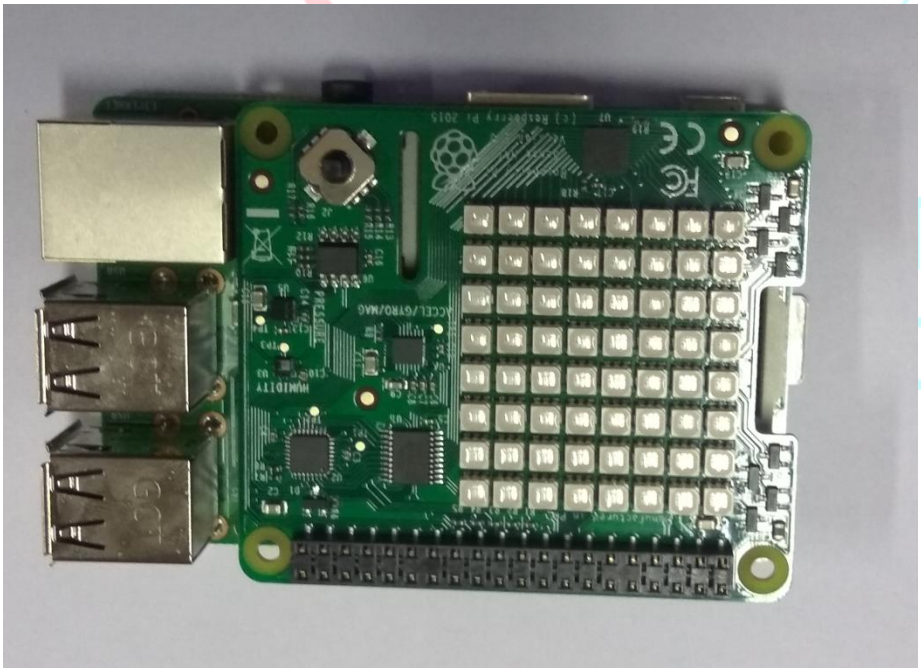
TENET TECHNETRONICS

2016

Interfacing SenseHat With Raspberry Pi



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Introduction:

Raspberry Pi is a credit card sized computer that plugs into a computer monitor or TV,and uses standard keyboard and mouse.It's capable of doing everything you'd expect a desktop computer to do, from browsing the internet and playing high-definition video, to making spreadsheets, word-processing, and playing games.Here we are going to interface sensehat with Raspberry Pi.

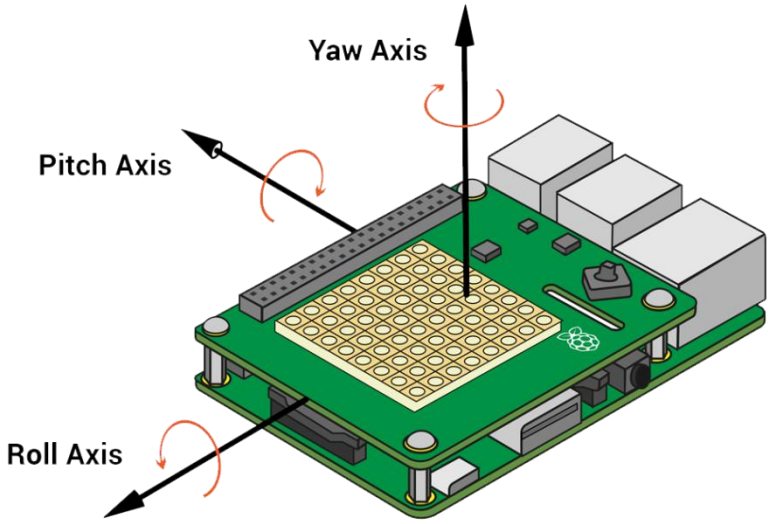
Hardware Requirements:

1. Raspberry Pi board.

2.Sense Hat

Sensehat:

The Sense HAT is an add-on board for Raspberry Pi, made especially for the Astro Pi mission – it launched to the International Space Station in December 2015 – and is now available to buy.



The Sense HAT has an 8×8 RGB LED matrix, a five-button joystick and includes the following sensors:

- Gyroscope
- Accelerometer
- Magnetometer
- Temperature
- Barometric pressure
- Humidity

Code:

Printing letter on LED Matrix

```
fromsense_hat import SenseHat
from time import sleep
sense=SenseHat()
sense.show_letter('T',text_colour=[255,0,0])
sense.clear()
```

Print Message on LED Matrix

```
fromsense_hat import SenseHat
from time import sleep
sense=SenseHat()
while 1:
    sense.show_message("Tenet Technetronics")
    sleep(1)
```

Measuring Temperature with Sensehat:

```
fromsense_hat import SenseHat
from time import sleep
sense=SenseHat()
while 1:
    data=sense.get_temperature()
    print("Temperature is %s C",data)
    sleep(1)
```

Measuring Humidity with Sensehat:

```
fromsense_hat import SenseHat
from time import sleep
sense=SenseHat()
while 1:
        data=sense.get_humidity()
        print("Humidity is %s is"%data)
        sleep(1)
```

Measuring Pressure with Sensehat:

```
fromsense_hat import SenseHat
from time import sleep
sense=SenseHat()
while 1:
        data=sense.get_pressure()
        print("Pressure is %s millibars",data)
        sleep(1)
```

Measuring Accelerometer with Sensehat:

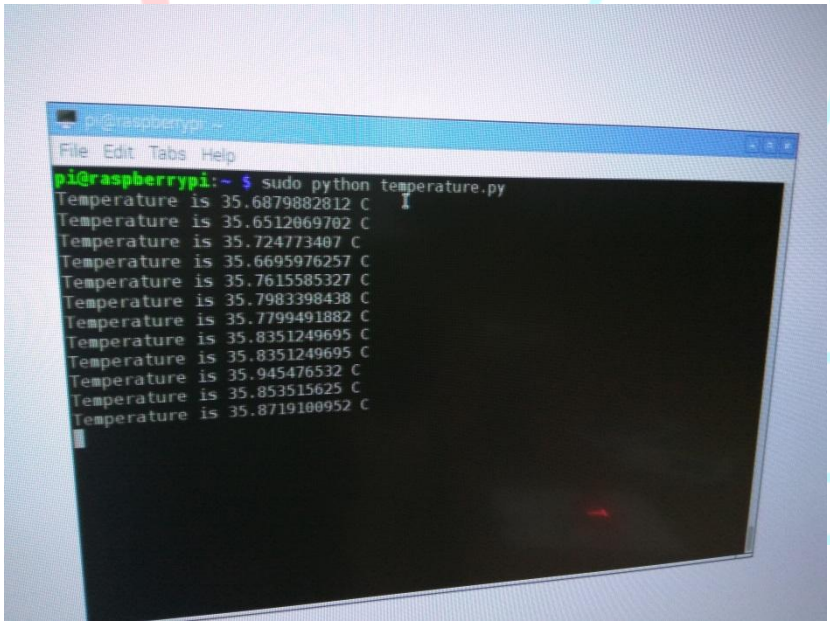
```
fromsense_hat import SenseHat
from time import sleep
sense=SenseHat()
while 1:
        data=sense.get_accelerometer()
        print("p: {pitch}, r: {roll}, y: {yaw}".format(**data))
        sleep(1)
```

Measuring Gyroscope with Sensehat:

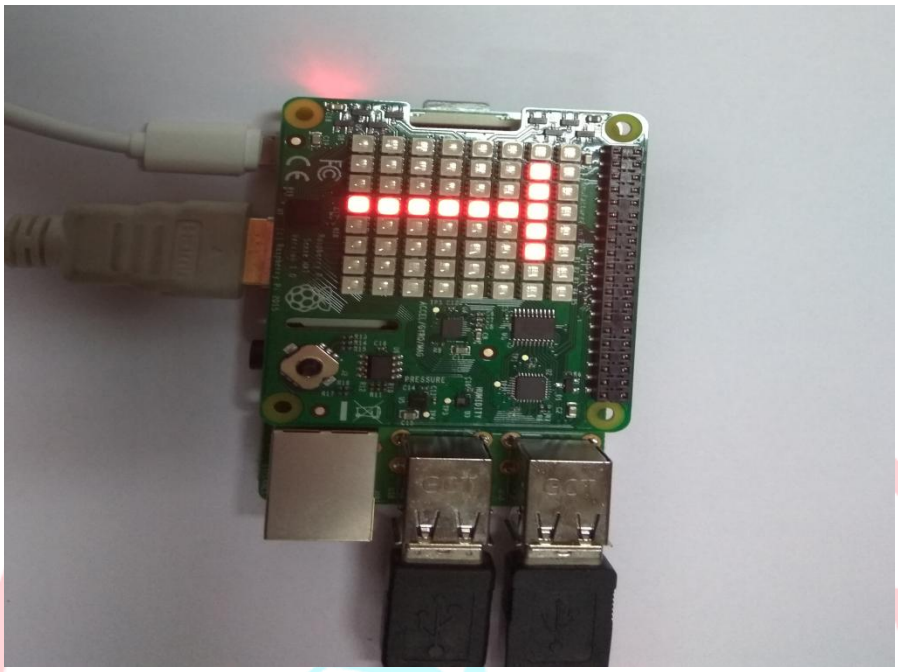
```
fromsense_hat import SenseHat
from time import sleep
sense=SenseHat()
while 1:
        data=sense.get_gyroscope()
        print("p: {pitch}, r: {roll}, y: {yaw}".format(**data))
        sleep(1)
```

Output:

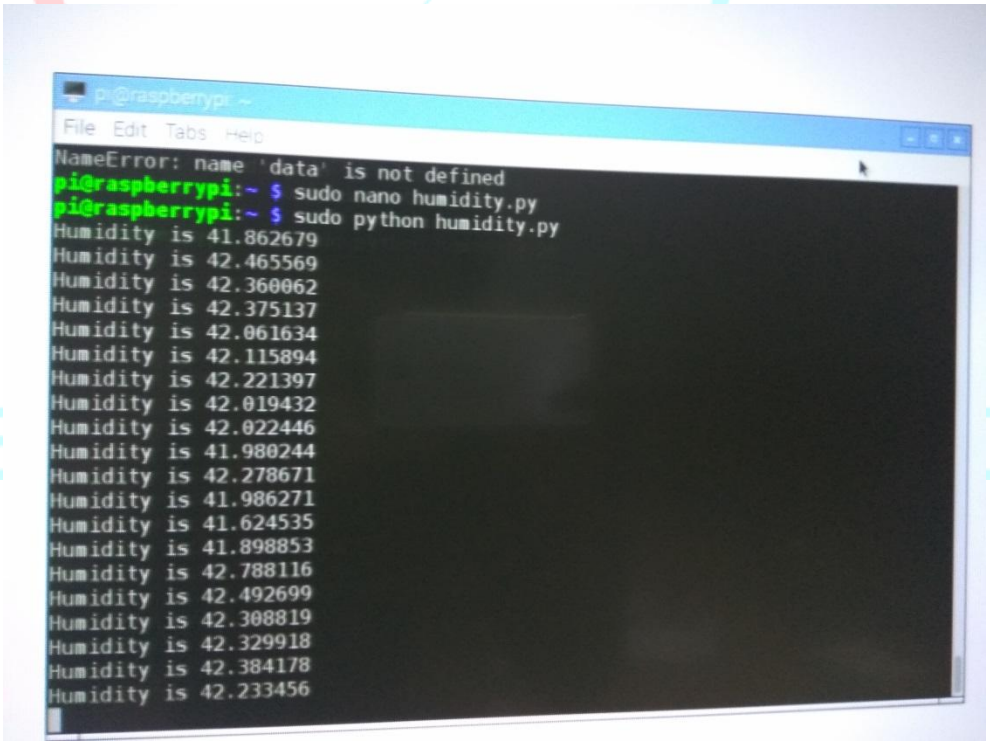
Experiment 1: Temperature



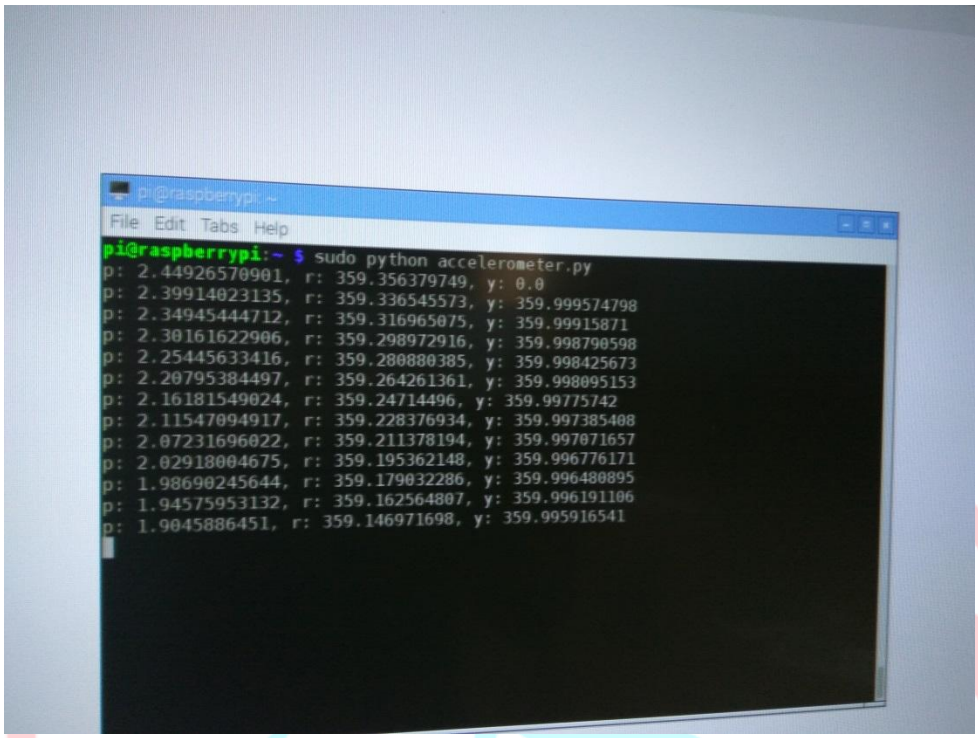
Experiment 2: Printing Letter on LED Matrix



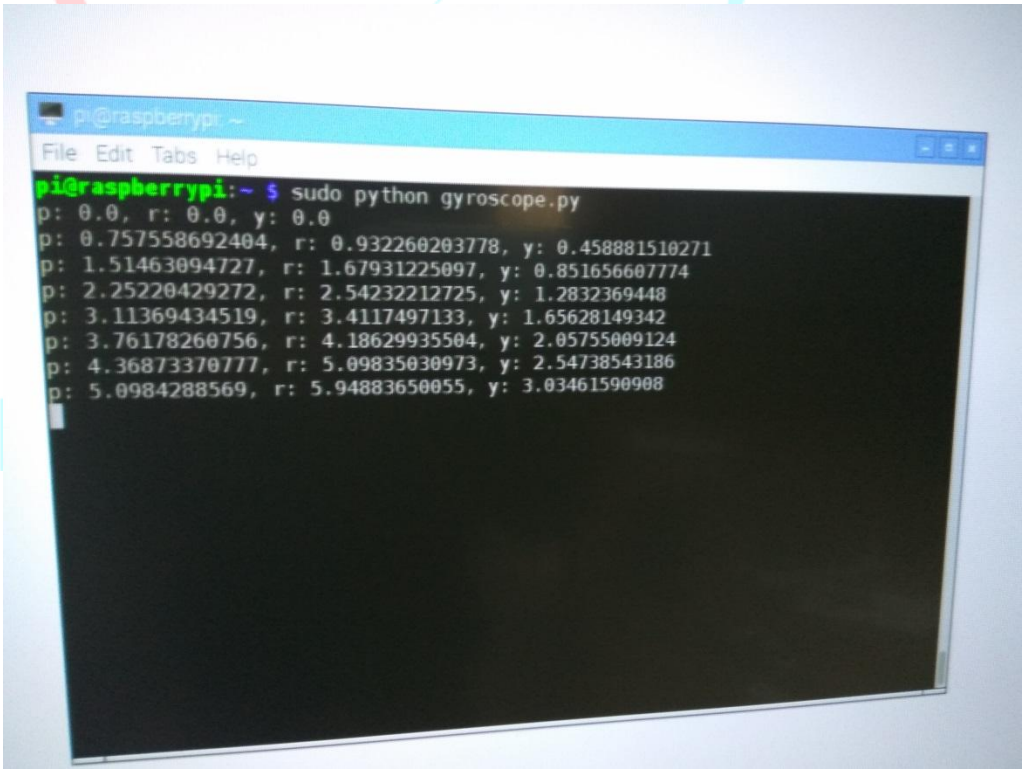
Experiment 3: Measuring Humidity



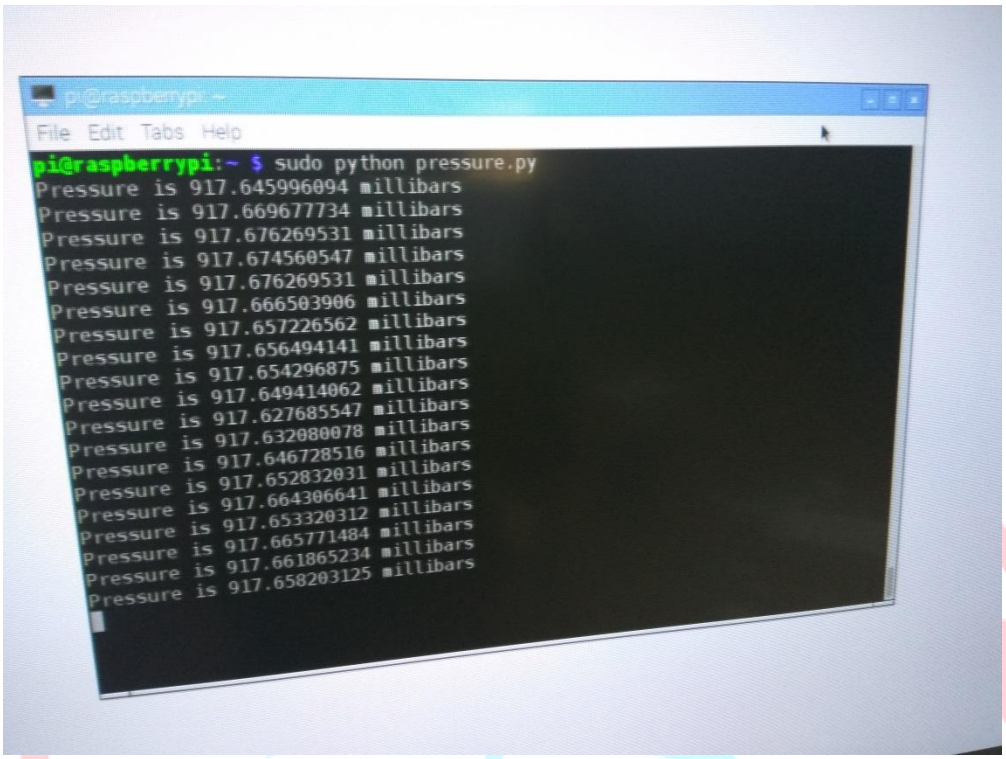
Experiment 4: Measuring Accelerometer



Experiment 5: Measuring Gyro



Experiment 6: Measuring Pressure



For more information please visit: www.tenettech.com

For technical query please send an e-mail: info@tenettech.com