```c
//pH meter Analog output to Arduino
#define SensorPin A0

//Calibration Value Sensor Value - pH Value Neutral (7) deviation compensate for sensor
#define Offset 0.00

//Store the average value of the sensor
unsigned long int avgValue;

//Arduino Onboard LED
int arduinoled = 13;

//Sets Arduino Pin to LED Module Color Red
int redPin = 11;

//Sets Arduino Pin to LED Module Color Green
int greenPin = 10;

//Sets Arduino Pin to LED Module Color Blue
int bluePin = 9;

void setup()
{
    pinMode(redPin, OUTPUT); //Sets Arduino pin 11 (Red) to only sending Signals out to the LED Module
    pinMode(greenPin, OUTPUT); //Sets Arduino pin 10 (Green) to only sending Signals out to the LED Module
    pinMode(bluePin, OUTPUT); //Sets Arduino pin 9 (Blue) to only sending Signals out to the LED Module
    pinMode(arduinoled, OUTPUT); //Sets Arduino pin 13 (Arduino Onboard LED) to only sending Signals
    Serial.begin(9600); //Connects Arduino Data Output to Serial Monitor in the Arduino IDE
    Serial.println("Ready"); //Test the serial monitor
}

void loop()
{
    //Get 10 sample value from the sensor for smooth the value
    int buf[10]; //buffer for read analog
    for(int i=0; i<10; i++)
    {
        buf[i]=analogRead(SensorPin); //Analog Read takes in 10 readings and assigns to a 1 Dimensional Array
        delay(10); //10 millisecond Delay to allow sensor processing time
    }
    for(int i=0; i<9; i++) //Sort Sensor Readings from small to large to find average
    {
        for(int j=i+1; j<10; j++)
        {
```
if(buf[i]>buf[j])
{
    int temp=buf[i];
    buf[i]=buf[j];
    buf[j]=temp;
}
}
avgValue=0;
for(int i=2;i<8;i++) //take the average value of 6 center sample
    avgValue+=buf[i];
float phValue=(float)avgValue*5.0/1024/6; //convert the analog into millivolt
phValue=3.5*phValue+Offset; //convert the millivolt into pH

//Outputs pH Sensor Average Value
Serial.print("pH Value: ");
Serial.print(phValue,2);
Serial.println();

//Turns on LED on Arduino when a average value is calculated
digitalWrite(arduinoled ,HIGH);
delay(800);
digitalWrite(arduinoled , LOW);

//Neutral = LED Color Green
if (phValue>=6.8 && phValue<=7.2) // Range for sensor error
{
    setColor (0,255,0); //3 numbers represent RGB (Red, Gree, Blue) scale 0-255; Values passed to Function Setcolor turning on the Red
}

//Bases = LED Color Yellow
else if (phValue < 7)
{
    setColor (255, 50, 0); //3 numbers represent RGB (Red, Gree, Blue) scale 0-255; Values passed to Function Setcolor turning on the Red
}

// Acids = LED Color Red
else
{
    setColor (255, 0,0); //3 numbers represent RGB (Red, Green, Blue) scale 0-255; Values passed to Function Setcolor turning on the Red
}
void setColor(int red, int green, int blue)       //Function to assign LED Color
Range 0-255 on the Red, Green, Blue Color Spectrum
{
analogWrite(redPin, red);
analogWrite(greenPin, green);
analogWrite(bluePin, blue);
}