## ****Title:**** Voice-Activated AI Personal Assistant

**Author:** Pratik Chouragadey

## ****Introduction:****

The Voice-Activated AI Personal Assistant is a Python-based project designed to perform a wide range of tasks based on voice commands. It integrates multiple APIs and libraries to automate everyday tasks, making it a versatile tool for users. The assistant can send emails, search the web, play media, control system applications, and more, all through simple voice commands.

## ****Features:****

1. **Voice Command Recognition:** Converts user speech into text for command processing using speech\_recognition.
2. **Email Automation:** Allows users to send emails via voice commands using the smtplib library.
3. **Web Automation:** Performs web searches on Google, Wikipedia, and opens popular websites like YouTube and Facebook through the webbrowser library.
4. **System Control:** Opens and closes system applications like Notepad, Command Prompt, and more, using Python's os and subprocess modules.
5. **Entertainment:** Plays music, videos, tells jokes, and fetches the latest news using pywhatkit, pyjokes, and requests.
6. **Messaging:** Sends WhatsApp messages and images through voice commands using the pywhatkit library.
7. **Security:** Retrieves and displays the user's public IP address and geographical location using the requests library.

**Libraries and Tools Used:**

* **speech\_recognition:** Converts speech to text.
* **pyttsx3:** Converts text to speech, allowing the assistant to respond verbally.
* **requests:** Fetches data from external APIs, such as news headlines and IP location.
* **wikipedia:** Searches and summarizes information from Wikipedia.
* **webbrowser:** Opens web pages in the user's default browser.
* **pywhatkit:** Automates sending of WhatsApp messages and media.
* **pyjokes:** Provides random jokes for entertainment.
* **cv2 (OpenCV):** Handles camera-related operations, such as taking screenshots or capturing images.
* **pyautogui:** Automates keyboard and mouse actions, enabling the assistant to control the system.
* **paho-mqtt:** Facilitates MQTT protocol-based communication for IoT-related functions.

## ****Setup Instructions:****

**Install Python:**

* Ensure that Python 3.x is installed on your system. You can download it from [Python.org](https://www.python.org/" \t "_new).

**Install Required Libraries:**

* Install all necessary Python libraries using the following command:

“pip install pyttsx3 pyjokes requests speechrecognition pywhatkit opencv-python wikipedia paho-mqtt pyautogui”

## ****How It Works:****

1. **Greeting:**The AI assistant begins by greeting the user based on the time of day (morning, afternoon, evening).
2. **Listening for Commands:**It then listens for the user's voice command, converting speech to text using the speech\_recognition library.
3. **Processing and Execution:**The assistant processes the command and performs the corresponding action, such as opening an application, sending an email, playing a song, or fetching the latest news.
4. **Verbal Feedback:**After executing the command, the assistant provides verbal feedback to the user using pyttsx3, confirming the action or providing the requested information.