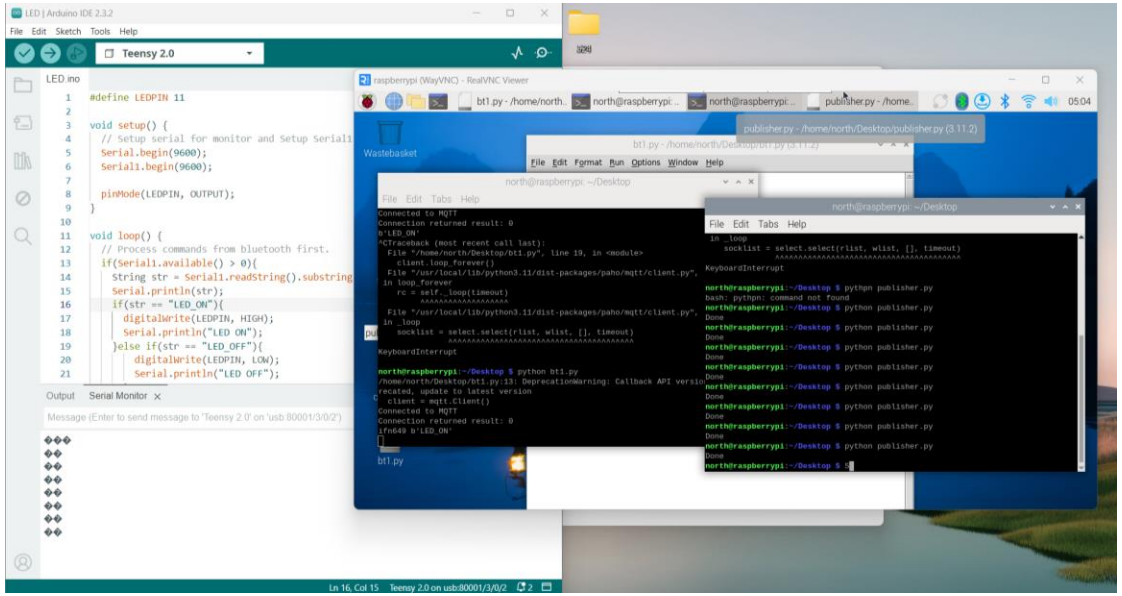
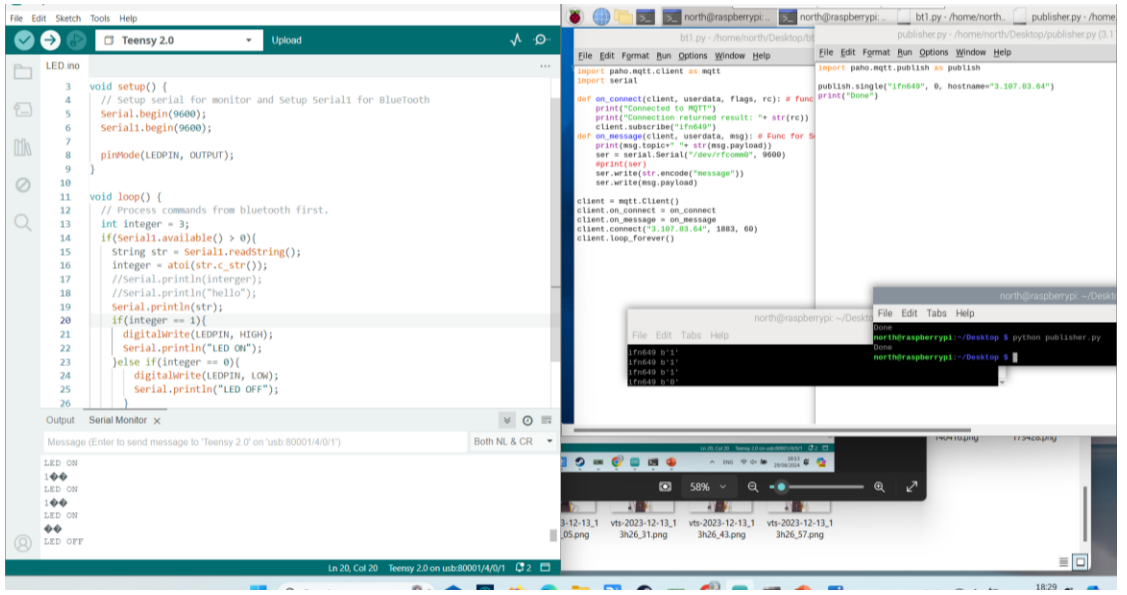
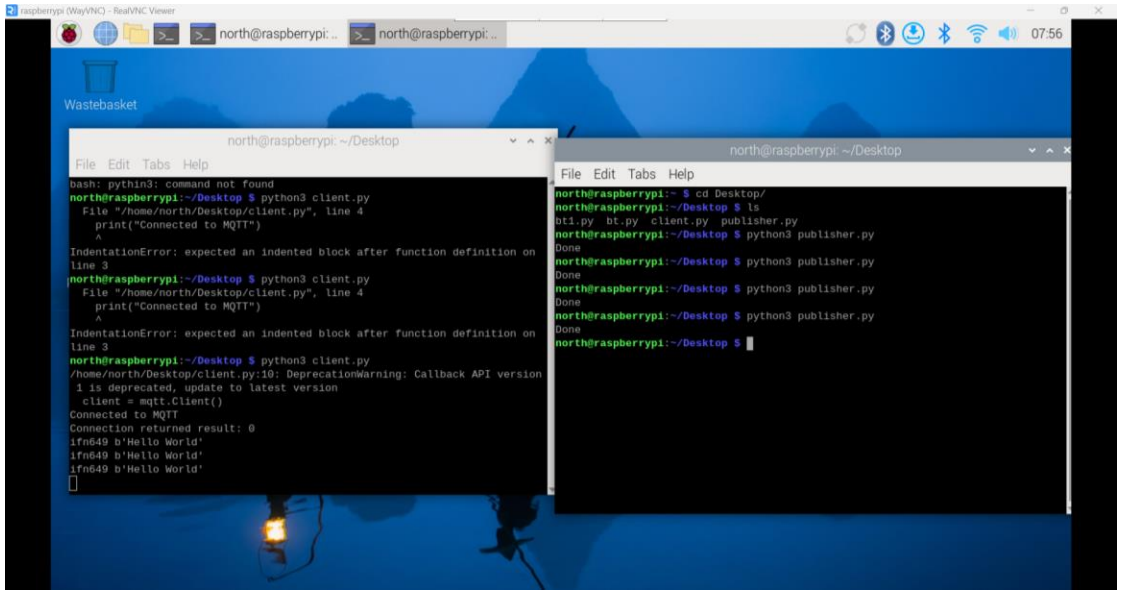
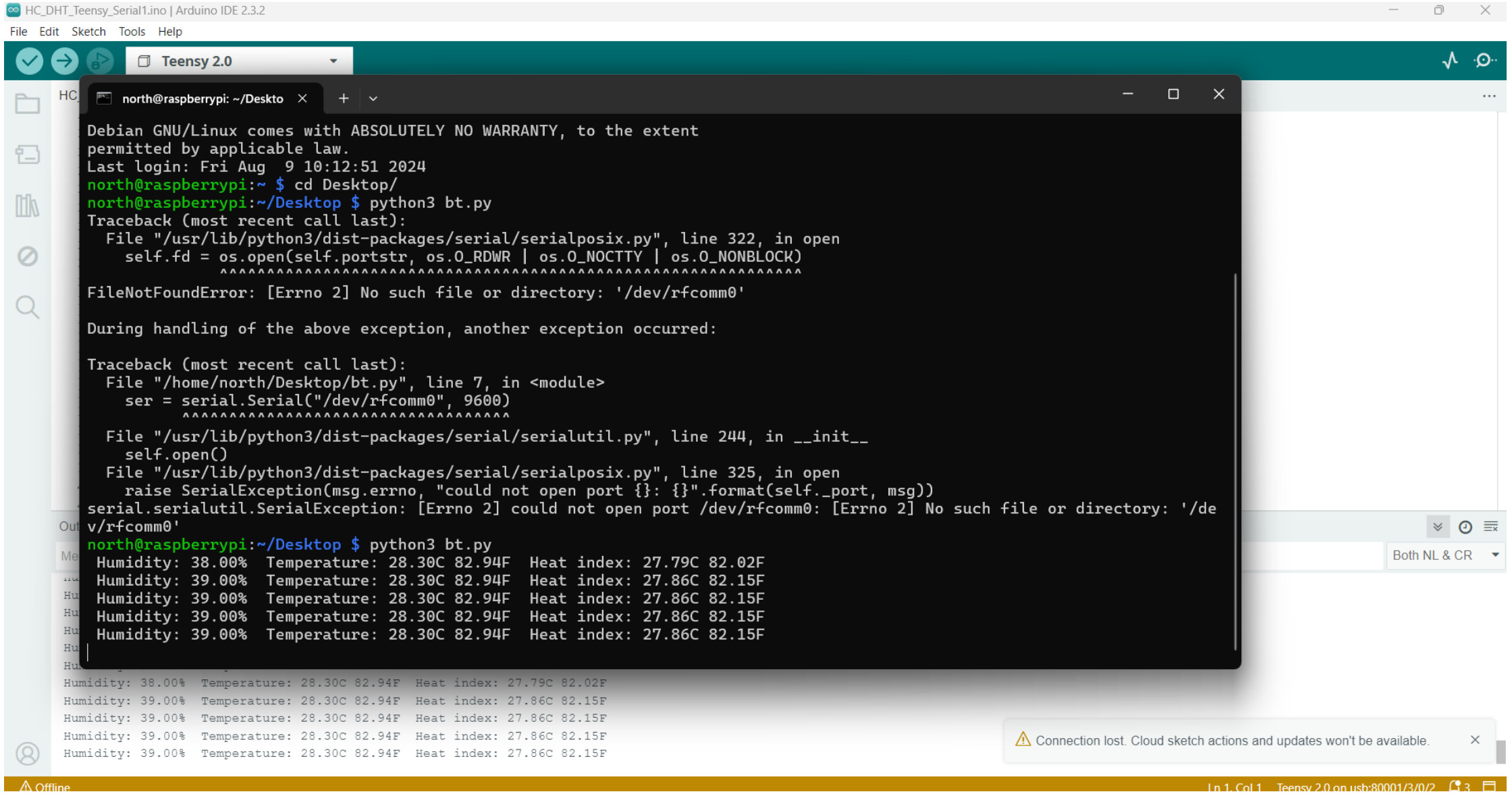

LED | Arduino IDE 2.3.2
Teensy 2.0
LED.ino
#define LEDPIN 11
void setup() {
// Setup serial for monitor and Setup Serial1
Serial.begin(9600);
Serial1.begin(9600);
pinMode(LEDPIN, OUTPUT);
}
void loop() {
// Process commands from bluetooth first.
if(Serial1.available() > 0){
String str = Serial1.readString().substring
Serial.println(str);
if(str == "LED_ON"){
digitalWrite(LEDPIN, HIGH);
Serial.println("LED ON");
}else if(str == "LED_OFF"){
digitalWrite(LEDPIN, LOW);
Serial.println("LED OFF");
Output
Serial Monitor
Message (Enter to send message to 'Teensy 2.0' on 'usb:80001/3/0/2')
Ln 16, Col 15
Teensy 2.0 on usb:80001/3/0/2
raspberrypi (WayVNC) - RealVNC Viewer
Wastebasket
bt1.py
publisher.py - /home/north/Desktop/publisher.py (3.11.2)
north@raspberrypi: ~/Desktop
Connected to MQTT
Connection returned result: 0
b'LED_ON'
^CTraceback (most recent call last):
File "/home/north/Desktop/bt1.py", line 19, in <module>
client.loop_forever()
File "/usr/local/lib/python3.11/dist-packages/paho/mqtt/client.py",
in loop_forever
rc = self._loop(timeout)
File "/usr/local/lib/python3.11/dist-packages/paho/mqtt/client.py",
in _loop
socklist = select.select(rlist, wlist, [], timeout)
KeyboardInterrupt
north@raspberrypi:~/Desktop $ python bt1.py
/home/north/Desktop/bt1.py:13: DeprecationWarning: Callback API version 1 is deprecated, update to latest version
client = mqtt.Client()
Connected to MQTT
Connection returned result: 0
ifn649 b'LED_ON'
north@raspberrypi:~/Desktop $ pythpn publisher.py
bash: pythpn: command not found
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $ s

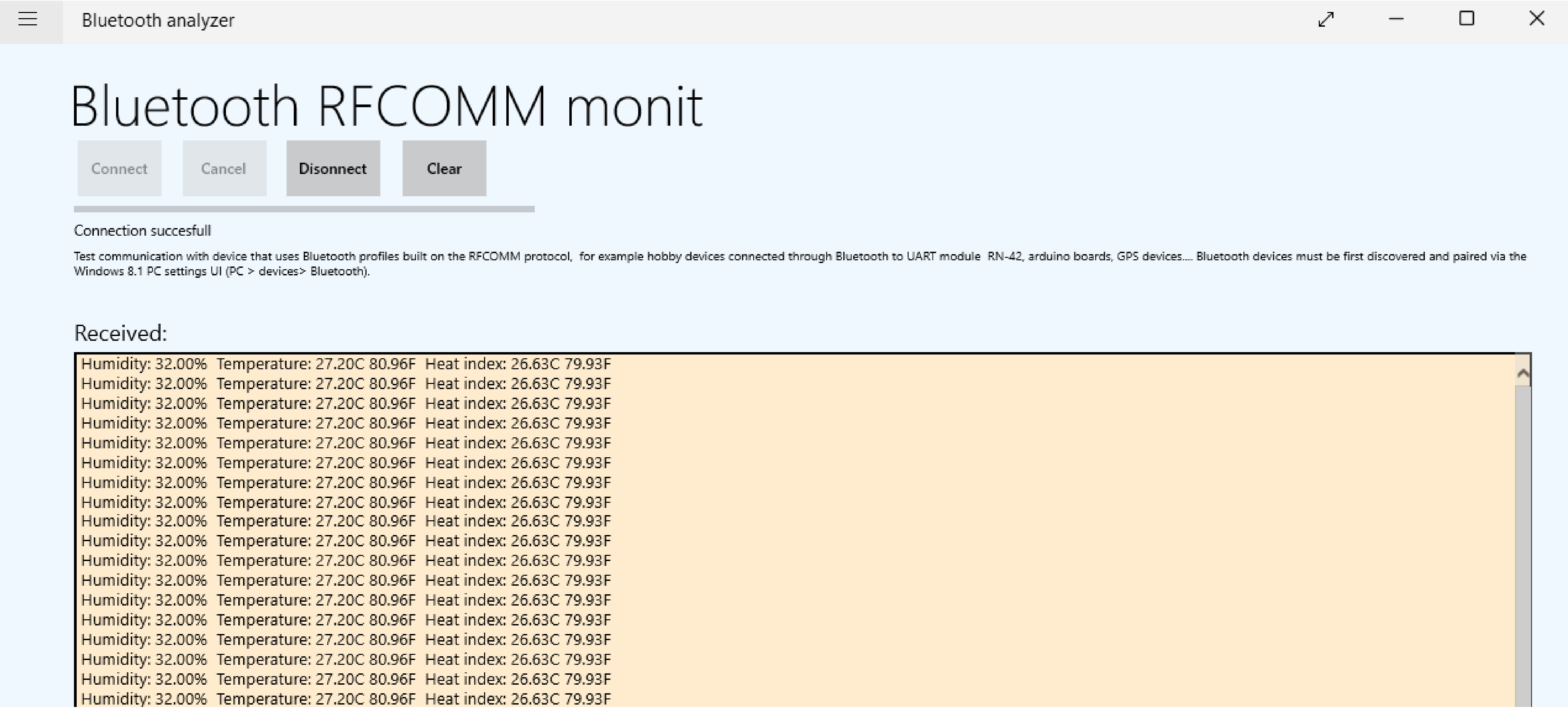

Teensy 2.0
Upload
LED.ino
void setup() {
// Setup serial for monitor and Setup Serial1 for BlueTooth
Serial.begin(9600);
Serial1.begin(9600);
pinMode(LEDPIN, OUTPUT);
}
void loop() {
// Process commands from bluetooth first.
int integer = 3;
if(Serial1.available() > 0){
String str = Serial1.readString();
integer = atoi(str.c_str());
//Serial.println(interger);
//Serial.println("hello");
Serial.println(str);
if(integer == 1){
digitalWrite(LEDPIN, HIGH);
Serial.println("LED ON");
}else if(integer == 0){
digitalWrite(LEDPIN, LOW);
Serial.println("LED OFF");
Output
Serial Monitor
Message (Enter to send message to 'Teensy 2.0' on 'usb:80001/4/0/1')
Both NL & CR
LED ON
1
LED ON
1
LED ON
LED OFF
Ln 20, Col 20
Teensy 2.0 on usb:80001/4/0/1
bt1.py - /home/north/Desktop/bt1.py (3.11.2)
import paho.mqtt.client as mqtt
import serial
def on_connect(client, userdata, flags, rc): # func
print("Connected to MQTT")
print("Connection returned result: "+ str(rc))
client.subscribe("ifn649")
def on_message(client, userdata, msg): # Func for S
print(msg.topic+" "+ str(msg.payload))
ser = serial.Serial("/dev/rfcomm0", 9600)
#print(ser)
ser.write(str.encode("message"))
ser.write(msg.payload)
client = mqtt.Client()
client.on_connect = on_connect
client.on_message = on_message
client.connect("3.107.83.64", 1883, 60)
client.loop_forever()
publisher.py - /home/north/Desktop/publisher.py (3.11.2)
import paho.mqtt.publish as publish
publish.single("ifn649", 0, hostname="3.107.83.64")
print("Done")
north@raspberrypi:~/Desktop $ python publisher.py
Done
north@raspberrypi:~/Desktop $
ifn649 b'1'
ifn649 b'1'
ifn649 b'1'
ifn649 b'0'
58%
vts-2023-12-13_1 3h26_31.png
vts-2023-12-13_1 3h26_43.png
vts-2023-12-13_1 3h26_57.png

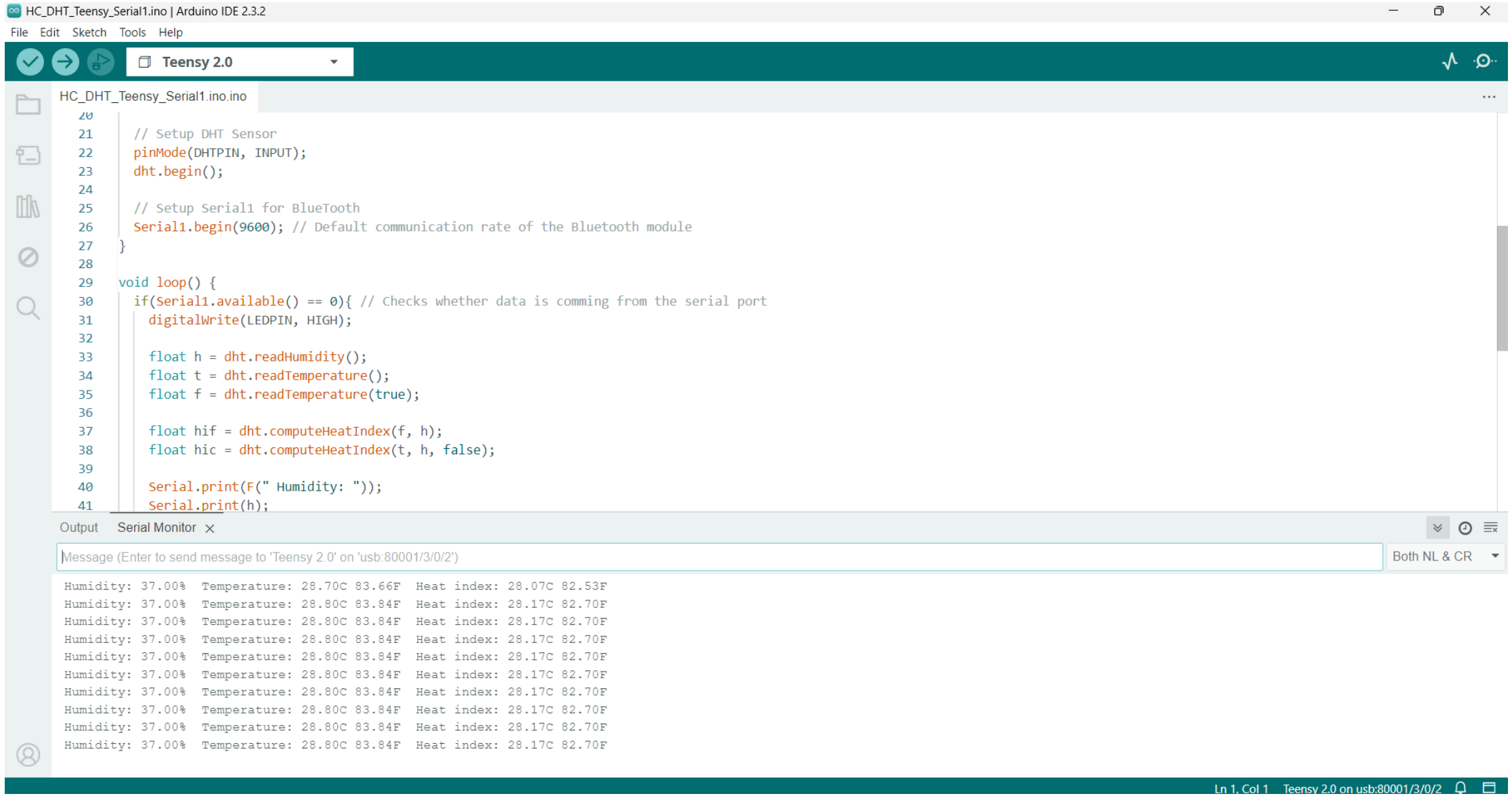



```
[ec2-user@ip-172-31-41-236 ~]$ sudo apt update
sudo: apt: command not found
[ec2-user@ip-172-31-41-236 ~]$ mosquitto_sub -h localhost -t "test"
> ^C
[ec2-user@ip-172-31-41-236 ~]$ sudo
usage: sudo -h | -K | -k | -V
usage: sudo -v [-AknS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-AknS] [-g group] [-h host] [-p prompt] [-U user] [-u user]
            [command]
usage: sudo [-AbEHknPS] [-r role] [-t type] [-C num] [-g group] [-h host]
            [-p prompt] [-T timeout] [-u user] [VAR=value] [-i|-s]
            [<command>]
usage: sudo -e [-AknS] [-r role] [-t type] [-C num] [-g group] [-h host]
            [-p prompt] [-T timeout] [-u user] file ...
[ec2-user@ip-172-31-41-236 ~]$ mosquitto_sub -h localhost -t "test"
> mosquitto_sub -h localhost -t test
> ^C
[ec2-user@ip-172-31-41-236 ~]$ mosquitto_sub -h localhost -t "test"
> ^C
[ec2-user@ip-172-31-41-236 ~]$ mosquitto_sub -h localhost
Error: You must specify a topic to subscribe to.

Use 'mosquitto_sub --help' to see usage.
[ec2-user@ip-172-31-41-236 ~]$ mosquitto_sub -h localhost -t test
hello
client_loop: send disconnect: Connection reset

C:\Users\USER\Downloads\649\w4>
```

```
ypted
          communication.
 --capath : path to a directory containing trusted CA certificates to enable
 encrypted
          communication.
 --cert : client certificate for authentication, if required by server.
 --key : client private key for authentication, if required by server.
 --keyform : keyfile type, can be either "pem" or "engine".
 --ciphers : openssl compatible list of TLS ciphers to support.
 --tls-version : TLS protocol version, can be one of tlsv1.3 tlsv1.2 or tlsv
1.1.
                 Defaults to tlsv1.2 if available.
 --insecure : do not check that the server certificate hostname matches the
remote
              hostname. Using this option means that you cannot be sure that
 the
              remote host is the server you wish to connect to and so is ins
ecure.
              Do not use this option in a production environment.
 --tls-engine : If set, enables the use of a TLS engine device.
 --tls-engine-kpass-sha1 : SHA1 of the key password to be used with the sele
cted SSL engine.
 --psk : pre-shared-key in hexadecimal (no leading 0x) to enable TLS-PSK mod
e.
 --psk-identity : client identity string for TLS-PSK mode.
 --proxy : SOCKS5 proxy URL of the form:
           socks5h://[username[:password]@]hostname[:port]
          Only "none" and "username" authentication is supported.

See https://mosquitto.org/ for more information.

[ec2-user@ip-172-31-41-236 ~]$ mosquitto_pub -h localhost -t "test" -m "hell
o"
[ec2-user@ip-172-31-41-236 ~]$ mosquitto_pub -h localhost -t "test" -m "hell
o"
[ec2-user@ip-172-31-41-236 ~]$ client_loop: send disconnect: Connection rese
t
```


HC_DHT_Teensy_Serial1.ino | Arduino IDE 2.3.2
File Edit Sketch Tools Help
Teensy 2.0
north@raspberrypi: ~/Deskto
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Aug 9 10:12:51 2024
north@raspberrypi:~ $ cd Desktop/
north@raspberrypi:~/Desktop $ python3 bt.py
Traceback (most recent call last):
File "/usr/lib/python3/dist-packages/serial/serialposix.py", line 322, in open
self.fd = os.open(self.portstr, os.O_RDWR | os.O_NOCTTY | os.O_NONBLOCK)
FileNotFoundError: [Errno 2] No such file or directory: '/dev/rfcomm0'
During handling of the above exception, another exception occurred:
Traceback (most recent call last):
File "/home/north/Desktop/bt.py", line 7, in <module>
ser = serial.Serial("/dev/rfcomm0", 9600)
File "/usr/lib/python3/dist-packages/serial/serialutil.py", line 244, in __init__
self.open()
File "/usr/lib/python3/dist-packages/serial/serialposix.py", line 325, in open
raise SerialException(msg.errno, "could not open port {}: {}".format(self._port, msg))
serial.serialutil.SerialException: [Errno 2] could not open port /dev/rfcomm0: [Errno 2] No such file or directory: '/dev/rfcomm0'
north@raspberrypi:~/Desktop $ python3 bt.py
Humidity: 38.00% Temperature: 28.30C 82.94F Heat index: 27.79C 82.02F
Humidity: 39.00% Temperature: 28.30C 82.94F Heat index: 27.86C 82.15F
Humidity: 39.00% Temperature: 28.30C 82.94F Heat index: 27.86C 82.15F
Humidity: 39.00% Temperature: 28.30C 82.94F Heat index: 27.86C 82.15F
Humidity: 39.00% Temperature: 28.30C 82.94F Heat index: 27.86C 82.15F
Both NL & CR
Connection lost. Cloud sketch actions and updates won't be available.
Offline
Ln 1, Col 1 Teensy 2.0 on usb:80001/3/0/2


Bluetooth analyzer
Bluetooth RFCOMM monit
Connect
Cancel
Disonnect
Clear
Connection succesfull
Test communication with device that uses Bluetooth profiles built on the RFCOMM protocol, for example hobby devices connected through Bluetooth to UART module RN-42, arduino boards, GPS devices.... Bluetooth devices must be first discovered and paired via the Windows 8.1 PC settings UI (PC > devices> Bluetooth).
Received:
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F
Humidity: 32.00% Temperature: 27.20C 80.96F Heat index: 26.63C 79.93F


HC_DHT_Teensy_Serial1.ino | Arduino IDE 2.3.2
File Edit Sketch Tools Help
Teensy 2.0
HC_DHT_Teensy_Serial1.ino.ino
// Setup DHT Sensor
pinMode(DHTPIN, INPUT);
dht.begin();
// Setup Serial1 for BlueTooth
Serial1.begin(9600); // Default communication rate of the Bluetooth module
}
void loop() {
if(Serial1.available() == 0){ // Checks whether data is comming from the serial port
digitalWrite(LEDPIN, HIGH);
float h = dht.readHumidity();
float t = dht.readTemperature();
float f = dht.readTemperature(true);
float hif = dht.computeHeatIndex(f, h);
float hic = dht.computeHeatIndex(t, h, false);
Serial.print(F(" Humidity: "));
Serial.print(h);
Output
Serial Monitor
Message (Enter to send message to 'Teensy 2.0' on 'usb:80001/3/0/2')
Both NL & CR
Humidity: 37.00% Temperature: 28.70C 83.66F Heat index: 28.07C 82.53F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Humidity: 37.00% Temperature: 28.80C 83.84F Heat index: 28.17C 82.70F
Ln 1, Col 1
Teensy 2.0 on usb:80001/3/0/2

GitHub link

https://github.com/TakawatP/IFN649.git