



Personal Digital Voice Assistant

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Abstract: A Personal Digital Voice Assistant is a software agent that is used to interpret human voices or speeches. It can also respond to verbal commands of the user. Personal Digital Voice Assistant is considered a platform to perform the daily tasks of the user. The personal digital voice assistant is an assistant program that works on the desktop. It is connected to the web browsers to perform web searches. The digital voice assistant aims to provide a hands-free experience to the user. Voice assistant is an experiment that changes the way of living life, here the GTTS (Google Text-To-Speech) converts text into audio (mp3) files, and later the audio is played as output by using python play sound package.

In this paper, we focus on the development of the personal voice assistant and also on how the AI-based assistant will execute its task. Our focus is to provide a hands-free experience for the user. The entire assistant is designed using the python programming language.

I. INTRODUCTION

Personal digital Voice Assistant aimed to provide a hands-free experience to the user as much as possible, and this virtual voice assistant is capable to open different sites, can also open different applications, sending mail on the single voice command, and also be able to play music on the single user voice command. It also provides security and privacy. In today's fast-paced life, sometimes people feel troubled and sometimes feel annoyed by typing commands into the computer. And the solution is to switch the user to an assistant which understands the user's voice and does some work for us. An assistant is used to perform all the tasks that we have to do by manual typing. The voice assistant takes the voices as input from the user and converts the voice command to the text files and sends the text files as input to the Google Text-To-Speech. Presently we have a number of voice assistants in the market and these assistants are very helpful to the user provide the user a hands-free environment. Voice assistants are used to save time they are widely used for the consumption of time.

II. METHODOLOGIES

The efficient and effective way for the implementation of a personal digital voice assistant is having a speech recognition library that gives the assistant the right to get the information from the user's command and also gives the response to the user or client in verbal format by taking help from GTTS (Google Text-To-Speech). When assistant recognize the voice from the user the libraries that are built-in the python language changes speech into text format, and then the text is sent as input to the machine which performs the tasks same as requested by the user.

This process has 3 steps involved in it

- Voice to text conversion
- Problem execution
- Text to speech conversion.

We used different kinds of APIs for performing different tasks like web browsing, taking news from websites, and other many tasks. The novelty is this assistant was sending emails from our side to others. We implemented many libraries in this assistant so that we can take more and more advantage from this assistant, libraries like Random, OS, etc. Wikipedia is a library that we used to access the data from, Wikipedia. The assistant was able to achieve different kinds of goals by using these libraries.

III. SCOPE

As we see in the current time the growing market of voice assistants will make it a big business market in upcoming years. According to a census, approximately 18% of people are using voice assistants which means we can see a rise in the next few years, according to reports the market value of voice assistants was USD 11 billion in 2020 and this value can rise up to USD 28 billion in 2027. And without any surprise by 2022, the voice-based assistant is expected to have the



revenue to reach \$ 19 billion. This led to the conclusion that voice searches increase rapidly per year giving opportunities for business.

And there is also the possibility of upgradation in our Virtual Digital Assistant. As of now, it is program-based without any GUI and Application. But in the future as an upgrade, we can build a Graphical User Interface for the Virtual Desktop Voice Assistant so that we can give services as per pay scale. In the future, we will see all the searches will be done using such assistants.

IV. CONCLUSION

User interfaces have gotten increasingly natural to use over the course of computer history. One stride in this approach was the screen and keyboard. Another was the mouse and graphical user interface. The most recent advancement is touch displays. Augmented reality, gestures, and voice controls will most likely be used in the following level. After all, asking a question or having a chat is frequently more convenient than typing something or filling out a lengthy online form. The more a person uses voice-activated devices, the more trends, and patterns the system detects based on the data it gets. The data may then be used to establish consumer preferences and tastes, which is a long-term selling point for smart home technology. Google and Amazon want to combine voice-activated artificial intelligence that can analyze and respond to human emotion.

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