

AI BASED VOICE ASSISTANT

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ABSTRACT

Digital installation provides new opportunities to simplify everyday life using auxiliary technology tools. Amazon Alexa, Apple Siri, Microsoft Cortana, are examples of voice assistant. Voice assistant is a software that utilize artificial intelligence to take input in form of voice and then do the task accordingly. We use Various methods to convert speech into text(STT), then after processing of the text, it converts into speech(TTS). However, the smart personal assistant's study is vast.. It is divided into separate branches, e.g. A computer-related environment, personal interaction with a computer as well Information systems. Various python packages is used in this project. In this paper, we have tried to present a descriptive and detailed review to provide strong support for future research. We use nlp instead of pattern identification strategies for recognizing contextual based text. It works online and offline. Python programming language is used in voice assistant. Data is stored in the app itself, it reduces the complexity of time and space.

Keywords-Voice assistant, artificial intelligence, python.

I. INTRODUCTION

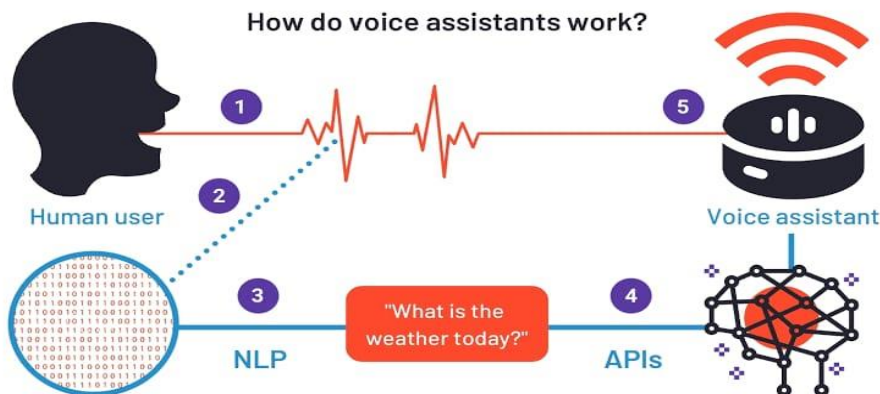
Voice assistant is used to run a computer system like a laptop or PC at your own command. It is a software that can understand human's language and verbal commands and then performs according to the instruction provided to it. Users can give commands to their assistants. Voice assistant performs various functions like sending e-mail, managing to-do lists, open any websites or app, send texts with just any verbal commands on WhatsApp etc. Nowadays assistants are very helpful for human. It has brought comfort in human life. Now we do not have to type for searching anything on internet. We just have to tell the assistant verbally and voice assistant will understand your words and will do actions accordingly. Voice assistants takes less time to show the results.. We can save our time with the help of voice assistant.. Voice assistants usually work with the internet, they require an Internet connection. To make a voice assistant we need to have knowledge of python language. Python has many inbuilt libraries and functions that makes coding part a bit easier. Virtual assistants are work-oriented. Voice assistant is software that works according to the voice commands given to it. They can interpret and respond to human sounds. VS code editor is used to execute our python program. Some of the packages and modules of python that has been used are speech recognition, pyttsx3, smtplib, date time etc.

II. LITERATURE REVIEW

Many researchers have done work on various voice assistants. The first voice system was made by Bell laboratories in 1952. The name of that system was 'audrey'. Audrey had some limitations. It could understand 10 digits only. In early 1960's IBM made a shoebox machine. This machine could remove some limitations of Audrey. It could understand 16 different words and also perform basic functions like plus or minus. But still that was not enough. After this, another model named hidden Markov model(HMM) proposed. This model was far better than previously proposed models. This model could respond to thousand of words. Later, apple company introduced it's 'siri' in the market. Siri is among the best voice assistants that are available in the market. Some chat bots also been made, chat bot also works on similar principle as voice assistant. Voice assistant increases the interaction between the human and the machines. The software uses algorithms and then convert the verbal command into actions.

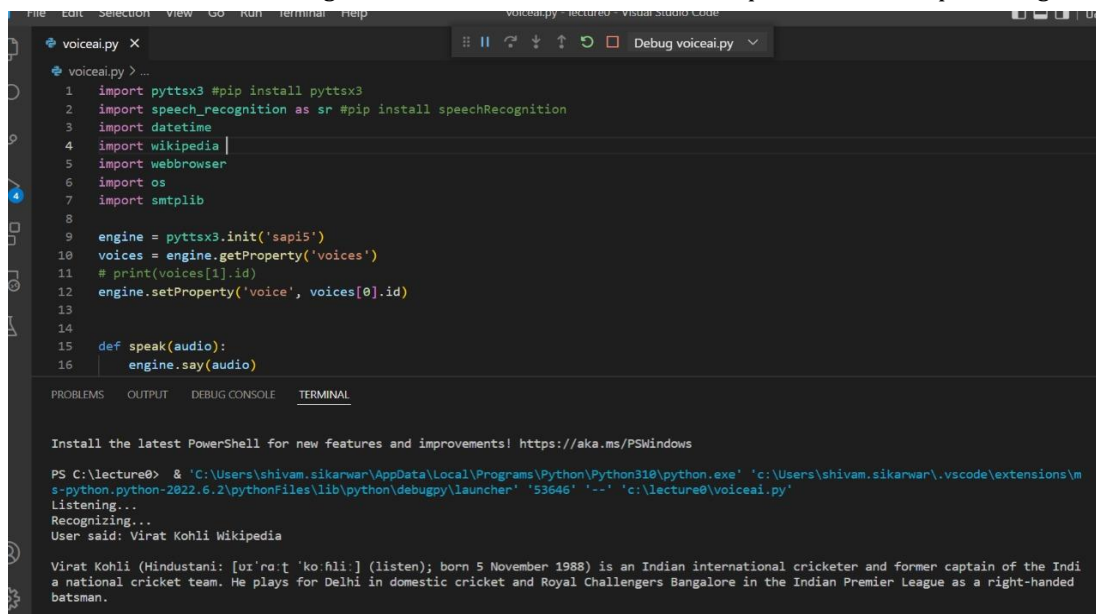
III. PROPOSED METHODOLOGY

Voice assistants take voice input and perform tasks according to the instructions provided. Working of these assistants is very simple and easy. We give some instructions to assistant in the form of audio signal then the software understands and analyse those audio signal and after that it does the tasks. The python code which we have used is also not very complex. These voice assistants can also be helpful for the peoples who cannot see. Use of python language made the execution fast and simple also. Python code has some of installer packages like speech recognition, pyttsx3, python backend, system calls.



IV. RESULT AND DISCUSSION

Voice assistant works fast and takes less time in execution. Voice assistant is a program that has the ability to understand instructions given by users and can do the task on the basis of those instructions. It uses system's microphone to take the verbal instructions. With voice assistant our laptops and PC's can work on our commands. It is a quick process, so saves time. Voice assistant works for you at regular intervals, therefore always accessible to you and can do the task according to the needs of user. Some of the outputs are shown in pictures given below:



```

1 import pyttsx3 #pip install pyttsx3
2 import speech_recognition as sr #pip install speechRecognition
3 import datetime
4 import wikipedia
5 import webbrowser
6 import os
7 import smtplib
8
9 engine = pyttsx3.init('sapi5')
10 voices = engine.getProperty('voices')
11 # print(voices[1].id)
12 engine.setProperty('voice', voices[0].id)
13
14
15 def speak(audio):
16     engine.say(audio)
17
18
19 # Speak some random facts
20 def get_facts():
21     facts = ['Virat Kohli is a cricketer', 'Virat Kohli is a batsman', 'Virat Kohli is a right-handed batsman', 'Virat Kohli is a former captain of the Indian national cricket team', 'Virat Kohli is a former captain of the Royal Challengers Bangalore in the Indian Premier League']
22     fact = random.choice(facts)
23     speak(fact)
24
25 # Take a command from the user
26 def take_command():
27     r = sr.Recognizer()
28     with sr.Microphone() as mic:
29         r.listen()
30     text = r.recognize_google(audio)
31     return text
32
33 # Open a website
34 def open_website(url):
35     webbrowser.open(url)
36
37 # Open a file
38 def open_file(file):
39     os.open(file, os.O_RDONLY)
40
41 # Open a folder
42 def open_folder(folder):
43     os.open(folder, os.O_RDONLY)
44
45 # Open a terminal
46 def open_terminal():
47     os.system('cmd')
48
49 # Open a browser
50 def open_browser():
51     os.system('chrome')
52
53 # Open a music player
54 def open_music_player():
55     os.system('spotify')
56
57 # Open a video player
58 def open_video_player():
59     os.system('vlc')
60
61 # Open a game
62 def open_game(game):
63     os.system(game)
64
65 # Open a search engine
66 def open_search_engine(query):
67     webbrowser.open(query)
68
69 # Open a social media
70 def open_social_media(platform):
71     os.system(platform)
72
73 # Open a news website
74 def open_news_website():
75     webbrowser.open('https://www.bbc.com/news')
76
77 # Open a sports website
78 def open_sports_website():
79     webbrowser.open('https://www.bbc.com/sport')
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81 # Open a weather website
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V. CONCLUSION AND FUTURE WORK

We have discussed about voice assistant in the paper. Voice assistant makes life easier for people. we made a voice assistant using python programming language. It can work on various operating system like windows. Artificial intelligence is also been used for making of this project. Efficiency of voice assistants is very high due to less time consumption. Voice assistants are easy to use and they can be used at any time. As the automation process is been used in many fields now a days, voice assistant also do the automation process by reducing typing methods. Digital automation is achieved through voice assistant. It can be very useful in future as things and processes are going to be automated in future. In future voice assistant can be more efficient and accurate when we will use iot technology in these voice assistant.

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