7.Get Humidity value

Learning goals: Obtain the percentage of relative humidity from the humidity sensor.

Experimental phenomena: The terminal prints the currently detected relative humidity value, and the RGB matrix scrolls to display humidity=relative humidity percentage value.

Tips: Humidity, the physical quantity indicating the degree of dryness of the atmosphere. At a certain temperature, the less water in a certain volume of air, the more dry the air; the more water vapor, the more humid the air. The degree of dryness and humidity of the air is called "humidity". Relative humidity refers to the percentage of the actual vapor density in air and the saturated water vapor density at the same temperature.
The humidity that the human body feels comfortable is: The relative humidity is less than 70%.

1.Create python file

nano temperature.py

We need to input content as shown below:

```
#!/usr/bin/python
from sense_hat import SenseHat
sense = SenseHat()

# Set the direction of rotation (0,90,180,270 for choice), default is 0
sense.set_rotation(180)

# Set color R G B value
color_text = (0, 0, 255)
color_back = (0, 0, 0)
while True:
    # Obtain the humidity value on the sensor.
    humidity = sense.humidity
    # humidity = sense.get_humidity()

    # The terminal prints out the temperature value and saves two decimal places.
    print("Humidity: %0.2f %%RH" % humidity)

    # The parameter scroll_speed changes the scrolling speed, the default is 0.1,
    # text_colour is the font color , and back_colour is the background color.
    sense.show_message("humidity=%0.2f%%RH" % humidity,
```

scroll_speed=0.05,
text_colour=color_text, back_colour=color_back)

As shown below:

```
#!/usr/bin/python
from sense_hat import SenseHat

sense = SenseHat()

# Set the direction of rotation (0,90,180,270 for choice), default is 0
sense.set_rotation(180)

# Set color R G B value
color_text = (0, 0, 255)
color_back = (0, 0, 0)


while True:
    # Obtain the humidity value on the sensor.
    humidity = sense.humidity
    # humidity = sense.get_humidity()

    # The terminal prints out the temperature value and saves two decimal places.
    print("Humidity: %0.2f %%RH" % humidity)

    # The parameter scroll_speed changes the scrolling speed, the default is 0.1,
    # text_colour is the font color , and back_colour is the background color.
    sense.show_message("humidity=%0.2f%%RH" % humidity, scroll_speed=0.05,
                       text_colour=color_text, back_colour=color_back)
```

Please press Ctrl+O to save, press Ctrl+X to quit.

The code of the experiment, please refer to **humidity.py** in the Python sample program folder.

2.Commonly function

①Two methods to read the relative humidity percentage on the sensor.

```
# Obtain the humidity value on the sensor.
humidity = sense.humidity
# humidity = sense.get_humidity()
```

②Print the current relative humidity percentage through the terminal, save the two digits after the decimal point, and display it on the RGB matrix.

```
# The terminal prints out the temperature value and saves two decimal places.
print("Humidity: %0.2f %%RH" % humidity)

# The parameter scroll_speed changes the scrolling speed, the default is 0.1,
# text_colour is the font color , and back_colour is the background color.
sense.show_message("humidity=%0.2f%%RH" % humidity, scroll_speed=0.05,
                   text_colour=color_text, back_colour=color_back)
```

3.Running program

Input the following command to running:

python humidity.py

After running the program, the relative humidity percentage is printed on the terminal, and the RGB matrix scrolls to show “humidity=relative humidity percentage value.”

```
pi@raspberrypi:~/sense_hat $ python humidity.py
Humidity: 63.28 %RH
Humidity: 63.19 %RH
Humidity: 63.08 %RH
Humidity: 63.40 %RH
Humidity: 63.61 %RH
Humidity: 63.30 %RH
```