Mini Project Report

Chatbot with Rule-Based Responses

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Abstract

This project demonstrates the implementation of a simple rule-based chatbot using Python programming language. The chatbot operates by matching predefined keywords in user input and generating fixed responses using conditional logic (if-else). It is a basic introduction to the fields of Natural Language Processing and conversational AI systems.

Objective

To build a chatbot that can simulate a simple conversation using hard-coded rules and conditional statements.

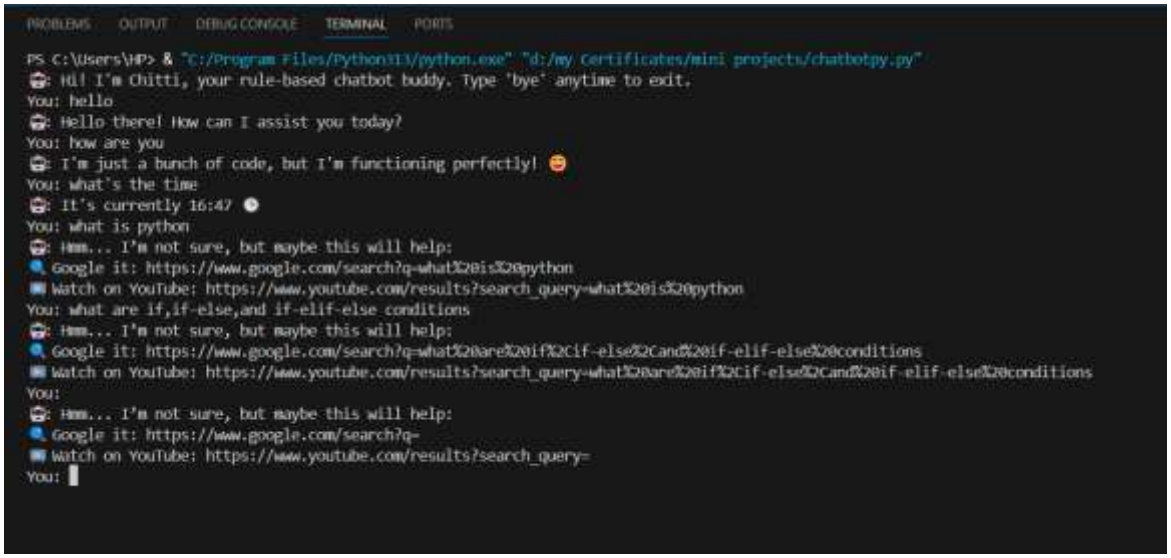
Technologies Used

- Programming Language: Python
- Platform: Visual Studio code
- Concepts: If-Else Logic, String Handling, User Input Processing

Methodology

- The chatbot uses a continuous loop to take user input.
- Inputs are converted to lowercase for uniformity.
- The logic checks if specific keywords (like "hello", "how are you", etc.) exist in the user message.
- Based on the matched rule, a predefined response is generated.
- The chatbot continues until the user types an exit command like "bye".

Screenshot



Conclusion

This chatbot introduces the fundamentals of rule-based dialogue systems and provides a strong foundation for further exploration into NLP and AI-powered conversational agents.

Future Scope

This basic rule-based model can be upgraded to:

- Use pattern matching libraries like re (Regular Expressions)

- Incorporate NLP libraries like NLTK or spaCy

- Switch to Machine Learning for learning-based response generation