SPRINT 4

Team ID : **PNT2022TMID21316**

Project Name : Real-Time River Water Quality Monitoring andControl System

```
#include
<OneWire.h>
                    #include <DallasTemperature.h>
                    #define ONE_WIRE_BUS 5
                    OneWire oneWire(ONE_WIRE_BUS);
                    DallasTemperature sensors(&oneWire);
                    float Celcius=0;
                    float Fahrenheit=0;
                    float voltage=0;
                    const int analogInPin = A0;
                    int sensorValue = 0;
                    unsigned long int avgValue;
                    float b;
                    int buf[10],temp;
                    void setup(void)
                    {

                     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;
  }
   }
}
for(int i=2;i<8;i++)
avgValue+=buf[i];
float pHVol=(float)avgValue*5.0/1024/6;
float phValue = -5.70 * pHVol + 21.34;
Serial.println(phValue);
Serial.print("pH");


  Serial.print(" C ");
  Serial.print(Celcius);

  Serial.print(voltage);
  Serial.print("V");
  delay(10000);
}
```

OUTPUT: