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Artificial Intelligence Assistant

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ABSTRACT:

Voice control is an essential developing function that change the way human beings can lives. The voice assistant is often being used in smartphones and laptops. AI-based Voice assistants are the operating systems that can recognize human voice and reply by using built-in voices.

This voice assistant will acquire the audio from the microphone and then convert that into text, later it is dispatched via GTTS (Google textual content to speech). GTTS engine will convert textual content into audio file in English language, then that audio is performed by using the play sound package of python programming Language. The predominant goal of the device is to simplify the procedure of the use of a computer, through decreasing the want for the usage of the mouse or typing. To provide a platform to interact with devices through voice commands. The proposed system is a way to make working with computer less difficult and convenient. Currently all the computer work is accomplished by both typing or using mouse. This system gives an interface to the user for interacting with computer machine through voice commands.

In our project we have applied many things compared to different assistants. Now a days it is very beneficial in human existence due to the fact it is a hands-free application. It is very simple and easy to use application. It is used in a commercial enterprise area for instance in a laboratory. For example, a person who wears gloves and body suits for their safety purpose so it is harder for them to type, through voice assistant they can get any data so that their work will become easy.

Keywords: Voice control, AI-based Voice Assistant, GTTS Engine, Play sound, Python.

Introduction:

In the past few years, the way people interact with virtual assistants has changed. In these instances, we are now using them for various tasks such as switching on and off lights, playing music, and controlling Spotify and other streaming apps. This new method of interacting with the devices makes it easier for users to communicate with the system.

The concept of virtual assistants in earlier days is to describe the professionals who provide ancillary services on the websites. The job of a voice is described in three stages: Text to speech; Text to Intention; Intention to action; Voice assistant will be thoroughly developed to improve the modern range. Voice assistants are no longer befuddled with the digital assistants, which are people, who work casually and can consequently manage all types of tasks.

Voice Assistants anticipate our every need and it takes action, Thanks to AI based Voice Assistant. This Voice Assistants can be useful in numerous fields similar as IT Helpdesk, Home automation, HR affiliated tasks, voice-based search etc., and the voice-based search is going to be the future for coming generation people where all most dependent on voice assistant for every requirement. In this proposal we've built the AI- based voice assistant which can do all of these tasks without inconvenience.

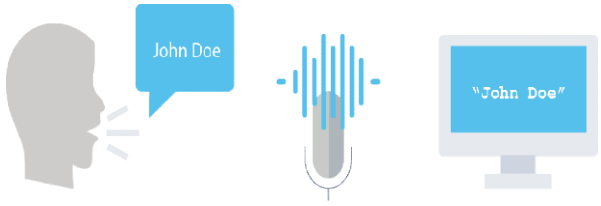
Methodology:

Voice assistants which are written in programming languages, that listens the verbal commands and reply in accordance to the user's request. In this project we have used Python Programming language to develop the AI-based Voice assistant. A user can say, “Play me a song” or “Open facebook.com”, the voice assistant will reply with the results via playing that particular music or through opening Facebook website. The Voice assistant waits for a pause to be aware of those users have completed their request, then the voice assistant sends users request to its database to search for the request.

A. The request made with the aid of the person receives break up into separate commands, so that our voice assistant can be in a position to understand.
B. Once inside the command list, our request is searched and compare with the different requests.
C. The command’s listing then sends these commands again to the Voice assistant.

D. Once the voice assistant receives these commands, then it is aware of next steps.
E. The voice assistant would even ask a query if the request is not clear to process it, in different words to make sure it knows what we would like to receive. If it thinks, it knows sufficient to method it, the voice assistant will operate the assignment which the user has requested for.

A. Working Of ASR:



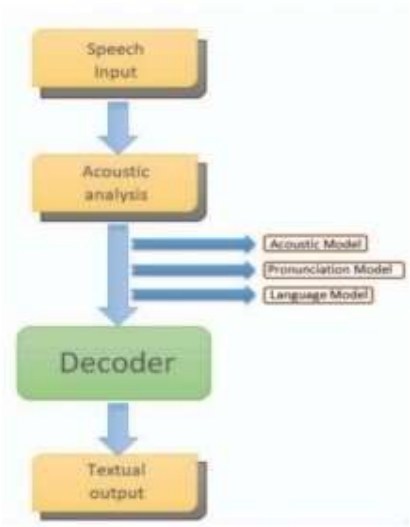
As shown in Fig, Automatic Speech Recognition which is termed as ASR is the main principle behind the working of AI-based Voice Assistant. ASR systems, initially it records the speech, then the wave file are created by the device which consists of the words it listens, later the wave file is cleaned so that the interference would get removed, and the volume will get normalized, then it will get broken down into elements and then it will get analysed in sequences, then the ASR software examines these sequences, and it implements statistical probability to find the entire words, and then it will get processed into textual content. The preferred method to recognise the elements is by using the
Element Recognition because it provides better results than the method of worddecoding. It does not matter what kind of speech recognition Software we mayuse, because all the work happens in ASR. In a nutshell, initially the first method starts with the Device gathering audio with the source, where source is the Microphone, then the Recorded speech waveforms will be Sent to acoustic analysis, which is in a position to be performed on three Different levels.

B. Acoustic Analysis

1. **Acoustic Modelling**: In this process, it represents That the element where pronounced or not and what are the words which can complete these rudiments.

2. **Pronunciation Modelling**: That analyses the way, where how these elements are pronounced, it'll Check whether there's any accent or other Tricks.

3**. Language Modelling:** This is frequently aimed toward finding contextual chances counting on what element were captured. All the data which were recorded get processed by Artificial Intelligence without any human interaction, also the speech waveforms data is transmitted to the decoder, where it eventually transforms into text format for further use like command.



HOW OUR VOICE ASSISTANT IS USEFUL:

In this section, we will explain a set of situational events that can tell how our voice assistants is useful. For e.g., if we Want to go to a particular location instead of opening google map and typing the destination takes a lot of time instead of that with our VA just by command to find the particular location it opens the map and highlights the particular T song is searched in the YouTube database and the Video ID is noted, with this the specific video is downloaded. If we want to get any information, we've to open Google and search for it. But in VA by just giving, it in the Collects the right information available on Wikipedia and Gives us and if we want to know about what's happening in This, we can gain knowledge. Concerning the aspect of extracts the current locations of the girl and sends it to their Parents or other relatives and the near police station.

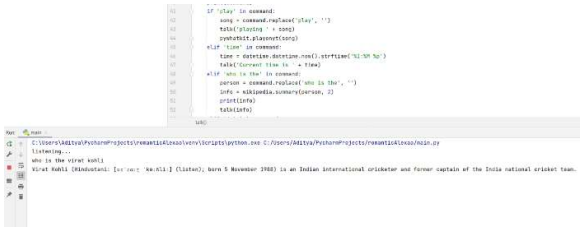
Results:

The required packages of Python programming language have been installed and the code was implemented using PyCharm Integrated development environment (IDE) and the python code we have developed runs in both Python 2.7 and Python 3.x.and below are the few outputs which we have received in our AI-based voice assistant.

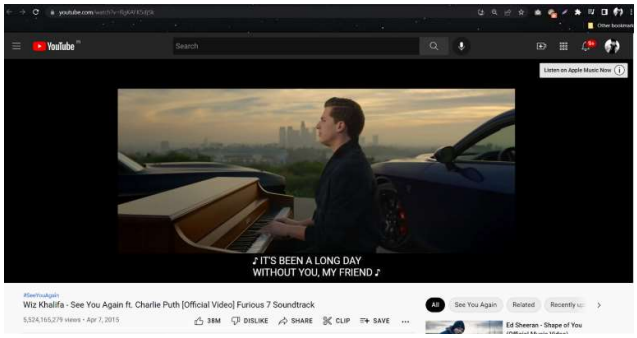
Greeting:

Current Time:

Who is Virat Kohli:

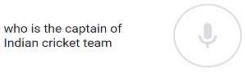


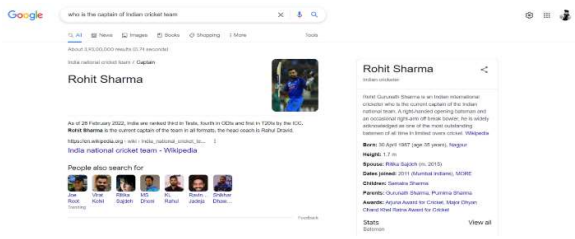
Play song using voice assistant:



Google Search Output

As shown in below Fig. When we ask the voice to search "WHO IS THE CAPTAIN OF INDIAN CRICKET TEAM", it receives the request and performs the actions by searching goggle. performs the action by searching google.





Conclusion:

Voice assistants are useful in many fields such as education, daily life application, home appliances etc. and voice assistant is also useful for the illiterate people they can get any information just by saying to the assistant, luxury is available for people, thanks to AI based voice assistants. Voice assistant is developing more and more in daily life. Many companies of voice assistant trying to improve interaction and more features to the next level and many of the youth started using voice assistant in daily life and from many sources the result showing very good feedback. Compared to last 2 years voice assistants have been developed more and more. In future voice assistants can be used for two Developments: First quality of dialogue recognition will Increase because broadband allows more complex data Processing in powerful data centres. Second, from the users Perspective, VAs

aid for interaction. In the companies, voice Assistants can be used to automate repetitive tasks, for Book meeting rooms etc.

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