Report for a Dummy Assistant

As a project for work course

PYTHON PROGRAMMING (INT 213)

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Jalandhar, Punjab, India.

A Dummy Assistant (Google Assistant)

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Abstract:

Voice control is a major growing feature that change the way people can live. The voice assistant is commonly being used in smartphones and laptops. AI-based Voice assistants are the operating systems that can recognize human voice and respond via integrated voices. This voice assistant will gather the audio from the microphone and then convert that into text, later it is sent through GTTS (Google text to speech). GTTS engine will convert text into audio file in English language, then that audio is played using play sound package of python programming Language.

Acknowledgement:

I would like to thank my seniors for giving advices and inputs on this project and they spent countless hours to listen and provide feedbacks.

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Introduction:

1.1 Context

The project has been as part of my course for the CSE at Lovely Professional University. Supervised by Ankita Wadhawan. I have two months to fulfill the requirements in order to succeed this module.

1.2 Motivations

I have interested in everything to do and having a relation with python language. The group project was a great occasion to give us the time to learn and confirmed our interest for this field and the ability for python has been teaches in powerful mode. We can use python language for gaming applications and in other smart projects like dummy assistant.

1.3 Ideas

This is our first experience, we wanted to make project as much as possible by approaching every different step of python language and trying to understand them deeply. That are not immediate scientific interest but useful to illustrate and practice we choose a project that is dummy assistant as approach. The goal was to work the voice assistant in a different feature.

TEAM MEMBERS:

TEAM LEADER

Leela Mahesh

Contributions

1. Coding
2. Python programming
3. Modules
4. Report
5. Libraries

Sriman Jindam

Contributions

- Modules
- Libraries (Joined)

LIBRARIES:

1. pip install pyaudio
2. pip install Speech_Recognition
3. pip install pywhatkit
4. pip install WebBrowser
5. pip install gtts

Pyaudio:

PyAudio provides Python bindings for PortAudio, the cross-platform audio I/O library. With PyAudio, you can easily use Python to play and record audio on a variety of platforms. PyAudio is inspired by: pyPortAudio/fastaudio.

Speech_Recognition:

Speech recognition technologies such as Alexa, Cortana, Google Assistant and Siri are changing the way people interact with their devices, homes, cars, and jobs. The technology allows us to talk to a computer or device that interprets what we're saying in order to respond to our question or command.

Pywhatkit:

PyWhatKit is a Python library with various helpful features. It's easy-to-use and does not require you to do any additional setup. Currently, it has about 300k+ downloads and counting. New updates are released frequently with new features and bug fixes.

WebBrowser:

The webbrowser module provides a high-level interface to allow displaying web-based documents to users. Under most circumstances, simply calling the open() function from this module will do the right thing. ... If text-mode browsers are used, the calling process will block until the user exits the browser.

gtts:

gtts (Google Text-to-Speech) is a Python library and CLI tool to interface with Google Translate text-to-speech API. ... save function allows us to save the converted speech in a format that allows us to play sounds. I have saved it in a file called hi and in a format called mp3.

MODULES

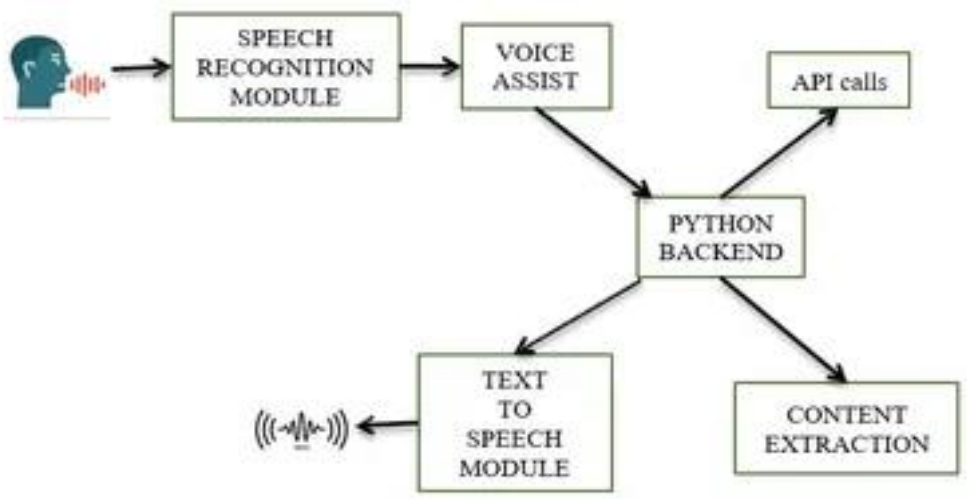
Subprocess:

This module is used for getting system subprocess details which are used in various commands i.e. Shutdown, Sleep, etc. This module comes built-in with Python.

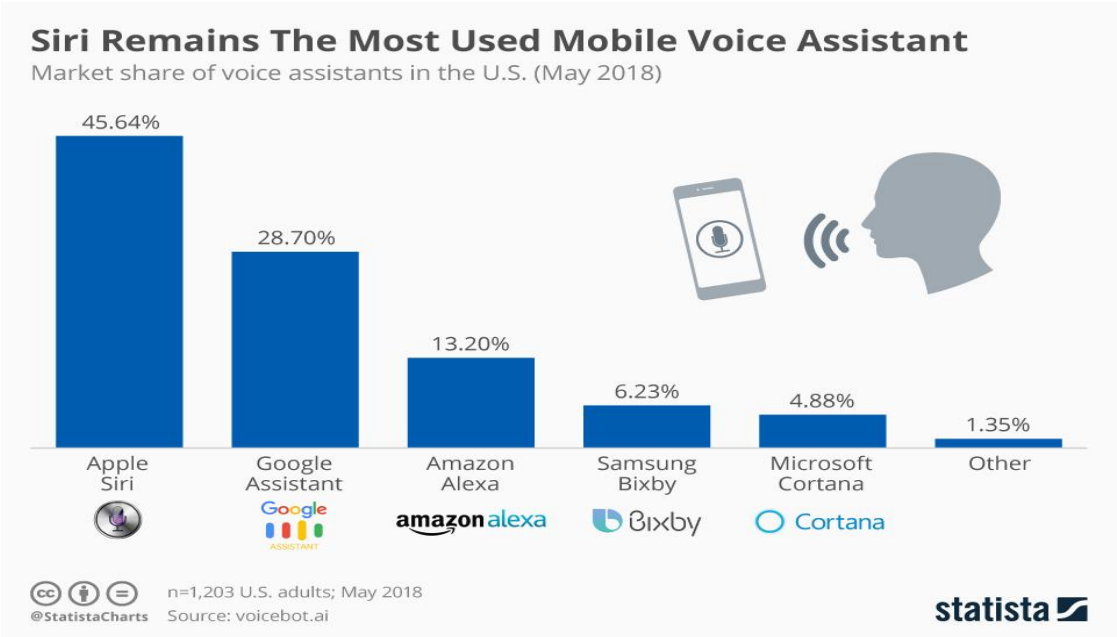
Wolfram Alpha:

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

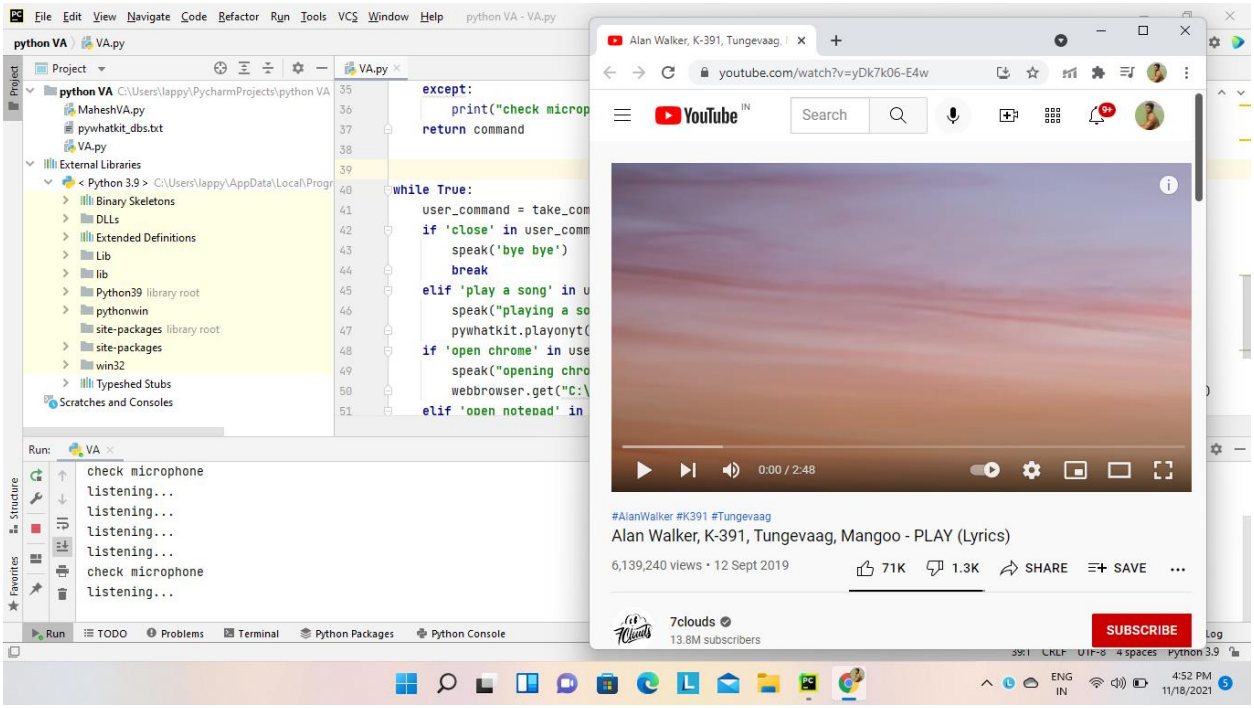
Flow Diagram of the Voice Assistant:

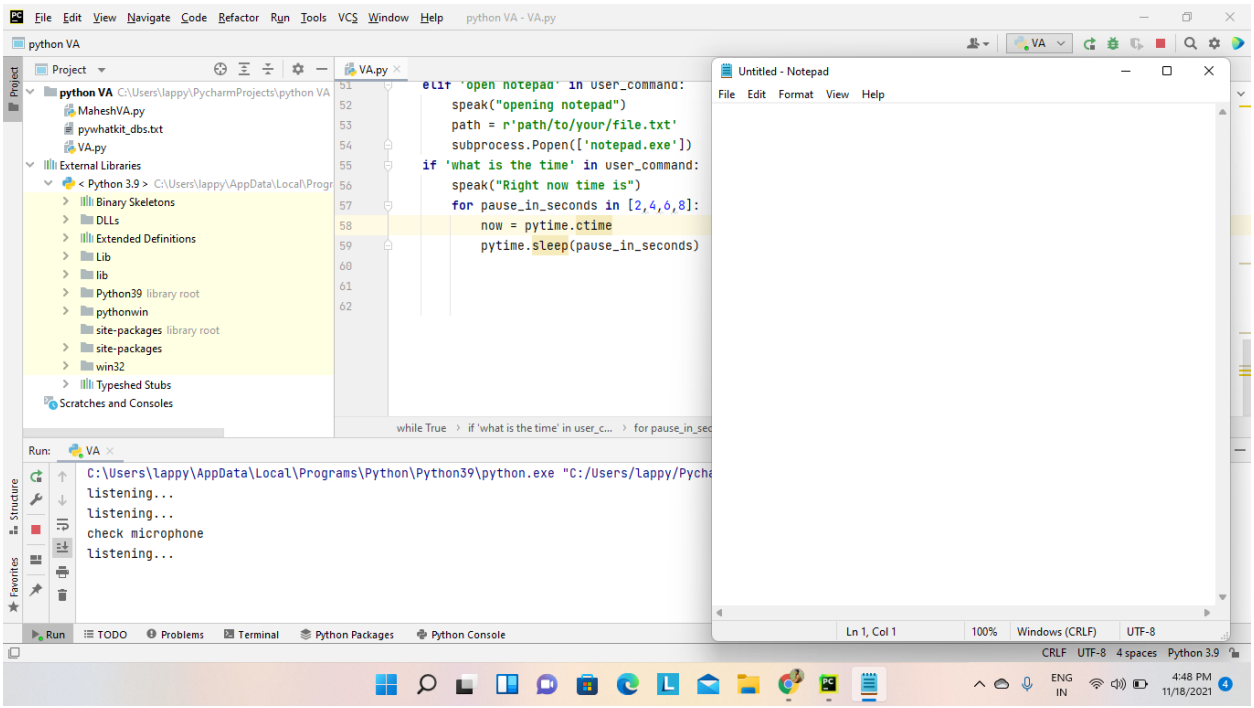


This is the present Situation of the voice Assistant Graph:



Screenshots of Output:





Analysis:

As this program includes the functions and services of: calling services, text message transformation, mail exchange, alarm, event handler, location services, music player service, checking weather, Google searching engine, Wikipedia searching engine, robot chat, camera, Bing translator, Bluetooth headset support and help menu. The list below indicates the information and the requirements of each individual function.

The program has two modes to well fetch the services and functions. The program will start with voice mode as its primary mode to provide the voice assistant, but the user can select switching to the text mode if he or she is not well working with the voice mode or the surrounds don't support the voice recognition well.

♣ Calling service, the application should allow the users to give a call to the person in the contacts. By giving a correct command with the calling request to a stored person, the Android phone should successfully direct to the number of the person requested.

♣ Text Message transformation, customers are able to send the SMS to a specific person in the contacts. By giving a correct command contains the messaging request keyword together with the destination person, the message should be sent to the destination immediately.

♣ Mail exchange, customers are able to send the mail to the person with mail address in the contacts. By giving a correct command contains the mail request keyword together with the destination person; the mail should be received by the recipient after it has been sent.

♣ Alarm, as a basic function on the mobile phone, it is frequently that users need to set the alarm to a specific time. The user could set the alarm through the request with the given time.

♣ Event handler, the application should allow the user to set as many events as they want. Customers with the event content should be stored and available for the user to check, modify and delete.

♣ Location services, location services provide the functions for the user to check the current location or find the direction to a destination. The user should get an

easy-to-understand map with the locations or routes depending on the category of the request.

♣ Checking weather, the user could check the weather in any place. In addition, the weather is returned with the temperature and humidity; the user could also check the weather for current day, tomorrow or in next four days.

♣ Google searching engine, the search engine enables the user to search anything on Google. The search engine will give result list back and displayed on the browser.

♣ Wikipedia searching engine, the search engine enables the user to search anything on Wikipedia. The result is given back on the web browser with the searched content on Wikipedia.

Conclusion:

Immersive learning technologies have the ability to update the existing education system. Virtual reality, augmented reality and voice assistants can provide new learning experiences. In this paper, research regarding the integration of AI voice assistants in education is presented. Research on this topic is limited since voice assistants and smart speakers are now gaining popularity. Findings presented in this paper will hopefully inspire other researchers to further investigate this topic. Smart speakers and voice assistants will be at the Centre of interest in coming years as they enter the everyday life of households. The ways they can be used efficiently in the learning process is the subject of research as there are many challenges. One of these challenges is the lack of many languages as voice assistants do not speak all languages. In addition, voice assistants do not have many of the appropriate security measures and protection filters that can be used in class by students. Teachers need to be trained and motivated about the usefulness of these devices in order to adopt them in their class. Although in most cases positive results have been reported regarding students and teachers, results are limited, incomplete and unorganized. As a conclusion, the role of these devices and their use in the classroom are still at an early stage of research and more studies need to address this topic. Controlled Devices uses Natural Language Processing to process the language spoken by the human and understand the query and process the query and respond to the human with the result. The understanding of the device means Artificial Intelligence needs to be integrated with the device so that the device can work in a smart way and can also control IoT applications and devices and can also respond to query which will search the web for results and process it. It is designed to minimize the human efforts and control the device with just human Voice. The device can also be designed to interact with other intelligent voice-controlled devices like IoT applications and devices, weather reports of a city from the Internet, send an email to a client, add events on the calendar, etc. The accuracy of the devices can be increased using machine learning and categorizing the queries in particular result sets and using them in further queries. The accuracy of the devices is increasing exponentially in the last decade. The devices can also be designed to accept commands in bilingual language and respond back in the same language queried by the user. The device can also be designed to help visually impaired people.

THE END