Voice Assistant using Python

Report -

I chose to create a voice assistant using Python to showcase my ability to integrate natural language processing and machine learning techniques into a practical application, highlighting my versatility in both data science and software development. In the development of this voice assistant, named Jarvis 1.0, I harnessed an array of pivotal modules, each contributing to a distinct facet of the assistant's functionality. For instance, I utilized **`Pyttsx3` for text-to-speech conversion**, harnessed the computational power of **`Wolframalpha` for intricate computations**, and leveraged the **`Tkinter` library for crafting an intuitive graphical user interface**. Moreover, my implementation encompassed the **`SpeechRecognition` module for accurate audio-to-text conversion**, enabling seamless voice interaction. The incorporation of **`Ecapture` facilitated real-time image capture through the camera module**. The integration of the **`Twilio` API allowed for effective communication, enabling the voice assistant to make calls and send messages**. For **web scraping functionalities, I employed the `Beautifulsoup`** library. This voice assistant is endowed with a spectrum of functionalities. It can adeptly handle tasks such as sending emails and messages, orchestrating music playback from the Spotify application, delivering up-to-date news from the Times of India, pinpointing locations on Google Maps, providing weather updates for various locations, and even capturing photos. Moreover, its computational capabilities extend to solving intricate calculations. Additionally, it has the ability to execute system commands like locking the window, clearing the recycle bin, initiating shutdowns, and transitioning the system to a sleep mode.

Technical details –

Speech recognition is the process of converting audio into text. This is commonly used in voice assistants like Alexa, Siri, etc. Python provides an API called SpeechRecognition to allow us to convert audio into text for further processing.

Modules needed

Subprocess:- This module is used to get system subprocess details used in various commands i.e Shutdown, Sleep, etc. This module comes built-in with Python.

WolframAlpha:- It is used to compute expert-level answers using Wolfram’s algorithms, knowledgebase and AI technology.

Pyttsx3:- This module is used for the conversion of text to speech in a program it works offline.

Tkinter:- This module is used for building GUI and comes inbuilt with Python. This module comes built-in with Python.

Wikipedia:- As we all know Wikipedia is a great source of knowledge just like GeeksforGeeks we have used the Wikipedia module to get information from Wikipedia or to perform a Wikipedia search.

Speech Recognition:- Since we’re building an Application of voice assistant, one of the most important things in this is that your assistant recognizes your voice (means what you want to say/ ask).

Web browser:- To perform Web Search. This module comes built-in with Python.

Ecapture:- To capture images from your Camera. To install this module type the below command in the terminal.

Pyjokes:- Pyjokes is used for the collection of Python Jokes over the Internet. To install this module type the below command in the terminal.

Datetime:- Date and Time are used to showing Date and Time. This module comes built-in with Python.

Twilio:- Twilio is used for making calls and messages. To install this module type the below command in the terminal.

Requests: Requests is used for making GET and POST requests. To install this module type the below command in the terminal.

BeautifulSoup: Beautiful Soup is a library that makes it easy to scrape information from web pages. To install this module type the below command in the terminal.

Spotipy: Python library that provides a simple interface for interacting with the Spotify Web API. It allows you to access and manipulate data from the Spotify platform, such as user playlists, tracks,albums, artists, and more. With `spotipy`, you can integrate Spotify functionality into your Python applications, like creating playlists, searching for tracks, and playing music.