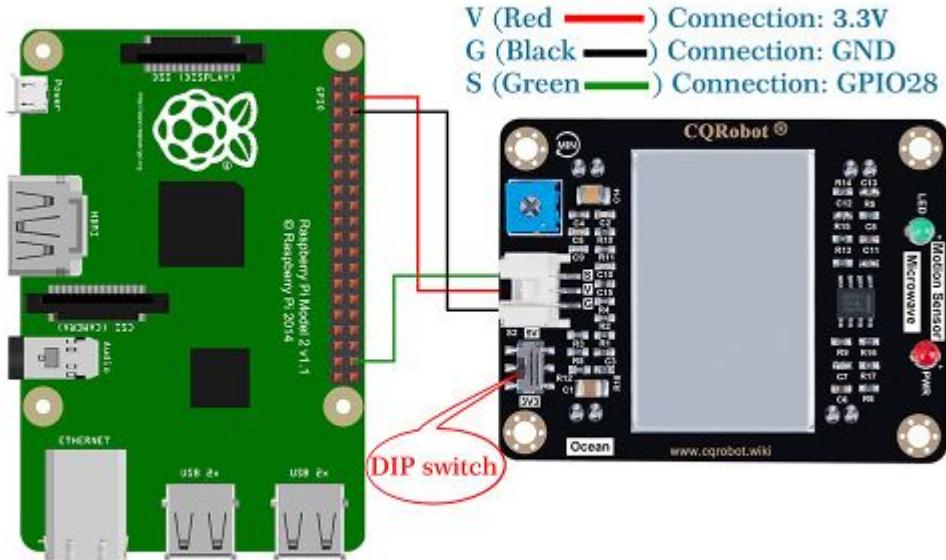


# Demo code for Raspberry Pi

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
```

```
[1] login as: pi
[1] 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.

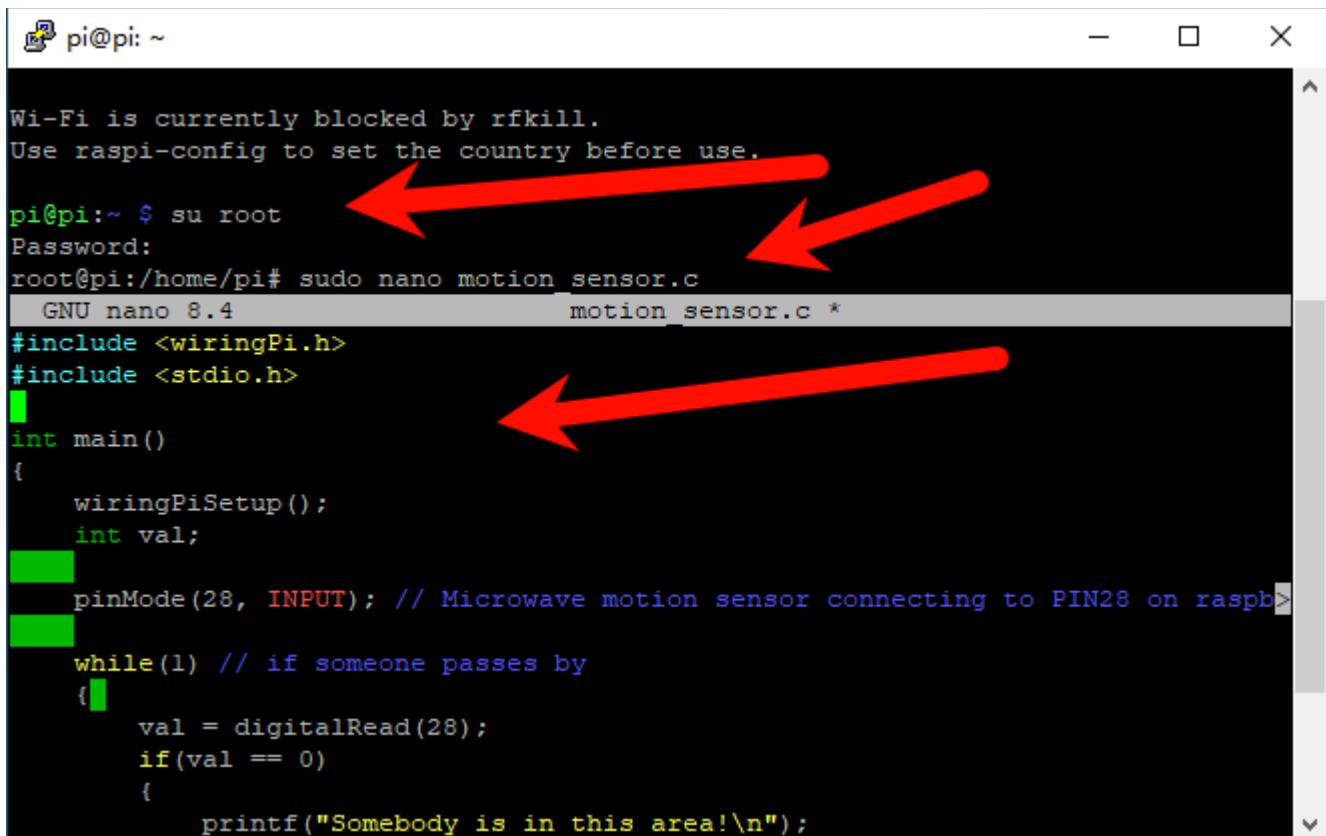
pi@pi:~ $ su root
Password:
root@pi:/home/pi# sudo nano motion_sensor.c
```

```
#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
```

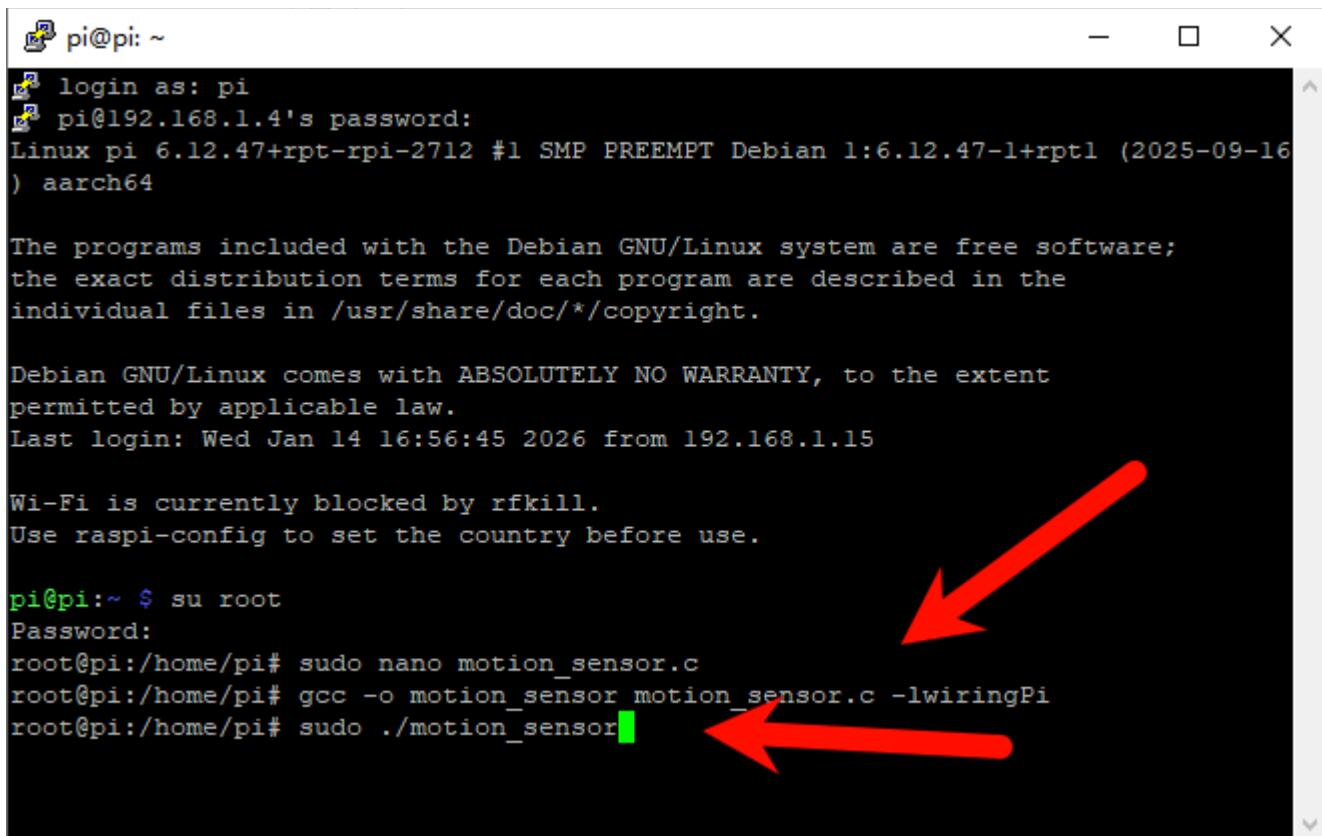
```
pi@pi: ~
pi@pi: ~ login as: pi
pi@192.168.1.4's password:
Linux pi 6.12.47+rpt-rpi-2712 #1 SMP PREEMPT Debian 1:6.12.47-1+rpt1 (2025-09-16)
) aarch64

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.

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

