

SPRINT-4

CODE IMPLEMENTATION

TEAM ID	PNT2022TMID44500
PROJECT TITLE	REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM
TEAM LEADER	JEEVIKA R
TEAM MEMBER 1	JAISRI S
TEAM MEMBER 2	LOGALAKSHMI S
TEAM MEMBER 3	NEHRU V
TEAM MEMBER 4	SIVARANJANI M

```
import serial
import time

import csv
import numpy as np
import matplotlib.pyplot as plt

ser = serial.Serial('/COM6',9600)

ser_bytes = ser.readline(10)
```

```

print (ser_bytes)
ser.flushInput() while True:

try:
ser_bytes = ser.readline() decoded_bytes =
float(ser_bytes[0:len(ser_bytes)-2].decode("utf-8"))
print(decoded_bytes)

```

```

temp = float(decoded_bytes(1:3)) turb =
float(decoded_bytes(4:6))    pH    =
float(decoded_bytes(6:8))    with
open("test_data.csv","a") as f: writer =
csv.writer(f,delimiter=",")

```

```

writer.writerow([time.time(),decoded_b
ytes])    except:    print("Keyboard
Interrupt")    ser.close()    break() t =
np.arange(0.0, 2.0, 0.01) s = 1 +

```

```

np.sin(2*np.pi*t)    plt.plot(t,    s)
plt.xlabel('time (s)') plt.ylabel('Celsius
(C)')    plt.title('Temperature')
plt.grid(True)

```

```

plt.savefig("Temperature.png")
plt.show()    Serial.begin(9600);
sensors.begin();    int sensorValue =

```

```

    analogRead(A1);          voltage    =
    sensorValue * (5.0 / 1024.0);

}

void loop(void)
{
    sensors.requestTemperatures();

    Celcius=sensors.getTempCByIndex(0);
    Fahrenheit=sensors.toFahrenheit(Celci

us); for(int i=0;i<10;i++)
{
    buf[i]=analogRead(analogInPin); delay(10);

}
for(int i=0;i<9;i++)
{
    for(int j=i+1;j<10;j++)
    {
        if(buf[i]>buf[j])

        {
            temp=buf[i];
            buf[i]=buf[j];
            buf[j]=temp;
        }
    }
}

```

```

n = 256
X = np.linspace(-np.pi, np.pi, 256, endpoint=True)
C,S = np.cos(X),
np.sin(X) plt.plot(X, C) plt.plot(X,S) plt.show()
print ("Visualization of real time sensor
Data.") print("/n") while True:
try:
ser_bytes = ser.readline() decoded_bytes =
float(ser_bytes[0:len(ser_bytes)-2].decode("utf-8"))
print(decoded_bytes) temp = float(decoded_bytes(1:3))
turb = float(decoded_bytes(4:6)) pH =
float(decoded_bytes(6:8)) with open("test_data.csv","a")
as f: writer = csv.writer(f,delimiter=",")
writer.writerow([time.time(),decoded_bytes]) except:
print("Keyboard Interrupt") ser.close() break() t =
np.arange(0.0, 2.0, 0.01) s = 1 + np.sin(2*np.pi*t) plt.plot(t,
s)

```