VOICE ASSISTANT

A MINOR PROJECT
Submitted in Partial Fulfillment of the Requirement for the Award of the Degree of BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE & ENGINEERING

SUBMITTED TO

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal(M.P.)

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CANDIDATE'S DECLARATION

We, **RITESH GUPTA & SAGAR TRIPATHI** student of **Bachelor of Engineering, Computer Science & Engineering, Lakshmi Narain College of Technology Excellence, Bhopal** hereby declare that the work presented in the dissertation entitled "**Voice Assistant"** is outcome of my own bona-fide work, which is correct to the best of my knowledge and this work has been carried out taking care of Engineering Ethics. The work presented does not infringe any previous work and has not been submitted to any University for the award of any degree / diploma.

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CERTIFICATE

This is to certify that the dissertation entitled **"VOICE ASSISTANT"** is the bonafide research work carried out independently by **Ritesh Gupta** and **Sagar Tripathi,** student of **Bachelor of Engineering**, Department of Computer Science & Engineering from Rajiv Gandhi Prodyogiki Vishwavidyalaya, Bhopal.

In the partial fulfillment of the requirement for the award of the degree of Bachelor of Engineering, and this dissertation has not formed previously the basis for the award of any degree, diploma, associate ship, fellowship or any other similar title according to our knowledge.

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ABSTRACT

* A **Voice Assistant** or **intelligent personal assistant** is a software agent that can perform tasks or services for an individual based on verbal commands i.e. by interpreting human speech and respond via synthesized voices. Users can ask their assistants' questions, control home automation devices, and media playback via voice, and manage other basic tasks such as email, to-do lists, open or close any application etc with verbal commands.

* Let me give you the example of which is an intelligent personal assistant, human language interface, automation and **voice recognition software** for Windows PC. Voice assistant a multi-functional AI software that allows you to interact with your computer using **voice commands** in most of the languages of the world. Voice assistant also allows you to accurately convert speech to text in over 100 different languages of the world.

* Our project (Voice assistant) is work on the basis of 'en-in' by the help of Google speech recognizer.

TABLE OF CONTENT

CHAPTER 1 |

INTRODUCTION

- What is Virtual Personal Assistant?
- Concept of an artificial personal assistant.
- Voice-controlled Personal Digital Assistants.
- The combination of **:**
    - Automatic Speech Recognition.
    - Artificial Intelligence.
    - Natural Language Processing.
    - Inter Process Communication.

CHAPTER 2 |

HISTORY

- The first PDA was released in 1984 by Psion, the Organizer
- Early PDA's was devices having full keyboard and touch screen, Which was also known as PALMs
- Which was also known as PALMs
- The concept of virtual assistant was first developed by Joseph Weizenbaum of MIT in the late 60s.
- The first chatterbot was "ELIZA".
- "JULIA" is an example of the second generation chatterbot.
- "ALICE" is example of third generation chatterbot.

CHAPTER 3 |

BASIC CONCEPT USED

The working of Virtual Assistant uses following principles:

- Natural Language Processing.
    - To Understand user's speech input.
    - Like en-in .
- Automatic Speech Recognition.
    - To understand command according to user's input.

CHAPTER 4 |

HARDWARE AND SOFTWARE REQUIREMENT

- Hardware:
    - A Laptop or Desktop with a touch and without touch interface.
    - Laptop Ram should be of a minimum 512 MB.
    - Internet connectivity.
- Software :
    - Operating system should be win 7/win 8.1 or higher.
    - The kernel version should be 3.0.16 or higher.
    - Visual studio code ,python setup ,Gitbash
    - Support of other basic applications like browsers, files,

Music bars etc.

CHAPTER 5 |

WORKING

Any Virtual Assistant basically consists of three layers.

1. Speech to text (Convert).
2. Text Analysing (Recognizing).
3. Interpret commands.
4. Show the output in the form of result (by voice).

CHAPTER 6 |

AVAILABLE APPLICATION

Name	Platform
Google Now	Android & IOS
Cortana	Windows
Siri	IOS
Robin	Android
Dragon Go	IOS
Evi	Android
EasilyDo	Android

CHAPTER 7 |

VPAs IN FUTURE

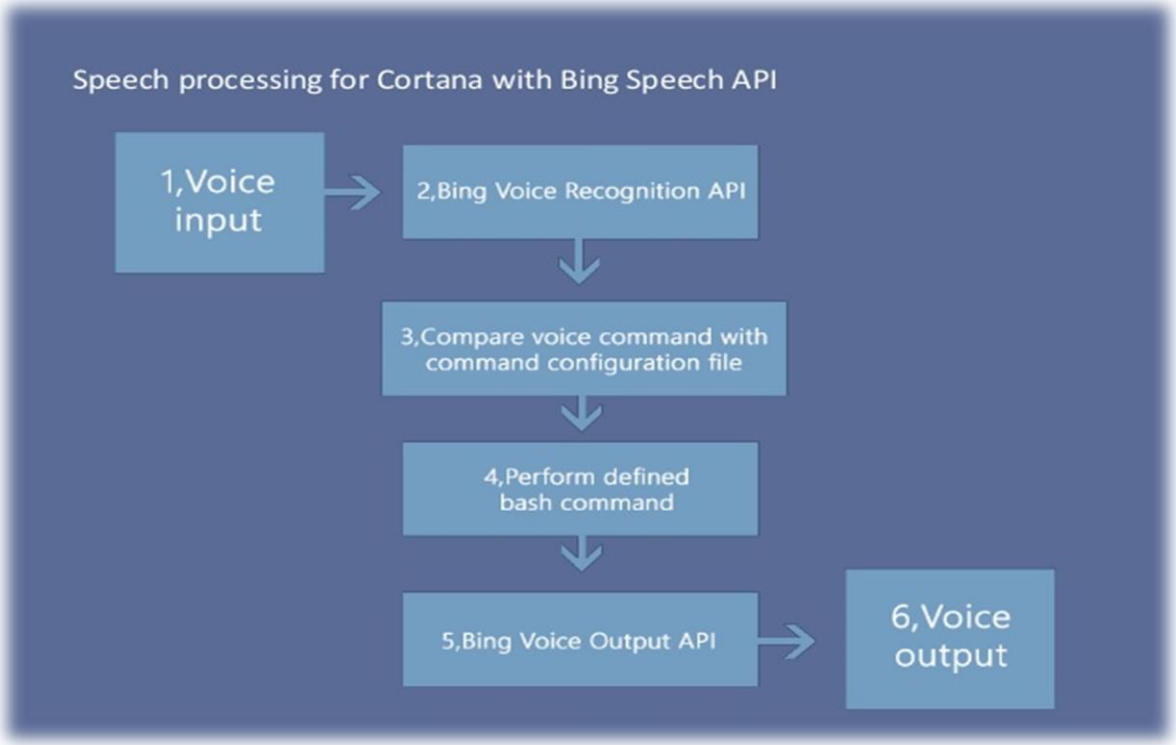
- Next step will be to strip back the physical hardware as far as possible
- With the intelligence of the VA existing in the cloud, getting pulled in, and pushing its way into our lives on multiple devices on our bodies and in our offices, homes, and vehicles
- Your VA will be continually prompting you with suggestions and taking instructions, and will know more about you than perhaps you do yourself.
- We can expect this device to be implanted and permanent.

USER INTERFACE


```
Ritesh@Ritesh-PC MINGW64 /f/python programing/projects/myrobt
$ python robt.py
Listning....
Recognizing....
user said:Sachin Tendulkar Wikipedia

Sachin Ramesh Tendulkar ( (listen); born 24 April 1973) is an Indian former international cricketer and a former captain of the Indian national team. He is wi
dely regarded as one of the greatest batsmen in the history of cricket.
Listning....
Recognizing....
```

FLOWCHART



THREE LAYERS WORKING

1. **Speech to text:**

- ❑ A Piece of software used that converts audio to text. It doesn't understand just anything you might say.

2. **Text Analysing:**

- ❑ Converted text is just letters for computer.
- ❑ A piece of software converts text to something that is understandable for computer.

- Computer understands the command, so Virtual Assistant like siri convert this text to computer command.

- VPAs maps the words to functions and parameters to create a command that computer can understand.

Example of (Wikipedia, browsing etc.)

3. **Interpret commands:**

    - In this layer, that mapped computer command, go to server through internet.

    - Simultaneously, your speech evaluated locally.

    - A local recogniser communicate with server to judge whether command will be best handle locally or not.

Example: Tell Wikipedia (like Sachin Tendulkar) , Play Music etc.

FEATURES

Some of the features of Virtual Assistant, you may ask him in day by day uses are shown below:

- WIKIPEDIA.
- GREETING.
- SHOW TIME
- SEND MESSAGE.
- PLAY MUSIC.
- SEARCH ON INTERNET.

- OPEN OF APPLICATION.

ADVANTAGES

- These applications make small and smart hand-held devices to combine multiple features.
- They allow you to export and import data.
- Store various information.
- Make to do lists.
- Recognizes voice commands.
- Controls various applications of device.
- Provides services regarding your location.
- Helps to plan your whole day.
- Reminds you important things on accurate situations or location. (Geofencing)

DISADVANTAGES

- Listening problem.
    - VPA get problem to process wrong pronounced words and miscellaneous words.
- Silent mode support.

- VPA gives response in voice output thus it doesn't work properly in silent mode.

❑ Navigation languages.

- Most of VPAs can understand only English language.

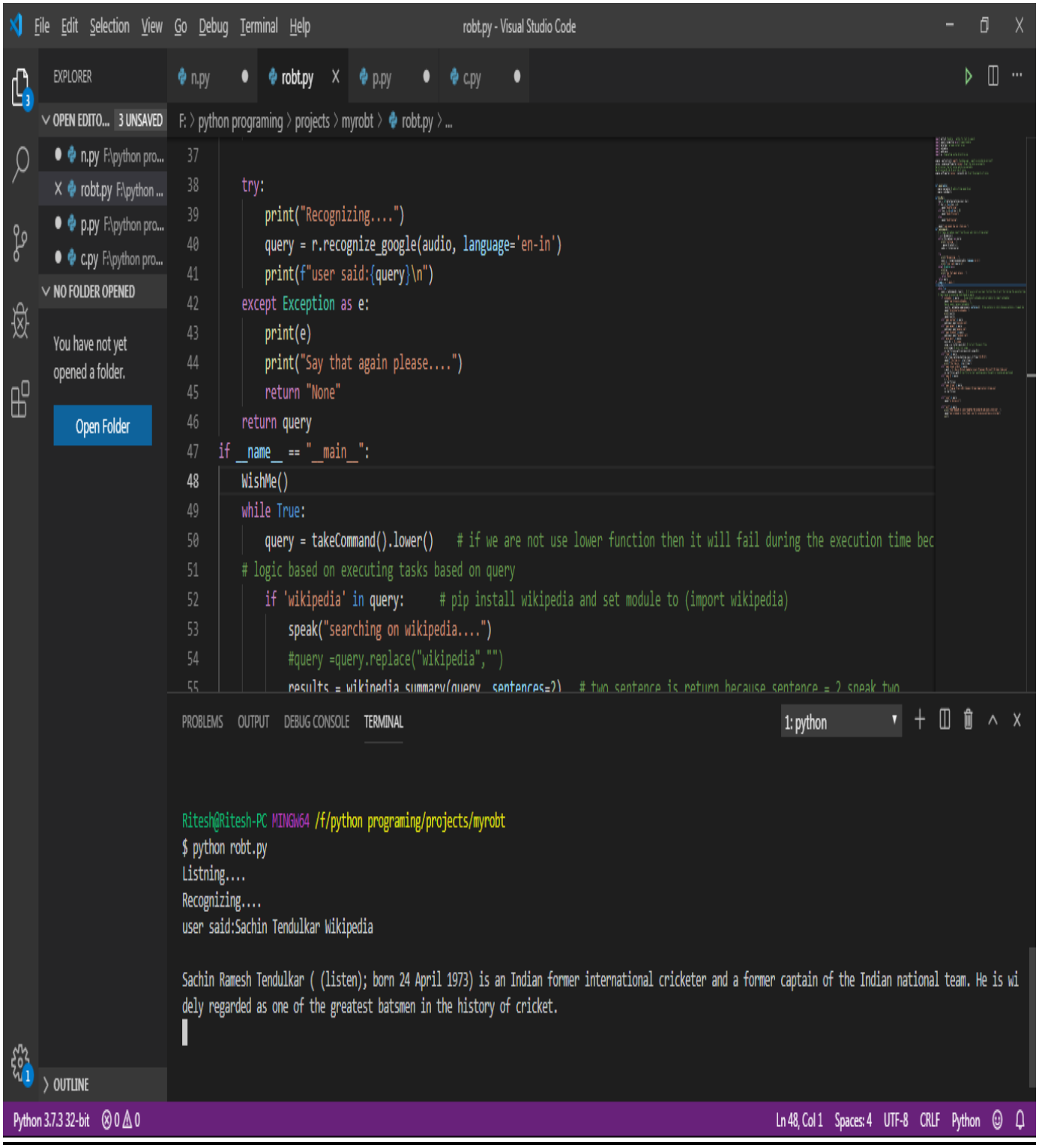
❑ Internet access.

- VPA needs internet connection to give desired output.

INSTALLED LIBRARIES

```
> python programing > projects > myrobt > robt.py > ...
1   import pyttsx3 # module    python for text to speech
2   import speech_recognition as sr # speech module
3   import datetime # already install on pc
4   import wikipedia
5   import webbrowser
6   import os  # operating system directory use
7
8   engine = pyttsx3.init('sapi5') # windows api   sapi5 is provide by microsoft
9   voices = engine.getProperty('voices') # get the voice as property
10  #print(voices) # print voices which are available
11  #print(voices[0].id) # print id of voice
12  engine.setProperty('voices', voices[0].id) # set the property of voice
13
14
```

REAL TIME WORKING



CODE :-

```
import pyttsx3 # module    python for text to speech
import speech_recognition as sr # speech module
import datetime # already install on pc
import wikipedia
import webbrowser
import os  # operating system directory use

engine = pyttsx3.init('sapi5') # windows api   sapi5 is provide by microsoft
voices = engine.getProperty('voices')
engine.setProperty('voices', voices[0].id) # set the property of voice

def speak(audio):

   engine.say(audio) # audio string speak by pc
   engine.runAndWait()

def WishMe():
    hour = int(datetime.datetime.now().hour)
    if hour >= 0 and hour <=12:
        speak("Good Morning")
    elif hour >= 12 and hour < 18:
        speak("Good Afternoon")
    else:
        speak("Good Evening")

    speak("i am ritesh how can i help you.....")
def takeCommand():
    # it takes microphone input from the user and return string output
    r = sr.Recognizer()
    with sr.Microphone() as source:
        print("Listning....")
        r.pause_threshold = 1
        audio =r.listen(source)

    try:
        print("Recognizing....")
        query = r.recognize_google(audio, language='en-in')
        print(f"user said:{query}\n")
    except Exception as e:
        print(e)
        print("Say that again please....")
        return "None"
    return query
if __name__ == "__main__":
    WishMe()
    while True:
```

```
        query = takeCommand().lower()
        if 'wikipedia' in query:      # pip install wikipedia and set module t
o (import wikipedia)
            speak("searching on wikipedia....")
            #query =query.replace("wikipedia","")
            results = wikipedia.summary(query, sentences=2)   # two sentence i
s return because sentence = 2 speak two
            speak("According to wikipedia: ")
            print(results)
            speak(results)
        elif "open youtube" in query:
            webbrowser.open("youtube.com")
        elif "open google" in query:
            webbrowser.open("google.com")
        elif "open facebook" in query:
            webbrowser.open("facebook.com")
        elif "play music" in query:
            music_dir = 'E:\\songs'
            songs = os.listdir(music_dir) # list all the music files
            print(songs) # print list songs
            os.startfile(os.path.join(music_dir,songs[0]))
        elif "time" in query:
            start_time= datetime.datetime.now().strftime("%H:%M:%S")
            speak(f" the time is : {start_time}")
            print(f"the time is : {start_time}")
        elif "open visual studio" in query:
            c_path = "C:\\Users\\Ritesh\\AppData\\Local\\Programs\\Microsoft V
S Code\\Code.exe"
            os.startfile(c_path) # startfile to start anything where the path
is located and mentioned .
        elif "open d" in query:
            o = "D:"
            os.startfile(o)
        elif "open chrome" in query:
            o="C:\\Program Files (x86)\\Google\\Chrome\\Application\\chrome.ex
e"
            os.startfile(o)

        elif "suno" in query:
            speak("ji boliye sir")

        elif "exit" in query:
            print("YOUR PROGRAM IS CLOSE THANKYOU FOR USING ME AND HAVE A NICE
 DAY : ")
            speak("your program is close Thank  you for using me and have a ni
ce day")
            exit()
```

CONCLUSION

Virtual Personal Assistants are very effective way to organize your schedule. Now there are many Smart Personal Digital Assistant applications available in market for various device platforms.

These new Software Applications are performing really well than PDA devices as they provided with all resources of your Smartphone.

VPAs are also reliable than Human Personal Assistant because, VPAs are more portable and you can use them anytime. They also have lot of information than any assistant as they are connected with internet.

REFERENCE

[1]^ *Hoy, Matthew B. (2018). "Alexa, Siri, Cortana, and More: An Introduction to Voice Assistants". Medical Reference Services Quarterly.* ***37*** *(1): 81–88. doi:10.1080/02763869.2018.1404391. PMID 29327988.*

[2]^ *Daniel B. Kline (2017-01-30). "Alexa, How Big Is Amazon's Echo?". The Motley Fool.*

[3]^ https://www.cnet.com/news/google-finding-its-voice/

[4]^ Jump up to:[a] [b] *"Feature: Von IBM Shoebox bis Siri: 50 Jahre Spracherkennung - WELT" [From IBM Shoebox to Siri: 50 years of speech recognition]. Die Welt (in German). Welt.de. 2012-04-20. Retrieved 2017-12-10.*

[5]^ *Zwass, Vladimir (2016-02-10). "speech recognition | technology". Encyclopædia Britannica Online. Britannica.com. Retrieved 2017-12-10.*