same as in the previous screenshot, but the 'Test in Web Chat' option is selected. The main content area displays a chat interface. At the top, there is a 'Test' button and a 'Start over' button. The chat history shows a welcome message: 'Welcome to the QnA Maker sample! Ask me a question and I will try to answer it.' followed by a 'Hello.' message. The input field at the bottom is labeled 'Type your message' and has a 'Hello.' button next to it.





Code link

- ✓ **GitHub URL:** <https://github.com/sasidhara-kashyap0903/PizzaBot-azure-master>
- ✓ **Demo URL:** <https://dev.botframework.com/>

Account ID

- ✓ **Git Hub ID: sasidhara-kashyap0903**
- ✓ **Azure Account ID: sasidhara.kashyap@gmail.com**

Technologies / Tools Used

- ✓ **Azure QnA Maker Service**
- ✓ **Git Hub**
- ✓ **Microsoft Office**
- ✓ **Microsoft Visual Studio**

Expected Outcome

By the end of this milestone, you would be having a working chatbot system that orders your favourite food like Pizzas, Cakes, Ice Creams and Garlic Bread to the user along with chatting.

My sincere thanks, to Microsoft for an impressive QnA Maker service on MS Azure Cloud to make the chatbot development easy. It was a wonderful experience learning this and would like to explore more in next two years of my B.Tech. Sincere appreciation to Team of Future Ready Talent who supported and encouraged us to work on this project.