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DESKTOP VOICE ASSISTANT

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ABSTRACT:

The Voice Assistants are growing gradually in these years. They areusedtocomplete the user's work more comfortably and at ease. There are somanypopular voice assistants like Google Assistant for google whichis widelyused by smartphone users, Microsoft's Cortana for windows, iOS's Siri, forApple users and Amazon's Alexa for gadgets. For Linux users, thereisnosuch Personal Voice Assistants till date.This project had developedthevoiceassistant for Linux using Python Programming which help the Linuxuserstochange wallpaper, opening and closing of document, playing music, Capturesnapshots, sending mails, etc.

INTRODUCTION

In today's world everyone wants their work to be doneassimpleand as quick as possible. To minimize the user's work, the personal assistantsarecreated. This can eliminate the traditional method of performingtaskslikepressing button. The personal voice assistants are performed usingmachinelearning, artificial intelligence, natural language processing (NLP) etc. Withintegrating AI innovations, deep learning the voice assistance will beworkingwithout an end. These voice assistants identify user's voice as input andtheworkis completed as an output. These user's voice is converted to machinelanguagewhich the assistants can understand then the work is done as the user's will. Thiscan be done by using machine learning technology which help the computertointeract with the users. The voice assistant can be for hardware applicationslikeGoogle home and Amazon Alexa. Users can ask their questions like managingemails, playing music. There are three modes-supervised, unsupervised or reinforcementlearning depending upon the usage of the assistants used. This is anend-to-enduser navigation for the work to be done. These take the voice as an input astheircommands, interrupt them and take required action to be done. This is mainlyindemand because of the devices like smart watches, fitness bands, speakers,Bluetooth, laptop or personal computer, television etc.

3.2 EXISTING SYSTEM

Existing system supports Windows OS, it will keep listening the commandsfrom the user and the time for listening the variable which can be changedaccording to the user requirements. The existing systemhas only femalevoice. Once the assistant in the system is not able to gather information fromtheuser'sinput it will exit. The existing system has enables and performs some commonoperations like "Open, Save, Exit" applications through the voice input. 3.2.1 DISADVANTAGES

Existing system doesn't support Linux based operating systems and not workincross platform set-ups. The assistant fails to do speech recognition properlyanddoesn't perform the task said by the user. Most of the assistant has onlyfemalevoice options.

PROPOSED SYSTEM:

The proposed system supports Linux and Windows based OS, this will listentothe commands from the user and the time for listening the variable whichcanbechanged according to the user requirements and it is build with pythonpackages.It has the capability to run over different

platforms. In this systemhas bothmaleand female voices, user can change the tone of assistant as per their desire. Inthisassistant in the system is not able to gather information fromthe user input it willkeep asking again to repeat till the desired number of times. It also helps theuserto open different system software's and also used for searching throughvoiceinput. This system has made by adding some features to performoperationssuchas "Turn on, play sound, take screenshot, etc..," a file by providing voiceinput.This assistant is build using python package and it has Speech RecognitionAPItoconvert an audio into text form.

3.3.2 ADVANTAGES: ¬

In this voice assistant is built-in python packages the user canedit oradda modules. ¬

This system supports Linux based operating systems. ¬

The system has the capability to access from a particular distance. ¬

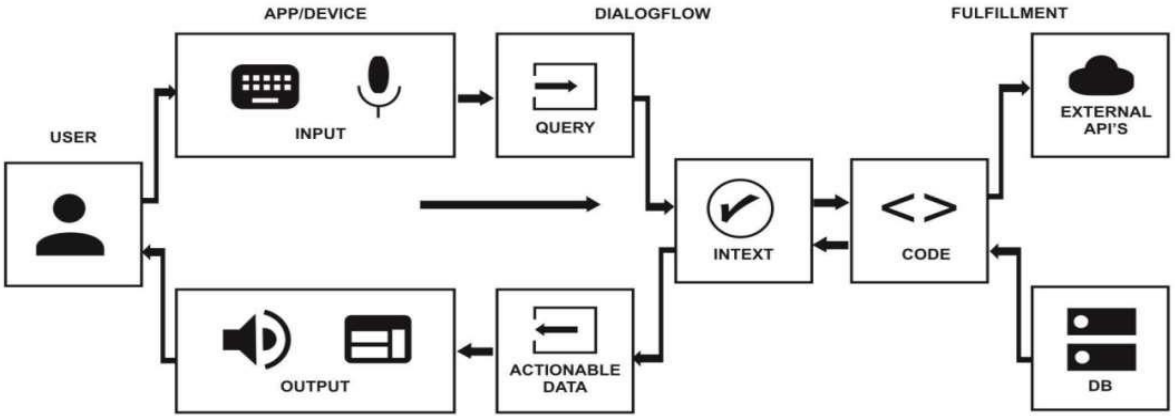
The assistant can perform a task said by the user throughonlyvoice as input. ¬

The assistant has both male and female voice options. ¬

The system performs several action like sending mail, searching, openapplications, play music, etc.

ARCHITECTURE DIAGRAM

Design Engineering deals with the various UML [Unified Modelinglanguage]diagrams for the implementation of project. Design is a meaningful engineeringrepresentation of a thing that is to be built. Software design is a process throughwhich the requirements are translated into representation of the software. Designis the place where quality is rendered in software engineering. Designisthemeans to accurately translate customer requirements into finished product.



MODULES DESCRIPTION

- Speech Recognition for Listening.
- sqlite3 and program modules (Working & database).
- pyttsx3 & gtts for Speaking.

Speech Recognition for Listening :

It is the process of converting spoken words to text. Python supports many speech recognition engines and APIs, including Google Speech Engine, Google Cloud Speech API, Microsoft Bing Voice Recognition and IBM Speech to Text.

Speech recognition systems use computer algorithms to process and interpret spoken wordsand convert them into text. A software program turns the sound a microphone records into written language that computers and humans can understand, following these four steps:

1. analyze the audio;
2. break it into parts;
3. digitize it into a computer-readable format; and
4. use an algorithm to match it to the most suitable text representation.

The sqlite3 and program modules (Working & database):

The phase between listening and speaking is Working module. This comprises many modules for each different features like sending mails and browsing

- **Process & System Utilities(psutil):**

It is a Python cross-platform library used to access system details and process utilities. There's an optional second argument, block, which is set to True by default. We can set it toFalse for making the function run asynchronously. It works with both WAV and MP3 files.

- **smtplib & email.message:**

The smtplib module defines an SMTP client session object that can be used to send mail toany internet machine with an SMTP or ESMTP listener daemon. The email.message provides a base class for the email object model. EmailMessage provides the core functionality for setting and querying header fields, for accessing message bodies, and for creating or modifying structured messages. By this user can send mail from one address toanother.

The pyttsx3 & Google Text to Speech (gtts) for Speaking:

- Google Text to Speech :

It uses a Google Cloud Text-to-Speech library which allows you to convert words and sentences to audio data of natural human speech. It can convert the audio data into a playable audio filelike an MP3. This module saves output audio files as media entities.

- pyttsx3:

pyttsx3 is a text-to-speech conversion library in Python. Unlike alternative libraries, it works offline and iscompatible with both Python 2 and 3. An application invokes the pyttsx3.init() factory function to get a reference to a pyttsx3.

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