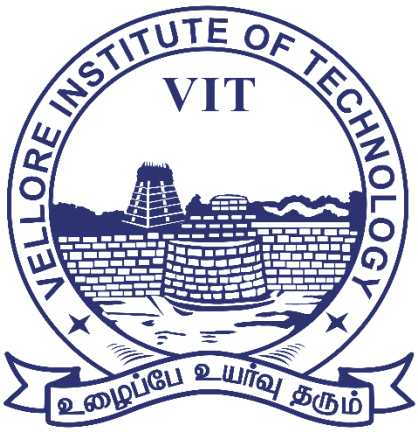

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Project Report: MIA – A Basic Python Voice Assistant

1. Introduction

A chatbot is a computer program designed to simulate human conversation through text or voice. It interacts with users to perform various tasks, providing an automated conversational experience. This project presents **MIA**, a simple Python-based voice assistant capable of executing local tasks and responding to voice commands.

2. Objective

The main objective of this project is to develop a basic voice-controlled assistant that can:

- Recognize and process voice commands.
- Perform local system operations.
- Retrieve information from the internet.
- Provide spoken responses to user queries.

3. System Requirements

Software Requirements

- Python 3.14 or higher
- Required Python libraries:
    - pyttsx3 – for text-to-speech conversion
    - datetime – for time-based functions
    - speech_recognition – for converting speech to text

- wikipedia – for fetching summaries from Wikipedia
- webbrowser – for opening web pages
- os – for system-level interactions

Hardware Requirements

- A computer with a microphone and speaker
- Internet connection for online queries

4. Setup and Installation

1. **Install Required Libraries**
   Use the following command to install dependencies:pip install pyttsx3 SpeechRecognition wikipedia
2. **Run the Script**
   Execute the assistant by running:python MIA.py

5. Working Principle

The assistant uses speech recognition to capture voice input, processes the command, and performs the corresponding action. It employs the pyttsx3 library to provide voice responses. The assistant greets the user based on the time of day and can execute both online and offline tasks.

6. Key Features

- **Voice Output:** Converts text responses into speech using pyttsx3.
- **Dynamic Greeting:** Greets the user with “Good Morning,” “Good Afternoon,” or “Good Evening” based on the current time.
- **Voice Command Input:** Listens for commands through the microphone using the Google Speech Recognition API.
- **Command Execution:**
  - wikipedia <query> – Searches Wikipedia and reads a summary.
  - open youtube – Opens YouTube in the default browser.
  - open google – Opens Google.
  - open stackoverflow – Opens Stack Overflow.
  - open vtop – Opens the VIT Bhopal VTOP portal.
  - open Vityarthi – Opens the Vityarthi portal.

- open github – Opens GitHub.
- open spotify – Opens Spotify's web player.
- the time – Announces the current time.
- open code – Opens Visual Studio Code (requires local path configuration).
- quit – Terminates the assistant.

7. Notes

- **Voice Configuration:** The assistant uses the second available voice (voices[1]), which may differ depending on the system.
- **VS Code Path:** The local path for Visual Studio Code must be updated before running on another computer.

8. Conclusion

The **MIA Voice Assistant** demonstrates the integration of speech recognition and text-to-speech technologies in Python. It provides a foundation for developing more advanced AI-based assistants capable of handling complex tasks and natural language interactions.

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