

ARTIFICIAL INTELLIGENCE DESKTOP VOICE ASSISTANT IN PYTHON

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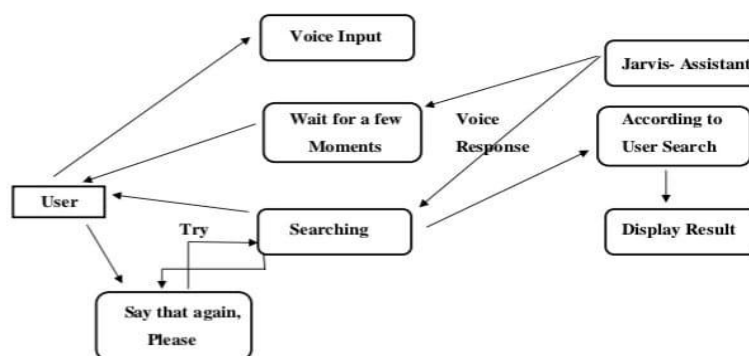
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Abstract – This project increase the comfort and quality of life. Now a days people have smartphones all the time so we can use to control electrical appliances with voice commands. These days we aren't even using fingers. We just speak of the task and it is done. These is the combination of software and hardware in which software part is made by PYTHON. The project aim to develop personal assistant for desktop based on artificial intelligence. These project inspired by the "Jarvis" in Iron man movie.

1. INTRODUCTION:

A intelligent personal assistant is a software agent that can perform tasks based on verbal commands that is given by a human speech and respond via synthesized voices. User can ask question to assistant for controlling home automation devices and manage other basic tasks like sending emails, to do list, open and close application through commands. The voice assistant is a desktop-based built using python module and libraries. These type of voice assistant is useful for old age, blind and physically challenged people and children etc. We named our desktop voice assistant as "JARVIS" which stands for "just a rather very intelligent system". Firstly we call the a jarvis and within a second Jarvis execute a task. Technically it is a smart recognition system and it is designed in such a way we can use efficiently on desktop. Personal assistant software improves user productivity by managing routing task for the user and by providing information from online sources to the users.

2. BLOCK DIAGRAM



Block diagram of Desktop Voice Assistant

User gives a input as a voice to assistant jarvis, then jarvis gives a voice response to the user i. e. if user say "HELLO" to jarvis then jarvis also give a response "HELLO" or recognize the voice and wait for movement and then response to the user. Otherwise searching the voice trying to recognize the voice if jarvis can't response then user gives the input again and again.

3. SOFTWARE USED:

A. Python: Python is object oriented programming based, high level, interpreted programming language. Python helps in easy writing and execution of code. Python has a lot of libraries for every need of these project. For jarvis, libraries used are speech recognition to recognize voice, Pyttsx3 for text to speech, selenium for web automation etc.

B. Pyttsx3: it stands for python text to speech. It is common text to speech engines no MAC OS X, windows and Linux. It works for both Python2.x and 3.x versions. Its main advantage is that it works offline.

C. Speech Recognition: This is a library for performing speech recognition, with support for several engines and APIs, online and offline. It supports APIs like Google cloud speech API, IBM speech to text, Microsoft Bing Voice Recognition etc.

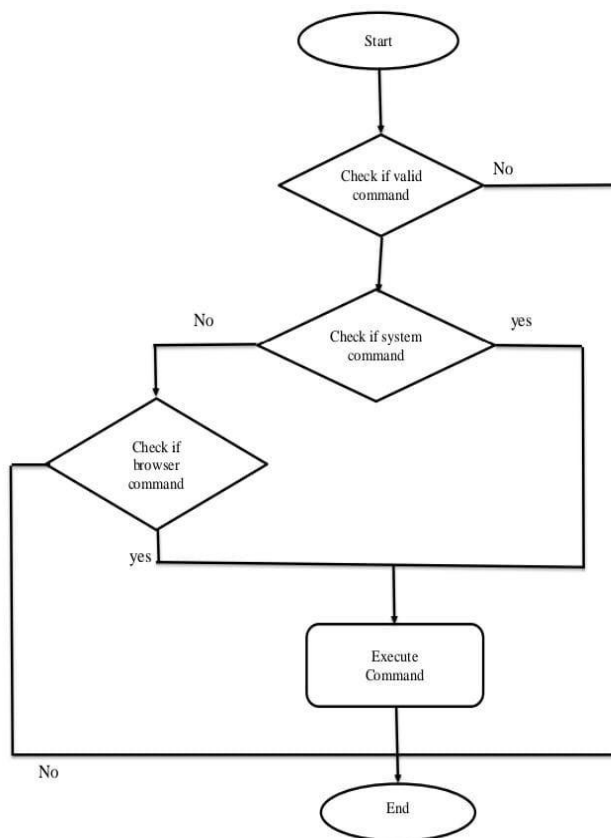
D. Web search: To perform web search. This module comes Web built in python

E. Datetime: Date and time is used to showing date and time.

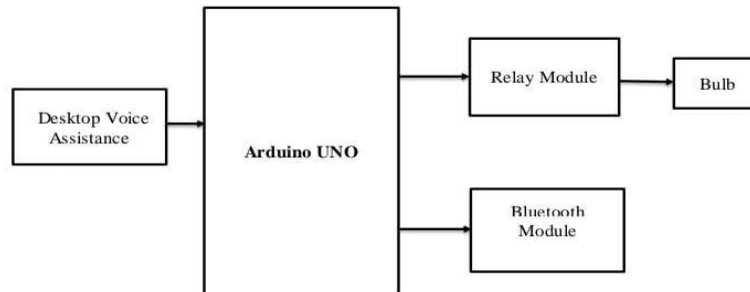
4. WORKING:

1.We are going to use the visual studio code so first installing the VS code, then we installing the Python version 3.10.2.Next we can install some python libraries, installing a module called Pyttsx3to convert text-to-speech and it works offline.3.To provide current and live time, import a module called datetime.4. Installing a module called speech recognition and import it to the code.5.Install Wikipedia, for opening website we importing a module web browser and for playing music import a module OS.6.First of all, we have created a wishme() function that gives the greeting functionality according to our system time, after that we created take command from the user.7.We develop the code logic for opening different websites like Google, You tube.

5. FLOW CHART:



6. HARDWARE USED:



1.Arduino UNO: It is ATmega328P based microcontroller board. The programming of these board can easily be loaded by using an Arduino computer program. It has 28 pin IC from these pins we use D2, GRD, VCC and two PWM pins D10, D11 for our project.

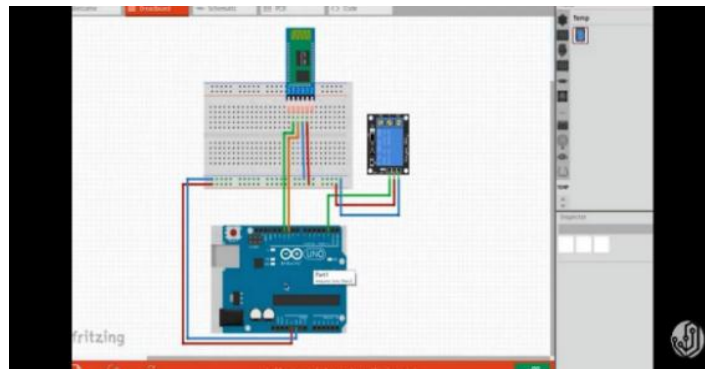
2.HC05 Bluetooth Module: It has 6 pin Bluetooth module.

It has two operating modes Data mode and Command mode.

When it is in data mode then it can send or receive data and it in command mode it will change default device setting. From these 6 pins we use only 4 pins i.e. VCC , GRD,RX,TX.

3.5V 1 Channel Relay Board: The inputs of 1 channel relay module are isolated to protect any circuitry. It act as a switch. The GND, VCC pins of board are connected to bread board and SIG pin is connected to D2pin of Arduino UNO.

7. PCB LAYOUT:



8. CONCLUSION

Jarvis is a very helpful voice assistant without any doubt as it saves time of the user by conversational interactions, its effectiveness and efficiency. But while working on this project, there were some limitations encountered and also realized some scope of enhancement in the future which are Weather Forecasting, Launch Games, Launch Windows Applications, Open Websites, tells you about almost everything you ask, tells you date and time, greetings, news etc. You can interact with your laptop's microphone console. The response generated by the assistant will display on the console or as a speech via the speaker.

9. ACKNOWLEDGEMENT

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