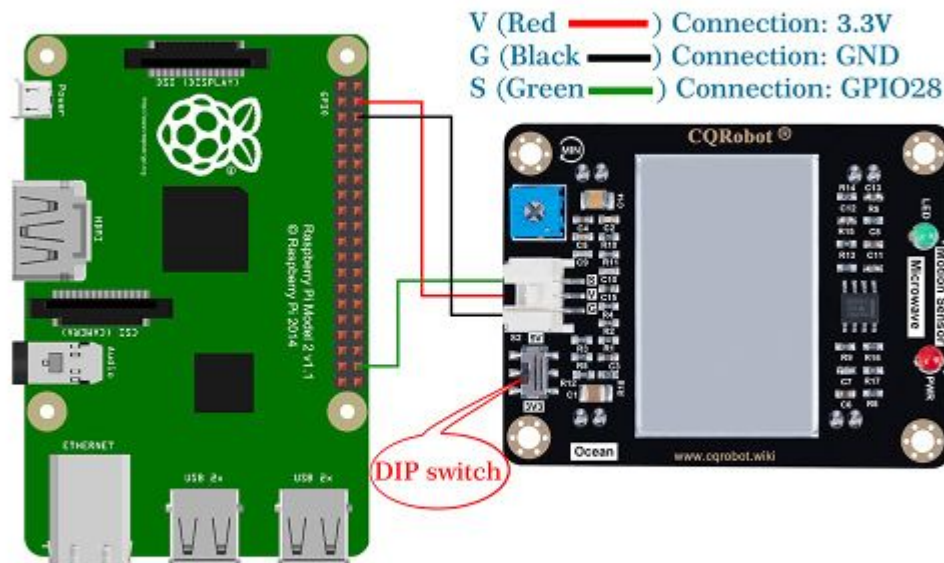


Demo code for Raspberry Pi

This tutorial was written using the official operating system on a Raspberry Pi 5.

Example 2 - Wiring Diagram



Note: Pull the DIP switch to 3.3V.

Refer to the diagram above for wiring connections. Connect the signal pin to GPIO28.

Experimental Procedures

1. First, ensure that the necessary libraries are installed.

```
# Update package list
sudo apt update

# Install the GCC compiler (if not already installed)
sudo apt-get install gcc

# Install the wiringPi library
sudo apt-get install wiringpi
```

After installing the library files, we need to create a file named motion_sensor.c using nano and write the following code into it. Before doing so, please enable root privileges.

Temporarily switch to the root user

Note: Entering a password on the Raspberry Pi is impractical; simply press Enter after typing.

su root

```
login as: pi
pi@192.168.1.4's password:
Linux pi 6.12.47+rpt-rpi-2712 #1 SMP PREEMPT Debian 1:6.12.47-1+rpt1 (2025-09-16)
) aarch64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Jan 14 16:56:45 2026 from 192.168.1.15

Wi-Fi is currently blocked by rfkill.
Use raspi-config to set the country before use.

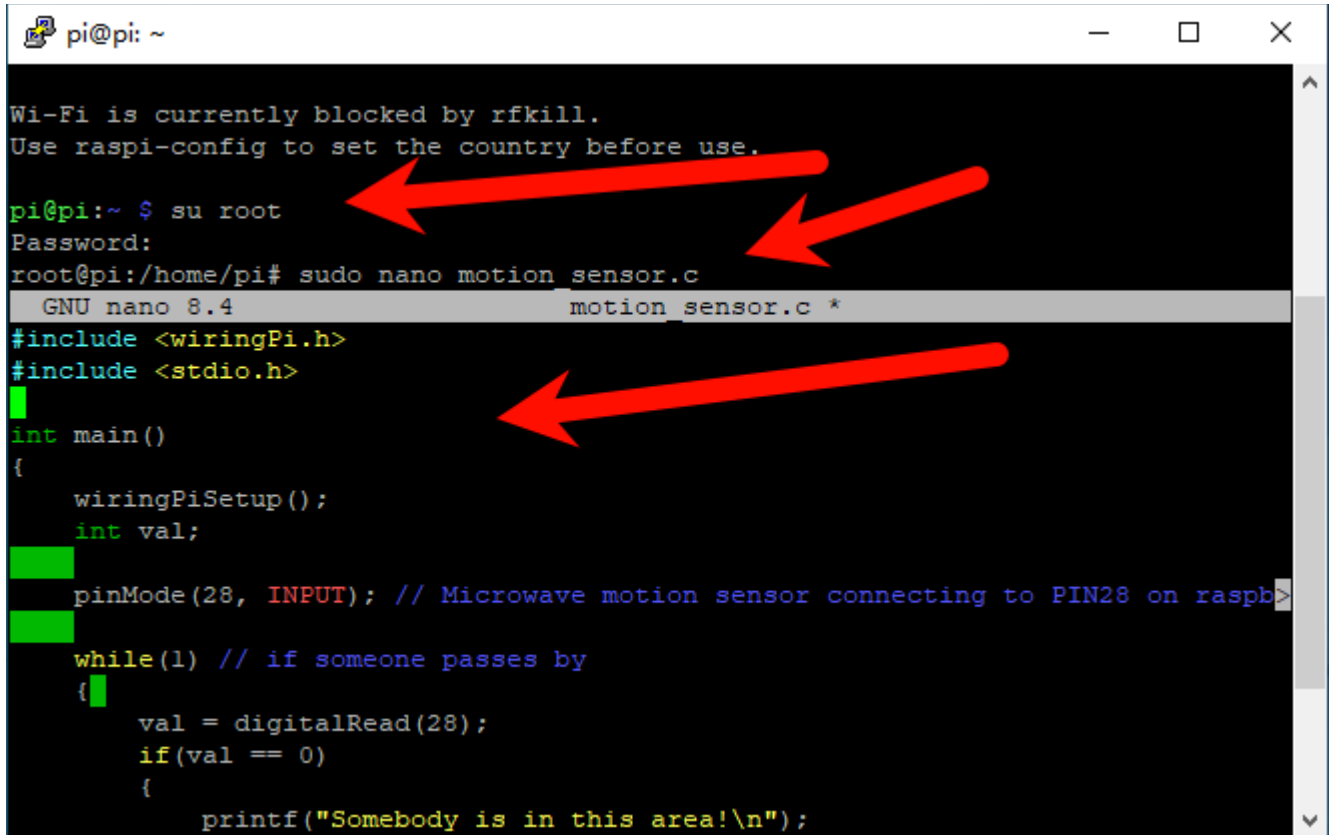
pi@pi:~ $ su root
Password:
root@pi:/home/pi# sudo nano motion_sensor.c
```

```
#include <wiringPi.h>
#include <stdio.h>

int main()
{
    wiringPiSetup();
    int val;

    pinMode(28, INPUT); // Microwave motion sensor connecting to PIN28 on raspberry pi

    while(1) // if someone passes by
    {
        val = digitalRead(28);
        if(val == 0)
        {
            printf("Somebody is in this area!\n");
            delay(10); // delay 10ms
        }
        else // nobody passes by
        {
            printf("No one!\n");
            delay(10); // delay 10ms
        }
    }
    return 0;
}
```



```
pi@pi: ~  
Wi-Fi is currently blocked by rfkill.  
Use raspi-config to set the country before use.  
pi@pi:~ $ su root  
Password:  
root@pi:/home/pi# sudo nano motion_sensor.c  
GNU nano 8.4 motion_sensor.c *  
#include <wiringPi.h>  
#include <stdio.h>  
int main()  
{  
    wiringPiSetup();  
    int val;  
    pinMode(28, INPUT); // Microwave motion sensor connecting to PIN28 on raspb  
    while(1) // if someone passes by  
    {  
        val = digitalRead(28);  
        if(val == 0)  
        {  
            printf("Somebody is in this area!\n");  
        }  
    }  
}
```

Compile and run

```
# Compile  
gcc -o motion_sensor motion_sensor.c -lwiringPi  
  
# Run  
sudo ./motion_sensor
```

```
pi@pi: ~  
login as: pi  
pi@192.168.1.4's password:  
Linux pi 6.12.47+rpt-rpi-2712 #1 SMP PREEMPT Debian 1:6.12.47-1+rpt1 (2025-09-16)  
) aarch64  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
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permitted by applicable law.  
Last login: Wed Jan 14 16:56:45 2026 from 192.168.1.15  
  
Wi-Fi is currently blocked by rfkill.  
Use raspi-config to set the country before use.  
  
pi@pi:~ $ su root  
Password:  
root@pi:/home/pi# sudo nano motion_sensor.c  
root@pi:/home/pi# gcc -o motion_sensor motion_sensor.c -lwiringPi  
root@pi:/home/pi# sudo ./motion_sensor
```

After running the code, it displays "Somebody is in this area!" when someone is present and "No one!" when no one is present, as shown below.

```
pi@pi: ~  
No one!  
No one!  
No one!  
No one!  
No one!  
No one!  
Somebody is in this area!  
Somebody is in this area!  
Somebody is in this area!  
Somebody is in this area!  
Somebody is in this area!  
Somebody is in this area!  
Somebody is in this area!  
Somebody is in this area!  
Somebody is in this area!  
No one!  
No one!  
No one!  
No one!  
No one!  
No one!  
No one!  
No one!  
No one!
```