LANGUAGE UNDERSTANDING IN NATURAL LANGUAGE PROCESSING USING MICRO SOFT AZURE

(Bridging the Gap between Humans and Machines)

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Introduction

- NLP stands for Natural Language Processing.
- It's a subfield of artificial intelligence (AI) that focuses on the interaction between computers and human language.
- Language is one of the primary ways humans communicate.
- It's rich in context, ambiguity, and nuance, making it challenging for machines to understand.
- NLP aims to bridge the gap between human language and computers.
- Its primary objectives include understanding, interpreting, and generating human language.
- NLP is pervasive in our daily lives.
- Examples of applications include virtual assistants (e.g., Siri, Alexa), search engines (e.g., Google), and chatbots.

About software tool

- In this language understanding we used Microsoft Azure tool.
- Microsoft Azure is a cloud computing platform and service created by Microsoft. It provides a wide range of cloud-based services, including infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) offerings.
- Azure is designed to help organizations build, deploy, and manage applications and services through Microsoft-managed data centers worldwide.

Usage of Tools

- Set up Azure Services – creating an Azure account
- Choose the Right Azure Service – We choose *Azure QnA Maker*
- Collect and Prepare Data – we choosen real time Sample Data
- Train the Model
- Integration with Chatbot
- Test and Iterate
- Deploy and Monitor

Reported Literature

- A literature survey on Language Understanding :Vision, status, and research topics of Natural Language Processing by Xieling Chen a, Haoran Xie b, Xiaohui Tao c

- The Power of Natural Language Processing by Ross Gruetzemacher

- Advances in natural language processing JULIA HIRSCHBERG AND CHRISTOPHER D. MANNING

Objective Of Project

- Enable the chatbot to comprehend the meaning and intent behind user questions, regardless of variations in language, syntax, or wording.
- Retrieve relevant information from a knowledge base or database to provide accurate answers to user queries.
- Ensure that the chatbot's responses are not only accurate but also relevant to the user's question
- Create engaging interactions that encourage users to interact with the chatbot and find value in the information it provides.

Timeline of work proposal

- Week 1: Planning and Research &Data Collection and Preparation
- Week 2: Model Training
- Week 3: Integration and Development
- Week 4: Testing and Iteration
- Week 5: Deployment and Optimization

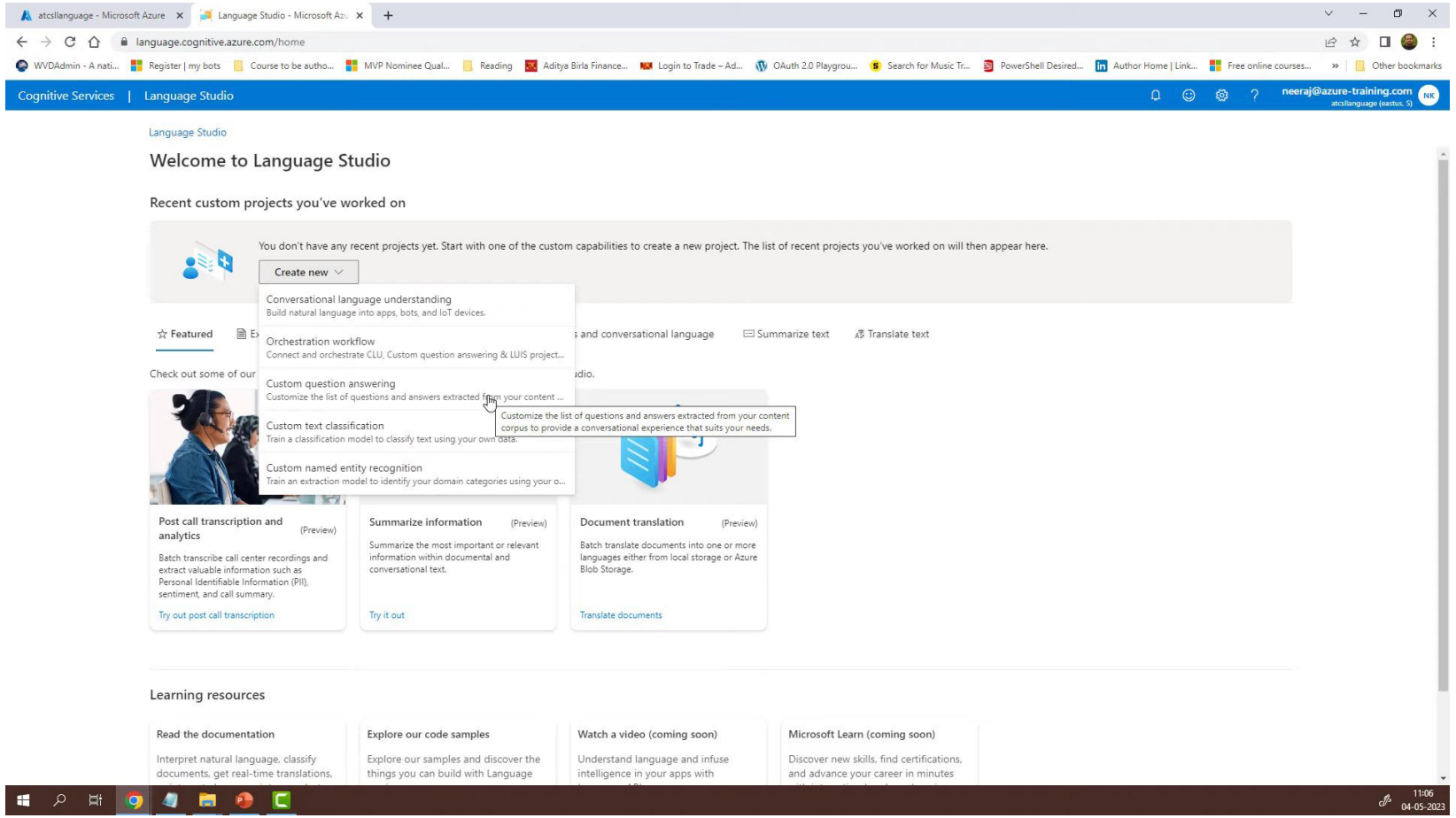
Algorithm Used

- **Azure QnA Maker**

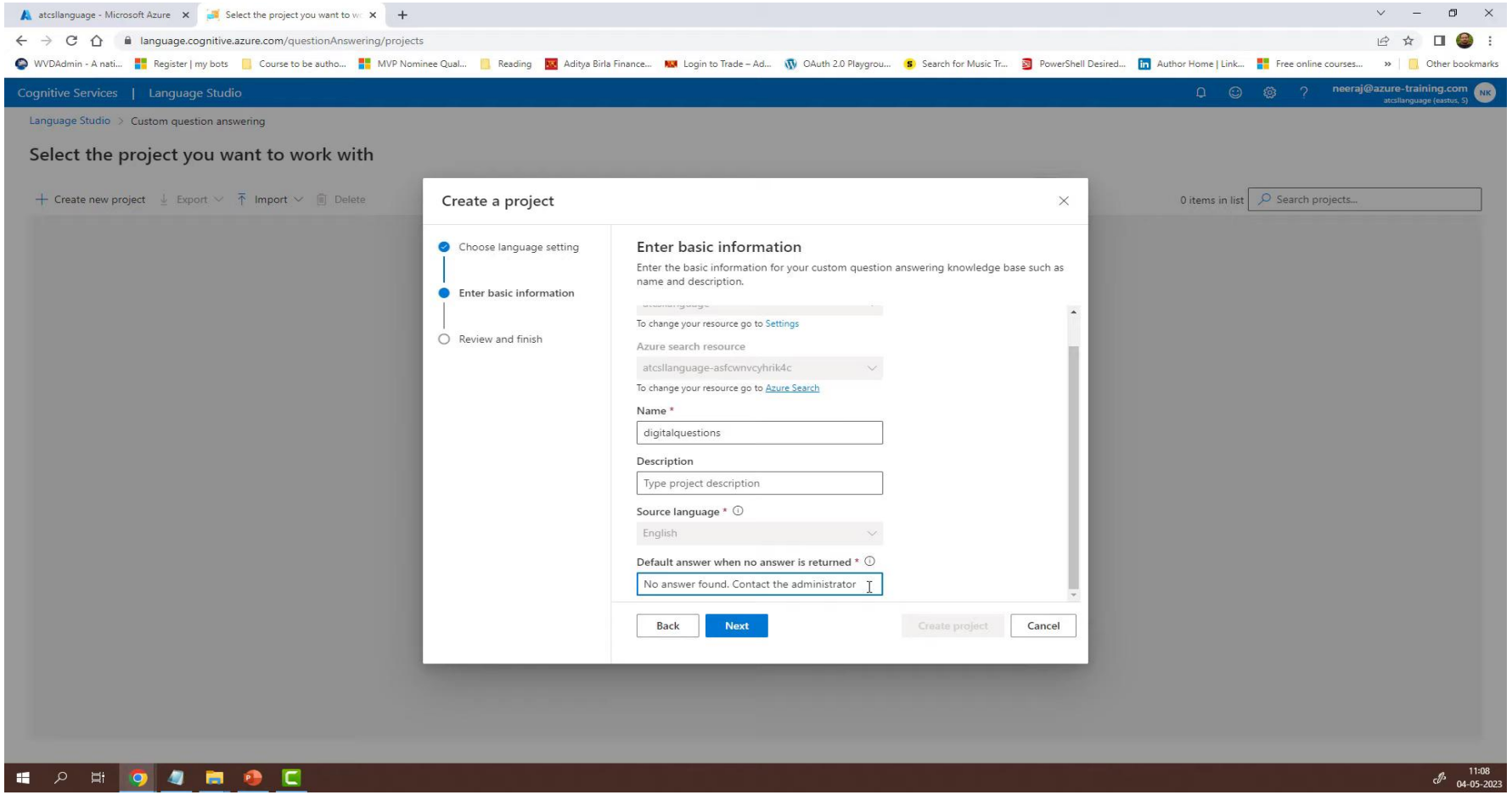
QnA Maker uses a combination of natural language processing techniques, including machine learning algorithms for language understanding and information retrieval. It employs techniques such as word embeddings, semantic similarity, and ranking algorithms to match user questions to the most relevant answers in the knowledge base.

Work done in step by step Description

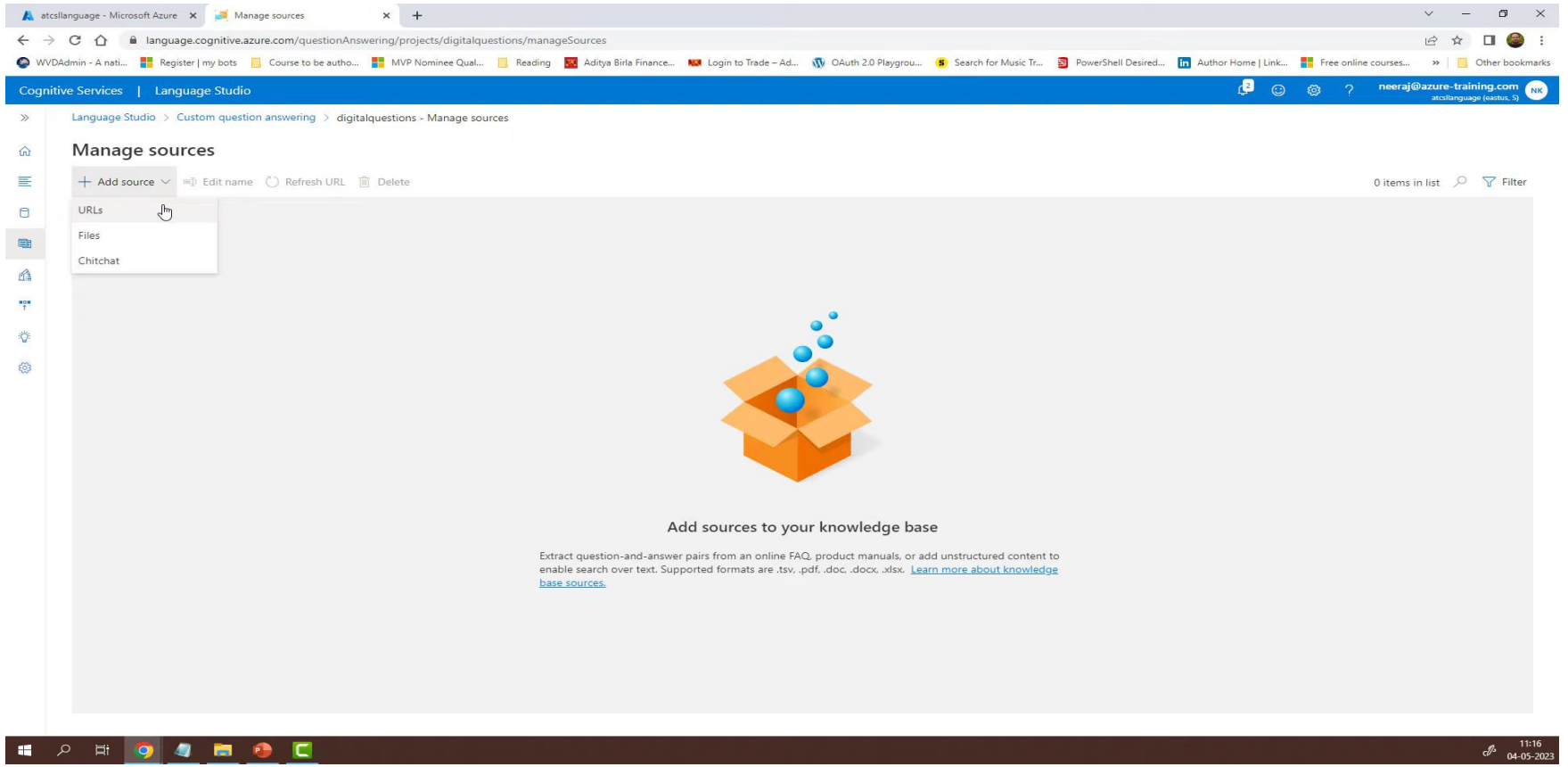
- 1 Selecting Q&A model



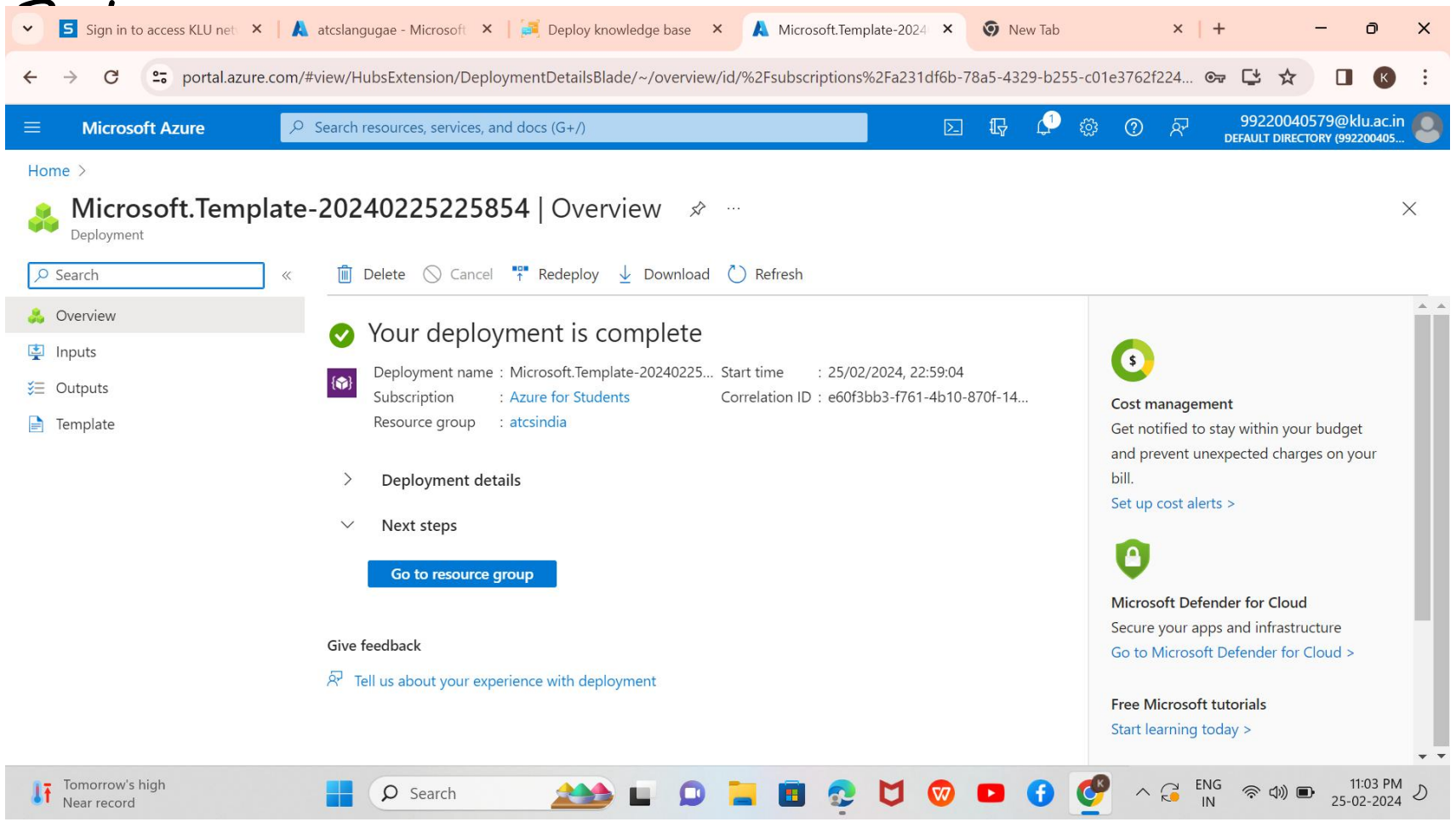
- 2 Naming The Project



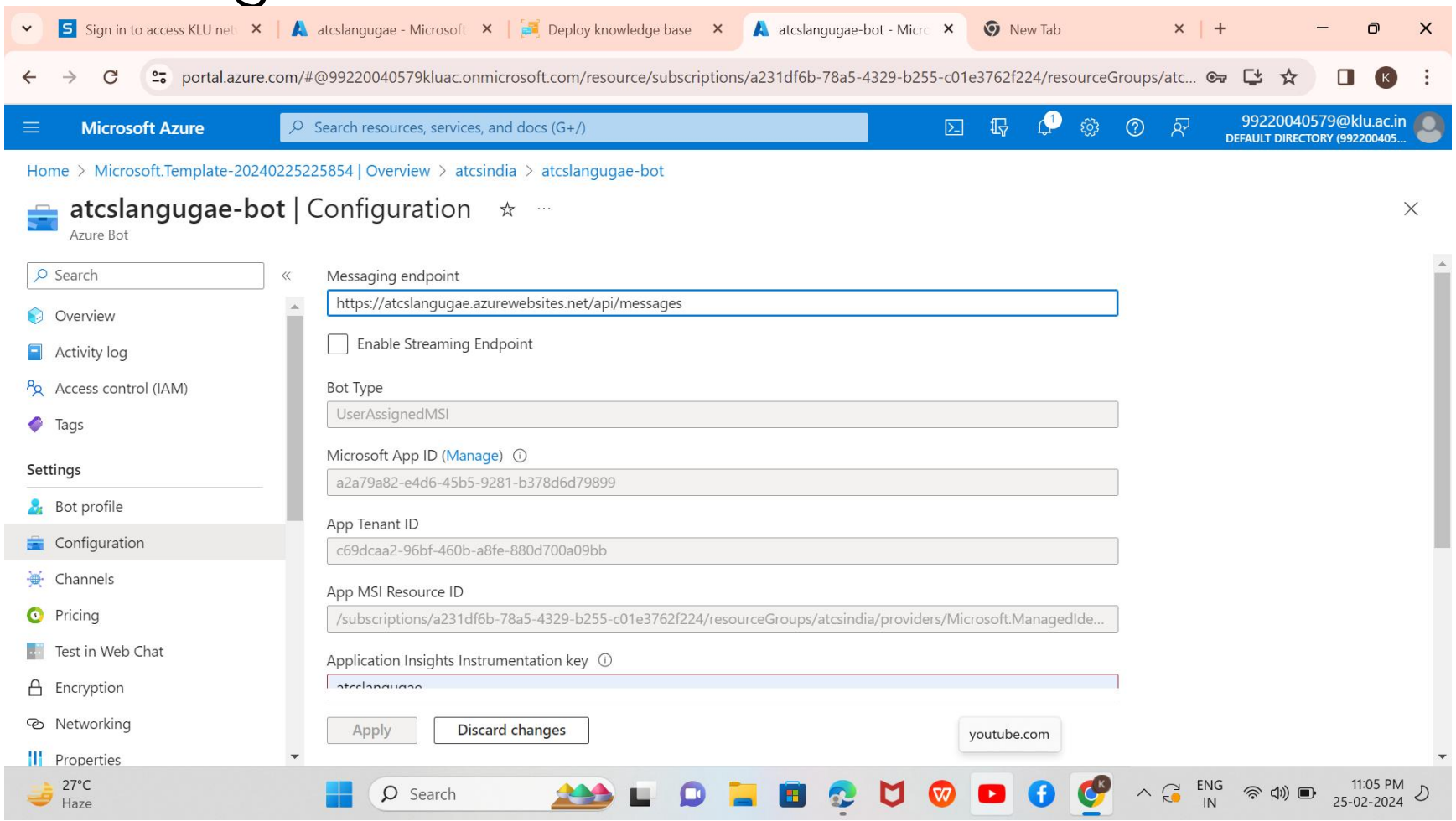
- 3 Adding Our Dataset



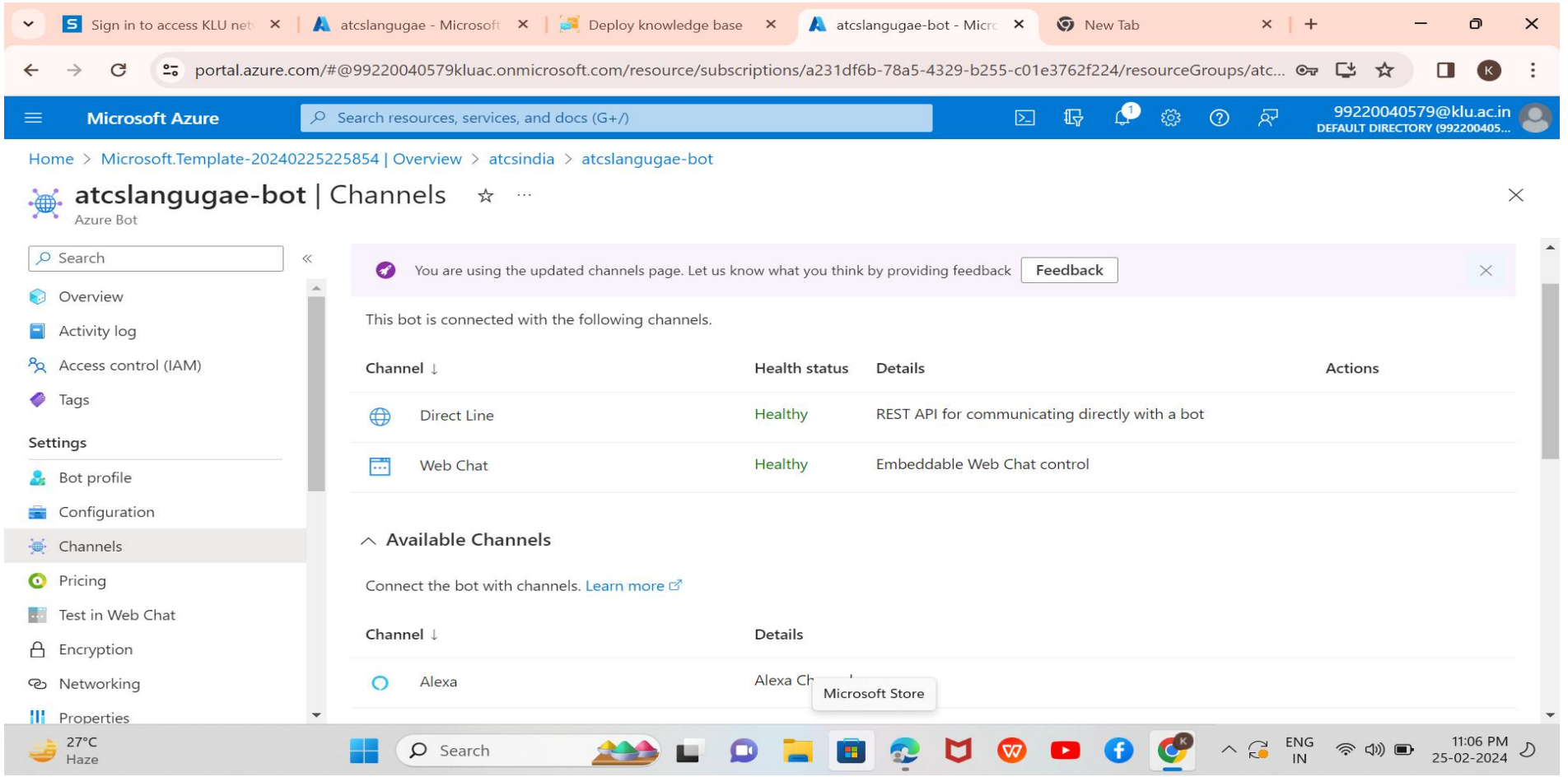
- 4 Deplyoing All our Datasets and Creating Our



- 5 Configuration



- 6 Channels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Test in Web Chat
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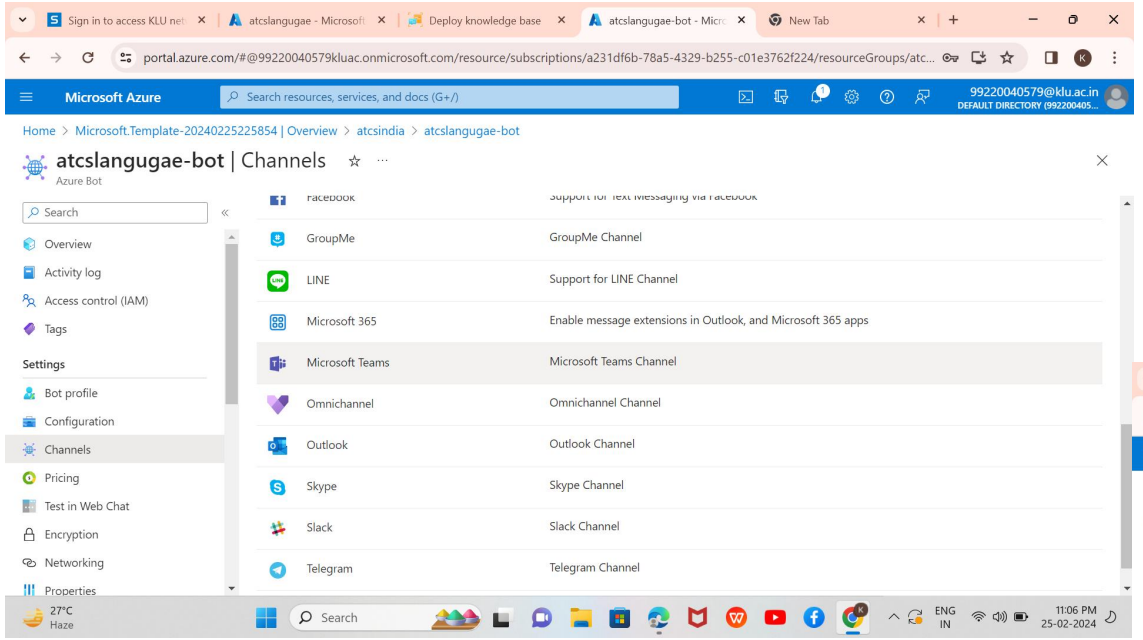
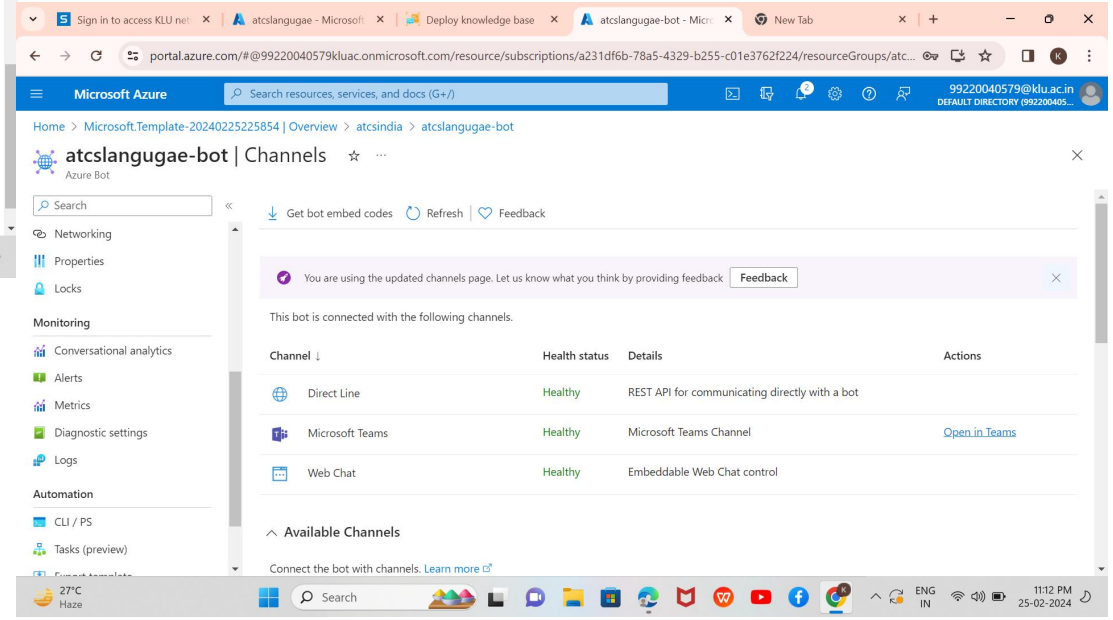
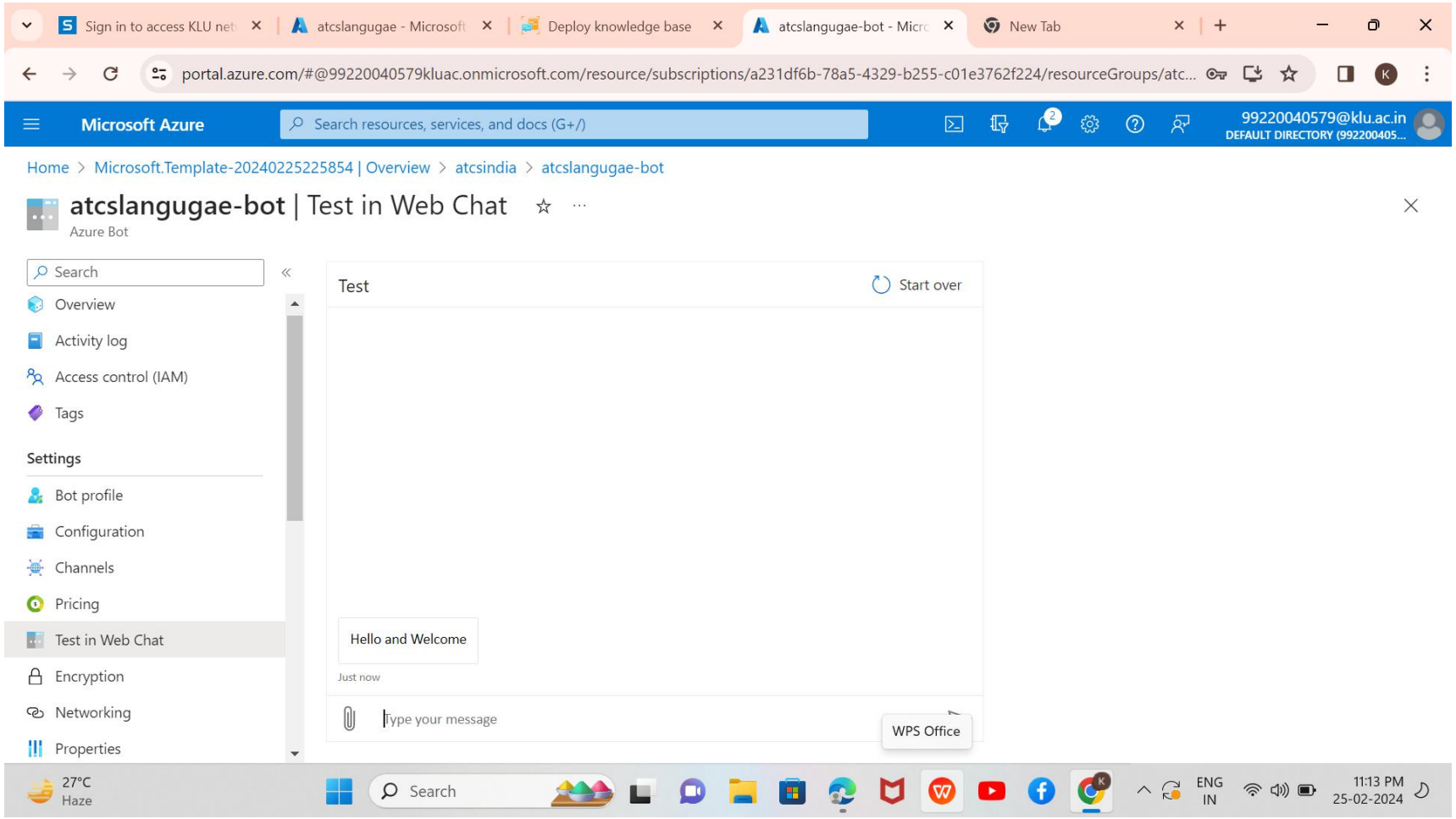
- 7 We can Add more channels

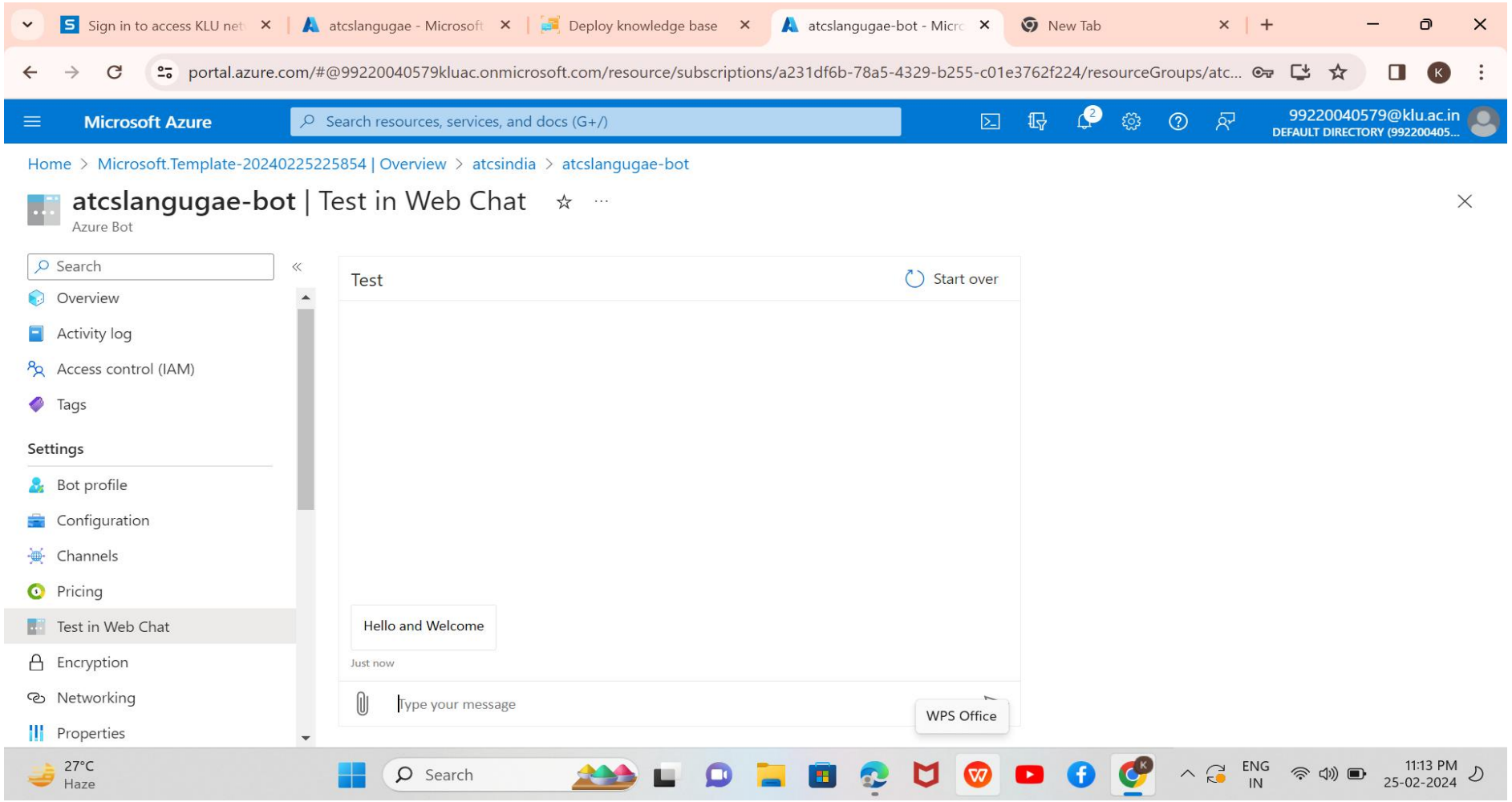


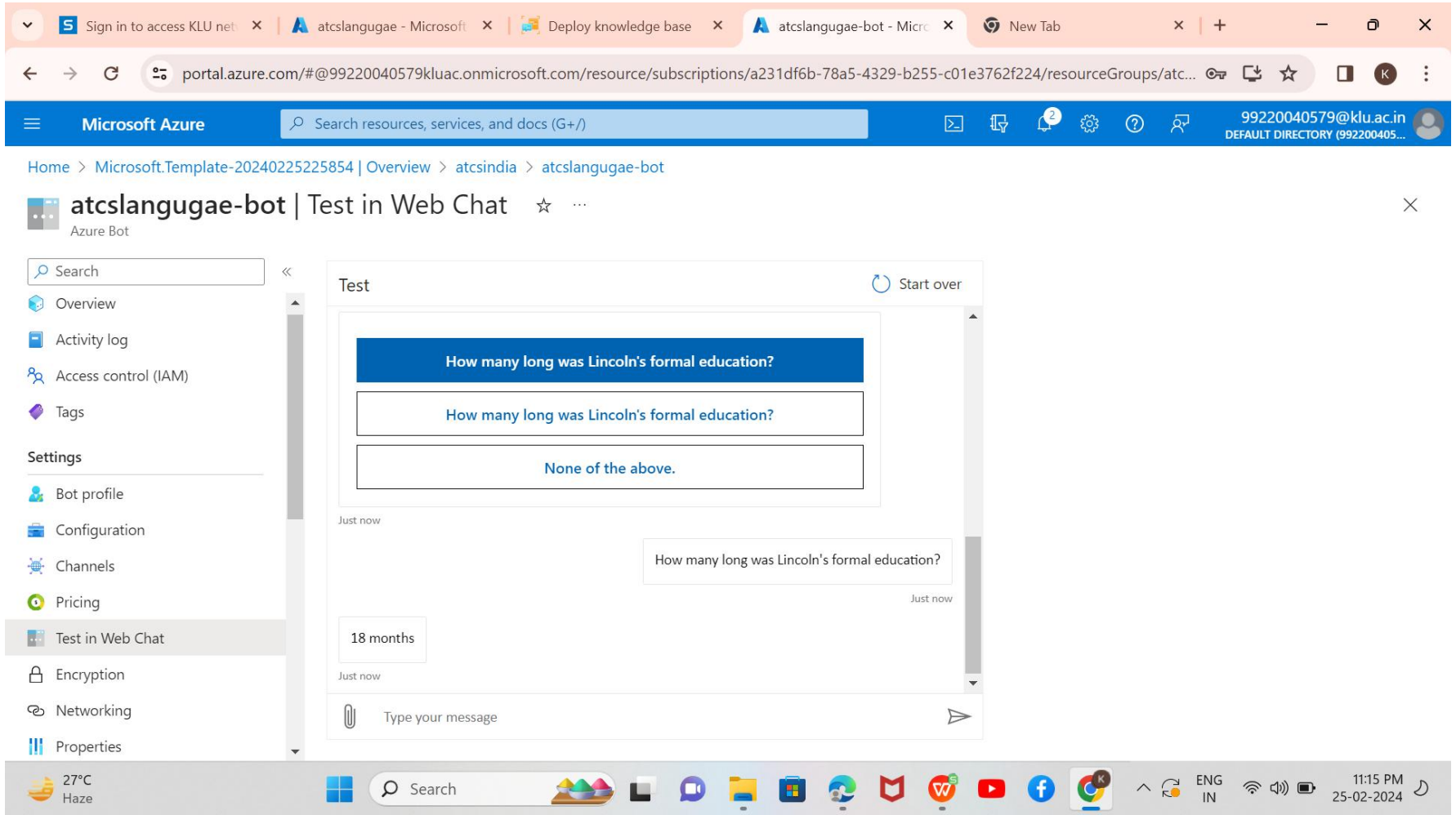


- 8 Interface out Bot



Result and Discussion

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Overview
Activity log
Access control (IAM)
Tags
Settings
Bot profile
Configuration
Channels
Pricing
Test in Web Chat
Encryption
Networking
Properties
Test
Start over
How many long was Lincoln's formal education?
How many long was Lincoln's formal education?
None of the above.
Just now
How many long was Lincoln's formal education?
Just now
18 months
Just now
Type your message
27°C
Haze
Search
ENG
IN
11:15 PM
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Summary

- The project aims to develop a question-answering chatbot leveraging Azure's AI services for natural language processing (NLP). The chatbot will be capable of understanding user queries and providing accurate responses by extracting relevant information from a knowledge base or database.

References

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