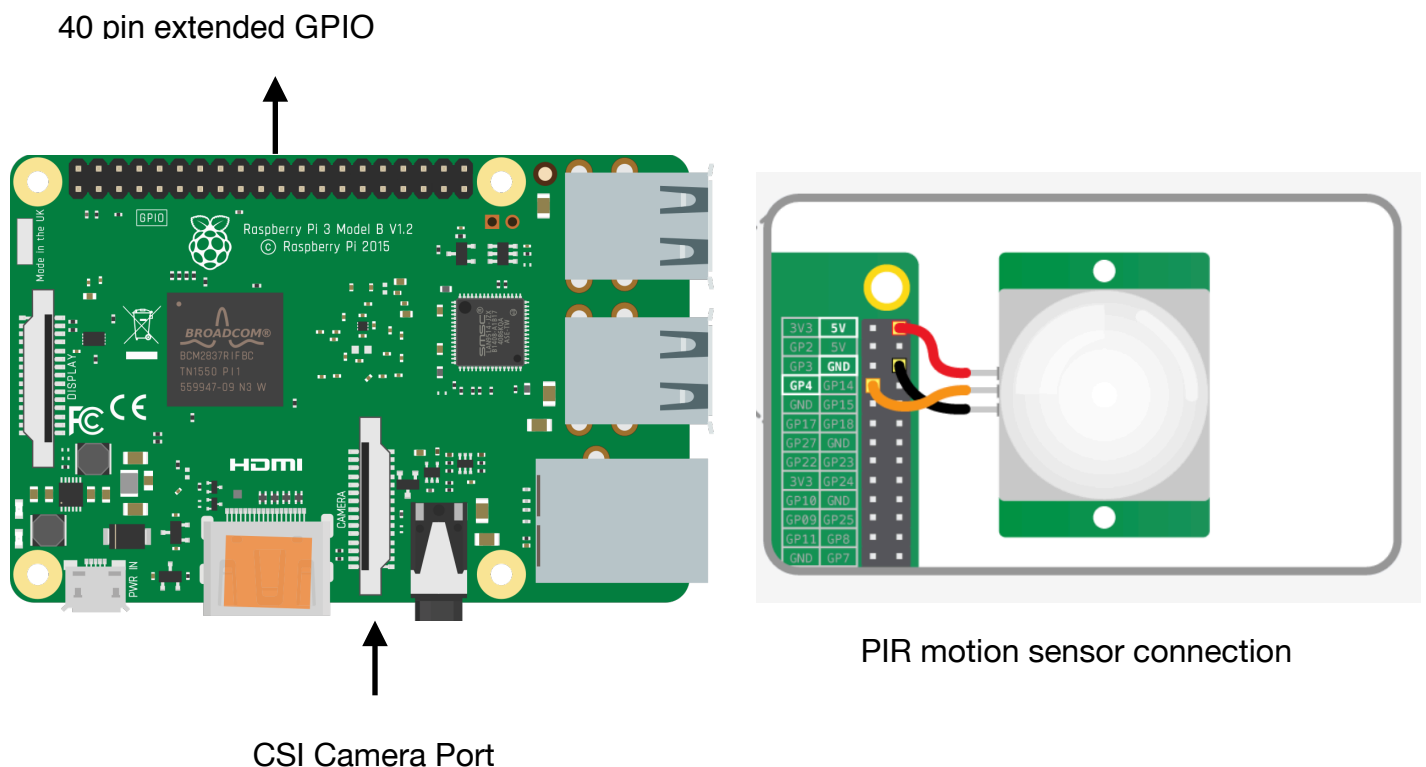


## Raspberry Pi Home Security System

The home security system is becoming a major part of every household because of the increasing crime and wanting to stay alert about different activities happening around in the house. Before, these systems were costly and not everyone could afford to have one, however, with decrease in the cost of cameras and sensors, it is simpler to build one using a raspberry pi.

**Hardware Connections:** To build a home security system using a raspberry pi 3 module, we will need a raspberry pi camera module, a passive infrared (PIR) motion sensor module, and three female-to-female jumper wires. First, we need to connect PIR motion sensor to the raspberry pi using the female-to-female jumper wires. The PIR sensor has three pins, the GND labelled pin will connect to the GND pin of raspberry pi to complete the circuit, the VCC labelled pin will connect to the 5V pin of raspberry pi to power the PIR sensor, and the OUT pin will connect to any of the pin labelled GPIO number to output the voltage send by PIR sensor on detecting motion. After connecting the sensor, we need to connect the camera module. The camera connector is present in between the HDMI port and the ethernet RJ45 of the raspberry pi, we need to insert the flex cable of the camera module inside the camera connector of the raspberry pi.



**Fig: Hardware Connections**

**Working of the Home Security System:** The PIR motion sensor gets triggered on detecting presence of a warm body around it, which sends commands to the raspberry pi camera to start video recording or click a photo of the intruder in the house. The PIR motion sensor has the capacity to detect objects emitting infrared radiations within the range of twenty feet. As soon as the sensor detects motion, a output voltage is signaled to the raspberry pi which sends command to the camera pi to click photos or start video recording. Below is the diagram showing follow of information when a motion is detected. After the video recording is complete, a alert email is send to the house owner containing the video of the intruder.

