ASKI The Virtual Desktop AI-Based Voice Assistant

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Abstract: *ASKI The Virtual Desktop AI-Based Voice Assistant is the software that can perform different tasks as per the user requirement through command or questions. The process which is involved in this system that done with speech recognition patterns, and then responding with artificial speech. By using this software a user can easily automate the tasks going from however not restricted to mailing, assignments board, and media playback. As you know that technology is advanced day by day, people are becoming more dependent on it, and such mostly used platform like desktop, laptop, and smartphones. We as a whole need to utilize these PCs more agreeable, the conventional method for providing an order to the PC is through the console yet a more advantageous way is to include the order through voice. Giving contribution through voice isn't just advantageous for typical individuals yet additionally for the people who are outwardly hindered who are not ready to give the contribution by utilizing a console. For this reason, there is a requirement for a voice colleague who cannot just take orders through voice yet additionally execute the ideal directions and give yield either as voice or any different means.*

Keywords: Python, Language Processing, Voice recognition, Text Analysing, Speech to text, Desktop Assistant, Virtual Private Assistant (VPA).

I. INTRODUCTION

In today's changing era where everything is getting modernized as our simple and difficult tasks are being done by different types of machines and robots. Due to this, we get to see two things here, first, our work is getting easier and time is being saved. In view of all this, today we are working on such a project which will not only save our time but will also do our work fast. Although almost some organizations are working on such type of project, we are trying to do something different from them, such as to increase the features of the project and, enhance its response time, not just provide limited functionality. As you know automation plays an important role in the economy and daily life. Automatic systems are being more preferred than manual systems because it makes life easier and wonderful. This research work has shown that how to save your time by using this automation project which is known as "**ASKI THE VIRTUAL DESKTOP AI-BASED VOICE ASSISTANT**". First of all, let's talk about why it's named ASKI?

ASKI - The word which is derived from the word ASK which means to ask something someone, since you are asking from our assistant so it is ASKI (ASK+I) I hope you all have understood it. It can take commands via text (online chatbots) or by voice.

Voice-based intelligent assistants need an invoking command or wake promptly to activate the listener, followed by the instruction. As you already know in today's time there are so many virtual assistants, such as Apple's Siri, Amazon's Alexa, and Microsoft's Cortana. This system is depicted to be used efficiently on desktops. Private assistant software improves user capacity by managing routine tasks of the user and by providing useful data from an online source to the user. This VPA project begins on the premise that there is a sufficient amount of openly available data and information on the web that can be taken advantage of to build a virtual assistant that has access to making an intelligent finding for routine user activities.
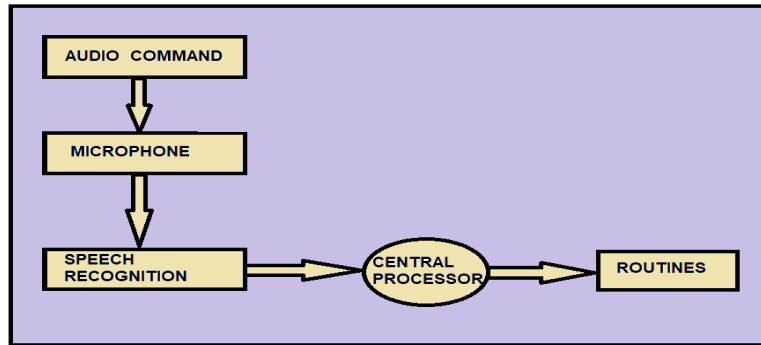
1.1 Features of VPA

- It is equipped for opening sites like Google, YouTube, and so forth, in an internet browser.
- It is fit for opening your code supervisor or IDE with a solitary voice order.
- It can do Wikipedia looks for you.
- It can play music, videos, and set alarms for you
- Send off an application on my Phone. Call somebody from my contacts list, and Send an instant message to somebody.
- Show today's weather report, and what percentage of chance for raining.

II. SYSTEM REQUIREMENT

For any project of establishment, there is a requirement of hardware and software it depends on user choice in which field that they choose. In this project used components are given below, and they showed to run this software minimum requirement if you fulfilling those things then it can be run easily.

Software Requirement	Hardware Requirement
• Windows 7 or higher	• Processor –Core i3
• Python	• Pentium-pro processor or later.
• PyCharm (Code Editor)	• RAM 512MB or more
• Chrome Driver	• Monitor

III. SYSTEM ARCHITECTURE

What does a virtual Assistant do?
1. It listens for your command.
2. It responds to your command with either a success or failure response.

Three most important Python libraries that are required to deal with voice are:
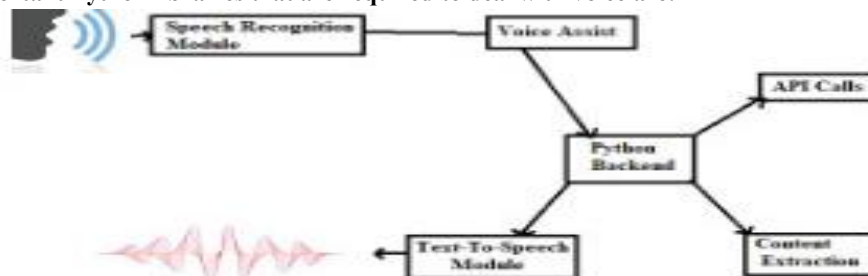
3.1 Speech Recognition

The speech recognition module used the program is Google's Speech Recognition API which is imported in python using the command "import speech. This module is used to recognize the voice which is given as input by the user. This is a free API that is provided and supported by Google. This is a very light API that helps in reducing the size of our application.

3.2 Python Texts to Speech v3 (Pyttsx3)

The pyttsx3 is an offline module that is used for text to speech conversion in Python and it is supported by both Python 2 & 3. The run and wait functionality are also in this module only. It determines how much time the system will wait for another input or in other words the time interval between inputs. This is a free module available in the python community which can be installed using the pip command just like other modules.

3.3 Python Audio (PyAudio)

PyAudio allows you to quickly play and record audio on a number of devices using Python.

3.4 Other Imported Modules

A. Datetime

The Date Time module is imported to support the functionality of the date and time. For example, the user wants to know the current date and time or the user wants to schedule a task at a certain time. In short, this module supports classes to manipulate date and time and perform operations according to it only. This is an essential module, especially in tasks where we want to keep a track of time. This module is very small in size and helps to control the size of our program. If the modules are too

B. Web Browser

This module allows the system to display web-based information to users. For example, the user wants to open any website and he gives input as "Open Google". The input is processed using the web browser module and the user gets a browser with google opened in it. The browser which will be used is the default set web browser.

C. Wikipedia

Wikipedia is a library in python which it possible for the virtual assistant to process the queries regarding Wikipedia and display the results to users. This is an online library and needs an internet connection to fetch the results. The no. of lines that the user wants to get as a result can be set manually.

D. OS Module

OS Module provides an operating system dependent functionality. If we want to perform operations on files like reading, writing, or manipulate paths, all these types of functionalities are available in an OS module. All the operations available raise an error "OSError" in case of any error like invalid names, paths, or arguments which may be incorrect or correct but just no accepted by the operating system.

E. SMTP Library

Python has this module for in the standard library for working with emails & email servers. The SMTPLIB defines an object known as "SMTP client session object" which is used to send mails by the user. There are 3 steps involved - initialize, send mail (), quit. When the optional parameters which are host and port, are provided connect method is called with these arguments during the first step which is initialization.

F. Subprocess

This module is used for getting system subprocess details which are used in various commands i.e. Shutdown, Sleep, etc. This module comes built-in with Python.

G. Pyscreenshot

It is a python module used to take screenshot.

H. Pyjokes

Pyjokes is used for collection Python Jokes over Internet.

3.5. Methods used

1. **Speak Method:** Speak Method will help us in taking the voice from the machine. Here is the code explanation of Speak Method
2. **Take Query Method:** This method will check for the condition. If the condition is true, it will return output. We can add any number if conditions for it and if the condition satisfy, we will get the desired output.
3. **takeCommand method:** This method is for taking the commands and recognizing the command from the speech_Recognition module
4. **Wishme Method:** This is just used to greet the user with a hello message.
5. **Main method:** Main method is the method where all the files get executed so we will call the Take_query method here so that it can recognize and tell or give us the desired output.

IV. PROPOSED WORK

The proposed system will have the following functionality:
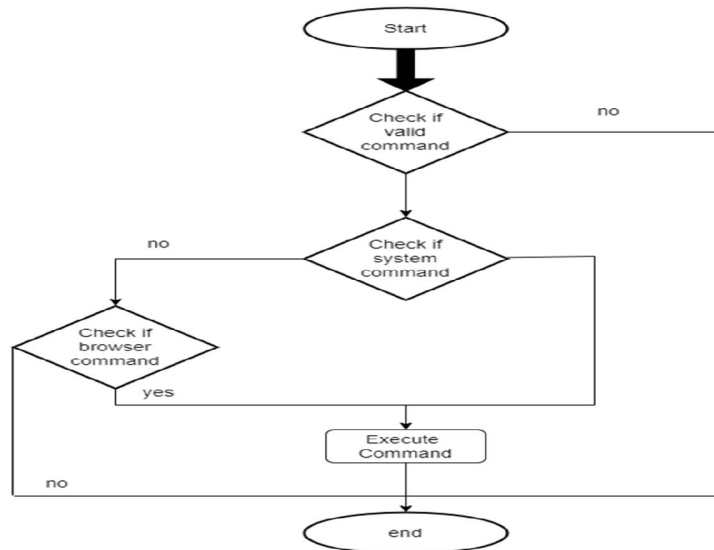
1. The system will keep listening for commands and the time for listening is variable which can be changed according to user requirements.
2. If the system is not able to gather information from the user input it will keep asking again.
3. The system can have both male and female voices according to user requirements.
4. Features supported in the current version include playing music, emails, texts, search on Wikipedia, or opening system installed applications, opening anything on the web browser, etc.
5. The system will keep listening for commands and the time for listening is variable which can be changed according to user requirements.

Some of the Functionalities of our Assistant

1. **Searching Wikipedia:** Wikipedia is an online free-content encyclopedia helping to create a world where everyone can freely share and access all available knowledge. This voice assistant will provide answers to your queries from Wikipedia.
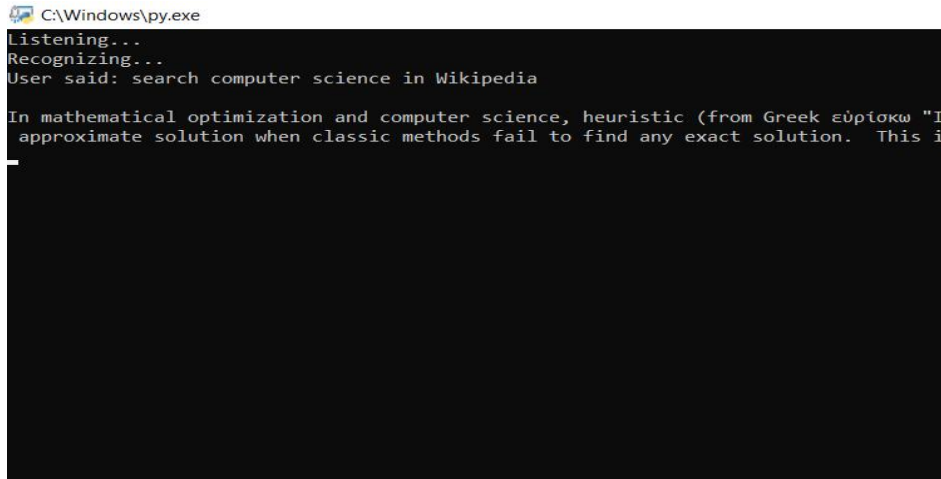
2. **Open YouTube:** YouTube is the biggest platform for video sharing, so our voice assistant will open YouTube on your commands and you will be able to enjoy the video.
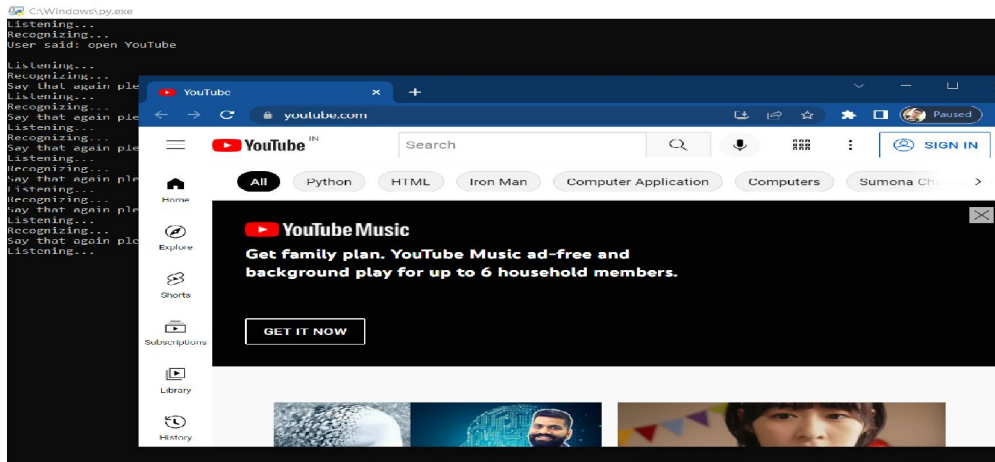

3. **Open Google:** Google has become a part of our life, we use it for some work, then our voice assistant will open you Google on a command and you will be able to search your query on it.
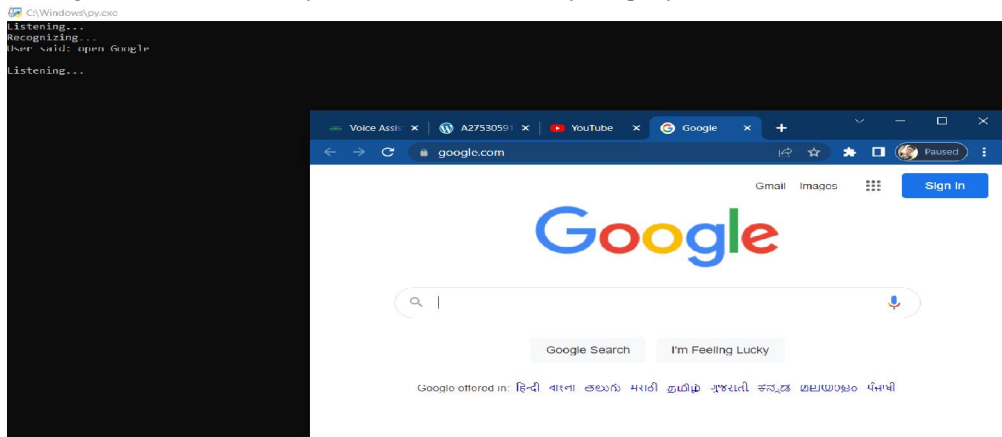
4. **Search:** Nor just open this Google Chrome but will also present the result in front of you by searching it on Google.
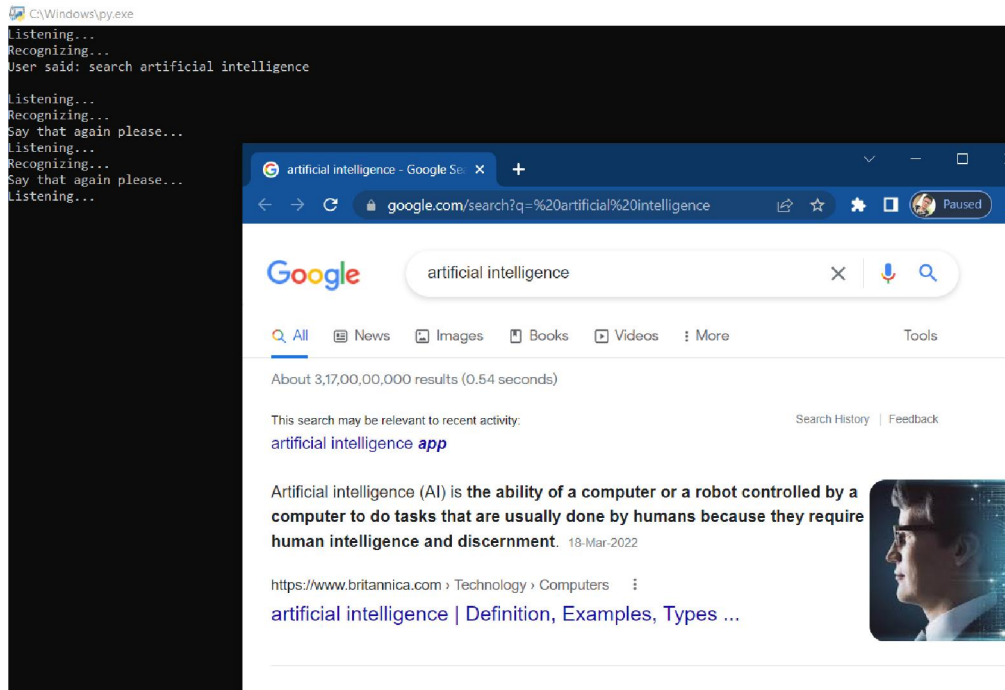
5. **Play Music:** Who does not like to listen to music, our assistant will play our favourite song in whatever application is installed on your system.

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Impact Factor: 6.252
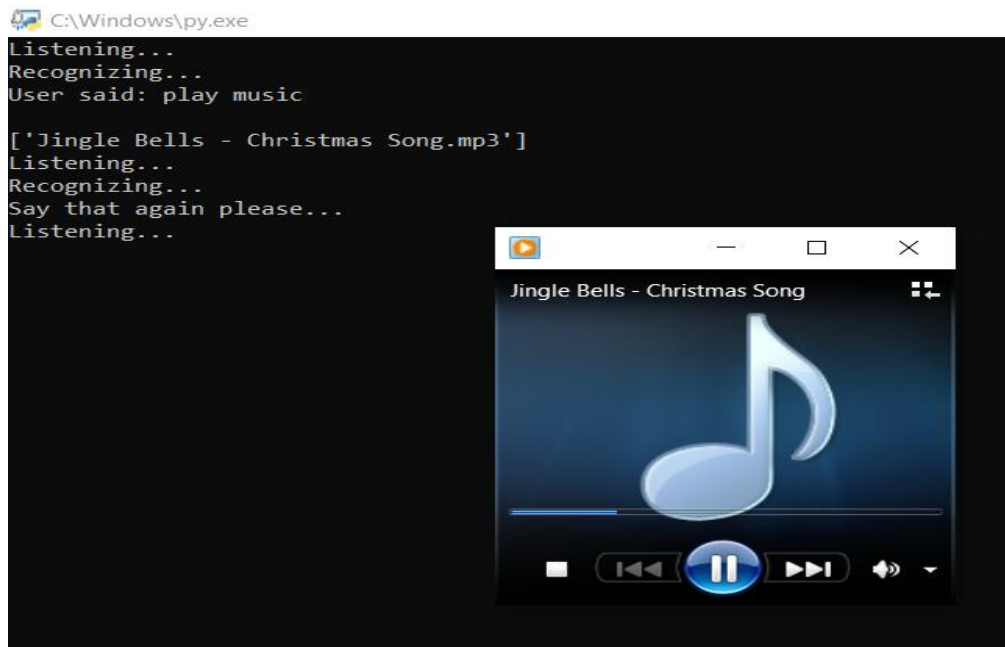
6. **Show Time:** In today's time, time is the most important and if we talk about seeing the time, then we see it again and again in the watch, you must want some smart solution, now our voice assistant will tell you the time on one voice command.
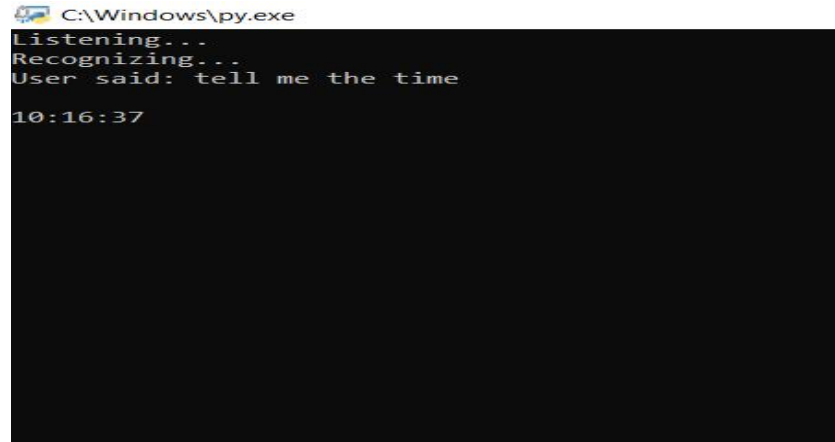
7. **Calculator:** Our voice assistant will help you to open the calculator application, you just have to give a voice input
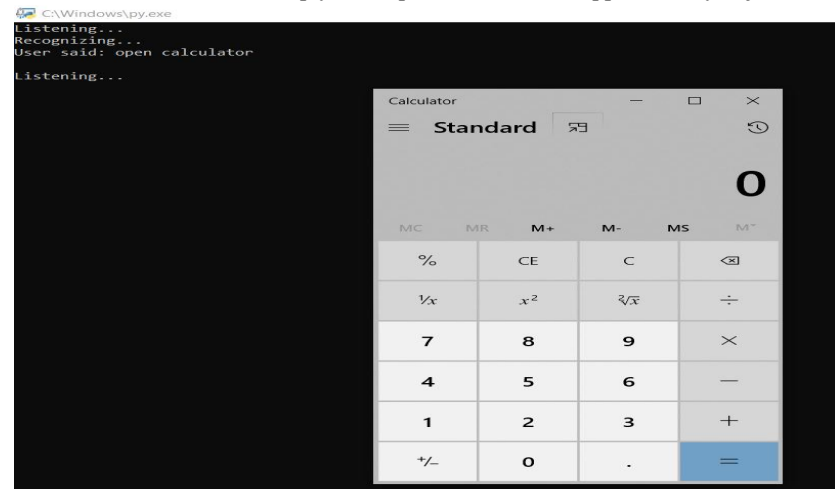
8. **Search a location:** Assistant will search a location on Google Map
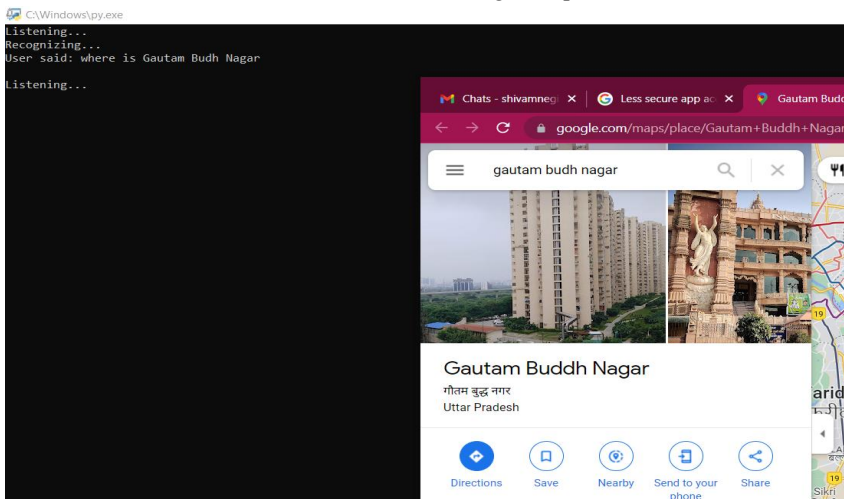
9. **Translator:** Like Google Translator Our Voice Assistant will also translate text from one language to another language.
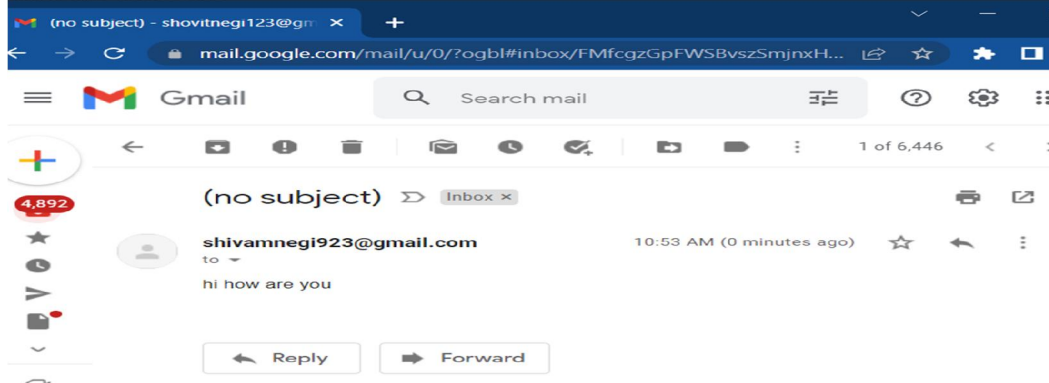

10. **Send Email:** Typing mail is time consuming, it takes a lot of time, if we send a lot of mail in a day, then our assistant will do all the work for you. It will type and send the mail, you just have to say whom to send and what to send only by speaking, all the work will be done by assistant and email will be sent.

11. **Birthday Remainder:** Do you also forget to wish your loving one their special day, then don't worry, our voice assistant will remind you on their special day.

12. **Search Vaccine Centre**: Covid-19 is spreading in the country and hope that you guys must have taken that vaccine, booking is also a kind of big task, so today we will make this work easy, you have to give the pincode of your area

where you have to book the slot of the vaccine, then our voice assistant will give you a complete list of the places where vaccine is available in that area, then you can easily book accordingly at your nearest place.

V. CONCLUSION

In this paper "ASKI The Virtual Desktop AI-Based Voice Assistant" we discussed the design and execution of Digital Assistance. The project is built using open source software modules with PyCharm community backing which can do someone a good turn for any updates shortly. The modular nature of this project makes it more workable and easy to add additional property without disturbing current system functionalities.

It not only works on human commands but also gives responses to the user based on the questions being asked or the words spoken by the user such as opening tasks and doing operations. It is greeting the user the way the user feels more relaxed and feels secure to interact with the private voice assistant. The application should also terminate any kind of unnecessary manual work required in the user life of performing every task. The whole framework deals with the verbal information instead of the following one.

VI. FUTURE SCOPE

The virtual assistants which are currently available are fast and responsive but we still have to go a long way. The understanding and reliability of the current systems need to be improved a lot. The assistants available nowadays are still not reliable in critical scenarios. The future of these assistants will have the virtual assistants incorporated with Artificial Intelligence which includes Machine Learning, Neural Networks, etc. and IoT. With the incorporation of these technologies, we will be able to achieve new heights. What the virtual assistants can achieve is much beyond what we have achieved till now. Most of us have seen Jarvis, that is a virtual assistant developed by iron man which is although fictional but this has set new standards of what we can achieve using voice-activated virtual assistants.

VII. ACKNOWLEDGEMENT

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