**SPRINT-4**

**CODE IMPLEMENTATION**

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| TEAM ID | PNT2022TMID44500 |
| PROJECT TITLE | REAL-TIME RIVER WATER QUALITY MONITORING AND  CONTROL SYSTEM |
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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('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(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:

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s)