

SPRINT-4

CODE FOR ARDUINO

TEAM ID	PNT2022TMID38782
PROJECT TITLE	Real-Time River Water Quality Monitoring and Control System
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```
#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);
```

```
}
```