Project 8

Clap to turn On-Off your home Light

Introduction

In this project you will make a clapping control device means when you clap once in your home, light or electrical appliance will be triggered.

Hardware Required

- Raspberry Pi (Any version)
- Microphone sound sensor
- One-Channel Relay module 5V Optional
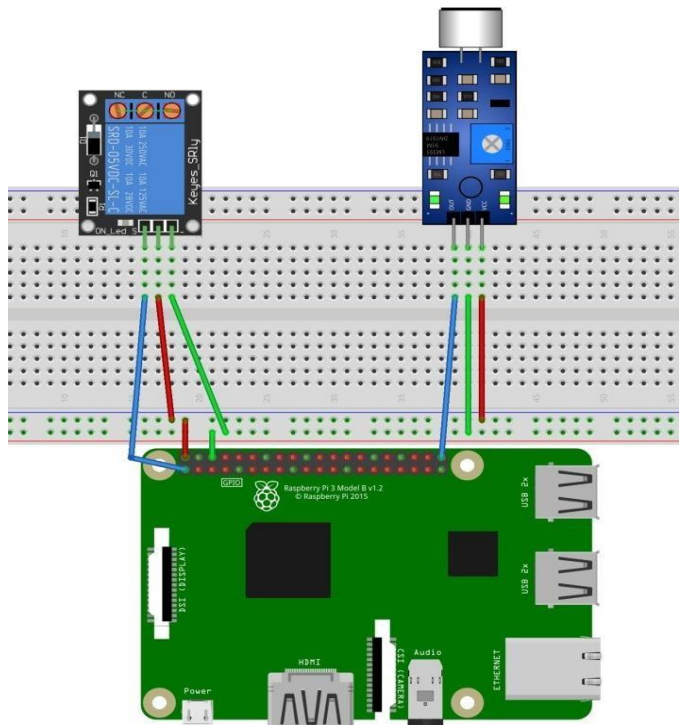- Jumper Wires
- Light Lamp

Hardware Setup

Connect the light lamp to the relay.

Wiring Microphone Sensor

Pin   Wiring LM393 to Raspberry Pi
OUT------GPIO Pin – 40
GND------GND
VCC-------5V

Wiring Relay

Pin   Wiring relay to the Raspberry Pi
 S----------GPIO Pin – 38
 –----------GND
 +----------5V

Python Coding

```
import RPi.GPIO as GPIO
import time

GPIO.setmode(GPIO.BOARD)

SOUND_INPUT=40

RELAY_OUTPUT=38

GPIO.setup(SOUND_INPUT,GPIO.IN)#######Digital input

GPIO.setup(RELAY_OUTPUT,GPIO.OUT)#####Digital output

GPIO.setwarnings(False) ch_flag=False try:

        while True:

                if  GPIO.input(SOUND_INPUT)==1:#sound detected

                    ch_flag= (not ch_flag)#toggle

        GPIO.output(RELAY_OUTPUT,ch_flag)                        print("Lights

ON" if ch_flag else "Lisghts Off")

                        time.sleep(.5)

except(KeyboardInterrupt):

        print("cleaning up..")

        GPIO.cleanup()
```

Output

When you clap and make sound to the sound senor, Sound sensor detects it and trigger your light pin as ON and on next time clap it turn OFF.