

# Portable Virtual Assistance with smart mic and Speaker Technology

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**Abstract**—Today, with the rise of technology, people are more connected to each other and have become more intelligent. With the help of voice assistance, this project can perform various tasks such as writing a daily schedule, performing a search, and even prescribing a medical prescription. The goal of voice assistance is to make people smart and provide them with instant and accurate results. It takes the voice input and converts it into a computer-readable language that can answer their questions. The goal of this service is to provide users with results that they have asked for through the web. Through the use of natural language processing, computers can communicate with each other in various forms.

## I. INTRODUCTION

Artificial intelligence (AI) systems that can organise a genuine human-machine connection (through voice, communication, gestures, facial expressions, and other means) are becoming increasingly common. The direction of interaction, based on the machine's interpretation of real human language, was one of the most explored and popular. It is no longer a human who learns to speak with a machine; instead, it is a machine that learns to interact with a human by studying his actions, habits, and behaviour in order to become his personalised assistant. Virtual assistants are software applications that assist you with day-to-day duties such as weather forecasting, preparing reminders, and building shopping lists, among other things. They can accept text (online chatbots) or voice commands. To activate the listener, voice-based intelligent assistants require an invoking phrase or wake word, followed by the command. This system is intended to be used on desktop computers. Personal assistant software increases user productivity by handling the user's everyday duties and giving information from an internet source.

## II. LITERATURE REVIEW

- There are various virtual assistants on the market that use Artificial Intelligence technology in the current virtual assistant system. Many companies have used conversation systems technology to set up various types of businesses. Microsoft's Cortona for example, is a Virtual Personal Assistant (VPA) that is based on its apps and areas. For Linux, there's Windows and E-speak, for Apple, there's Siri, and for Android, there's Google Assistants. Siri was the first digital virtual assistant to be put on an Apple smartphone, and it was released as a feature of the iPhone in 2011. The virtual assistant's goal was to include functions including sending text messages, making phone calls, monitoring the weather, and setting an alarm clock. It has evolved over time to give restaurant locations, online searches, and driving instructions. Microsoft released Cortona virtual assistants in 2014. Cortona is a personal virtual assistant designed by Microsoft for Windows, iOS, Android, and other platforms. Cortona is only compatible with Windows 10 operating systems. In 2015, it became available for Window 10. Windows 10 is the latest version of the operating system. Cortona is an icon on the taskbar next to the search bar that we are attempting to set up for usage with the Cortona application.

## V. METHODOLOGY

Natural language processing (NLP) is used by virtual assistants to match user text or voice input to executable commands. When a user asks a question of a personal assistant in order for it to do a task, the natural language audio signal is translated into an executable command or digital data that the software can examine. Then, to discover an acceptable answer, this data is compared to software data. Virtual Assistant is a program that allows you to run machines using your own commands. We use python installation packages such as Speech recognition, gTTS, pipwin, and others to create virtual assistants. The technique of translating audio into text is known as speech recognition. This is a frequent feature in voice assistants such a Speech Recognition is a Python API that allows us to translate voice or audio commands into text for further processing. According to the diagram above, users first provide commands to interaction entities such as laptops and PCs, which then listen to the commands and recognize them. Compare this command to the cloud, where we currently keep data, for a more in-depth analysis. If the request is matched with cloud data, the output is generated in text and speech form. Look for the function or logic that will be executed in response to the request and transmit the backend process' output as a response Alexa, Siri, and others.

## VI. PROPOSED SYSTEM

The process began with an analysis of the user's audio commands delivered through the microphone. This can include obtaining any information, managing a computer's internal files, and so forth. This is an empirical qualitative research based on reading the material indicated above and putting the instances to the test. Tests are carried out by programming in accordance with books and internet resources, with the specific purpose of discovering best practises and a deeper understanding of Voice Assistant. The workflow of the voice assistant's basic process is depicted in the diagram above. The speech input is converted to text using speech recognition. This text is then passed to the central processor, which determines the command's nature and invokes the appropriate script for execution.

## VII. SYSTEM ARCHITECTURE / DESIGN

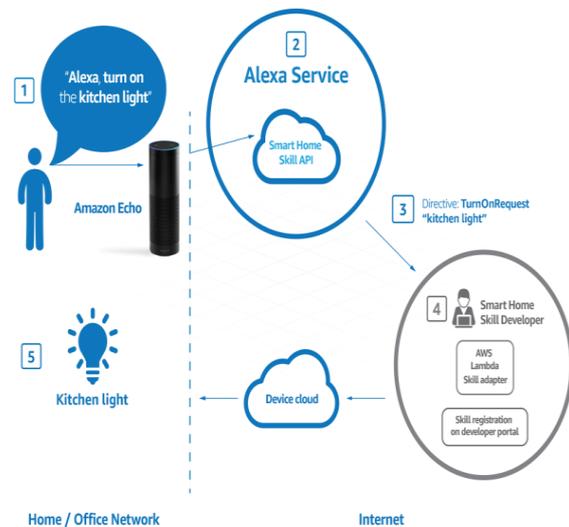


Fig. System Architecture

## VIII. CONCLUSION

We addressed Personal Virtual Assistant for Windows Using Python in this paper. Humans benefit from virtual assistants because they make their lives easier. The flexibility of a virtual assistant is the ability to contract for only the services they require. We build virtual assistants in Python for all Windows versions, just like Alexa, Cortona, Siri, and Google Assistant. This project makes use of Artificial Intelligence technologies. Virtual Personal Assistants (VPAs) are a great method to plan and manage your schedule. Virtual personal assistants are also more dependable than human personal assistants because they are more portable, loyal, and accessible at all times. Our virtual assistant will provide you with recommendations and instructions, as well as learn more about you. This gadget is likely to be permanent.

**IX. REFERENCES**

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