AI Assistant using Raspberry Pi

Design Document

Flow of events

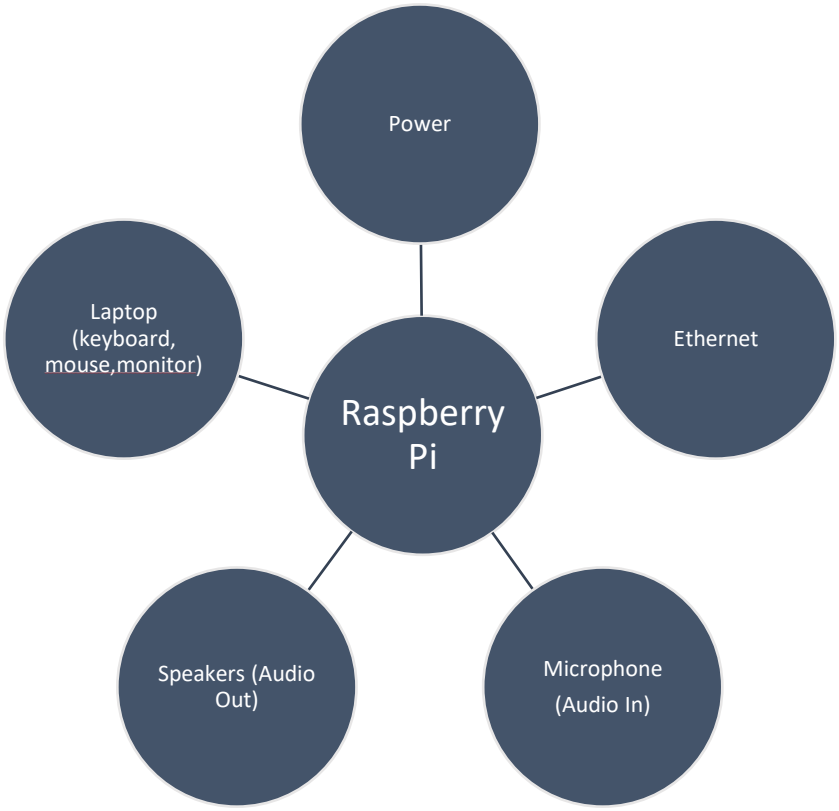
First, when the user starts the system, he uses the **microphone** to send in the input(any command). Basically, what it does is that it takes sound input from the user and it is fed to the computer to process it further. Then, that sound input if fed to the **speech to text converter**, which converts audio input to text output which is recognizable by the computer and can also be processed by it.

Then that text is parsed and searched for **keywords**. Our voice command system is built around the system of keywords where it searches the text for key words to match. And once key words are matched then it gives the relevant output.

This output is in the form of **text**. This is then converted to speech output using a **text to speech converter** which involves using an optical character recognition system. This output is transmitted via the speakers which are connected to the audio jack of the raspberry pi.

(Microphone and speakers connected to my Raspberry Pi)

System Block Diagram

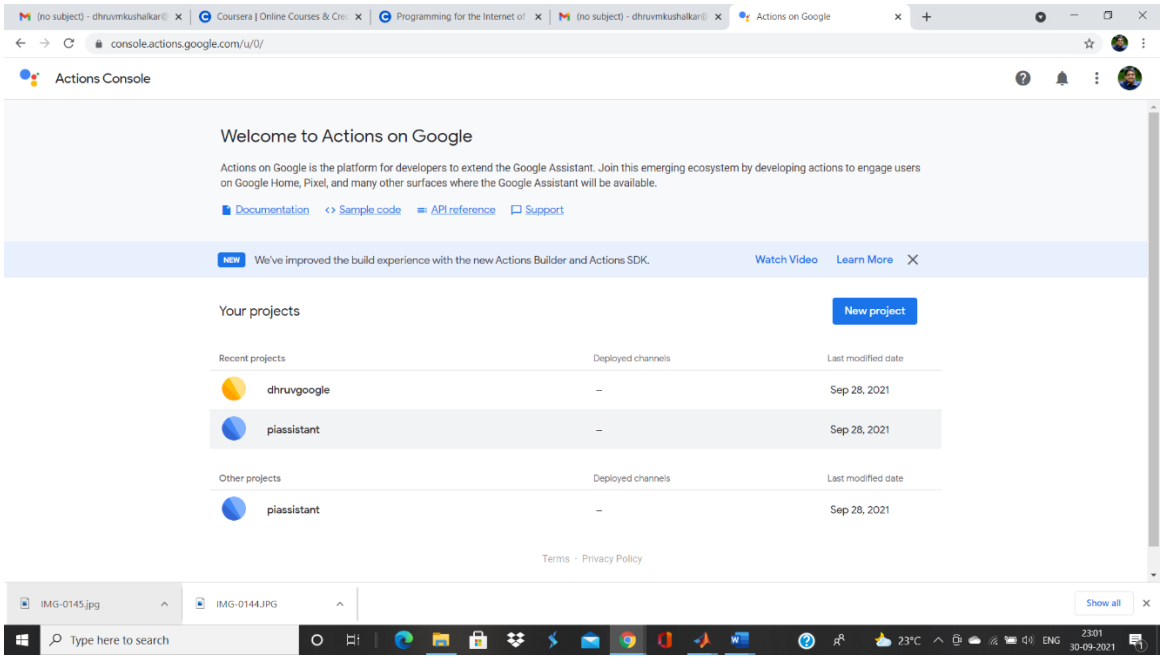


Flow of events flowchart

1. Input from microphone
2. Speech to text conversion
3. Querry processing on text
4. Sending information to our virtual assistant
5. Text to speech conversion
6. Final speech output to the user

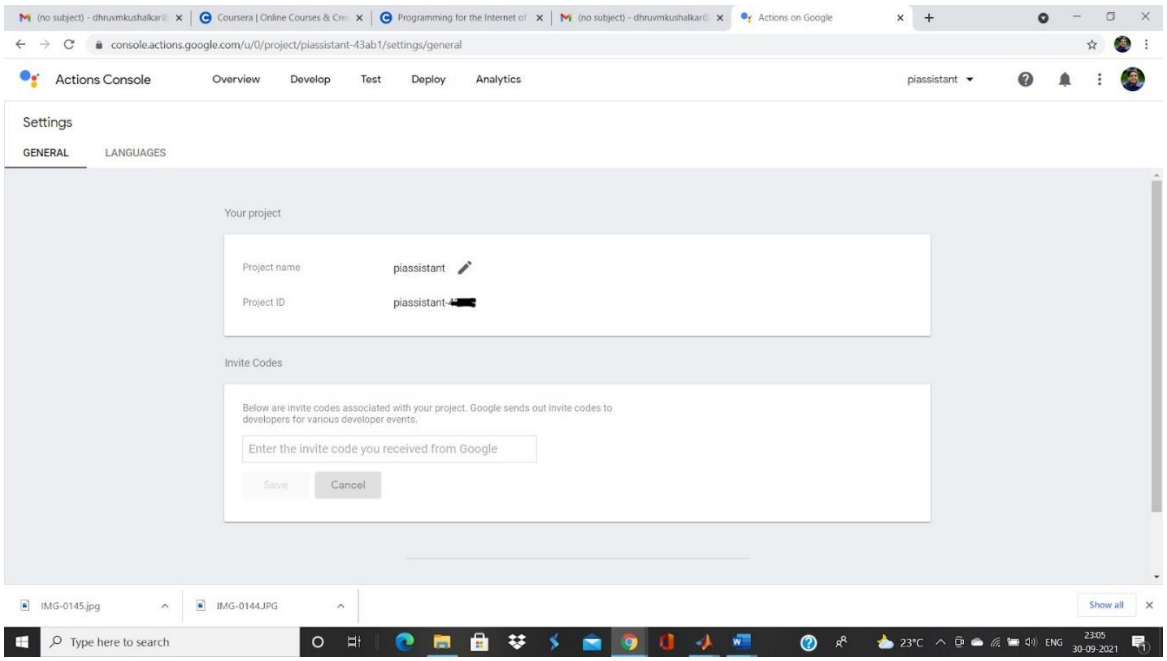
Software Implementation Screenshots

For my project I had to download google assistant api. For this I had to create a project and register my model on google actions console.



(piassistant is the name of my project which has all google assistants apis and sdk)

I got my model id and my device id and in order to link my raspberry pi I got an verification code thus I could use the project I created on google console on my raspberry pi.



(my model id for my project)