# Language understanding in natural language processing using microsoft azure

Bridging the Gap between Humans and Machines

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# Introduction to natural language processing

- ✓ 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 Tools

- ✓ 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

- ✓ The objectives of language understanding in Natural Language Processing (NLP) are to enable computers and artificial intelligence systems to comprehend, interpret, and process human language in a meaningful and contextually relevant way.

- ✓ In addition to understanding language, NLP also focuses on generating human-like text, whether it's in the form of chatbot responses, content generation, or machine-generated reports.

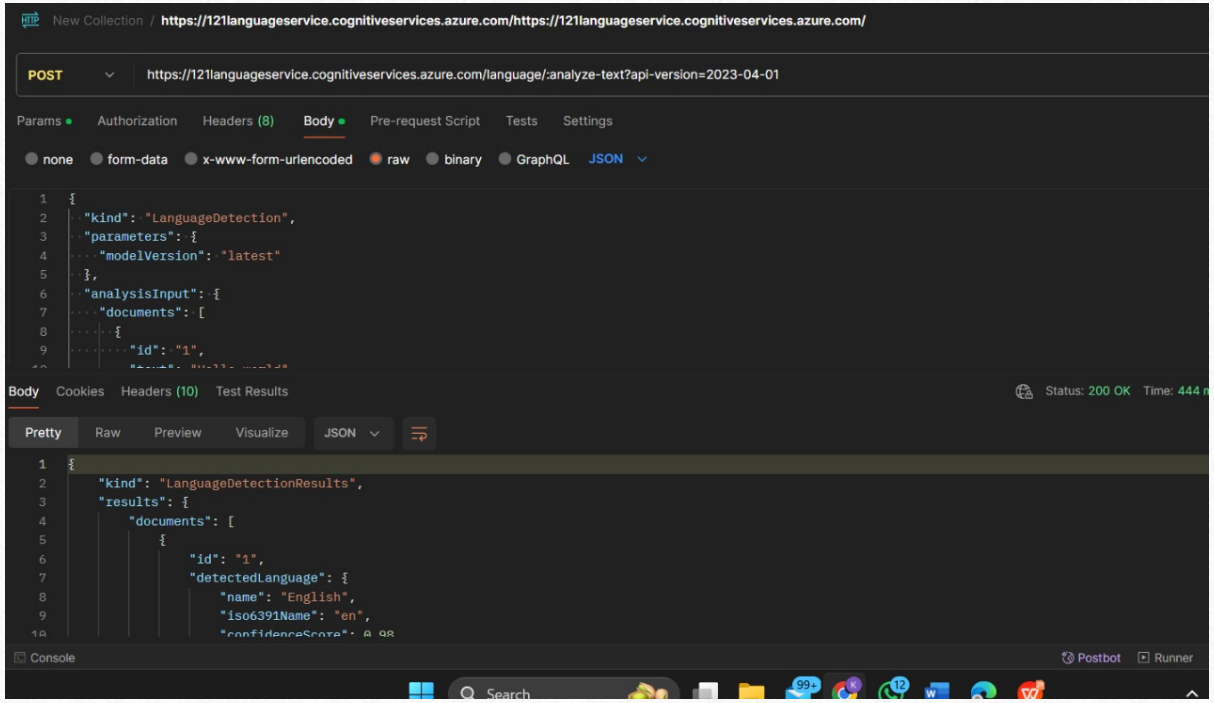
# Time line of work proposal

- ✓ Week 1: Planning and Research &Data Collection and Preparation
- ✓ Week 2: Model TrainingWeek
- ✓ 3: Integration and DevelopmentWeek
- ✓ 4: Testing and IterationWeek
- ✓ 5: Deployment and Optimization

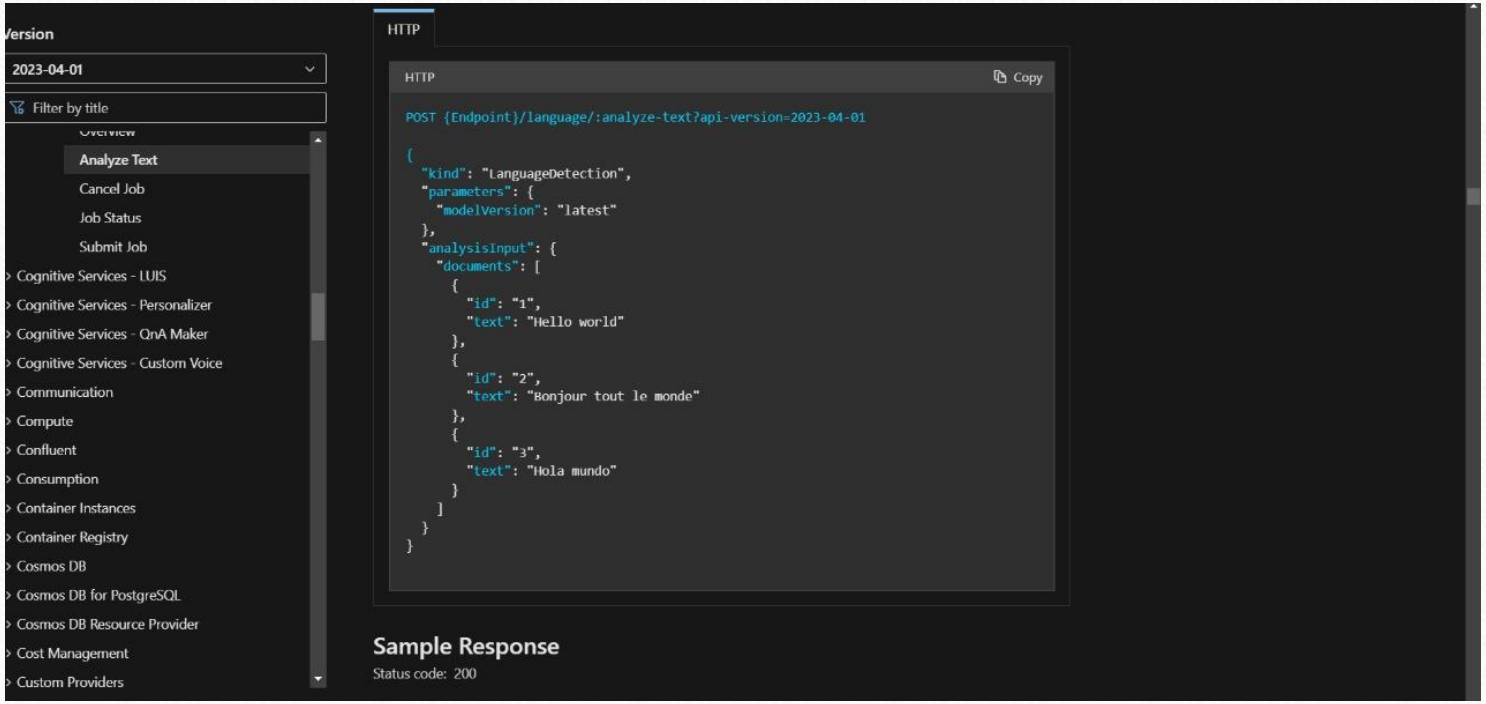
# Used Algorithm

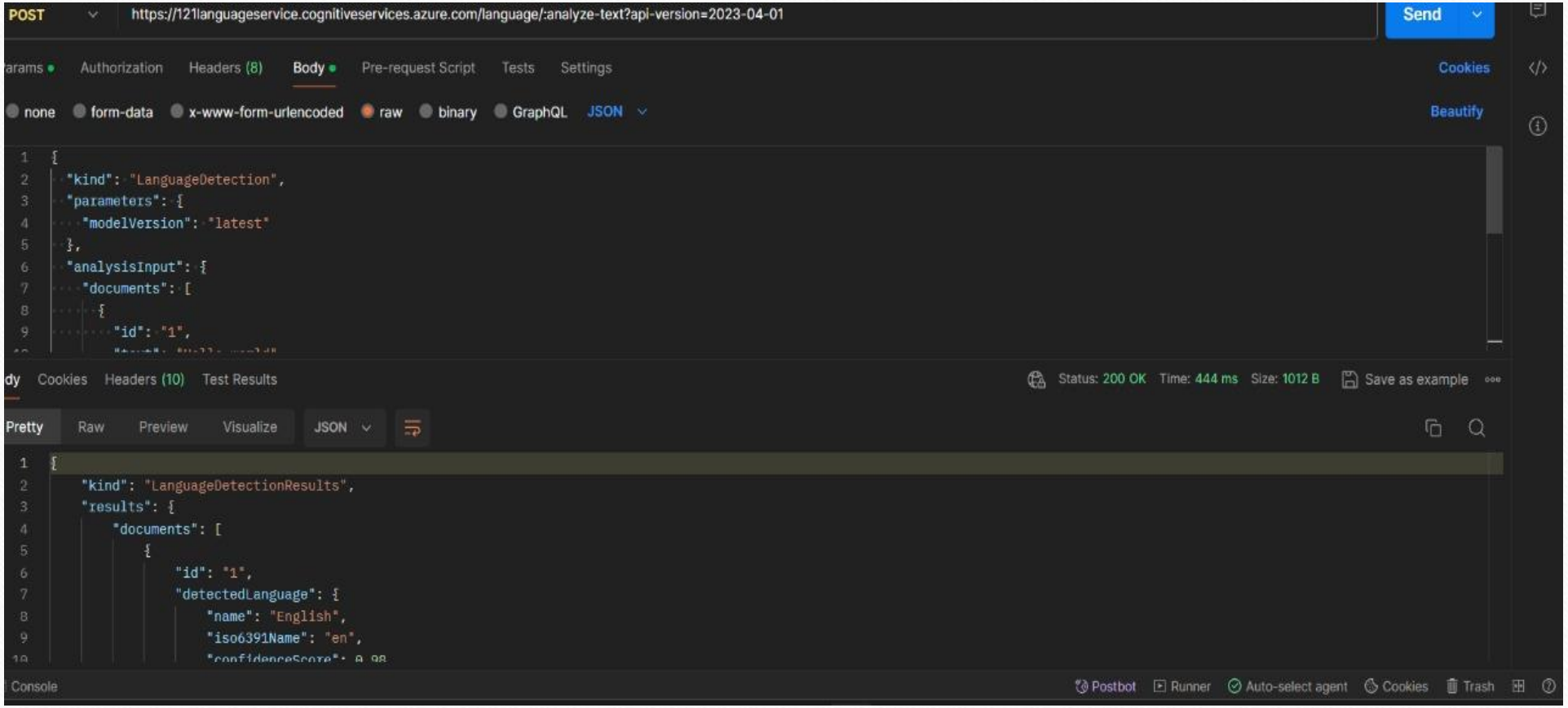
- ✓ Azure QnA MakerQnA
- ✓ Maker uses a combination of natural language processing techniques, including machine learning algorithms for language understanding and information retrieval. It employs techniques such as word embeddings, semantic similarity, and ranking algorithms to match user questions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

# Work down in step by step description



# Result and discussion

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Postbot
Runner
Auto-select agent
Cookies
Trash

# Summary

- ✓ The project aims to develop a question-answering **Sentiment Analysis, Language Detection, NameEntity Recognition.**
- ✓ 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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- A. Lally, J. M. Prager, M. C. McCord, B. K. Boguraev,S. Patwardhan, J. Fan, P. Fodor, J. Chu-Carroll., 2012. Question analysis: How Watson Reads a clue. IBM J. RES. & DEV. VOL. 56 NO. 3/4, pp. 1-14.
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