SPRINT-4

CODE IMPLEMENTATION

TEAM ID	PNT2022TMID04198
PROJECT TITLE	REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM
TEAM LEADER	NITHINKUMAR G
TEAM MEMBER 1	SURYA PRAKASH R
TEAM MEMBER 2	ANUPRIYA V
TEAM MEMBER 3	SNEGA 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_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)

plt.xlabel('time (s)')

plt.ylabel('Celsisus (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(Celcius);
 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)
```