



Virtual Voice Assistant Sara for the Handicap and Blind People to Make Them Use of Desktop

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ABSTRACT

In today's world the use of Computer is need for survive. But the handicap & Blind people they are not able to handle the computer devices due to their physical disabilities so we create the system called desktop voice assistant which will help them to use computer with ease. This paper is a part of proposed system that aim. at designing a system software that will take the voice command and execute as said. And its mainly focuses on reducing the use of hardware like keyboard, mouse & touch-pad. Independent gadgets are becoming more brilliant in their manner to connect with both a human and themselves. The objective of this paper is to existing the concepts about Speech Recognition Systems beginning from the evolution to the advancements that have now been tailored to the Speech Recognition Systems to make them more hearty and precise. This paper has the certain find out about of the mechanism, the challenges and the tools to overcome these challenges with a concluding notice that would ensure that with the developments of the technologies, this world is surely going to trip revolutionary adjustments in the near future

Keywords: Desktop voice assistant, Python, Text-to-Speech, voice Recognition.

INTRODUCTION

In this advanced period, everyday life became more astute and interlinked with innovation. We already know some voice assistance like Google, Siri, Cortana, etc. Presently in our voice help framework, it can go about as an essential clinical prescriber, everyday timetable update, note essayist, mini-computer and a pursuit device. This undertaking chips away at voice info and give yield through voice and shows the text on the screen. The main agenda of our voice assistance is to make people smart and give instant and computed results. The main function of the voice assistant is it will take the voice as a input through our microphones (wireless, wired microphone) and it will convert our voice into computer understandable language and then it will gives the required solution and answers which is asked by the user.

Due to having access to the internet assistant will connect with the world wide web to provide the result that are user has questioned. Basically virtual assistant are software program that help you to ease your day today task such as showing weather report, creating remainder, making shopping list etc. by taking it as command from the users.

These sorts of remote helpers are exceptionally valuable for advanced age, blind and actually tested individuals, kids, and so on by ensuring that the cooperation with the machine isn't a test any longer for individuals. Indeed, even visually impaired individuals who couldn't see the machine can associate with it utilizing their voice as it were.

The voice collaborator that we have created is work area based fabricated utilizing python modules and libraries. beacause there are enormous number of applications which provide efficient support for mobile phones, but for desktop the level of applications and also the count of applications are very less. Microsoft's desktop assistant is not up to the mark yet to compete with google assistant. There is a need of new work area right hand to give next degree of administrations with the goal that we can likewise make work areas as easy to use as cell phones.

EXISTING SYSTEM

Work area individual colleague is worked with AI advancements, here Jarvis helps the end-client with everyday exercises like general human discussion, looking through questions in different web search tools like Google, looking for recordings in youtube, retrieving images, files in local drive, play songs in desktop by the use of imported modules



like pyttsx3 is an offline module that is used for text to speech conversion in python, Date Time module is imported to support the functionality of date and time. web browser, Wikipedia, Google those are imported to fetch the user result. The user statements/commands are analysed with the help of Artificial intelligence to give an optimal solution.

PROPOSED WORK

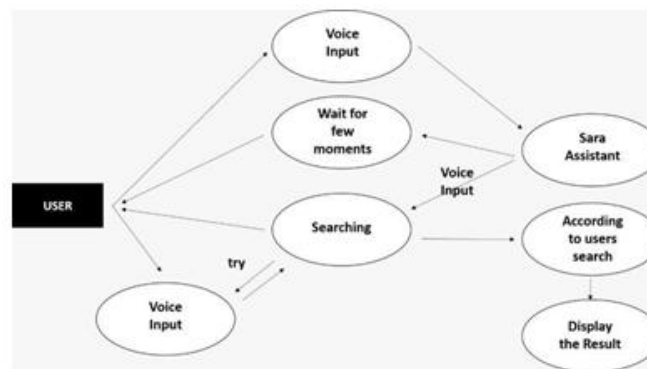
The proposed system will have the following functionality:

- The framework will continue to tune in for orders and the ideal opportunity for listening is variable which can be changed by client prerequisites.
- If the system is not able to gather information from the user input it will keep asking again to repeat the query and if still it is not able to gather the information then assistant will say not able to answer the query.
- The system can have both male and female voices

Ccording to user requirements (but we have selected female voice for assistant).

- Features upheld in the current version include search on Wikipedia, emails, texts, playing music , opening anything on the web browser, etc.
- We have automated some extra things like camera, we have also automated the restart and shutdown processes of the Computer.
- The desktop assistant available they only supports the English language but the people who can't speak English language found difficult to talk with assistant so we have overcome that our assistant support both English and Hindi language So that people will feel comfortable to talk with the assistant.
- Our assistant has the feature that does the calculations by just passing the voice.
- The assistant is password protected to access the functionalities user has to say the password if password is correct it will grant the access to the user.

Flow Diagram:



Flow Diagram

Implimentation

STEP 1:

Firstly we need to import the required packages for the program

- Import Pyttsx3
- Import Date_time
- Import Speech_recognition
- Import Pyaudio
- Import Wikipedia
- Import Os
- Import Webbrowser
- Import Pywhatkit
- Import Random
- Import Smtplib



- Import Operator
- Import open-cv2 python
- Import Pyautogui
- Import wolframalpha

There are mainly two modules that are important to carry out all the functionalities of the assistant they are as follow:

Text-To-Speech:

Text-To-Speech(TTS) is the technology that reads aloud digital text-the words on the computer, smartphones and tablets.

TTS help the people who struggles with the reading this text to speech tools are available in every device now-a-days.

Speech-Recognition:

Speech_recognition is the python module that helps us in saving the typing time by using this model we don't even need to type a line of the code we just have to speak. Speech Recognition is a great example of using machine learning in real existence.

1. Pyttsx3:

Pyttsx3 is a text-to-speech conversion library in python, it works offline and is compatible with both python 2 and 3. It is an exceptionally simple to utilize tool which changes over the entered text into speech. The pyttsx3 module upholds two voices initially is female and the second is male. It can work on any platform.

2. Date_Time:

Datetime is a python module to work with dates and time. The date contains parameter month, year, day, hour, minute, second and microsecond.

3. Speech_Recognition:

Speech_recognition is the python module that helps us in saving the typing time by using this model we don't even need to type a line of the code we just have to speak.

4. Pyaudio:

PyAudio provides python binding for portaudio, it is the cross- platform audio I/O library. With PyAudio you can easily use python to play and record audio on a various of platform.

5. Wikipedia:

In python Wikipedia module is used to fetch a verity of information from the Wikipedia website.

6. Os:

Operating System module in python provides a way of using operating system dependent functionality. By using this we can access any directory any program from any drive.

7. Webbrowser:

The main function of web browser is to fetch or retrieve informative resource from the World Wide Web to the user and translate those files received from web server and display those content to the user.

8. Pywhatkit:

For sending message on the whatsapp assistant uses the selenium automation to automate the whatsapp instead of the That huge process we have use this module which only takes the user name and what message you want to send to the user and at what time you want to send the message.

9. Random:

Random module is used to generate the random number from given range.it is the inbuilt module in the python.

10. Smtplib:

Python's standard library has 'smtplib' module which can be used to send mail via python program. A mail server is an application that handles and deliver's e-mail over the internet. Outgoing mail server implement SMTP or simple Mail



Transfer protocol which are an internet standard for email.

11. Operator:

The operator module perform various operations and operates two input number in python program. The operator module is the inbuilt module in python and it provides us with a lot of functions such as add(x, y), div(x, y) etc.

12. open-cv2 python:

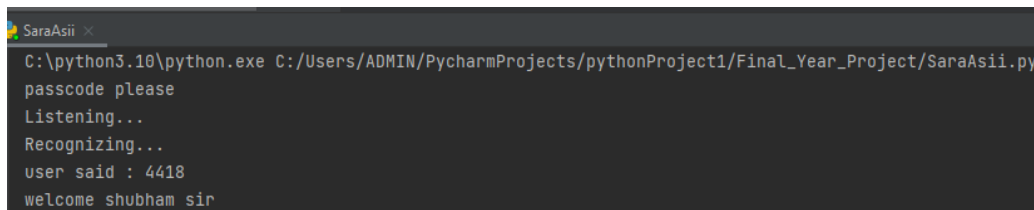
The open camera vision2 is the python module which is used to solve all computer vision-related problems. We have implemented this to automate the camera functionalities. Like taking pictures and saving it.

13. Pyautogui:

Pyautogui is a python module which can automate your GUI and automatically control your keyboard and mouse.

RESULT AND DISCUSSION

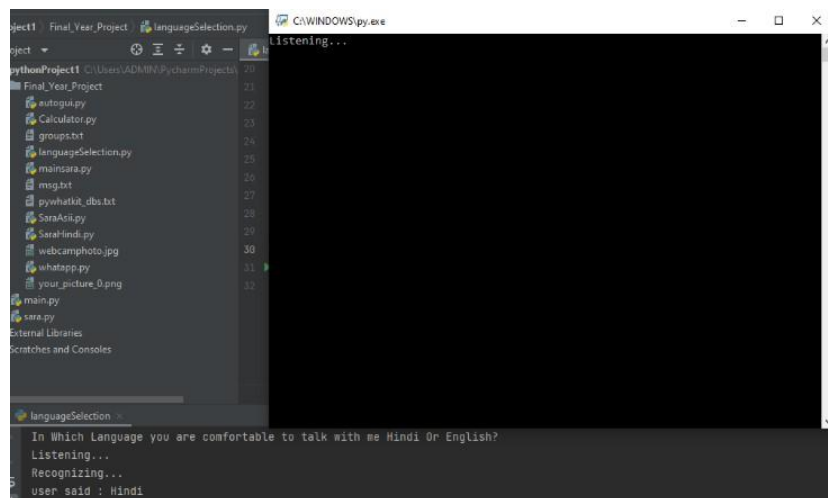
Firstly assistant will asks about the password to access it if the password said by the user is correct then it will allow the user all the functionalities.



```
SaraAsii >
C:\python3.10\python.exe C:/Users/ADMIN/PycharmProjects/pythonProject1/Final_Year_Project/SaraAsii.py
passcode please
Listening...
Recognizing...
user said : 4418
welcome shubham sir
```

Assistant asking for the password.

Then the assistant will asks the user that in which language the user is comfortable to do the conversation and it provides the two languages to choose first is Hindi and second is English.

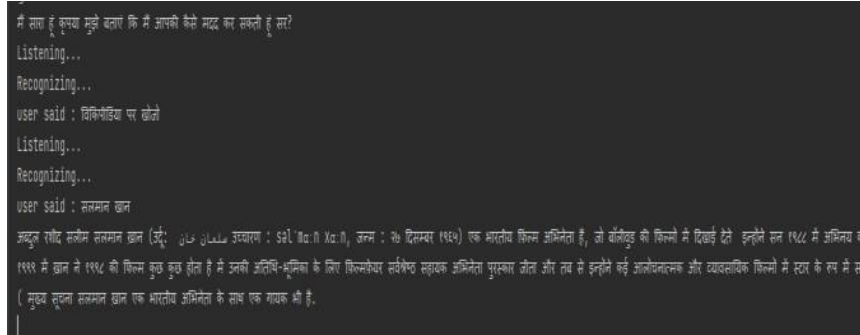


```
languageSelection.py
In Which Language you are comfortable to talk with me Hindi Or English?
Listening...
Recognizing...
user said : Hindi
```

Assistant asks for the language to speak.

Here user said Hindi so Hindi version of the assistant is executed if user said English then English version of the assistant gets executed.

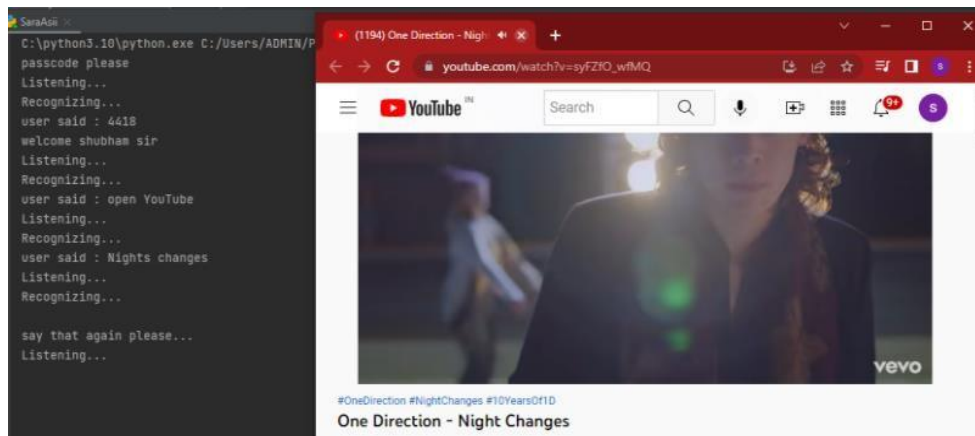
Wikipedia is the one of the functionalities that is provided by the assistant. So basically it will ask the topic about which the user want's to know the information about.



Assistant telling Wikipedia About Salman Khan.

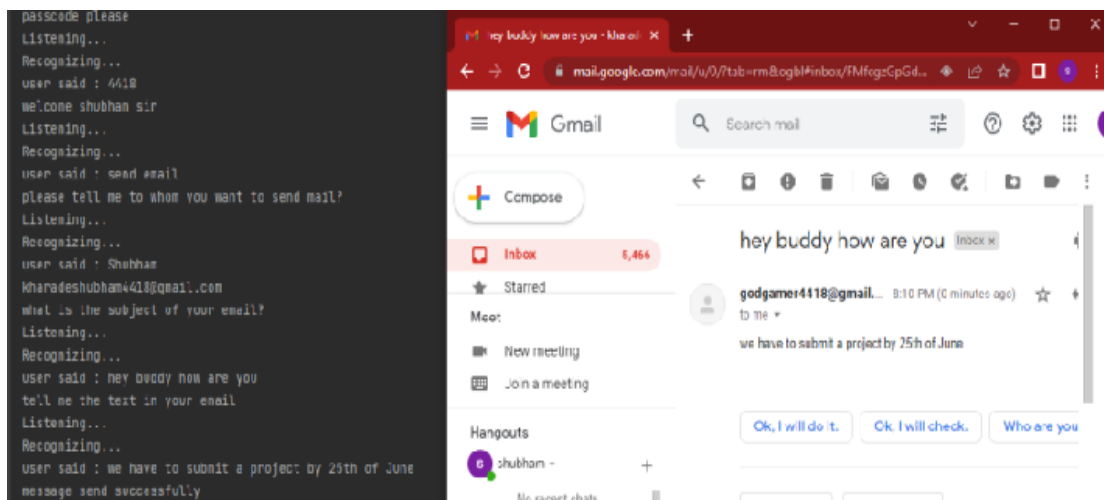
Youtube searching is also one of the feature provide by the assistant, the youtube searching is automated using pywhatkit module.

Assistant will ask you what to play on youtube and then search what the user has said on youtube.



Assistant searching song on youtube.

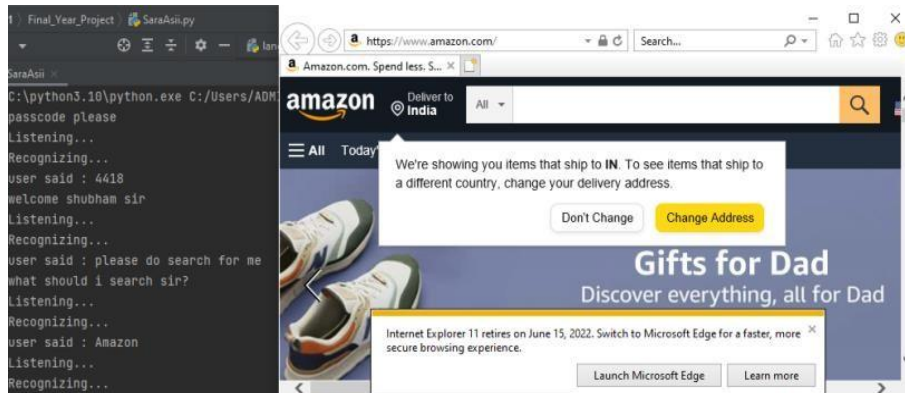
Sending mail by just saying is one of the functionality provided by the assistant, assistant will ask user to whom he wants to send mail, what is subject of the mail, what is the body of the mail.



Assistant Sending mail

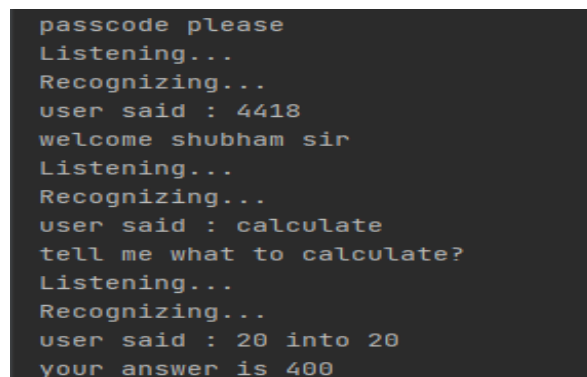


Google searching is also done by the assistant, assistant will ask what to search on Google and take it from the source which is microphone what user has said.



Assistant Searching amazon on webbrowser.

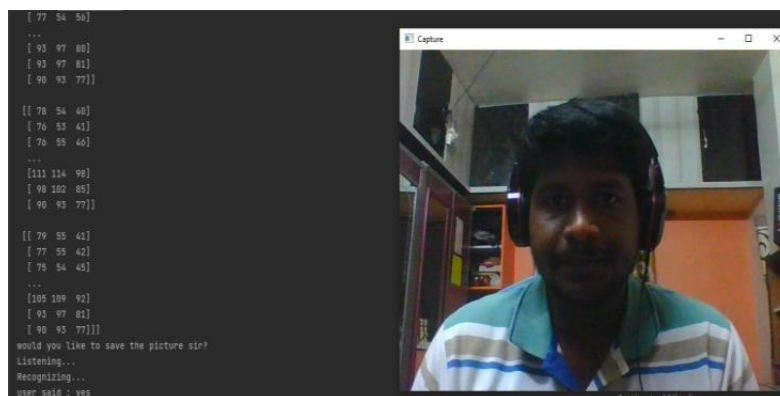
Assistant also does the calculations by just taking the number as input from the source that is microphone, to do the calculation it's just need to import the wolframalpha it an API which can compute answers using it's own algorithms.



Assistant Does the calculation.

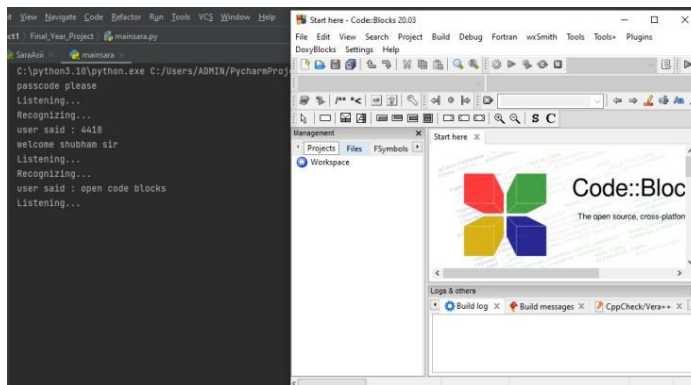
Assistant is also capable of capturing the pictures from the camera of the system, to make it happen it needs to import the module named open-cv2 python using this module assistant will capture the image and also can record the video.

Assistant is capable of saving the picture also.



Assistant taking picture.

With the help of the operating system module the assistant performs one functionality that is it can open any application, video, games by just passing the voice from resource that is microphone.



Assistant opening code block.

Assistant is also capable of giving the general knowledge question, 5 different meaning of words, it can also solve questions related to subjects like mathematics, Science, physics, chemistry, discrete mathematics, etc.

Assistant can does this with help of the module name wolfram alpha which is an API with help of the inbuilt algorithm we can easily get the results.

```
passcode please
Listening...
Recognizing...
user said : 4418
welcome shubham sir
Listening...
Recognizing...
user said : I have question
can i make search for you sir?
Listening...
Recognizing...
user said : yes
tell me your question sir..!
Listening...
Recognizing...
user said : who is Prime Minister of India
your answer is Narendra Modi (from 26/05/2014 to present)
```

Assistant answering general knowledge question.

```
user said : I have question
can i make search for you sir?
Listening...
Recognizing...
user said : yes
tell me your question sir..!
Listening...
Recognizing...
user said : atomic mass of carbon
your answer is 12.011 u (unified atomic mass units)
```

Assistant Answering chemistry related question.



CONCLUSION

In this project we have design the kind of a software for mute and handicap people which is also beneficial to the normal people in case of saving time. The main advantage of this project is that it is operating system independent the exe file can run into any operating system, if you use the exe file in the laptop, so it is kind of portable also. The main aim of this software is to make physically challenge people use the desktops and laptops, and make them as smart as the normal people and make them convenient to the new edge technologies. The project is built using open source software modules and the pycharm community 2021.3 edition which can accommodates any kind of updates in the near future.

FUTURE WORK

Till now we have automated tasks like sending mail, playing music, opening any application, camera automation, calculations by just passing voice, Google search, system restart and shutdown, taking notes, etc. And in all this functionalities we try to avoid hardware like keyboard and mouse but at certain point we need to access the mouse and keyboard in near future we are trying to avoid complete hardware support and we will try to automate all different kind of application and task which can be automated, Which will help the end user to save their time. In near future will add some emotions to assistant which will make assistant nor less than the real human assistant.

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