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Desktop Voice Assistant

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ABSTRACT

The Desktop voice assistant who helps the end user to communicate with desktop computer with voice and it also responds to the voice commands of the user. Our Proposed System has capability to work with and without Internet Connectivity in desktop computer. It is named as Desktop voice Assistant with Voice Recognition Intelligence, which takes the user input in form of voice or text and process it and returns the output in various forms like action to be performed or the search result is dictated to the end user

KEYWORDS: DVA, Voice Search, Laptop Device, speech recognizer.

I. INTRODUCTION

In our project, we mainly use voice as communication means, so the basically the Speech recognition application. Same kind of application is also developed by the Google that is "Google Voice Search" which is used for in Android Phones. But this Application mostly works with Internet Connections. The concept of speech technology really encompasses two technologies: Synthesizer and recognizer. A speech synthesizer takes as input and produces an audio stream as output. A speech recognizer, on the other hand, does the direct opposite. It takes an audio stream as input and thus turns it into text transcription. Direct analysis and synthesizing the complex voice signal is due to too much information contained in the signal. Therefore the digital signal processes such as Feature Extraction and Feature Matching are introduced to represent the voice signal. In this project, we directly use the speech engine which uses Feature extraction technique .An **Desktop voice assistant** (**DVA**) is a software agent that can perform tasks or services for an individual based on commands or questions. Desktop voice assistants are able to interpret human speech and respond via synthesized voices. . In addition, this proposed system can change the way of interactions between end user and the mobile devices. The system is being designed in such a way that all the services provided by the computer devices are accessible by the end user on the user's voice commands.

Users can ask their assistants questions, control home automation devices and media playback via voice, and manage other basic tasks such as email, to-do lists, and calendars with verbal (spoken) commands. In the Modern Era of fast moving technology we can do things which we never thought we could do before but, to achieve and accomplish these thoughts there is a need for a platform which can automate all our tasks with ease and comfort. Thus we humans developed applications like Desktop Voice Assistant having the ability to interact with the surroundings just by one of the materialistic form of human inter action i.e; HUMAN VOICE. e. The Application is being designed in such a way that all the services provided by the internet or without internet are accessible by the end user on the user's voice commands. Generally speech recognizer is a machine which understands humans and their spoken word in some way and can act thereafter. A different aspect of speech recognition is to facilitate for people with functional disability or other kinds of handicap. To make their daily chores easier, voice control could be helpful. With their voice they could operate the laptop or computer devices shutdown or operate some other applications of laptop. This leads to the discussion about intelligent computer where these operations can be made available for the common man as well as for handicapped

II. LITERATURE SURVEY

A speech synthesizer takes as input and produces an audio stream as output. A speech recognizer on the other hand does opposite. It takes an audio stream as input and thus turns it into text transcription. The voice is a signal of infinite information. A direct analysis and synthesizing the complex voice signal is due to too much information contained in the signal. Therefore the digital signal processes such as Feature Extraction and Feature Matching are introduced to represent the voice signal. In this project we directly use speech engine which use Feature extraction technique .Our aim to create more and more functionalities which can help human to assist in their daily life and also reduces their efforts. Design of a compact large vocabulary speech recognition system that can run efficiently on any laptop devices, accurately and with low latency. Speech

recognition has a long history with several waves of major innovations. Speech recognition for dictation, search, and voice commands has become a standard feature on laptop devices. Speech Recognition is main function of DVA it work on human voice.

III. METHODOLOGY

1. System Architecture:

The overall system design consists of following phases:

(a) Data collection in the form of speech.

(b) Voice analysis and conversion to text

(c) Execute Python script

(d) Generating speech from the processed text output

In first phase, the data is collected in the form of speech and stored as an input for the next phase for processing. In second phase, the input voice is continuously processed and converted to text using STT[1]. In next phase the converted text is analysed and processed using Python Script to identify the response to be taken against the command. Finally once the response is identified, output is generated from simple text to speech conversion using TTS[2].

2. Data Flow Sequence

a. Initialize device: Initialize the device by calling its name.

b. Task Manager: Conversion of Speech-to-Text and Text-to-Speech is performed by task manager.

c. Service Manager: Analysis of commands and matching them with web service and applications.

d. Execute Command: After finding the match for the given command, run the respective python script and give the output.

IV. PROPOSED SYSTEM

DVA has various branches of the services, but the main feature of DVA is Voice Recognition Engine which has an ability to work without internet connection i.e. Offline Voice Recognition. DVA will take an input data as a voice and given a output data will complete the task. This Voice Recognizer works offline and performs various operations as per the user commands and requirements. This is the first activity that's opens whenever we start DVA and it directly can be opened by pressing Power Button of the computer devices. This feature is specially design for Blind Persons who wish to use the Laptop or computer devices but are unable to connect this technology. Also Native user who barely knows to on laptop can easily open this application and using voice commands in their local languages as per need. DVA responds to basic commands like, Open Applications, Close Applications, Connect Google Send Mail to respective person , Add/Delete/Update File, Run any media file, Start various services like Hotspot, Wi-Fi, Bluetooth, Music , Youtube and various Services from the respective Notification Panel. All this can be performed on the voice commands of the end user without internet connectivity.

TECHNOLOGY USED: Python It is an all-around valuable programming language used in Dialog flow. It is used as a base for the most prominent Abased programming in light of its versatility, straightforwardness and longstanding reputation. **Python** is an interpreter, high-level, general-purpose programming language.

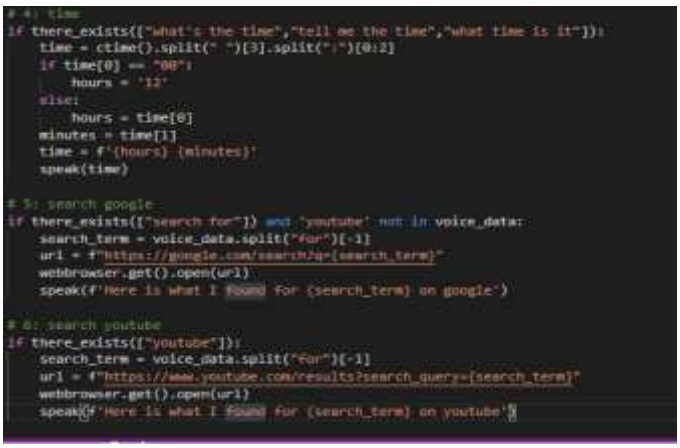

Figure 1: Implementation phase 1

Figure 1.2: implementation phase 2

Figure 2: Speech Command

Figure 2.2 : Speech Recognizer

Figure 2.3: Selecting Various Application

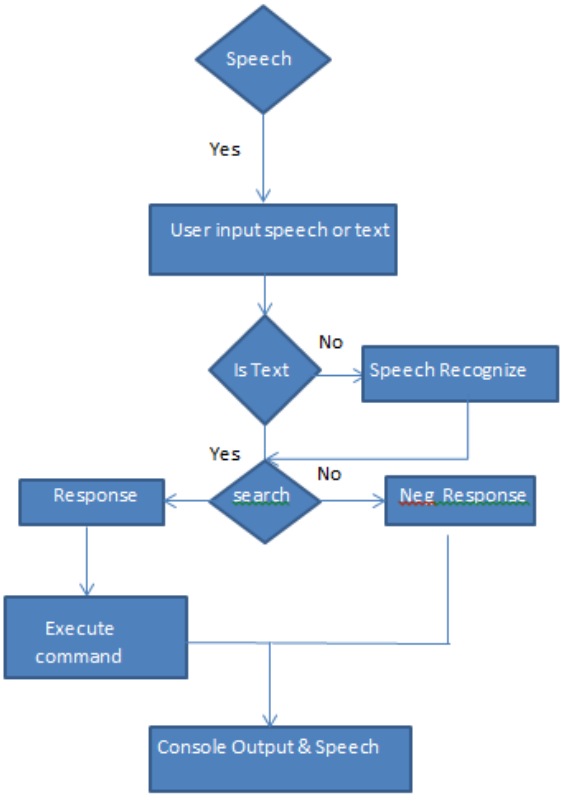

Figure 3: Data Flow Diagram of DVA

V. CONCLUSION

DVA is Designed to help Native and especially for Blind persons which works on their Voice Commands. DVA also has the capability of recognizing the voice commands without internet connection. DVA has various functionalities of Laptop devices like network connection and managing various applications on just the voice commands. Contains key features like Voice Pattern Detection, Keyword Learning, etc. which helpful for end user to use various functionalities and services of the laptop devices. Hence, DVA is language barrier independent which actively responds to user's voice commands faster than the Online Voice Search applications. It is easy to use which it can take a input as voice and fulfil the requirement of user.

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