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| Voice Assistant using Python  Your own AI Personal Assistant |
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**INTRODUCTION:**

Today, almost all tasks are digitized. We have a smartphone in our hands. It's all about getting the world at your fingertips. Today we don't even use our fingers. Talk only about the task and it will be executed. There exist systems where we can say Text Dad, “I’ve reached college.” and the text is sent. That's the job of a virtual assistant. It also supports specialized tasks such as booking flights, playing your favorite music and movies, and provides an interface for booking orders, automating the search, detection and online ordering process.

Virtual assistants are software programs that help you ease your day-to-day tasks, such as showing weather reports, creating remainders, making shopping lists etc. They can take commands via text (online chatbots) or by voice. Voice-based intelligent assistants need an invoking word or wake word to activate the listener, followed by the command. We have so many virtual assistants, such as Apple’s Siri, Amazon’s Alexa and Microsoft’s Cortana.

This system is designed to be used efficiently on desktops. Personal assistants software improves user productivity by managing routine tasks of the user and by providing information from an online source to the user.

\*\*\*\* is effortless to use. Call the wake word ‘\*\*\*\*’ followed by the command. And within seconds, it gets executed.

**MOTIVATION:**

There are already a number of Desktop Virtual Assistants that have been working with great efficiency and comfortably. A few examples have been discussed in this section along with the tasks they perform and their demerits.

* **SIRI from Apple:**

Siri is a virtual assistant that is part of Apple Inc.'s iOS, iPadOS, watchOS, macOS, tvOS, and audioOS operating systems.

It uses voice queries, gesture-based control, focus-tracking and a natural-language user interface to answer questions, make recommendations, and perform actions by delegating requests to a set of Internet services. With continued use, it adapts to users' individual language usages, searches and preferences, returning individualized results.

**Supported Tasks**

* Call someone from my contacts list
* Launch an application on my iPhone
* Send a text message to someone
* Set up a meeting on my calendar for 9am tomorrow
* Set an alarm for 5am tomorrow morning
* Play a specific song in my iTunes library
* Enter a new note

**Drawbacks:**

SIRI does not maintain a knowledge database of its own and its understanding comes

from the information captured in domain models and data models**.**

* **Cortona by Microsoft:**

Cortana is a virtual assistant developed by Microsoft that uses the Bing search engine to perform tasks such as setting reminders and answering questions for the user.

Cortana is currently available in English, Portuguese, French, German, Italian, Spanish, Chinese, and Japanese language editions, depending on the software platform and region in which it is used.

**Supported Tasks:**

* Cortana can set reminders
* recognize natural voice without the requirement for keyboard input
* answer questions using information from the Bing search engine
* Cortana stores personal information such as interests, location data, reminders, and contacts in the "Notebook".
* Most versions of Cortana take the form of two nested circles, which are animated to indicate activities such as searching or talking.
* Cortana has a "do-not-disturb" mode in which users can specify "quiet hours", as was available for Windows Phone 8.1 users.

**Drawbacks:**

Cortana takes up a lot of system resources. And the more she knows about you, the more resources she uses.

**OBJECTIVES:**

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**PURPOSE, SCOPE AND APPILCABILITY:**

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**SURVEY OF TECHNOLOGY:**

**Python:**

Python is a high-level, interpreted, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

The usage of Python is such that it cannot be limited to only one activity. Its growing popularity has allowed it to enter into some of the most popular and complex processes like Artificial Intelligence (AI), Machine Learning (ML), natural language processing, data science etc. Python has a lot of libraries for every need of this project. For \*\*\*\*, we have used a number of python libraries like Speech Recognition, Pyttsx3, subprocess, OpenCV etc.

**Speech Recognition:**

Speech recognition is an important feature used in house automation and in artificial intelligence devices. The main function of this library is it tries to understand whatever the humans speak and converts the speech to text.

**Pyttsx3:**

pyttxs3 is a text to speech conversion library in python. This package supports text to speech engines on MacOS, Windows and on Linux.

**Wikipedia:**

Wikipedia is a multilingual online encyclopedia used by many people from academic community ranging from freshmen to students to professors who wants to gain information over a particular topic. This package in python extracts data’s required from Wikipedia.

**OpenCV:**

This module is used to capture images from your camera.

**Date Time:**

This is an inbuilt module in python and it works on date and time.

**OS:**

This module is a standard library in python and it provides the function to interact with operating system.

**Time:**

The time module helps us to display time.

**Web browser:**

This is an in-built package in python. It extracts data from the web.

**Subprocess:**

This is a standard library use to process various system commands like to log off or to restart your PC.

**Json:**

The json module is used for storing and exchanging data.

**Request:**

The request module is used to send all types of HTTP request. Its accepts URL as parameters and gives access to the given URL’S.

**Wolframalpha:**

Wolfram Alpha is an API which can compute expert-level answers using Wolfram’s algorithms, knowledge base and AI technology. It is made possible by the Wolfram Language.