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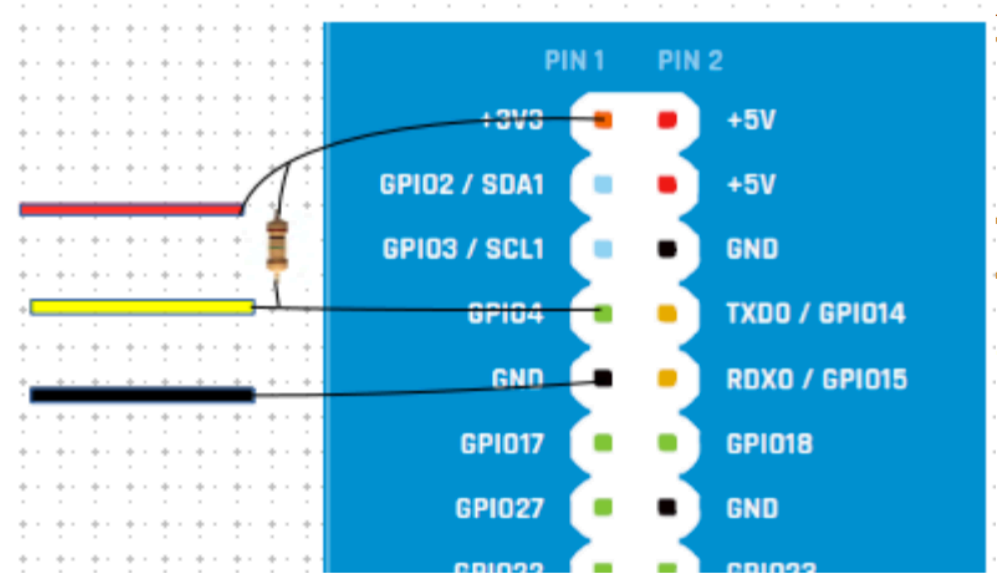
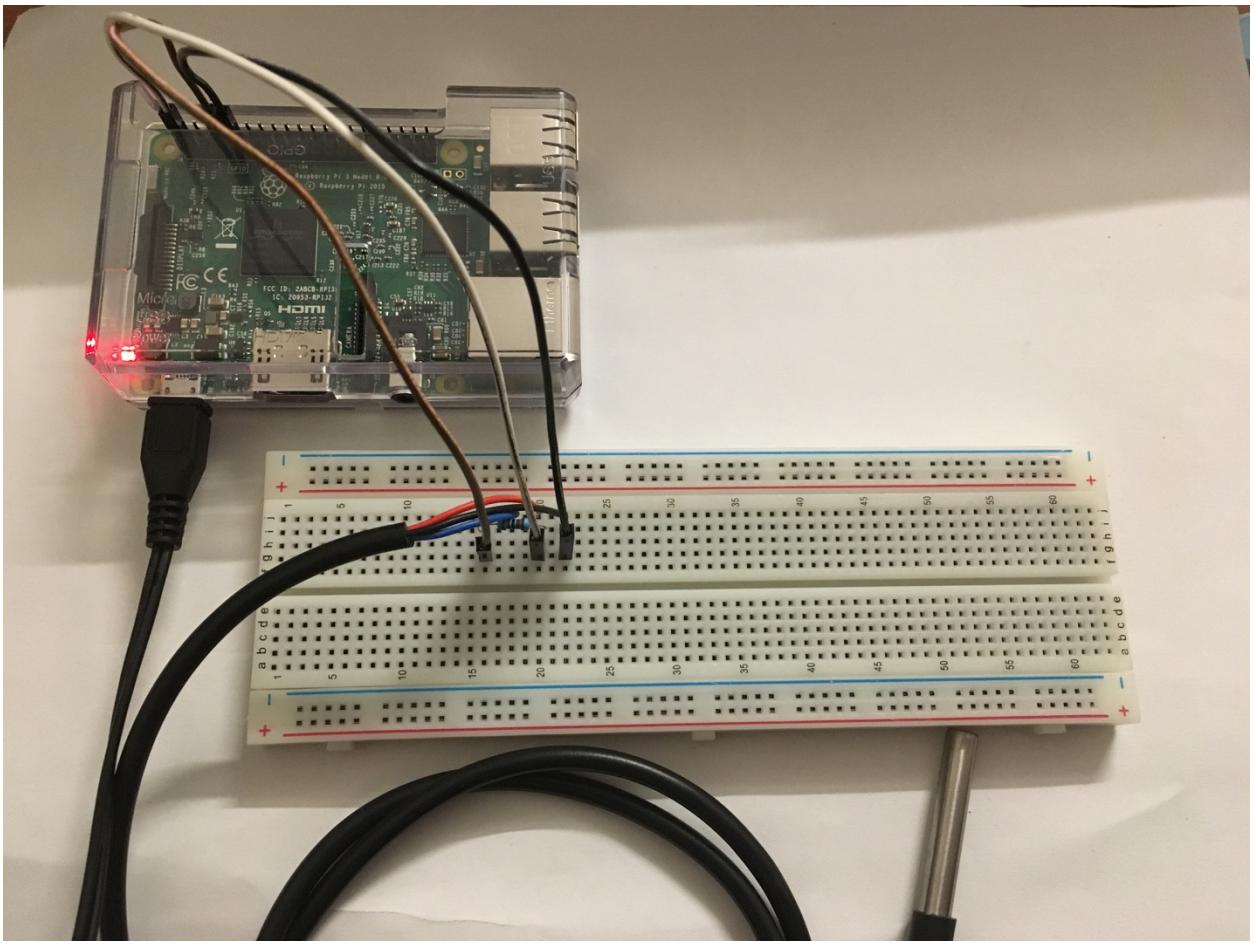
Embedded Linux Class

the Picture of Set up





Source code of log temperature data into database

```
#!/usr/bin/python
import os
import time
import sqlite3 as mydb
import sys

""" Log Current Time, Temperature in Celsius and Fahrenheit
     To an Sqlite3 database """

def readTemp():
     tempfile = open("/sys/bus/w1/devices/28-00044a3d8eff/w1_slave")
     tempfile_text = tempfile.read()
     currentTime=time.strftime('%x %X %Z')
     tempfile.close()
     tempC=float(tempfile_text.split("\n")[1].split("t=")[1])/1000
     tempF=tempC*9.0/5.0+32.0
     return [currentTime, tempC, tempF]

def logTemp():
     con = mydb.connect('/home/pi/Tests/temperature.db')
     with con:
         try:
             [t,C,F]=readTemp()
             print "Current temperature is: %s F" %F
             cur = con.cursor()
             #sql = "insert into TempData values(?,?,?)"
             cur.execute('insert into TempData values(?,?,?)', (t,C,F))
             print "Temperature logged"
         except:
             print "Error!!"


#print readTemp()
logTemp()
```

run the following code in the terminal and waits for 10 minutes to use CTRL + C to exit

while true ; do sudo python logTemperature.py & sleep 30; done

Source code of output data from database

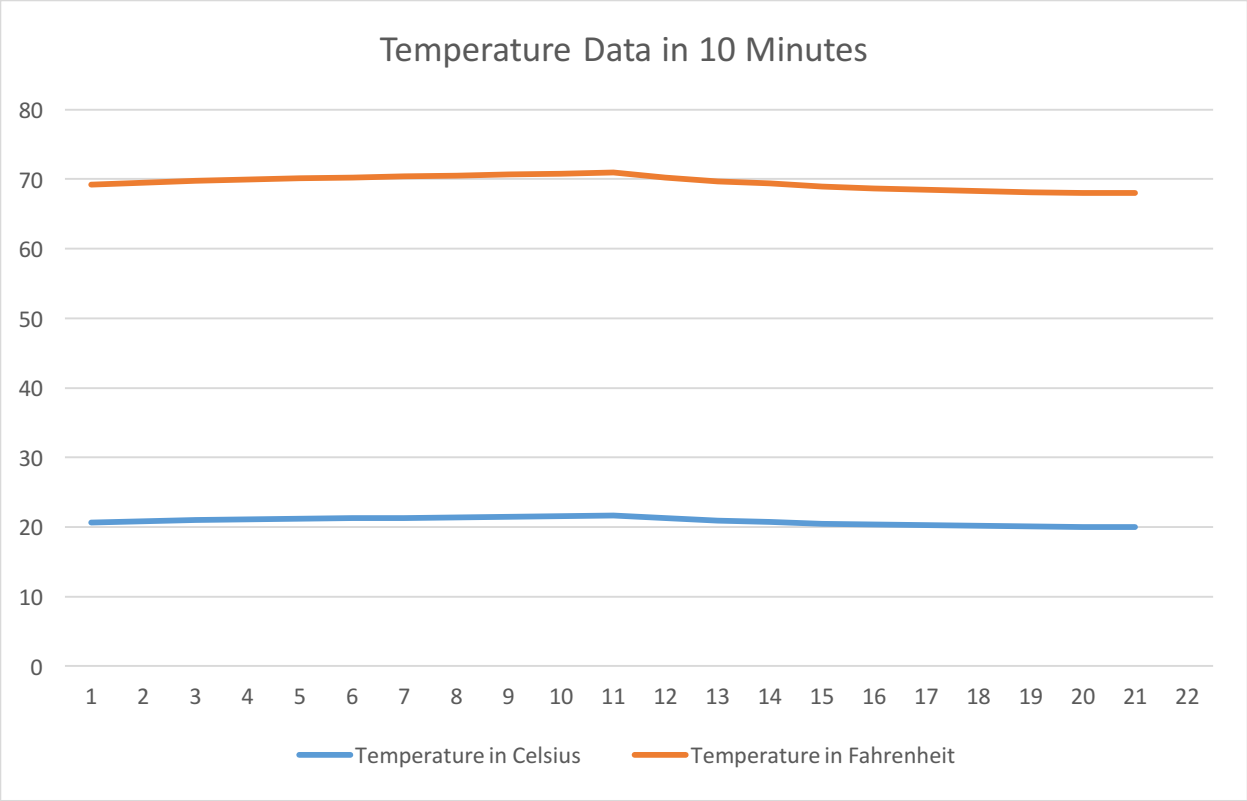
```
import sqlite3 as mydb
import sys

def output():

     con = mydb.connect('/home/pi/Tests/temperature.db')
     with con:
                 cur = con.cursor()
                 cur.execute("SELECT * FROM TempData")
                 for row in cur:
                     print(row)
output()
```

Table of Temperature Data

1	03/05/17 18:44:23 EST	20.687	69.2366
2	03/05/17 18:44:53 EST	20.812	69.4616
3	03/05/17 18:45:23 EST	21	69.8
4	03/05/17 18:45:53 EST	21.062	69.9116
5	03/05/17 18:46:23 EST	21.187	70.1366
6	03/05/17 18:46:53 EST	21.25	70.25
7	03/05/17 18:47:23 EST	21.312	70.3616
8	03/05/17 18:47:53 EST	21.375	70.475
9	03/05/17 18:48:23 EST	21.5	70.7
10	03/05/17 18:48:53 EST	21.562	70.8116
11	03/05/17 18:49:23 EST	21.625	70.925
12	03/05/17 18:49:53 EST	21.25	70.25
13	03/05/17 18:50:23 EST	20.937	69.6866
14	03/05/17 18:50:53 EST	20.75	69.35
15	03/05/17 18:51:23 EST	20.5	68.9
16	03/05/17 18:51:53 EST	20.375	68.675
17	03/05/17 18:52:23 EST	20.25	68.45
18	03/05/17 18:52:53 EST	20.187	68.3366
19	03/05/17 18:53:23 EST	20.062	68.1116
20	03/05/17 18:53:53 EST	20	68
21	03/05/17 18:54:23 EST	20	68


Temperature Data in 10 Minutes
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
Temperature in Celsius
Temperature in Fahrenheit