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Voice Assistant using AI

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ABSTRACT: Beforehand As we all know, how life is connected with the technology and the use of AI. AI- powered voice sidekicks have come an integral part of our lives, intertwining technology, and diurnal tasks. A particular Virtual Adjunct allows a stoner to command or ask questions in the same manner that they would do with another mortal and are indeed able of doing some introductory tasks like opening apps, doing Wikipedia quests without opening a cybersurfed, playing music etc., with just a voice command. This design presents the development of a particular desktop adjunct using Python, aiming to give convenience, robotization, and backing to druggies in their computer-related conditioning. The adjunct incorporates features similar as voice recognition, natural language processing, and integration with external APIs to enhance its functionality and stoner experience. moment there's huge Advancement in the Specialized field which is adding day by day. In early days there were only computer systems where we were suitable to perform only many tasks, but moment new technologies like machine literacy, artificial intelligence, deep literacy, and many some others have made computer systems so advance that we can perform any type of task with them. In recent times, Artificial Intelligence (AI) have done remarkable progress and its Capability is adding day by day.

KEYWORDS: Voice Assistant, Voice recognition, Speech to Text, Text Analysing.

I. INTRODUCTION

Voice assistants are AI-powered digital companions that can understand and respond to voice commands, helping users with a variety of tasks. They are becoming increasingly prevalent in our daily lives, from smart home devices to mobile apps. Voice assistants, powered by artificial intelligence, have become an integral part of modern technology. These AI-driven software agents are designed to interpret and respond to human speech, providing a seamless interaction between users and their devices.

The core technologies behind these assistants include automatic speech recognition (ASR), natural language processing (NLP), machine learning (ML), and text-to-speech (TTS) synthesis. Initially, voice assistants were limited to simple voice commands, but advancements in AI have significantly enhanced their capabilities. Voice assistants are widely used in various applications, including smart home automation, customer service, healthcare, and automotive industries. As AI technology continues to evolve, the future of voice assistants looks promising, with expectations of even more advanced functionalities, broader device integration, and enhanced user experiences.

A voice assistant can be a digital assistant that uses human voice, language process algorithms, and synthesis to pay attention to particular voice commands and come applicable information or perform particular functions as appealed by the user supported commands, commonly known as intents, tell by the user, voice assistants will come applicable information by hearing for particular keywords and filtering out the close noise.

II. LITERATURE SURVEY

Kanika Sehgal (2024) An intelligent virtual Assistant (IVA) or intelligent adjunct (IPA) may be a software agent which will perform tasks or services for a private supported commands or questions. occasionally the term "chatbot" is employed to ask virtual sidekicks generally or specifically penetrated by online converse. In some cases, online converse programs are simply for entertainment purposes.

Mahesh T. R. (June 2023) These days, virtual adjunct is being veritably useful to mortal beings as it helps us to work on or operate a laptop or a PC on voice commands only and we can do a lot of other computers- grounded effects using

adjunct. Virtual adjunct helps us save our time. Virtual adjunct provides us the inflexibility for a stoner to modify us functionalities.

Kiran Bidua. (Mar 2022) Artificial intelligence technologies are starting to be laboriously employed in mortal life, thanks to the Internet of effects debut and wide distribution. Autonomous widgets are growing more intelligent in their relations with humans and with each other. New capabilities led to the development of colourful results for integrating smart bias into the Internet of effects Social Networks.

Raj Kumar Jain. (2021) The advancements in technologies over the time have been un-measurable. Because of this reason, numerous voice sidekicks have developed and still are being bettered for better performance and effectiveness. The main work of a voice adjunct prototype is to minimize the operation of input bias like touch pens, keyboard, mouse, etc. This will reduce the tackle cost and space taken by it both.

Subhash S. (2020) Voice control is a major growing point that change the way people can live. The voice adjunct is generally being used in smartphones and laptops. AI- grounded Voice sidekicks are the operating systems that can fete mortal voice and respond via integrated voices. This voice adjunct will gather the audio from the microphone and also convert that into text, latterly it's transferred through GTTS (Google text to speech).

III. METHODOLOGY

Architecture

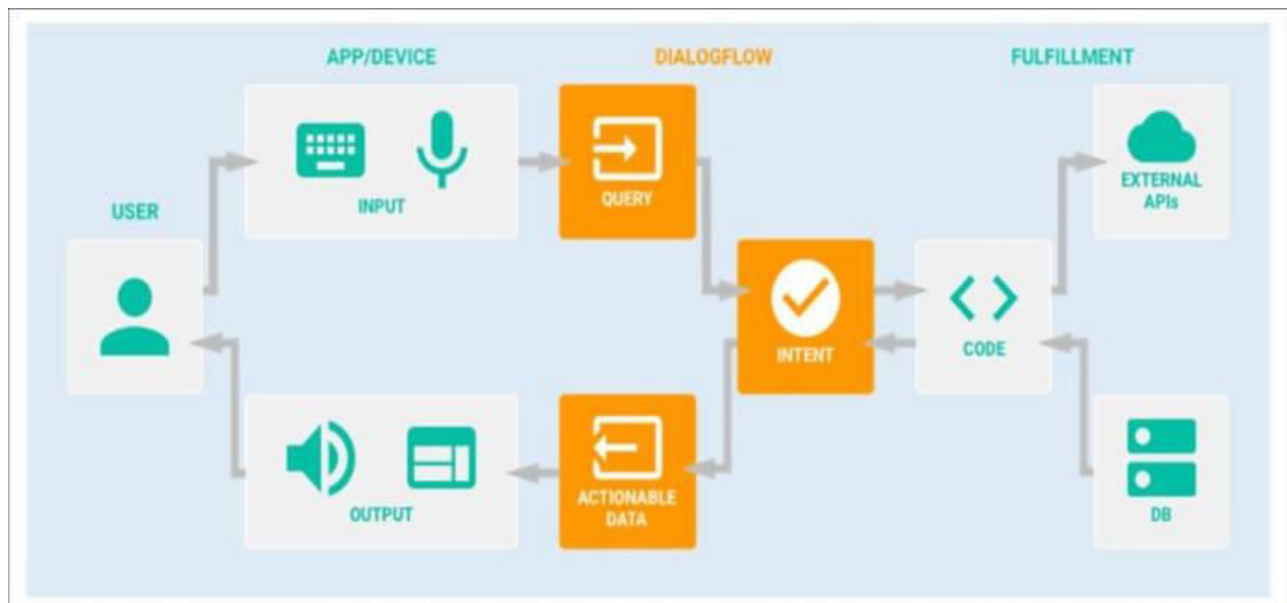


Fig 1. System Architecture

Voice sidekicks are all written in programming languages, which listens the verbal commands and respond according to the stoner's requests. In this project we have used HTML, CSS, JavaScript, and Python programming languages to build the Voice Assistant Using Artificial Intelligence.

The Voice adjunct delays for a pause to know that druggies have finished their request, also the voice adjunct sends druggies request to its database to search for the request. At the outset we make our program capable of using system voice with the help of pyttsx3. pyttsx3 is a text-to-speech conversion library in Python. In this voice assistant user can give a command in text format or in a voice command.

A user can give a voice command like “Open notepad” or “Open YouTube” or “Make a video call.”

The voice assistant will wait till user finishes his request, then the voice assistant sends user’s request to its database to search for request given by the user.

- The request given by the user is firstly identified whether it is in text format or in voice command.
- If the request is in text format it will directly start processing the command.
- But if the request is in voice/speech it will take an extra stage i.e. it will convert voice/speech in text format by using speech to text converter, and then it will start processing the command.
- Then the voice assistant will provide the desired output requested by the user.

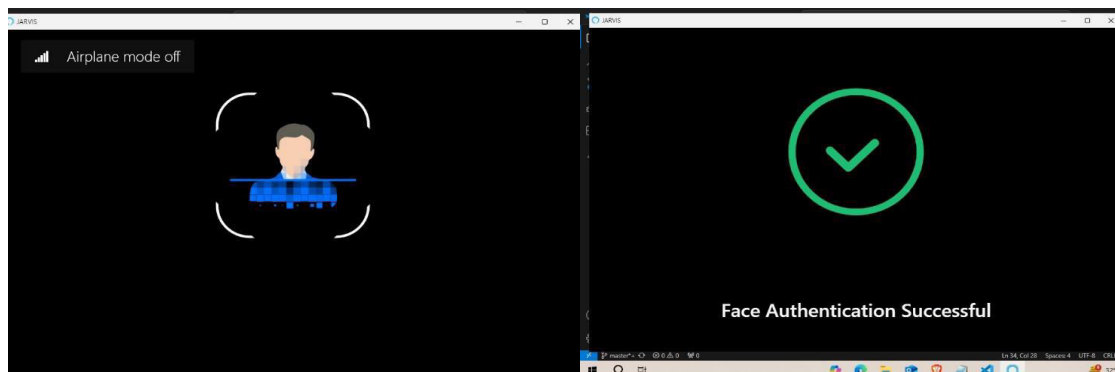
IV. EXPERIMENTAL RESULTS

A. When we ask the voice assistant to open the notepad it receives the request and perform the action opening notepad.



B. Face Recognition/Authentication:

When we first open the voice assistant, we must do face recognition for the security purpose.



C. Interface of the Voice Assistant:



V. CONCLUSION

Our virtual is designed to fulfil a wide range of user commands, from opening specific files on the system to browsing the web and gathering information. We've taken a straightforward approach to working this problem by exercising Python. The adjunct supports colourful stoner tasks, including web quests, penetrating YouTube vids, transferring voicemails, and more.

The particular voice adjunct will be easy to use and will reduce the homemade mortal sweats for performing colourful tasks. The functionality of the current voice assistant system is limited to working on Desktop based and working online (required to have internet connection to perform tasks) only. The voice assistant system is modular in nature so that addition of new features is possible without disturbing current system functionalities.

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