# Google Voice Assistance using Re-speaker with Raspberry Pi

# Introduction

Voice assistance is one of the major application of AI, which the system learns by its own by collecting the datasets from the people search and voice requests. There is some voice assistance like Google Assistance, Siri and Amazon Alexa. Among these voice assistance this project is developed by using Google assistance with raspberry pi with the mic, Respeaker a 4 mic array helps to give the voice commands from the distance instead of giving commands to the USB mic at the close.

# Abstract

In this project to integrate google assistance, google cloud is used with Command Line Interface (CLI). Respeaker is used as a mic, which has 4 mics used for giving commands from distance. It has same 40 pin interface, easily interfaceable with raspberry pin 40-pin GPIO. Respeaker also has an RGB LED indication, which gives more attraction.

# Existing system

In the existing system, Google assistance is done with Raspberry pi by using USB Microphone which is difficult to give voice command from the distance. You have to give voice commands by having close contact with Mic.

# Proposed system

In the proposed system, Respeaker with 4-mic is used to avoid close contact, we can give voice command from distance. It also has LED indication when the system is ready to accept the voice command.

# Demo video

# Block diagram

# Block diagram description

Respeaker which has 40 pin interface directly plugged in the Raspberry Pi 40 Pin GPIO. Then for echoing the voice response from the system, 3.5mm audio speaker is connected to the audio jack of the Raspberry Pi.

# Project description

In this project, as an initial step, you will learn to work with Google Cloud, by signing up your account and get your API keys with CLI on your Raspberry Pi. Then by using Respeaker, you can give the voice commands as like Google assistance in your mobile, but from the distance, we can interact with the system. Commands like asking Jokes or General questions. Voice response gets through the speaker connected to the audio jack of the Raspberry pi.

# Hardware Required

* Raspberry Pi
* Respeaker 4 mic array
* 32GB SD card
* Speaker or Earphone

# Software required

* OS for Raspberry Pi
* SD card formatter
* Etcher

# Result

By this project, you will learn to work with the Google cloud to integrate Google assistance with the Raspberry pi and also to integrate Respeaker with Raspberry pi.