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BELLA - A Desktop Assistant for Developers

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Abstract: *This project includes the implementation of an intelligent voice recognition assistant for developers. In this project, we aim to use a voice assistant while explain the various difficulties and challenges that exist in this work. The main purpose of the software is to perform engineering tasks with specific instructions, provided in methods, speech or text. It will simplify most developer work as complete work can be done in one command.*

Keywords: Desktop assistant

I. INTRODUCTION

We all know very well about Cortana, Siri, Google Assistant and many other visual assistants designed to help user tasks on Windows, Android and iOS. We encouraged the same to create our Desktop Assistant (BELLA), especially for developers. The main purpose of the software is to perform engineering tasks with specific instructions, provided in methods, speech or text. It will simplify a lot of developer work as complete work can be done individually command. BELLA inspires Virtual Assistants like Cortana for Windows and Siri for iOS. Developers can interact with the assistant using voice commands or keyboard input. As a personal assistant, Bella assists the end-user with day-to-day operations such as regular human chat, search queries on various search engines like Google, Bing or Yahoo, video search, image retrieval, live weather, and word descriptions. , search for drug details, symptom-based health recommendations and user reminders about planned events and activities.

The developer's statements/instructions are reviewed with the help of Artificial Intelligence to provide the appropriate solution. Our project aims to provide developers with a Visual Assistant that will not only assist them in their day-to-day tasks such as web search, weather data extraction, vocabulary assistance and much more but also help with the transformation of various tasks.

III. LITERATURE SURVEY

The development of voice assistants began in 1962 at the Seattle International Exhibition where IBM introduced a shoebox IBM device that could detect spoken digits and retrieve them with flashing lights listed near digits 0-9. Can see a total of 16 words. Currently, most voice assistants for mobile google make voice support for android mobile phones, uses apple Siri and amazon has Alexa these assistants use language processing to do their job. Another voice assistant is Cortana developed by Microsoft and used on desktops. All of these voice assistants perform the same intended function - that is, the initiated processing of the voice, and all of these developments are the result of the technology of the same new era - practical ingenuity. At the heart of all these assistants is a simple cycle of synchronization - Voice commands and hearing responses. Sutar Shekhar [1] and various researchers collectively came up with an app that uses a wide range of voice functions and includes a voice messaging feature to help those visually impaired people. They intend to continue their development the application eventually had an engine that could also detect various local languages such as Bengali, and a few vernacular Hindi languages. Miss Priyanka

V. Mhamunkar [2] and others propose a system that will allow each person to download the meanings of words with integrated sounds. Omyonga Kevin and Kasamani Bernard Shibwabo [15] claim to have come up with an app that can use spoken commands even offline, thus giving us data-driven flexibility. Since there is no need for an internet connection this feature makes their solution faster than most advanced engines like Alexa and Cortana. Tong Lai Yu and Santhrushna Gande [7] have developed an Android solution through open source services that can assist editors facing physical challenges in development. Use the manufacturer-buyer paradigm on the client-side to integrate functions that can be used on an android device. When we reviewed these systems, we concluded that they were designed to work in the android environment, which

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is why we decided to build software that would work on it.

III. PROPOSED ARCHITECTURE

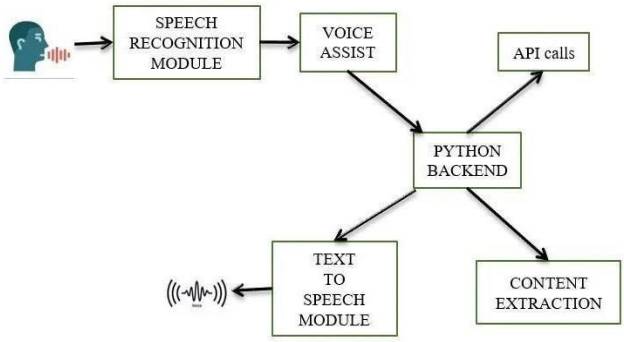

Figure 1: System Architecture

3.1 Proposed Architecture

The system design contains

1. Take input as speech patterns through a microphone.
2. Audio data recognition and conversion.
3. Comparison of inputs with pre-defined instructions.
4. Provide the output you want

The first section includes data taken as speech patterns from the microphone. in the second phase, the collected data is processed and converted into text data using NLP. In the next step, this resulting sequence data is used with Python Script to complete the required extraction process. In the final stage, the generated product is presented in the form of text or converted from text to speech using TTS Bella is a voice-based AI desktop helper with built-in python editing language to make the work of developers easier.

- Uses Different Technologies to Add New Unique Features.
- Can Automate Tasks with just one Voice Command.
- It is a Desktop-Based AI Assistant.

IV. METHODOLOGY

When a user provides a voice command or statement, the app sends the information to the following modules and components:

4.1 Speech View Module

The system uses Google's online speech recognition system to convert speech input into text. Speech input users can receive a text from a special organization organized by a computer network server in the information centre from a microphone that is temporarily stored in the system and sent to the Google cloud for speech recognition. Equal text is then acquired and consumed in the central processor.

4.2 Python Backend

The python backend detects the output in the speech recognition module and indicates that the command or output is a call API and Content Release. Output is sent back to the python backend to provide the required output to the user.

4.3 API Calls

The API stands for Application Programming Interface. API is a software interface that allows two applications to speak to each other. In other words, an API is a message that brings your request to the provider you are requesting from and returns a response to you.

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4.4 Content Extraction

Content Release (CE) is the task of automatically extracting structured information from random and/or machine-readable formats. In most cases, this work involves the processing of human language texts using natural language processing (NLP). Recent tasks in processing multimedia documents such as automated annotations and extracting content from images/audio/video can be considered as EXAMINATION RESULTS for context content.

4.5 Text-to-Speak Module

Text-to-Speech (TTS) refers to the ability of computers to read text aloud. TTS Engine converts text into phonetic representation and converts phonetic representations into waveforms that can emit sound. TTS engines with different languages, dialects and special names are available from third-party publishers.

V. RESULT

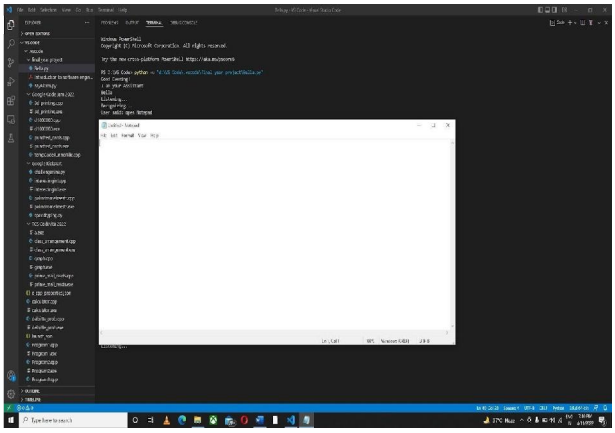

Figure 2. Output To Open Notepad

Figure 3. Input And Output To CloseThe Notepad

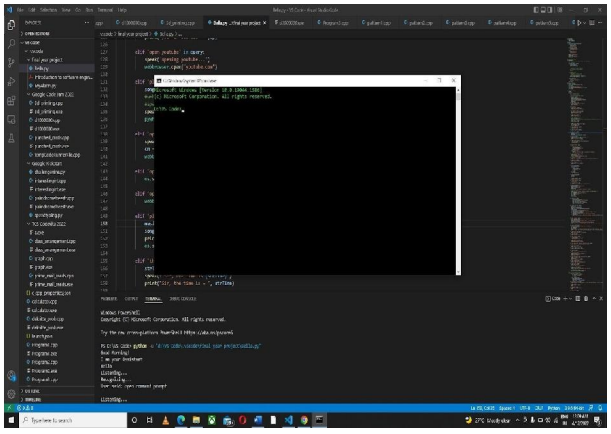

Figure 4. Input And Output To Open ACommand Prompt

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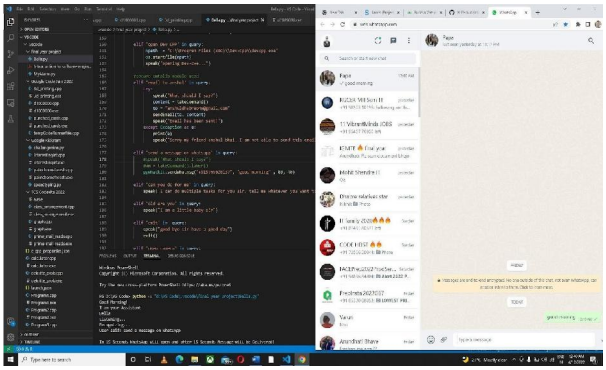

Figure 5: Input and Output to Send AMessage On Whatsapp

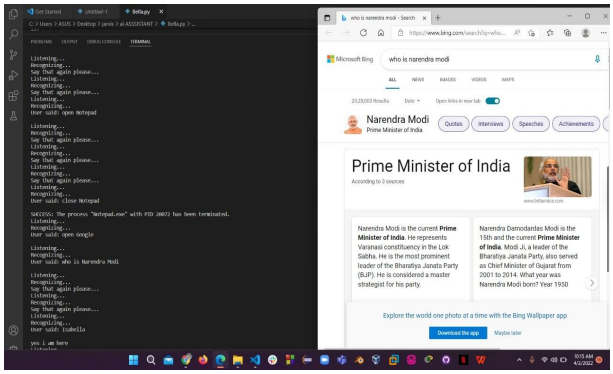

Figure 6: Google Search

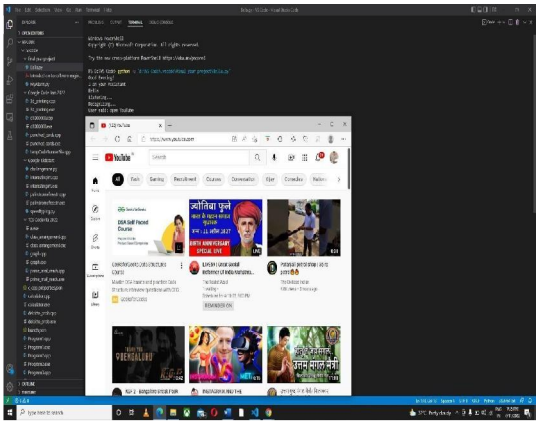

Figure 7. Output to Open Youtube

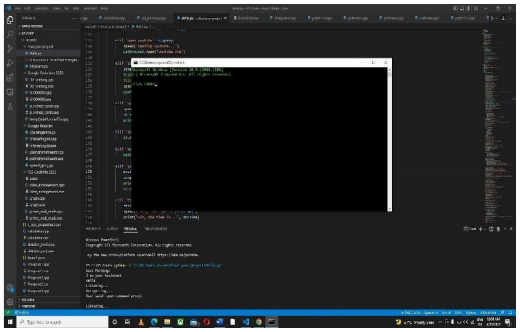

Figure 8. Output To Open A Command Prompt

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VI. Conclusion

Voice assistants have had major changes in the interaction of developers and technologies embedded in their devices. Like any other technology of such magnitude, they have changed the basic genome of the circle in which they operate. While this has created a much better world with great benefits to communities, previously kept in the dark regarding technological innovations, it has posed new types of threats to the privacy and safety of engineers.

VII. Future Scope

The future of voice assistants can be set in parameters in the magnitude system. In terms of compatibility with other devices and systems, there is still much to be gained. Other sizes may be related to the non-use of the waking words at the beginning of each command. Differentiation of results also creates major problems. But for all intents and purposes, the future of this technology is bright. With its development and related technologies (search processes, for example) Voice assistants can perform very difficult tasks like booking tickets, etc. At their back, this technology may have its trials and tribulations, but it is still a blessing to many who may be kept in the dark about all aspects of technological advancement. Apart from this, technology is very beneficial so that you do not continue in research and development.

Voice Assistant Privacy Concerns

The user may have privacy concerns as personal assistants need large amounts of data and are always listening to take command. This idle data is stored and filtered for people employed by almost every major company - Amazon, Apple etc. In addition to the discovery of Ai which was able to record our audio communications, there were concerns about the type of information the staff and contractors were hearing. Therefore, for a cloud-based voice assistant, a privacy policy must be in place to protect user-information

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