AI Assistant using RaspberryPi

Requirement Specification Document

Introduction:

Technology has made our lives a lot more easier and in my project I will show you how to use technology to further simplify your day to day tasks. In my project I'll be using Amazon Alexa. Amazon Alexa is a virtual personal assistant. It can engage in two way communication like how normal people talk.

Requirements

(i) Raspberry Pi starter Kit ($140.0)
(ii) SD card with Raspbian OS (included in the starter kit)
(iii) Microphone with USB connection ($8.0)
(iv) Speakers with USB connection ($10.0)
(v) Ethernet connecting Wire (included in the kit)
(vi) Laptop

Microphone and Speakers must be USB because of the way raspberry pi is built. It has only one Analog output. So as the Raspberry Pi has usb ports for inputs where we can connect our external devices, in my case the Microphone and the Speakers

Laptop should have VNC viewer and PuTTY software downloaded so the you can use the Raspberry Pi from your laptop.

Hardware Implementation (User and Designers' perspective)

Raspberry Pi is the heart of our AI assistant system as it is involved in every step of processing data to connecting all the components together. The Raspbian OS is mounted onto the SD card slot to provide a functional operating system. The Raspberry Pi needs a constant 5V power supply. This can be provided through a Micro USB charger or a Power bank.

Microphone is used to take audio input of the sound. This audio input when further passed through the system would be searched for keywords. These

keywords are essential for the functioning of voice command system as my project would work on the essence of searching for keywords and giving output by matching keywords.

Speakers, once the query put forward by the user has been processed, the text output of the query is converted to speech using the online text to speech converter. Now this speech which is the audio output is sent to the user using the speakers which are running on audio out.

Ethernet is used to connect our Raspberry Pi to our computer system.