

PROJECT REPORT
Computational Thinking and Programming
(ECSE105L)

AI Desktop Voice Assistant



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ABSTRACT

Voice assistants are increasingly popular and functional, but they still have a long way to go. The project is based on today's young technology of AI which is a personal assistant. An AI personal assistant is a piece of software that understands verbal or written commands and completes tasks assigned by the client. It is an example of weak AI – i.e., an AI system trained for a particular task. The difference between weak and strong AI systems has to do with finding solutions to problems. Strong AI, or artificial general intelligence, can find solutions to unfamiliar problems without human intervention. Weak AI can only execute tasks that you design it to perform.

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1 Introduction

Have you ever wondered how cool it would be to have your own A.I. assistant? Imagine how easier it would be to send emails without typing a single word, doing Wikipedia searches without opening web browsers, and performing many other daily tasks like playing music with the help of a single voice command.

It is based on the speech recognition feature which helps it to convert it into text which furthermore gives us the output we require. We can set reminders, alarm clocks, and stop clocks, take notes through voice recognition, and can even make changes in personal settings.

It is basically a voice assistant based on sonic interaction. The project deals with how digital networked technologies are gradually changing domestic life. This assistant is assumed to become a central part of the operating systems.

It will comprise of:

- 1.Set Reminders.
- 2 Open Applications.
- 3.Send emails.
- 4.Voice Typing.
- 5.Search anything on the Internet and many more features.

1.1 Objectives

Our aim is to make an AI Desktop Voice Assistant that can help the user to complete his/her task rapidly and effectively. This Voice Assistant will help the user to manage his time efficiently and can perform some of the minute tasks like making to-do lists, opening browsers, etc. which ultimately increases his/her productivity.

1.2 Importance & Need of your Project

Basically, any technology ever made helps to ease the work of humans and this application makes our work even easier because of its unique quality of voice typing.

This application has many tricks up its sleeves in disguise and it will be promising in the future. We can set reminders, alarm clocks, and stop clocks, take notes through voice recognition, and can even make changes in personal settings.

As we can see, people use voice assistants to complete a number of different tasks that help them run their daily errands. Using voice assistance devices makes perfect sense because it's quicker and more user-friendly than typing.

2 Proposed Solution

Our purpose is transpicuous and is to create a simple AI Voice Assistant. As there are many AI Desktop Voice Assistants in the market which are even better than us obviously but Our Assistant is user-friendly and can be reform and recast by the user as per his/her need.

Our project will improve the customer's world by allowing users to design the software(Voice Assistant) according to his/her requirements which ultimately increases his/her productivity.

2.1 Proposed Methodology

As we know Python is a suitable language for script writers and developers. Let's write a script for Voice Assistant using Python. The query for the assistant can be manipulated as per the user's need. Speech recognition is the process of converting audio into text. This is commonly used in voice assistants like Alexa, Siri, etc. Python provides an API called **Speech Recognition** to allow us to convert audio into text for further processing. In this article, we will look at converting large or long audio files into text using the SpeechRecognition API in python.

For different functions we have to install different modules:

- 1. Pytttsx3:-** This module is used for conversion of text to speech in a program that works offline. To install this module type the below command in the terminal. **(pip install pytttsx3).**
- 2. Speech Recognition:-** Since we're building an Application of voice assistant, one of the most important things in this is that your assistant recognizes your voice. **(pip install SpeechRecognition)**
- 3. Datetime:-** Date and Time is used to show Date and Time. This module comes built-in with Python.
- 4. Wikipedia:-** As we all know Wikipedia is a great source of knowledge just like GeeksforGeeks we have used the Wikipedia module to get information from Wikipedia or to perform Wikipedia search. (pip install wikipedia)
- 5. Tkinter:-** This module is used for building GUI and comes inbuilt with Python. This module comes built-in with Python.

3 Project Execution & Setup

Hardware :

A Basic PC/Laptop having minimum configuration, which can Visual Studio Code Straightforwardly and Effortlessly.

A laptop with at least 4GB of **RAM** is ideal with 500GB HDD/SSD. As such there is no Graphic Card required.

Software:

PC must have **Python 3.9.1**(In case if anyone has an older version then there is no issue).

Should have all the Modules required download.

Must have an **IDE(Integrated Development Environment)**.

(In our case we have used **Visual Studio Code**)

4 Conclusion

To sum up everything that has been stated so far, Many people will argue that the virtual assistant that we have created is not an A.I, but it is the output of a bunch of statements. But, if we look at the fundamental level, the sole purpose of A.I develop machines that can perform human tasks with the same effectiveness or even more effectively than humans.

It is a fact that our virtual assistant is not a very good example of A.I., but it is an A.I. !!!

5 Future Work

We will Update the Virtual Assistant as per the needs of the user and we are going to add as many features that can elevate the users productivity and give a high yield. We will be going to add:

1. Unlocking of Device by Voice Recognition
2. Write codes using Voice-Typing
3. Even Communicate with the User Etc.

It's pretty sure that voice assistants will achieve more popularity in the next few years.

6 Major Contributions

Aparajita Mehrotra: worked on the feature of
Search Engines.

Aryan Yadav: worked on the opening of
Wikipedia and VS code.

Harsh Garg: worked on **Music and Desktop Notification.**

Ishaan gaware: worked on the **Sending of email.**

7 References

1. Google
2. GeekforGeeks,
3. Stackoverflow
4. Youtube etc.