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Program: Internet Of Things (IoT)

Booklet: All Arduino Programs

Date: 31-Jul-2021

No# 01//Hello World

void setup()

{

Serial.begin(9600);

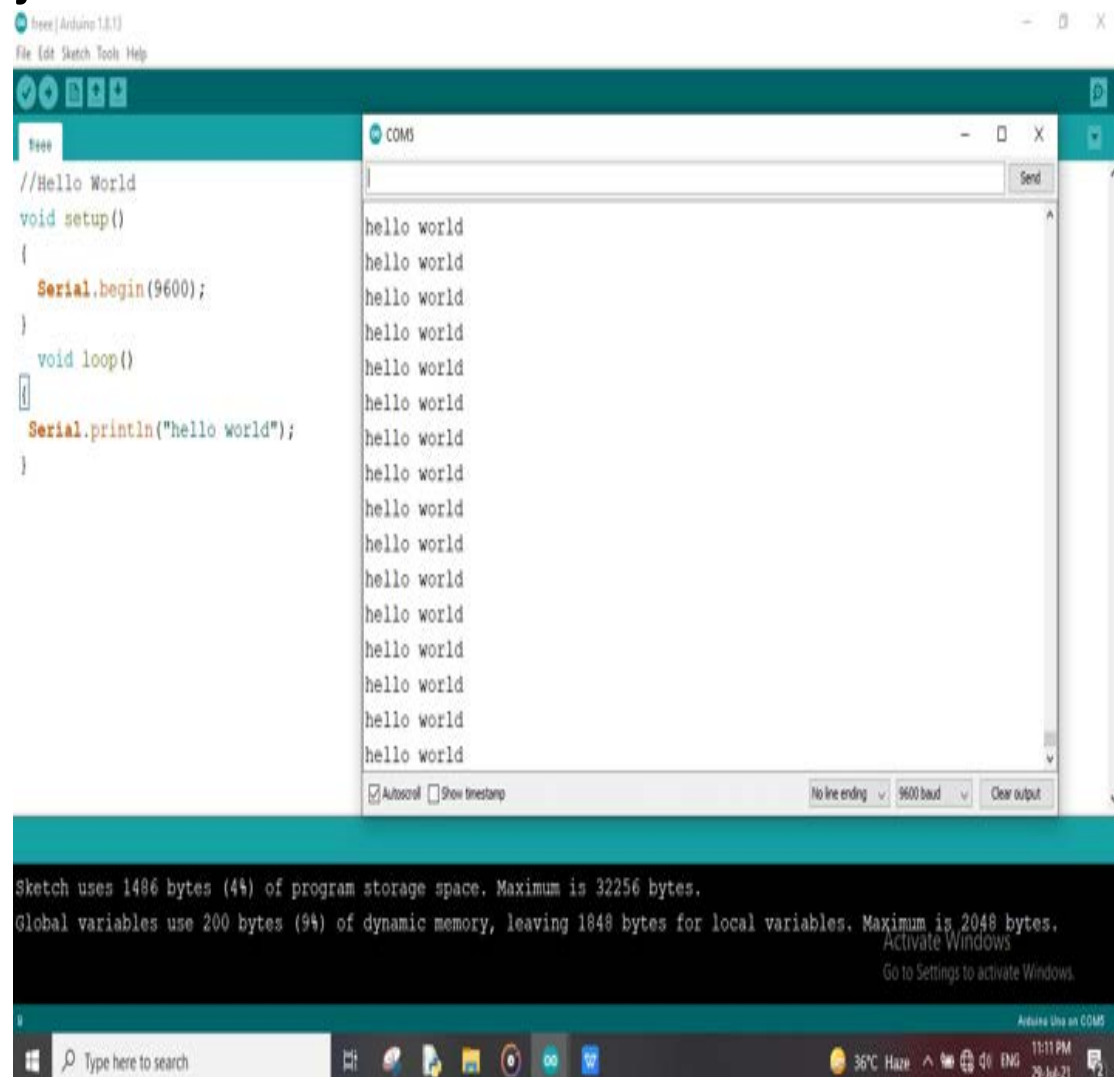
}

void loop()

{

Serial.println("hello world");

}



No#02//Hello world

void setup()

{

Serial.begin(9600);

}

void loop()

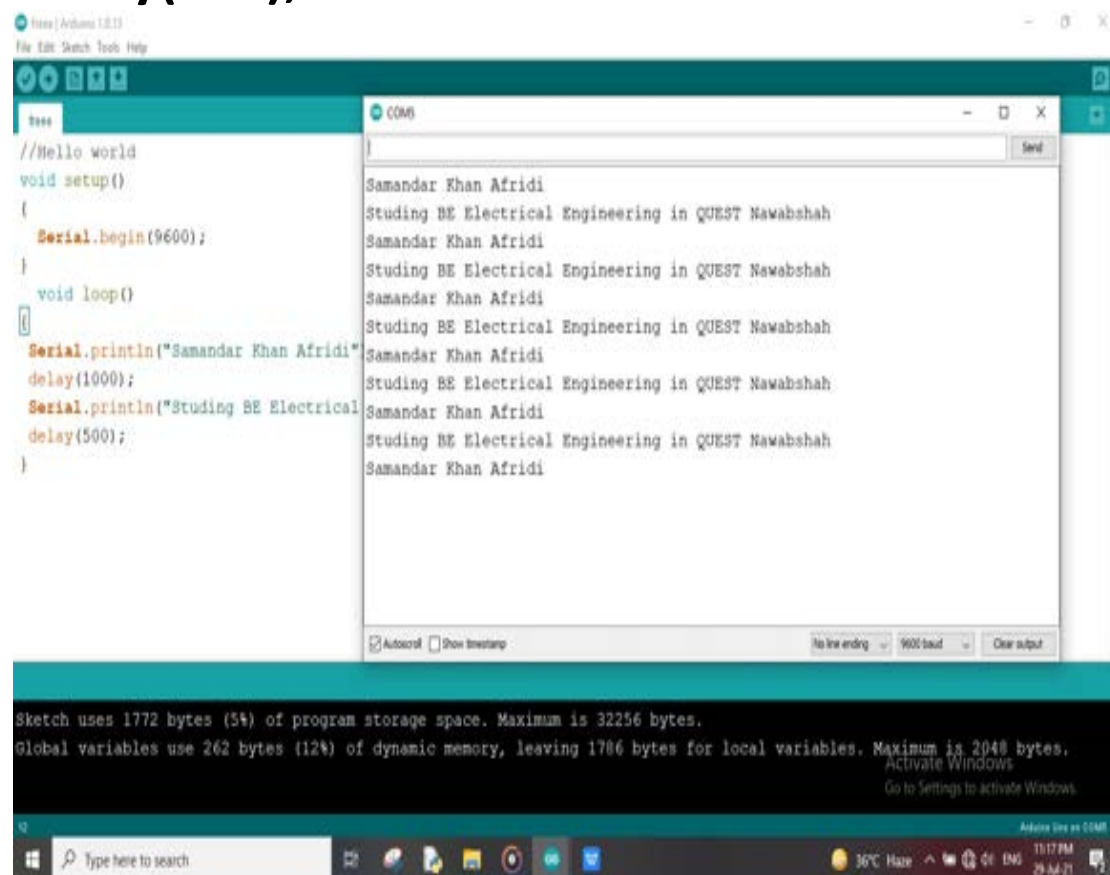
{

Serial.println("Samandar Khan Afridi");

delay(1000);

**Serial.println("Studing BE Electrical
Engineering in QUEST Nawabshah");**

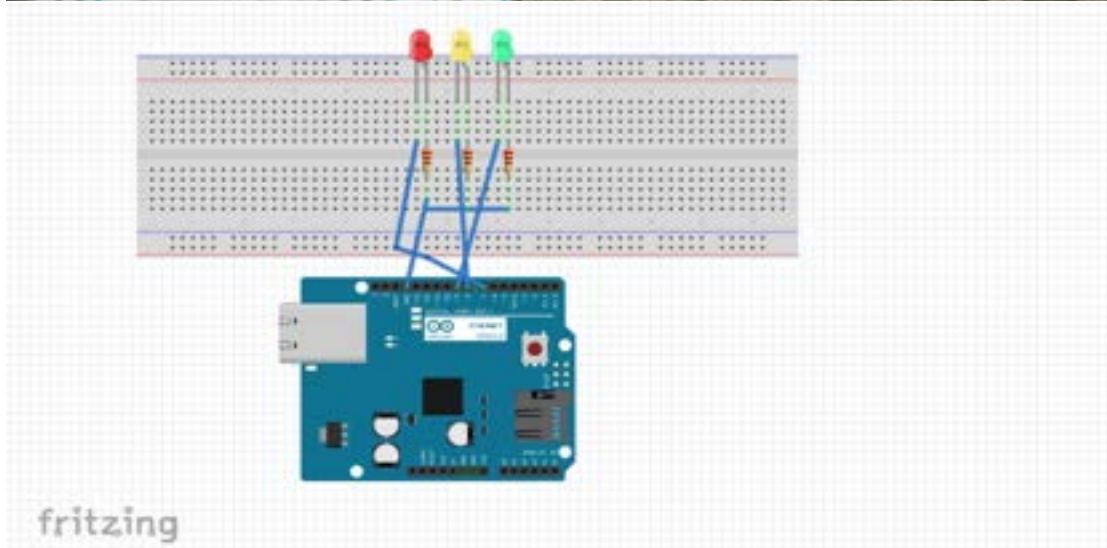
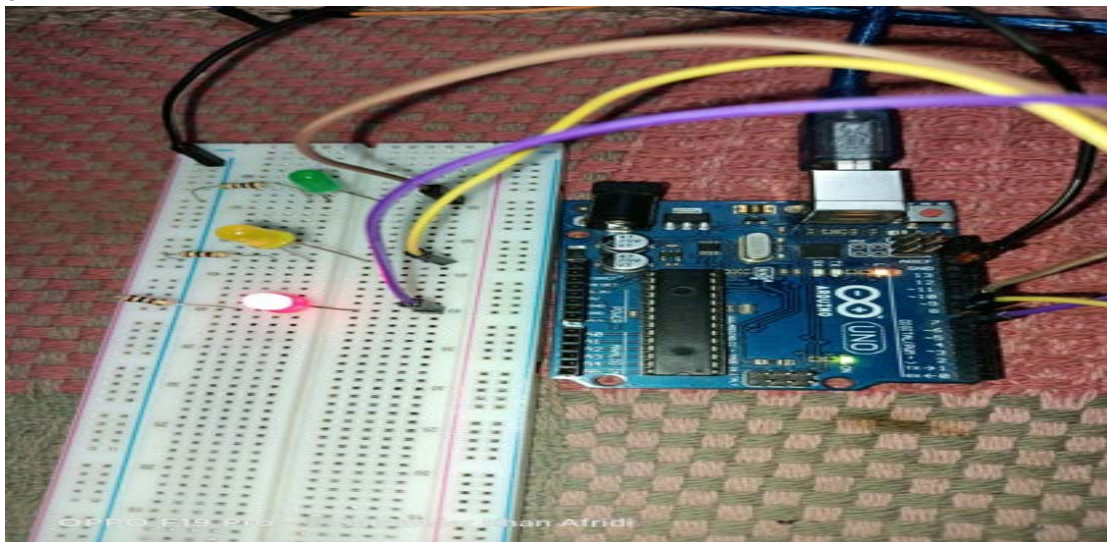
delay(500);



No#03//Traffic Signals

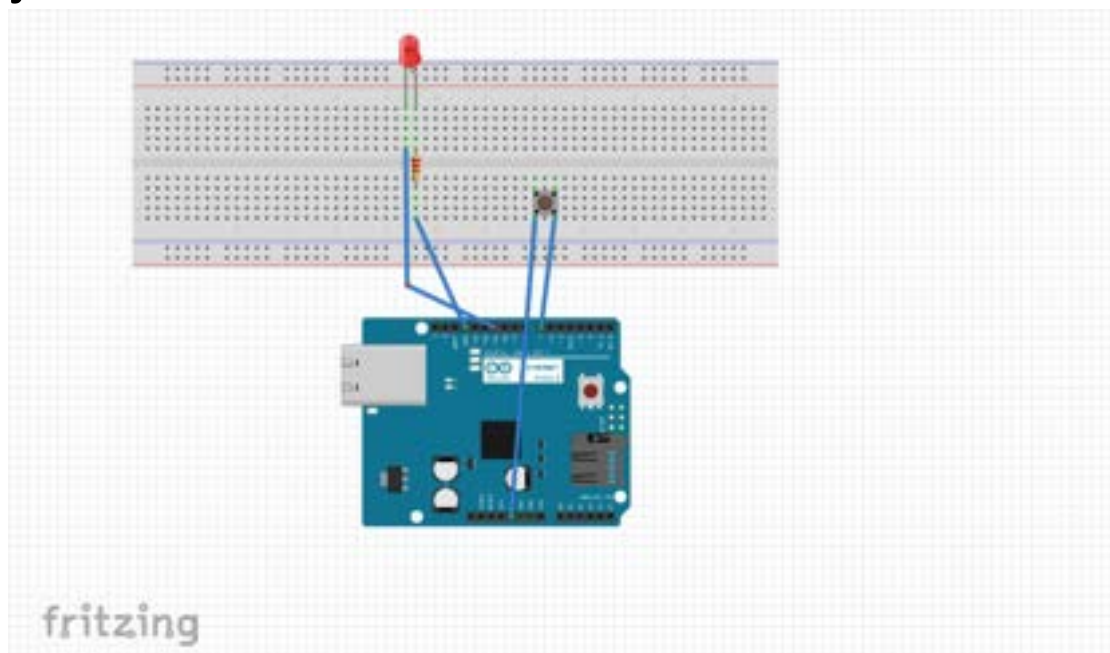
```
#define RED 7
#define YELLOW 8
#define GREEN 9
void setup()
{
  pinMode(RED,OUTPUT);
  pinMode(YELLOW,OUTPUT);
  pinMode(GREEN,OUTPUT);
}
void loop()
{
  digitalWrite(RED,HIGH);
  digitalWrite(YELLOW,LOW);
  digitalWrite(GREEN,LOW);
  delay(5000);
  digitalWrite(YELLOW,HIGH);
  digitalWrite(RED,LOW);
  digitalWrite(GREEN,LOW);
  delay(2000);
  digitalWrite(GREEN,HIGH);
  digitalWrite(RED,LOW);
  digitalWrite(YELLOW,LOW);
```

```
delay(5000);  
digitalWrite(RED,HIGH);  
digitalWrite(YELLOW,LOW);  
digitalWrite(GREEN,LOW);  
delay(5000);  
digitalWrite(YELLOW,HIGH);  
digitalWrite(RED,LOW);  
digitalWrite(GREEN,LOW);  
delay(2000);  
}
```



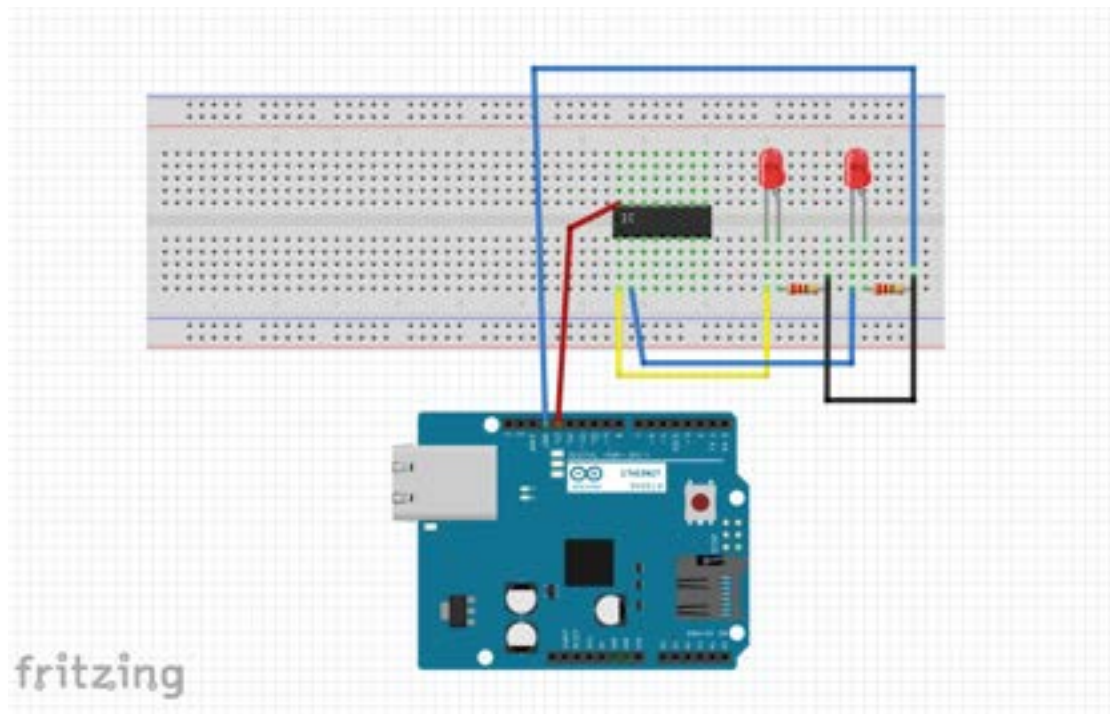
No#04// turn on led from input(output)

```
int Ledpin=13;  
int Inpin=7;  
int Val=0;  
void setup()  
{  
  pinMode(Ledpin,OUTPUT);  
  pinMode(Inpin,INPUT);  
}  
void loop()  
{  
  Val=digitalRead(Inpin);  
  digitalWrite(Ledpin,Val);  
}
```



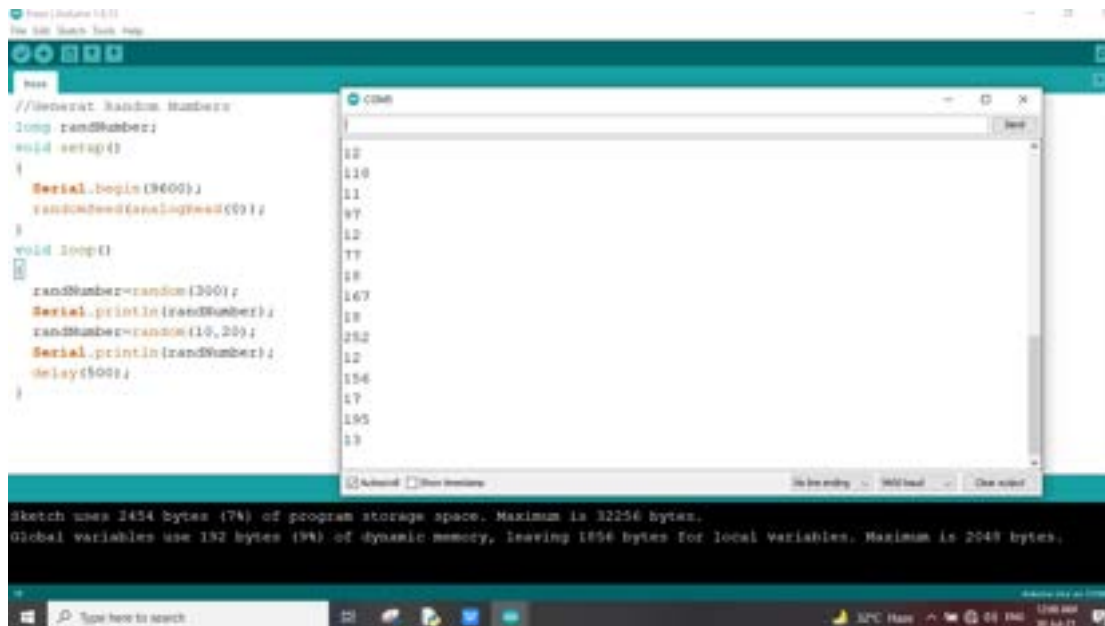
No#05//Connect NOR GAT IC with Arduino

```
int Vcc=13;  
int inpin1=7;  
int inpin2=6;  
void setup(){  
  pinMode(Vcc,OUTPUT);  
  pinMode(inpin1,OUTPUT);  
  pinMode(inpin2,OUTPUT);  
}  
void loop()  
{  
  digitalWrite(Vcc,HIGH);  
  digitalWrite(inpin1,HIGH);  
  digitalWrite(inpin2,HIGH);  
  delay(4000);  
  digitalWrite(inpin1,LOW);  
  digitalWrite(inpin2,HIGH);  
  delay(4000);  
  digitalWrite(inpin1,HIGH);  
  digitalWrite(inpin2,LOW);  
  delay(4000);  
  digitalWrite(inpin1,LOW);  
  digitalWrite(inpin2,LOW);  
  delay(4000);}
```

No#06//Generat Random Numbers

```
long randNumber;  
void setup()  
{  
  Serial.begin(9600);  
  randomSeed(analogRead(0));  
}  
void loop()  
{  
  randNumber=random(300);  
  Serial.println(randNumber);  
  randNumber=random(10,20);  
  Serial.println(randNumber);  
  delay(500);  
}
```

No#07//LED fire Effect

int Ledyellow1=11;

int Ledred=10;

int Ledyellow2=9;

void setup()

{

pinMode(Ledyellow1,OUTPUT);

pinMode(Ledred,OUTPUT);

pinMode(Ledyellow2,OUTPUT);

}

void loop()

{

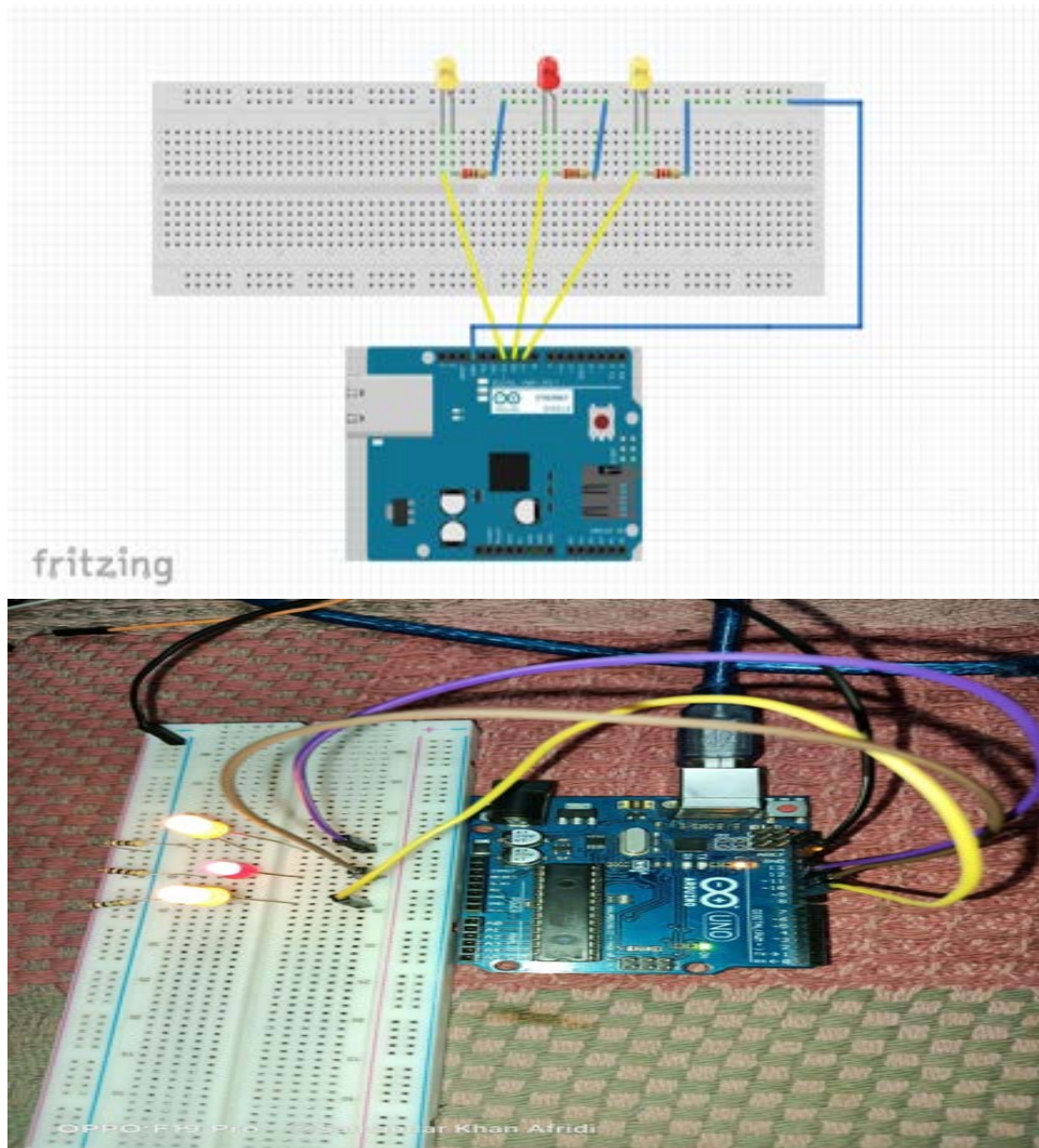
analogWrite(Ledyellow1,random(300));

analogWrite(Ledred,random(300));

analogWrite(Ledyellow2,random(300));

delay(500);

}



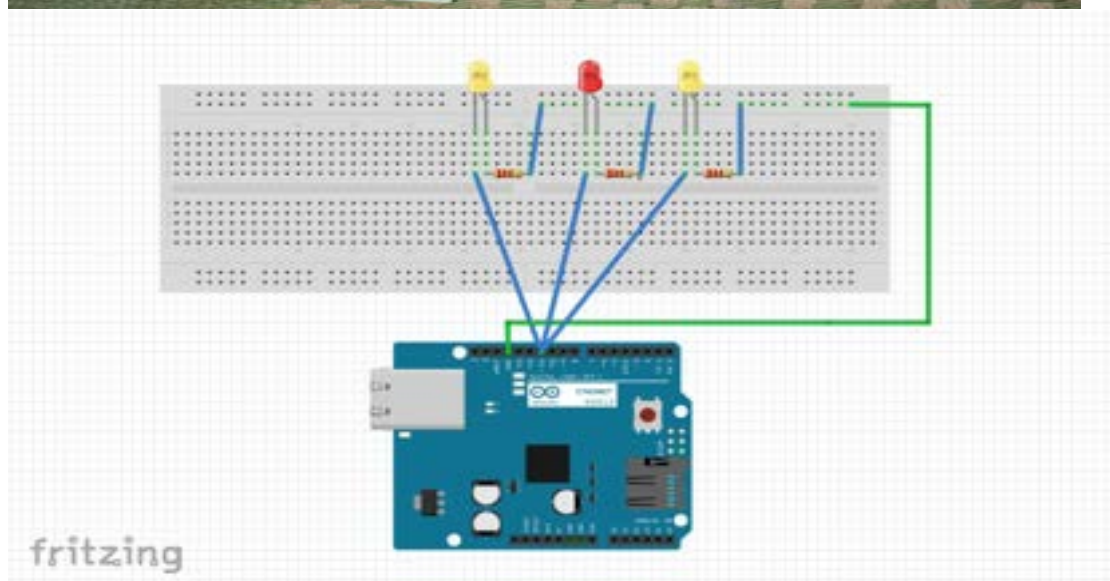
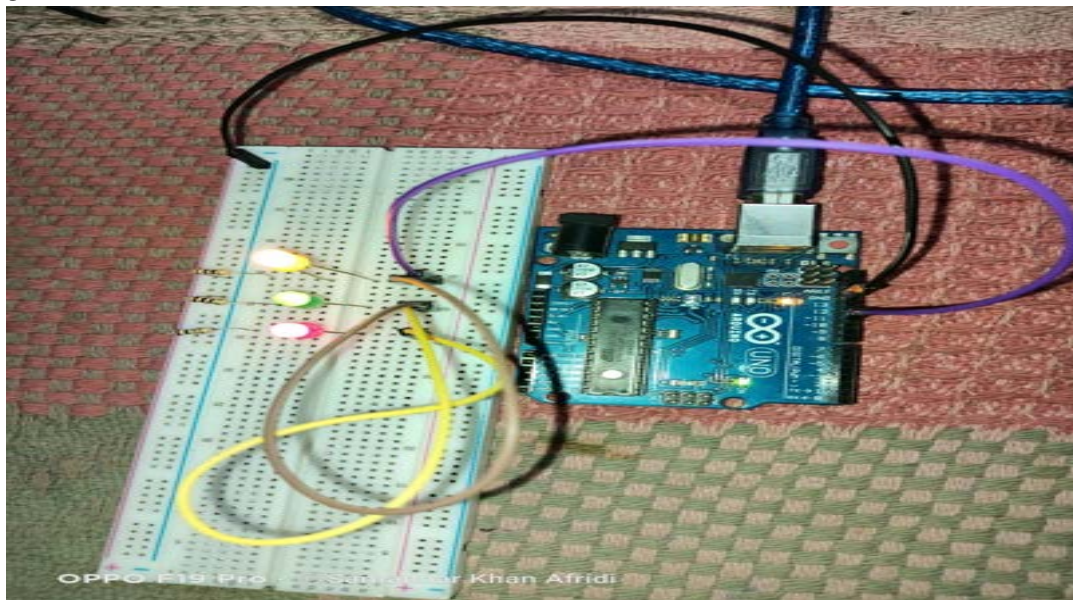
No#08//Pulsating LED

```
int Ledpin=11;
float sinval;
int Ledval;
void setup()
{
  pinMode(Ledpin,OUTPUT);
}
```

```

void loop()
{
  for(int x=0;x<180;x++)
  {
    sinval=(sin(x*(3.1412/180)));
    Ledval=int(sinval*255);
    analogWrite(Ledpin,Ledval);
    delay(25);}
}

```



No#09//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//Use of Array

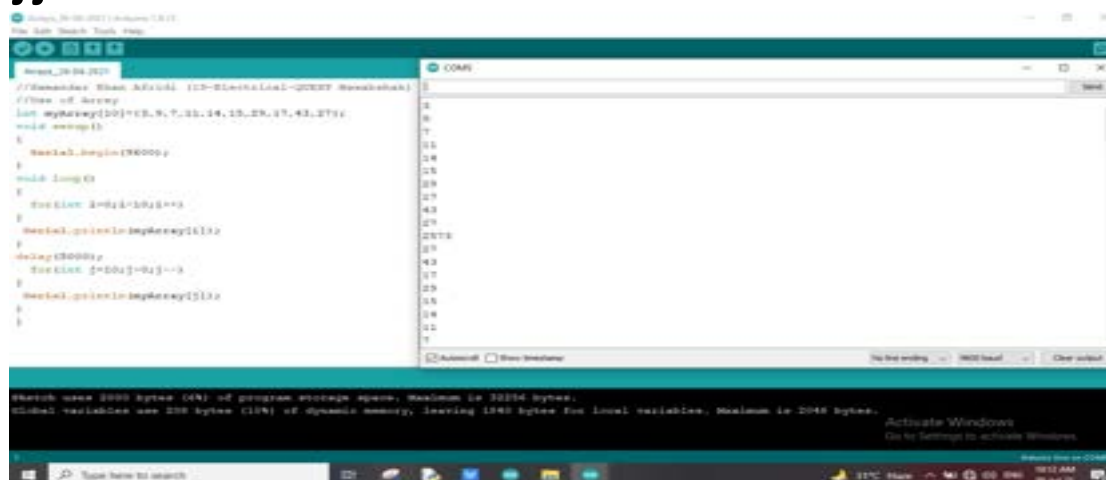
int myArray[10]={3,9,7,11,14,15,29,17,43,27};

void setup()

```
{  
  Serial.begin(9600);  
}
```

void loop()

```
{  
  for(int i=0;i<10;i++)  
  {  
    Serial.println(myArray[i]);  
  }  
  delay(5000);  
  for(int j=10;j>0;j--)  
  {  
    Serial.println(myArray[j]);  
  }  
}
```



**No#10//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//Potentiometer

**float floatMap(float x,float in_min,float
in_max,float out_min,float out_max)**

**{
return(x-in_min)*(out_max-
out_min)/(in_max-in_min)+out_min;
}**

void setup()

**{
 // put your setup code here, to run once:
 Serial.begin(9600);
}**

void loop()

**{
 // put your main code here, to run
 repeatedly:
 int analogValue=analogRead(A0);
 float
 voltage=floatMap(analogValue,0,1023,0,5);
 Serial.print("analog");
 Serial.println(analogValue);
 Serial.print("Voltage");**

The screenshot shows the Android Studio IDE with a C++ project named 'Arduino'. The main code file contains the following C++ code:

```
//Arduino.cpp
float floatMap(float a, float in_min, float in_max, float out_min, float out_max)
{
    return (a - in_min) * (out_max - out_min) / (in_max - in_min) + out_min;
}

void setup()
{
    // put your setup code here, to run once:
    Serial.begin(9600);
}

void loop()
{
    // put your main code here, to run repeatedly:
    int analogValue = analogRead(A0);
    float voltage = floatMap(analogValue, 0, 1023, 0, 5.0);
    Serial.print("analog");
    Serial.print(analogValue);
    Serial.print("voltage");
    Serial.print(voltage);
    delay(1000);
}
```

The console window on the right shows the output of the program:

```

Voltage0.00
analog0
Voltage0.00
analog0
Voltage0.39
analog155
Voltage0.78
analog311
Voltage1.68
analog622
Voltage2.72
analog942
Voltage3.78
analog1265
Voltage4.69
analog1585
Voltage5.00
analog1638
Voltage5.00

```

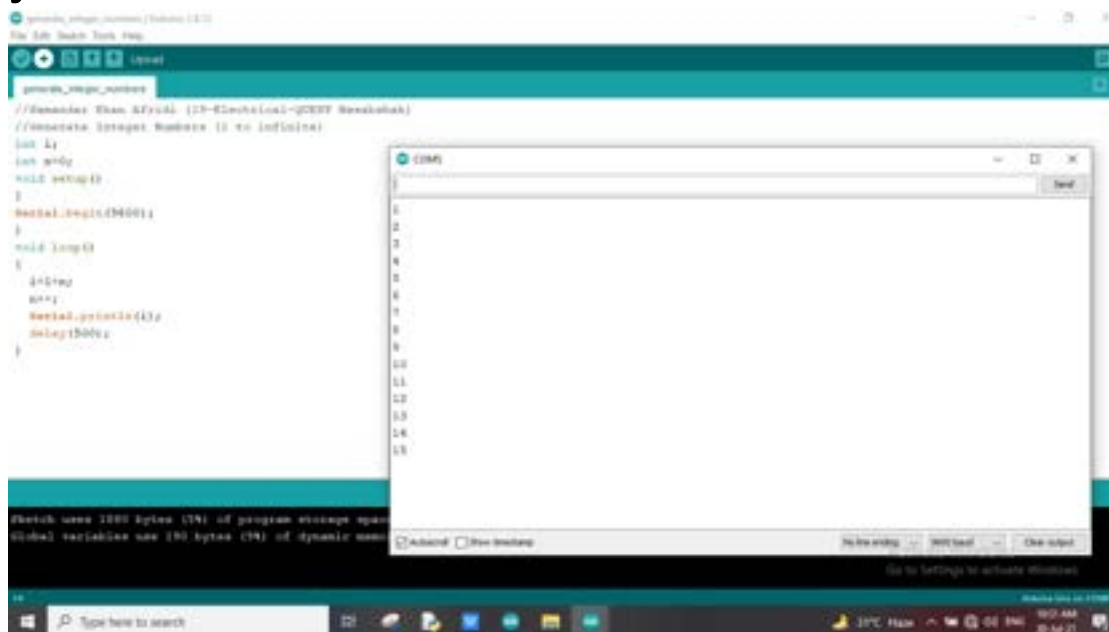
At the bottom of the IDE, a status bar indicates: "Sketch uses 3470 bytes (10%) of program storage space. Global variables use 214 bytes (10%) of dynamic memory, leaving 1886 bytes free." The system tray at the very bottom shows the date and time as "10:16 AM 20 Jul 21".



No#11//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//Generate Integer Numbers (1 to infinite)

```
int i;  
int n=0;  
void setup()  
{  
  Serial.begin(9600);  
}  
void loop()  
{  
  i=1+n;  
  n++;  
  Serial.println(i);  
  delay(500);  
}
```



No#12//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//controlling brightness of led by potentiometer

int sensor=A0;

int led=3;

int val=0;

void setup() {

// put your setup code here, to run once:

pinMode(led,OUTPUT);

Serial.begin(9600);

}

void loop() {

// put your main code here, to run repeatedly:

val=analogRead(sensor);

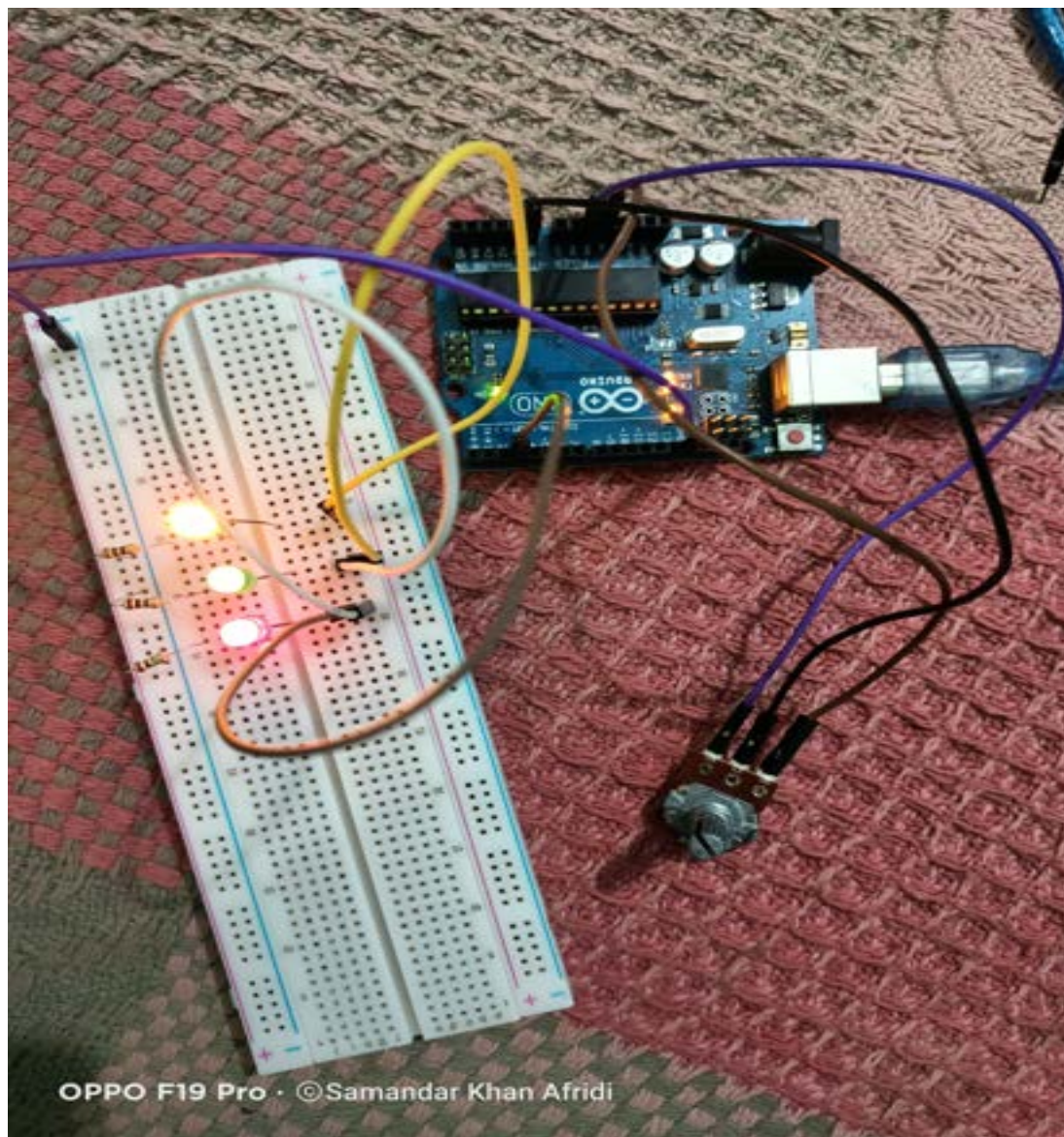
Serial.println(val);

Serial.print(" ");

analogWrite(led,val);

delay(20);

}



No#13//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//UltraSonicSensor

int trigPin = 11; //Trig - green Jumper

int echoPin = 12; //Echo - yellow Jumper

long duration, cm, inches;

void setup() {

//Serial Port begin

Serial.begin (9600);

//Define inputs and outputs

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

}

void loop()

{

// The sensor is triggered by a HIGH pulse of 10 or more microseconds.

// Give a short LOW pulse beforehand to ensure a clean HIGH pulse:

digitalWrite(trigPin, LOW);

delayMicroseconds(5);

digitalWrite(trigPin, HIGH);

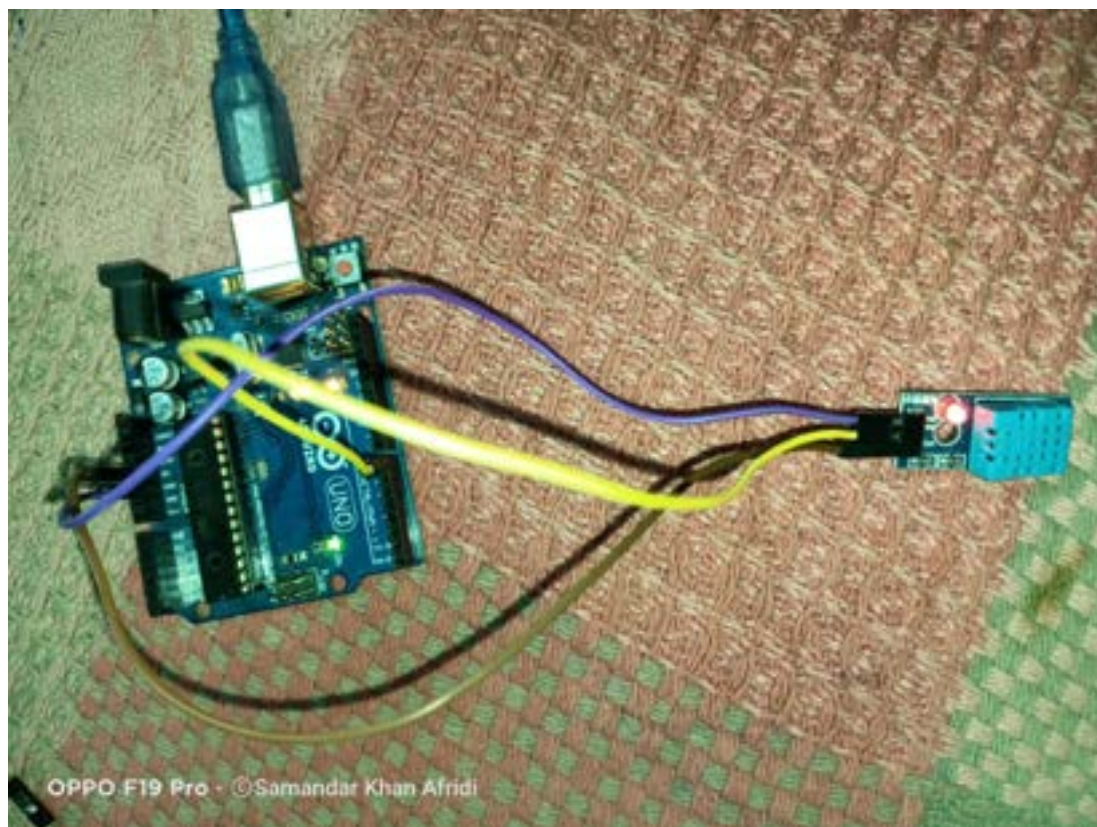
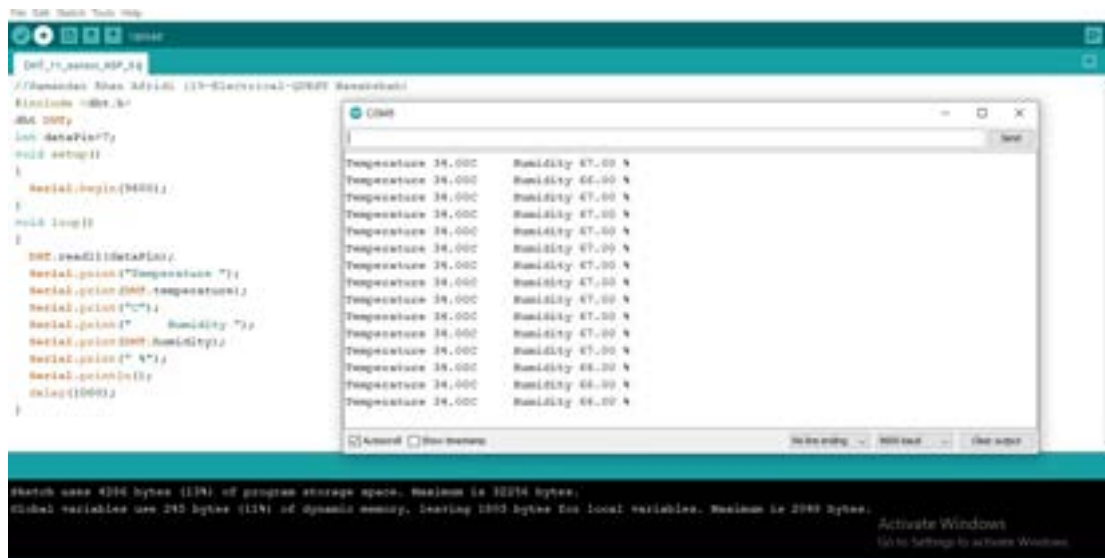
delayMicroseconds(10);

digitalWrite(trigPin, LOW);

```
// Read the signal from the sensor: a HIGH  
pulse whose  
// duration is the time (in microseconds)  
from the sending  
// of the ping to the reception of its echo off  
of an object.  
pinMode(echoPin, INPUT);  
duration = pulseIn(echoPin, HIGH);  
// convert the time into a distance  
cm = (duration/2) / 29.1;  
inches = (duration/2) / 74;  
Serial.print(inches);  
Serial.print("in, ");  
Serial.print(cm);  
Serial.print("cm");  
Serial.println();  
delay(250);  
}
```


**No#14//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

```
#include <dht.h>
dht DHT;
int dataPin=7;
void setup()
{
  Serial.begin(9600);
}
void loop()
{
  DHT.read11(dataPin);
  Serial.print("Temperature ");
  Serial.print(DHT.temperature);
  Serial.print("C");
  Serial.print("    Humidity ");
  Serial.print(DHT.humidity);
  Serial.print(" %");
  Serial.println();
  delay(1000);
}
```



**No#15//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//DHT 11 Sensor With LCD

#include <dht.h>

#include <LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

dht DHT;

#define DHT11_PIN 7

void setup(){

lcd.begin(16, 2);

}

void loop(){

int chk = DHT.read11(DHT11_PIN);

lcd.setCursor(0,0);

lcd.print("Temp: ");

lcd.print(DHT.temperature);

lcd.print("C");

lcd.setCursor(0,1);

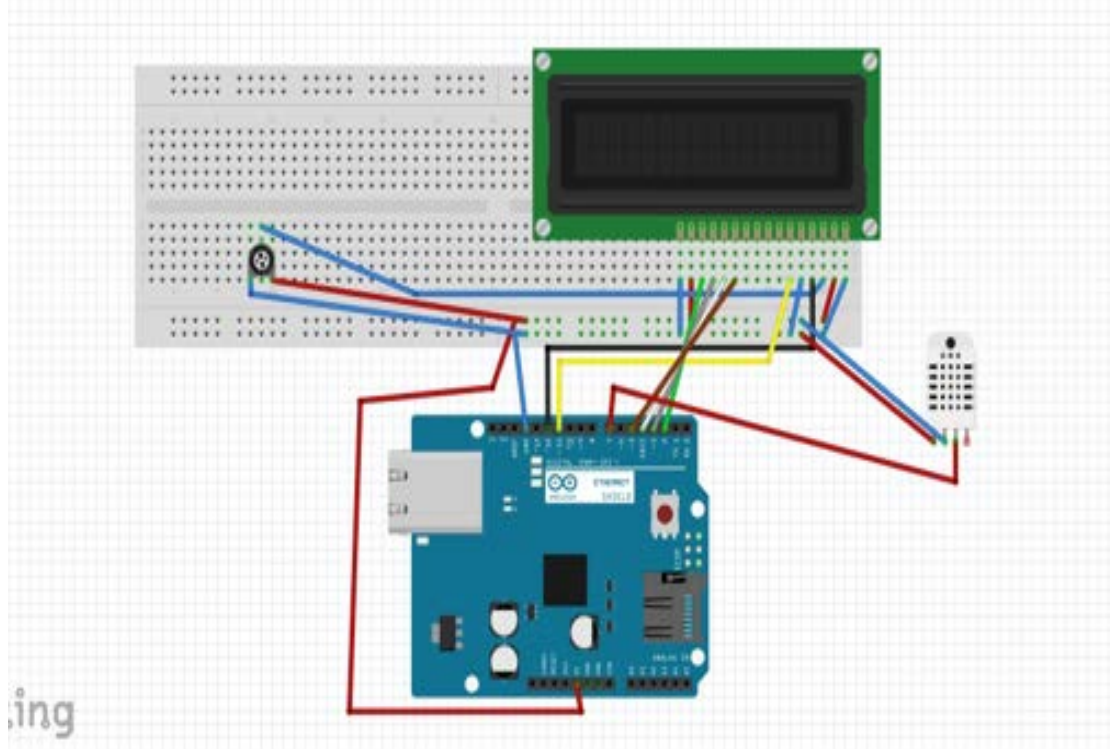
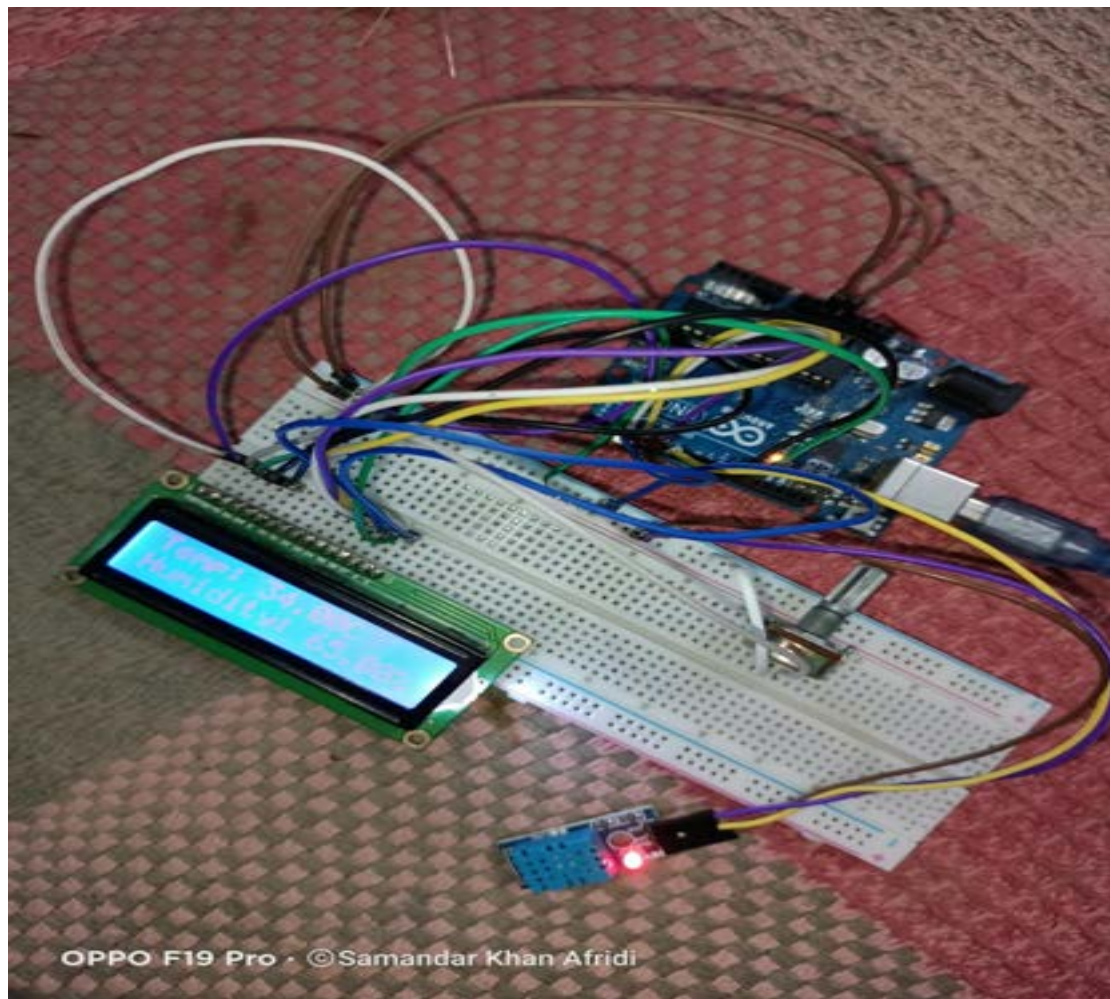
lcd.print("Humidity: ");

lcd.print(DHT.humidity);

lcd.print("%");

delay(1000);

}



No#16//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

```
int a;
int pin=11;

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  pinMode(pin,OUTPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
  Serial.println("Enter 1 for ON and 2 for OFF");
  Serial.setTimeout(1500);
  a=Serial.parseInt();
  if(a==1)
  {
    digitalWrite(pin,HIGH);
    Serial.println("Moter is ON");
  }
  if(a==2)
  {
    digitalWrite(pin,LOW);
    Serial.println("Moter is OFF");
  }
  delay(5000);
}
```

No#17//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

```
#include<LiquidCrystal.h>
```

```
int rs=12 , en=11, d4=5, d5=4, d6=3, d7=2;
```

```
LiquidCrystal lcd(rs,en,d4,d5,d6,d7);
```

```
void setup() {
```

```
    // put your setup code here, to run once:
```

```
    lcd.begin(16,1);
```

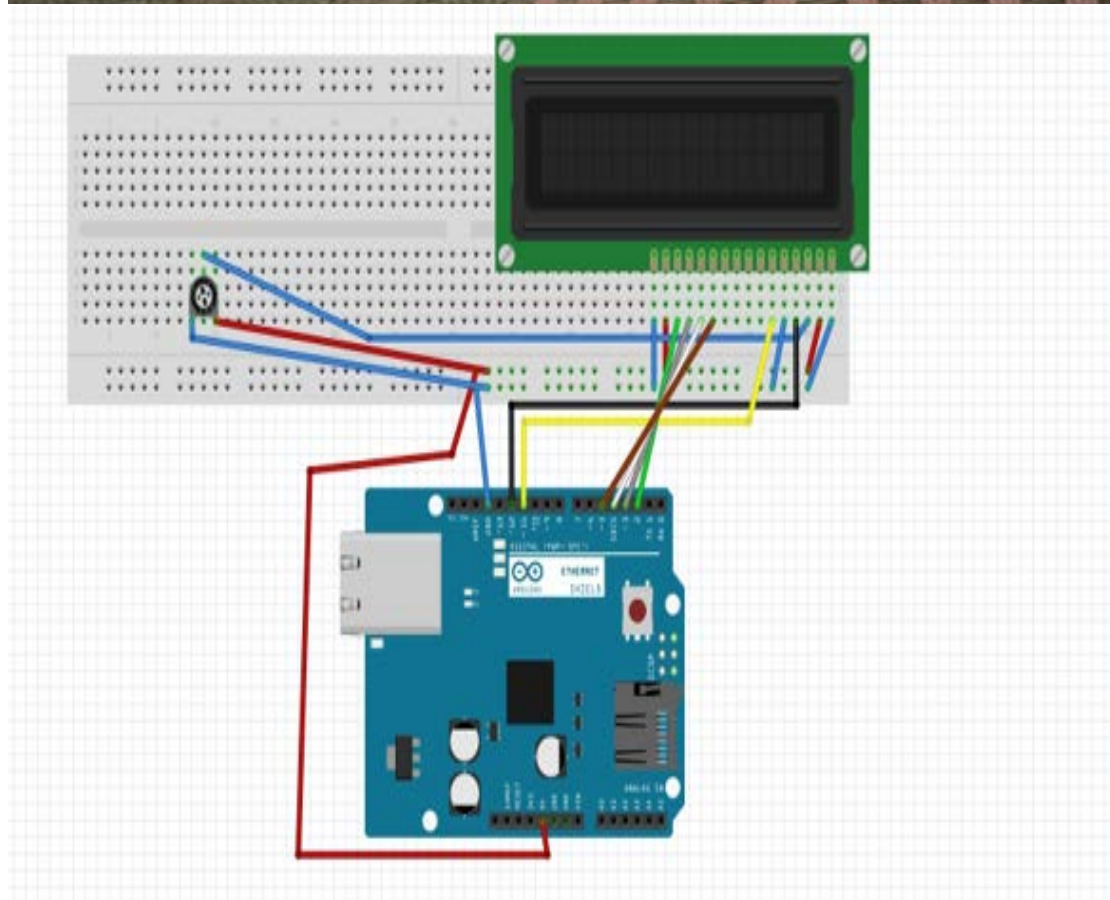
```
    lcd.print("Samandar Khan");
```

```
}
```

```
void loop() {
```

```
    // put your main code here, to run  
    repeatedly:
```

```
}
```

**No#18//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//Decode IR remote

#include <IRremote.h>

const int RECV_PIN = 7;

IRrecv irrecv(RECV_PIN);

decode_results results;

void setup(){

Serial.begin(9600);

irrecv.enableIRIn();

irrecv.blink13(true);

}

void loop(){

if (irrecv.decode(&results)){

Serial.println(results.value,HEX);

irrecv.resume();

}

}

**No#19//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

```
#include<IRremote.h>
```

```
int irPin=A0;
```

```
IRrecv irrecv(irPin);
```

```
decode_results Results;
```

```
int
```

```
led_1=1,led_2=2,led_3=3,led_4=4,led_5=5,le  
d_6=6,led_7=7,led_8=8,led_9=9,led_10=10;
```

```
void setup()
```

```
{
```

```
  irrecv.enableIRIn();
```

```
  pinMode(1,OUTPUT);
```

```
  pinMode(2,OUTPUT);
```

```
  pinMode(3,OUTPUT);
```

```
  pinMode(4,OUTPUT);
```

```
  pinMode(5,OUTPUT);
```

```
  pinMode(6,OUTPUT);
```

```
  pinMode(7,OUTPUT);
```

```
  pinMode(8,OUTPUT);
```

```
  pinMode(9,OUTPUT);
```

```
  pinMode(10,OUTPUT);
```

```
}
```

```
void loop()
```

```
{
```

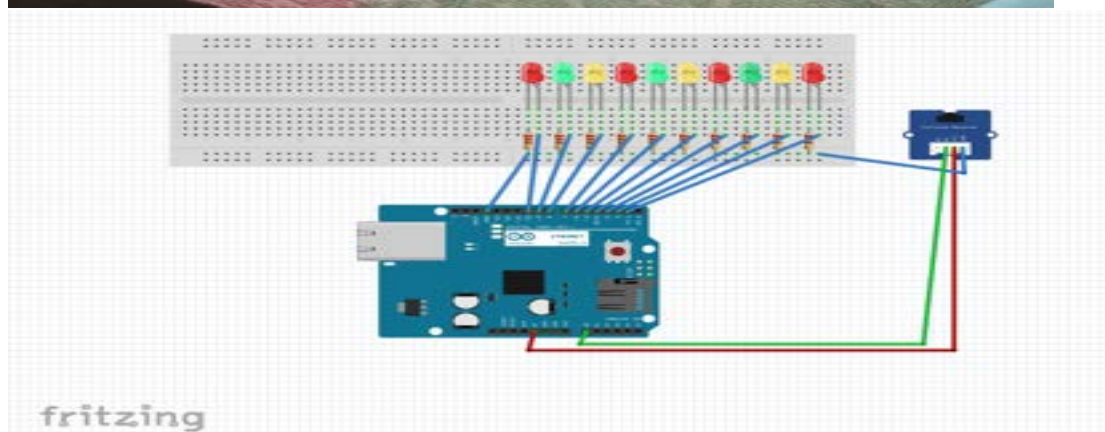
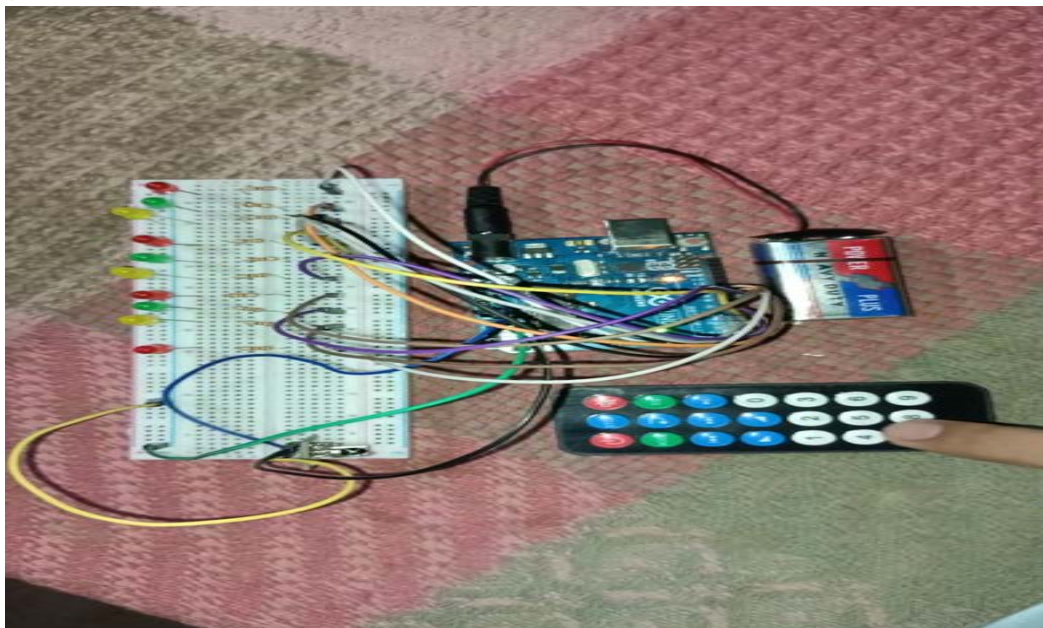
```
if(irrecv.decode(&Results))
{
  switch(Results.value)
  {
    case 16753245:
      digitalWrite(1,0);
      digitalWrite(2,0);
      digitalWrite(3,0);
      digitalWrite(4,0);
      digitalWrite(5,0);
      digitalWrite(6,0);
      digitalWrite(7,0);
      digitalWrite(8,0);
      digitalWrite(9,0);
      digitalWrite(10,0);
      delay(100);
      break;
    case 16724175:
      digitalWrite(1,HIGH);
      delay(100);
      break;
    case 16718055:
      digitalWrite(2,HIGH);
      delay(100);
      break;
```

```
case 16743045:  
digitalWrite(3,HIGH);  
delay(100);  
break;  
case 16716015:  
digitalWrite(4,HIGH);  
delay(100);  
break;  
case 16726215:  
digitalWrite(5,HIGH);  
delay(100);  
break;  
case 16734885:  
digitalWrite(6,HIGH);  
delay(100);  
break;  
case 16728765:  
digitalWrite(7,HIGH);  
delay(100);  
break;  
case 16730805:  
digitalWrite(8,HIGH);  
delay(100);  
break;  
case 16732845:
```

```

digitalWrite(9,HIGH);
delay(100);
break;
case 16756815:
digitalWrite(10,HIGH);
delay(100);
break;
}
irrecv.resume();
}
}

```



No#20//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//LED with delay++delay

int ledPin = 13;

int timeDelay = 500;

void setup() {

// put your setup code here, to run once:

pinMode(ledPin,OUTPUT);

}

void loop() {

// put your main code here, to run repeatedly:

digitalWrite(ledPin,HIGH);

delay(timeDelay);

digitalWrite(ledPin,LOW);

delay(timeDelay);

timeDelay=timeDelay+100;

}

No#21//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//Array Calculate average sum

int i;

int val;

float avr;

int myArray[10]={1,2,3,4,5,6,7,8,9,10};

void setup(){

Serial.begin(9600);

}

void loop() {

for(int i=0;i<10;i++)

{

int val=myFunction(myArray[i],myArray[i+1]);

}

float var=average(val);

Serial.println(avr);

delay(1000);

}

int myFunction(int x,int y)

{

int result;

result=x+y;

return result;

}

float average(float val)

{

avr=val/10;

return avr;

}

No#22//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

int a=10;

int b=4;

**int result=a<<b;//this is bitwise operators
which shift the bit**

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

Serial.println(result);

}

void loop() {

**// put your main code here, to run
repeatedly:**

}

**No#23//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//Size of DataType

int x=3;

char t="g";

float y=3.5;

double z=10;

int a=sizeof(x);

int b=sizeof(y);

int c=sizeof(z);

int d=sizeof(t);

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

}

void loop() {

// put your main code here, to run repeatedly:

Serial.println(a);

delay(1000);

Serial.println(b);

delay(1000);

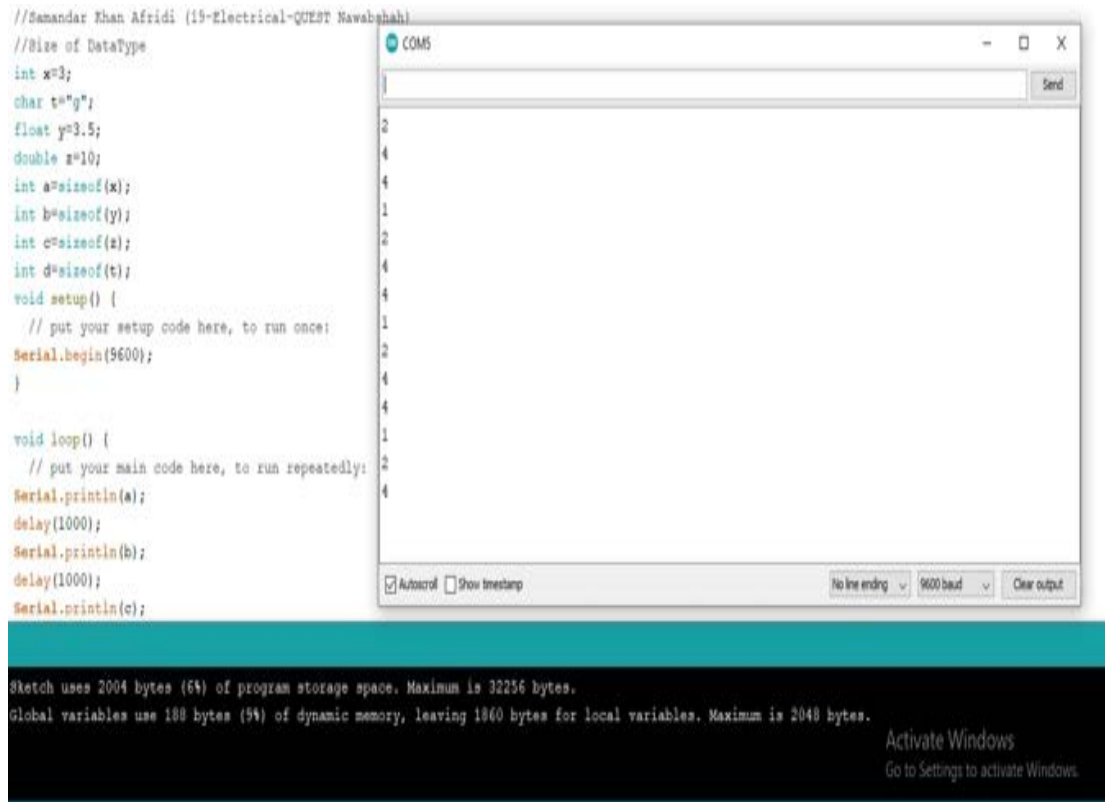
Serial.println(c);

delay(1000);

Serial.println(d);

delay(1000);

}



No#24//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//AND & Operator

int a=9;

int b=8;

int c;

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);}

void loop() {

// put your main code here, to run repeatedly:

int var=AND(a,b);

if (var>0)

{

Serial.println(var);

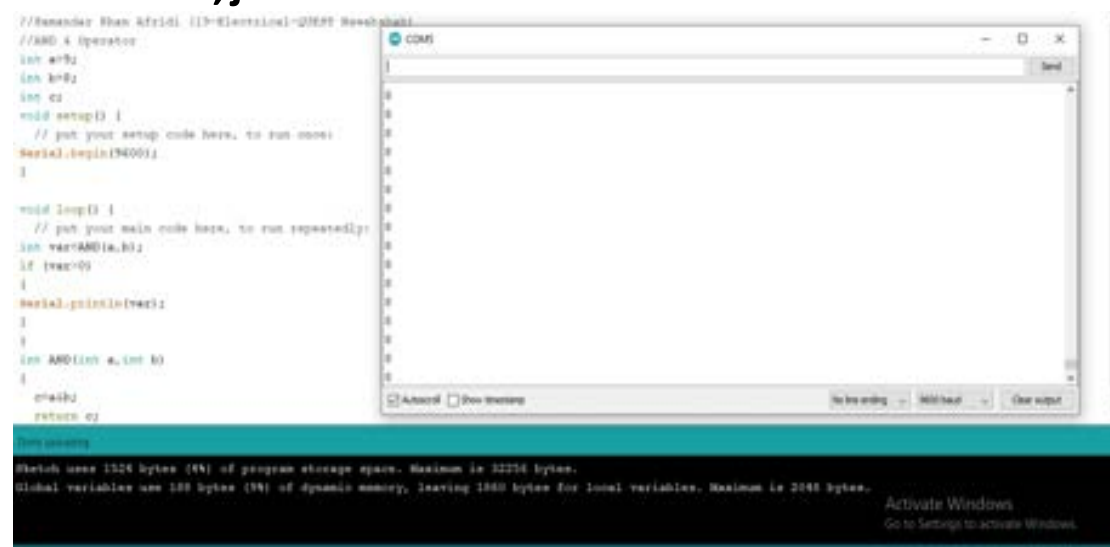
}}

int AND(int a,int b)

{

c=a&b;

return c;}



No#25//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

int a;//i send a=5

int b;//i send b=5

int c;// sum will be 10

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);}

void loop() {

// put your main code here, to run repeatedly:

Serial.println("Enter valu of a");

Serial.setTimeout(5000);

a=Serial.parseInt();

Serial.println("Enter value of b");

Serial.setTimeout(5000);

b=Serial.parseInt();

c=a+b;

Serial.println(c);

delay(3000);}



**No#26//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

**//Decimal,Binart and Hexadecimal values for 1 to
100**

```
void setup() {  
  // put your setup code here, to run once:  
  Serial.begin(9600);  
  Serial.print("Decimal");  
  Serial.print("  ");  
  Serial.print("Binary");  
  Serial.print("  ");  
  Serial.print("Hexadecimal");  
}
```

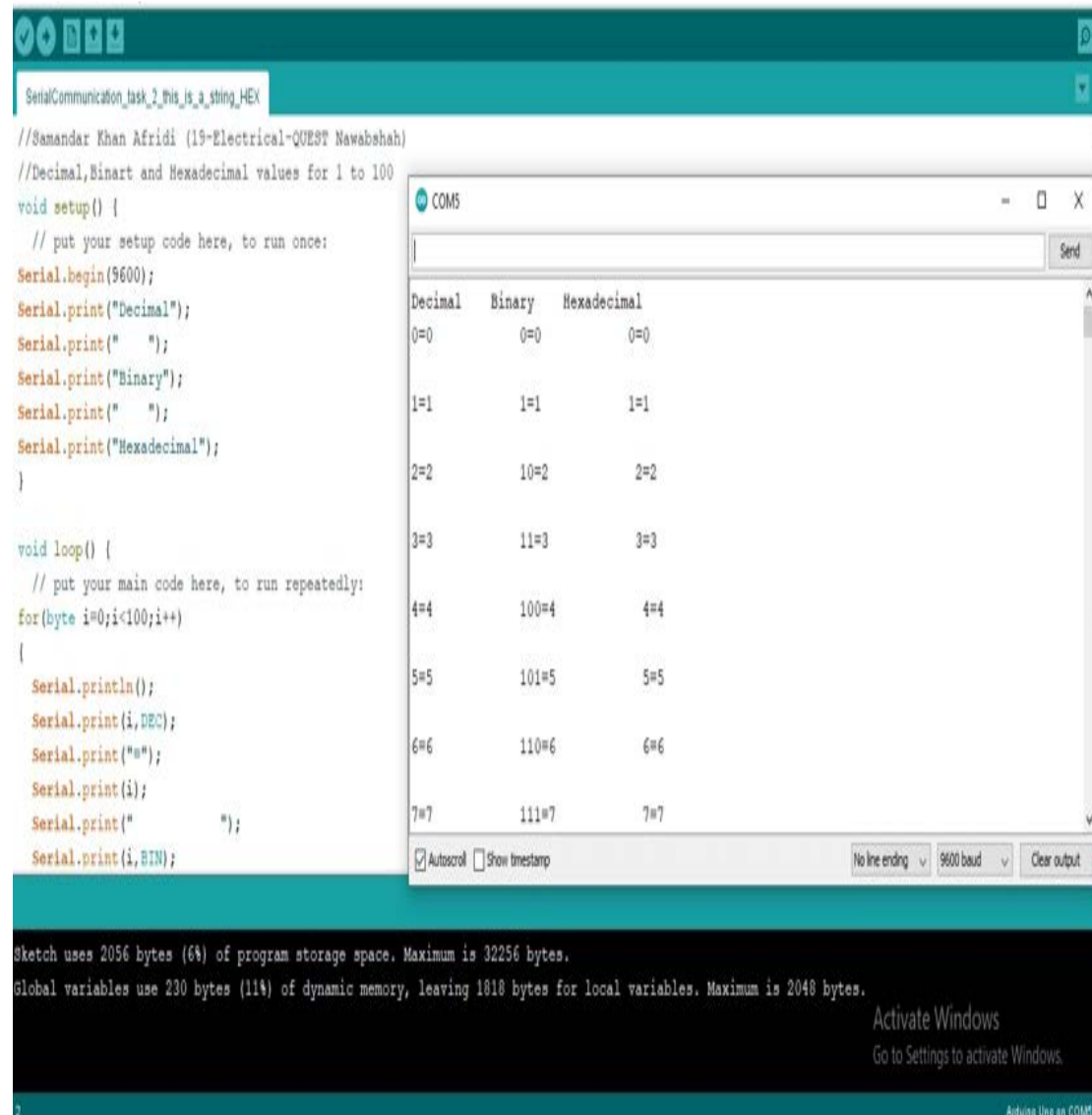
```
void loop() {  
  // put your main code here, to run repeatedly:  
  for(byte i=0;i<100;i++)  
  {  
    Serial.println();  
    Serial.print(i,DEC);  
    Serial.print("=");  
    Serial.print(i);  
    Serial.print("      ");  
    Serial.print(i,BIN);  
    Serial.print("=");  
    Serial.print(i);  
    Serial.print("      ");  
    Serial.print(i,HEX);
```



```

Serial.print("=");
Serial.print(i);
Serial.println();
}
delay(5000);
}

```



No#27//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//Decimal values for any String Sentence

char myStr[]="This is a string";

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);}

void loop() {

// put your main code here, to run repeatedly:

for(byte i=0;i<sizeof(myStr)-1;i++)

{

Serial.print(i,DEC);

Serial.print("=");

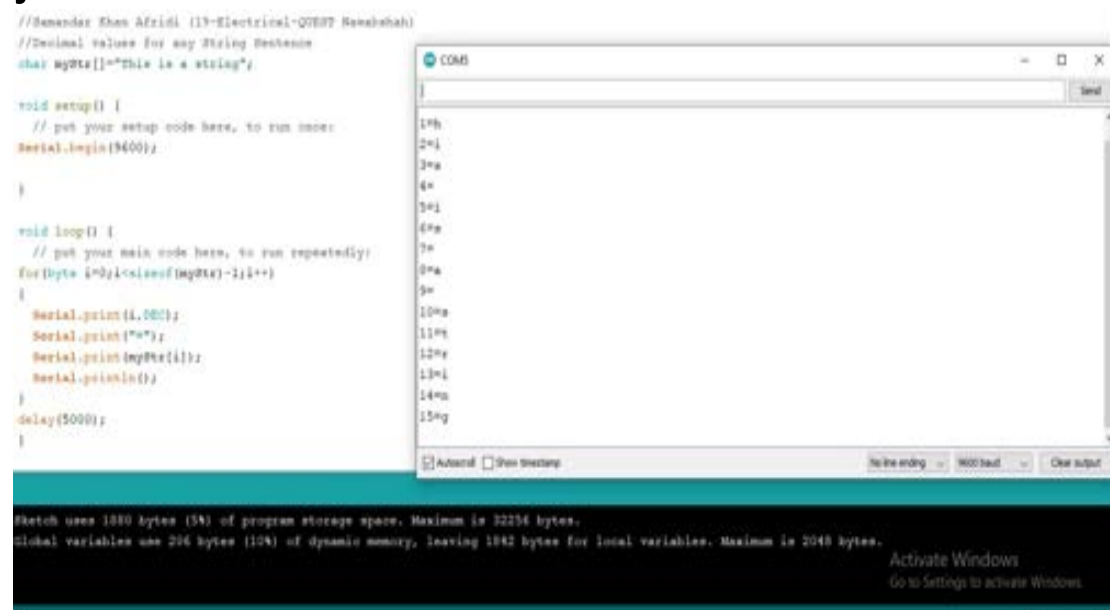
Serial.print(myStr[i]);

Serial.println();

}

delay(5000);

}



No#28//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)

//adding any letter into string

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

}

void loop() {

// put your main code here, to run repeatedly:

Serial.write(65);

int bytes=Serial.write("HELLO");

Serial.println(" ");

delay(2000);

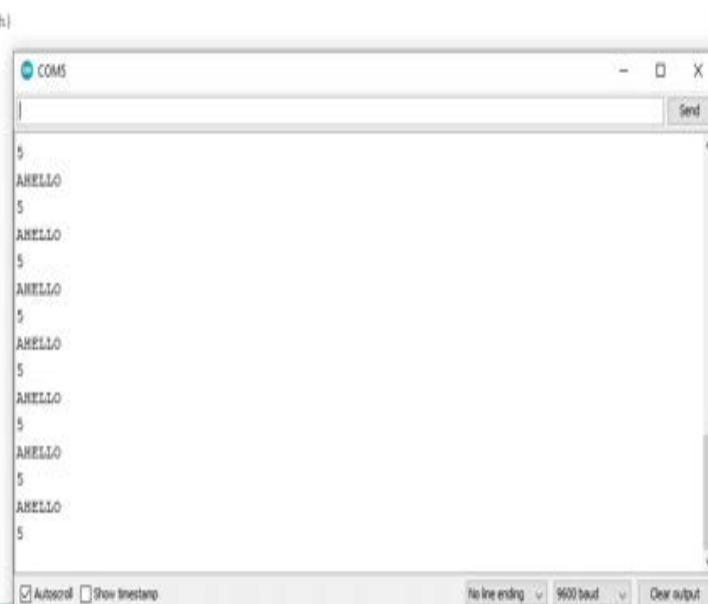
Serial.println(bytes);

delay(2000);

}

```
//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)
//adding any letter into string
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
  Serial.write(65);
  int bytes=Serial.write("HELLO");
  Serial.println(" ");
  delay(2000);
  Serial.println(bytes);
  delay(2000);
}
```



```

No#29//Samandar Khan Afridi (19-Electrical-  

QUEST Nawabshah)  

//Multiply x and y  

int x=5;  

int y=6;  

int result;  

void setup() {  

    // put your setup code here, to run once:  

Serial.begin(9600);  

}  

void loop() {  

    // put your main code here, to run repeatedly:  

int var=multiply(x,y);  

Serial.println(result);  

delay(1000);  

}  

int multiply(int x,int y)  

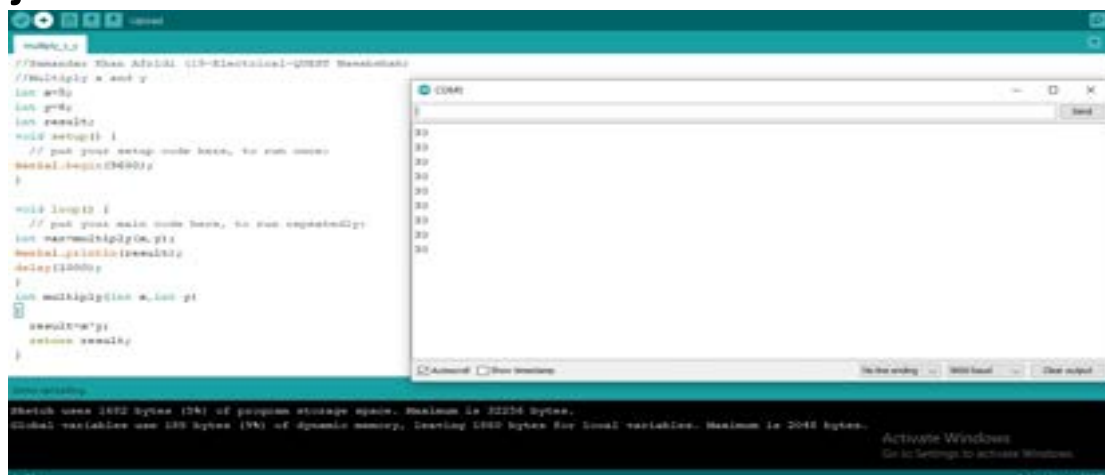
{  

    result=x*y;  

    return result;  

}

```



**No#30//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//LED ON 1 and OFF 2 from Serial Monitor

int a;

int pin=11;

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

pinMode(pin,OUTPUT);

}

void loop() {

// put your main code here, to run repeatedly:

Serial.println("Enter 1 for ON and 2 for OFF");

Serial.setTimeout(1500);

a=Serial.parseInt();

if(a==1)

{

digitalWrite(pin,HIGH);

Serial.println("LED is ON");

}

if(a==2)

{

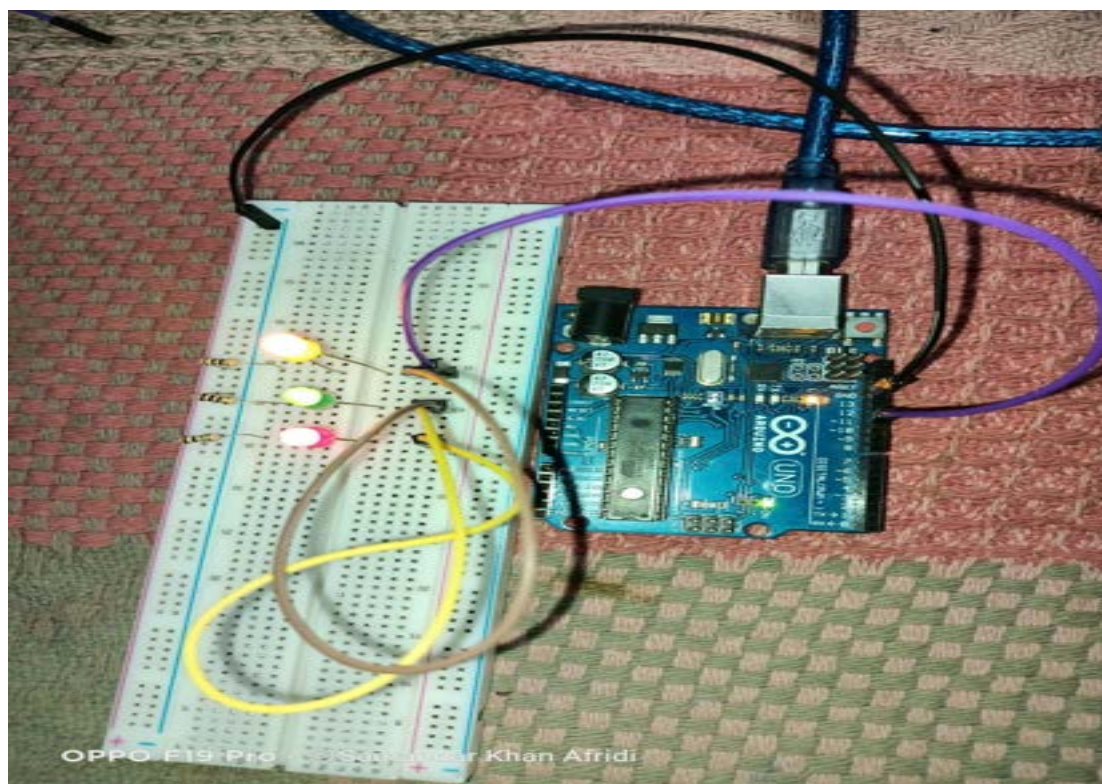
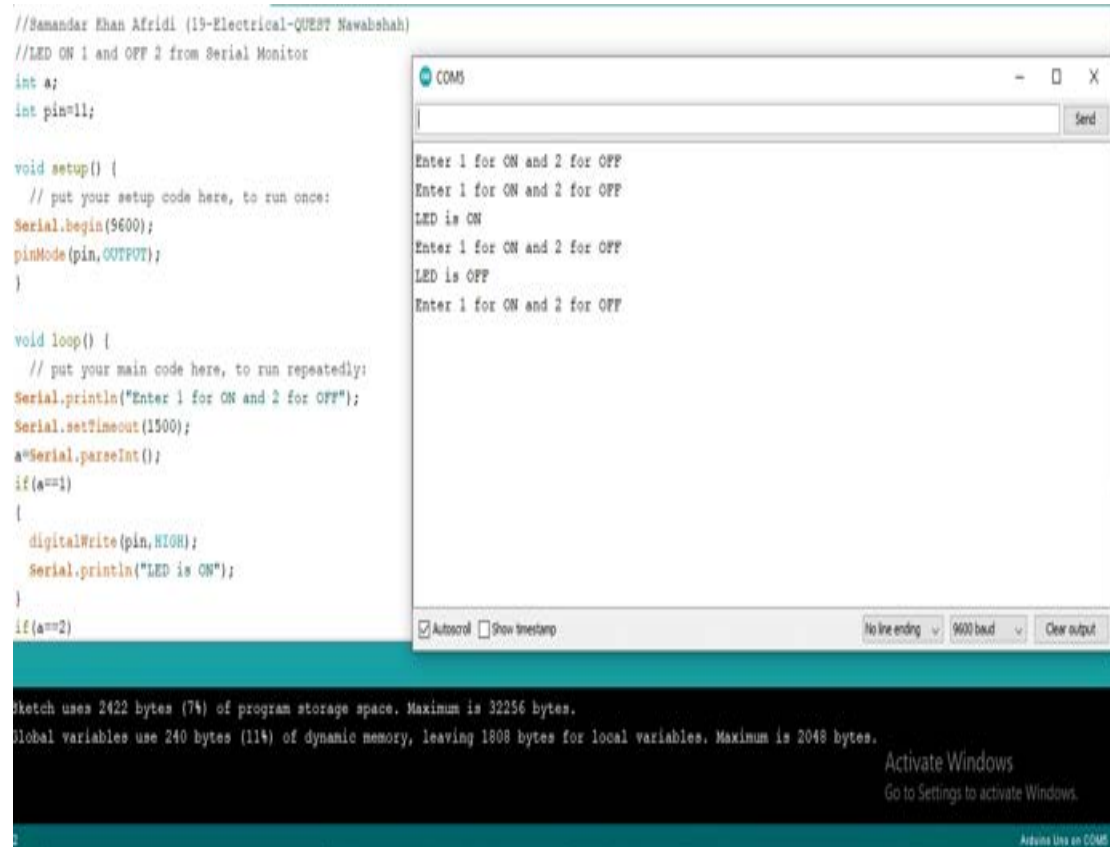
digitalWrite(pin,LOW);

Serial.println("LED is OFF");

}

delay(5000);

}



**No#31//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//LDR control LEDs

#define ldrPin 7

#define ledPin 13

void setup() {

// put your setup code here, to run once:

pinMode(ldrPin,INPUT);

pinMode(ledPin,OUTPUT);

}

void loop() {

// put your main code here, to run repeatedly:

int var=digitalRead(ldrPin);

if (var==LOW)

{

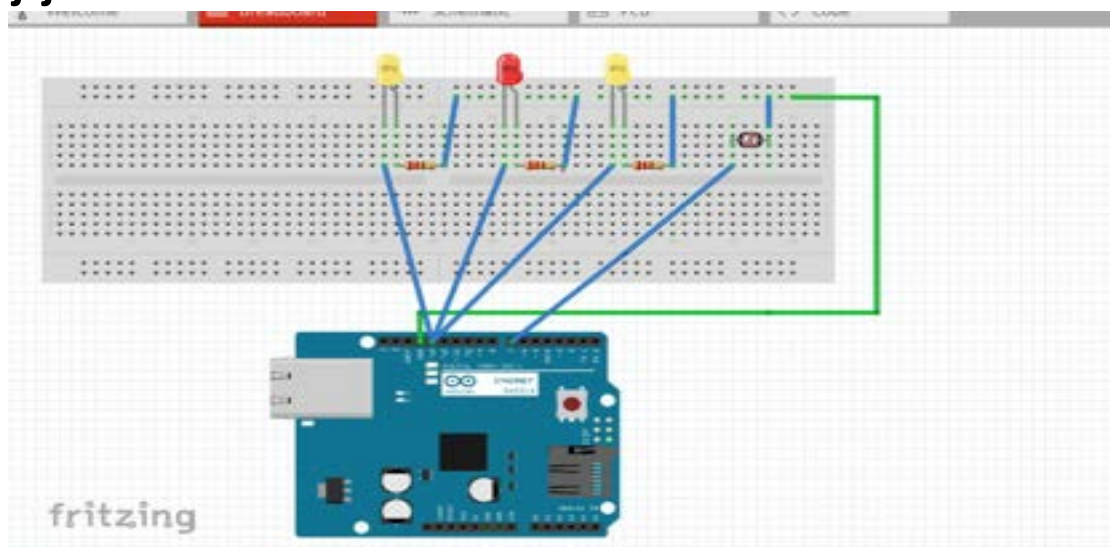
digitalWrite(ledPin,HIGH);

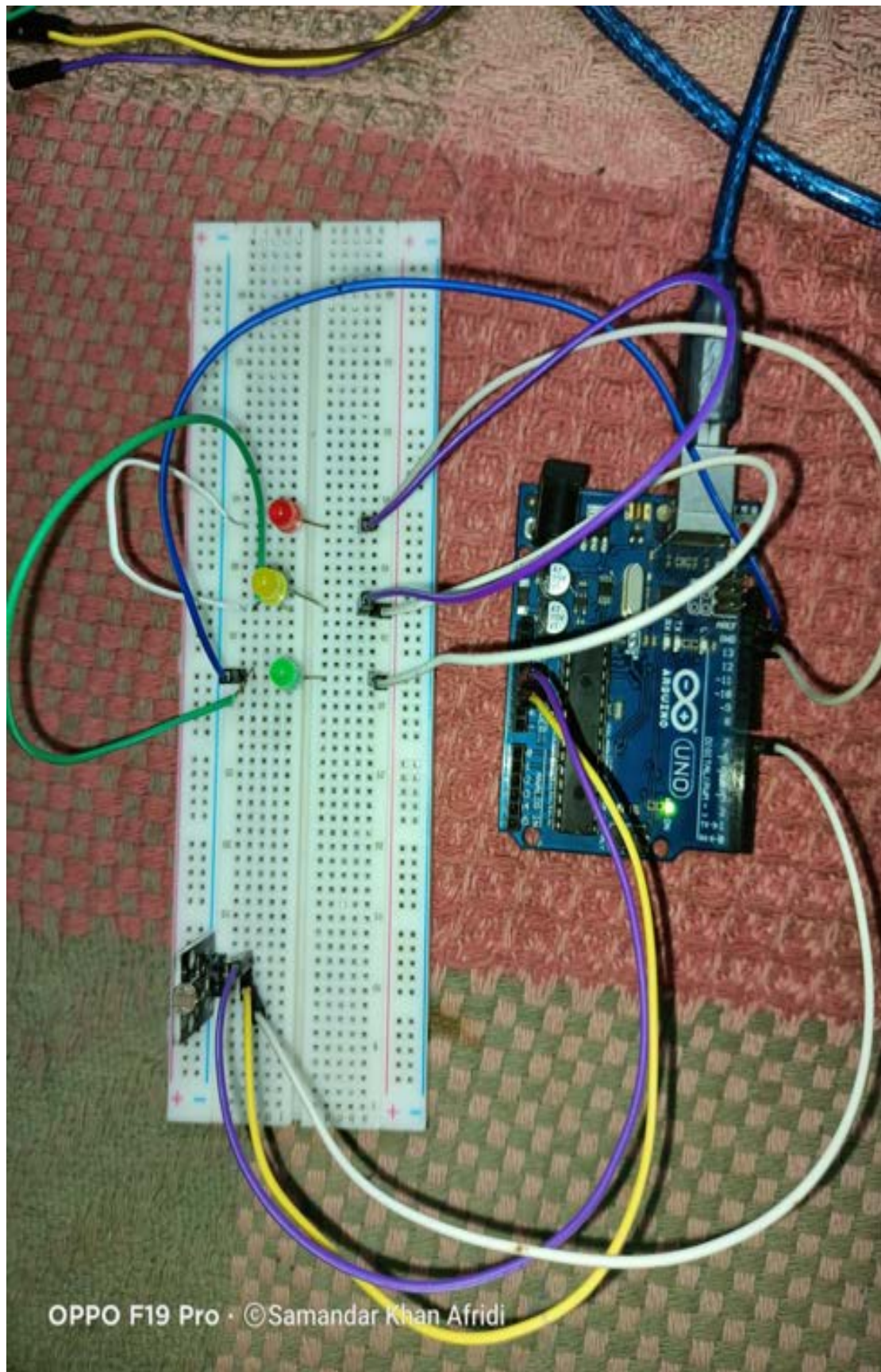
}

else{

digitalWrite(ledPin,LOW);

}}





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**No#32//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//GATS AND,OR,XOR,NOT

int a=31;

int b=230;

int c;

int d;

int e;

int f;

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

}

void loop() {

// put your main code here, to run repeatedly:

int nd=AND(a,b);

Serial.println(nd);

delay(2000);

int oor=OR(a,b);

Serial.println oor);

delay(2000);

int xoor=XOR(a,b);

Serial.println(xoor);

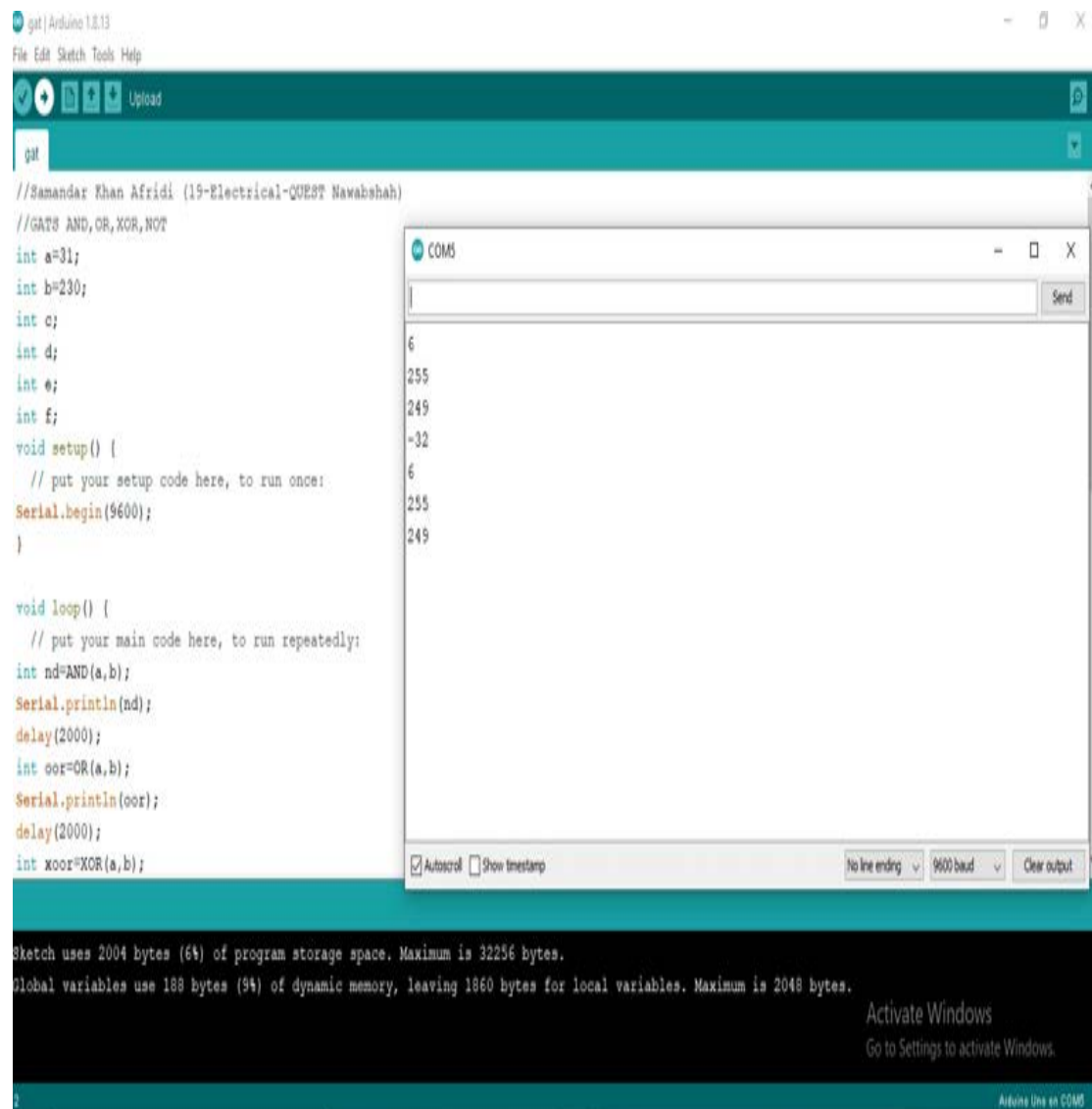
delay(2000);

int noor=NOT(a);

Serial.println(noor);

delay(2000);

```
}  
int AND(int a,int b)  
{  
    c=a&b;  
    return c;  
}  
int OR(int a,int b)  
{  
    d=a|b;  
    return d;  
}  
int XOR(int a,int b)  
{  
    e=a^b;  
    return e;  
}  
int NOT(int a)  
{  
    f=~a;  
    return f;  
}
```

**No#33//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//Functions Uses

```
int i;  
int myArray[10]={1,2,3,4,5,6,7,8,9,10};  
void setup()  
{  
  Serial.begin(9600);  
}  
void loop()  
{  
  for(int i=0;i<10;i++)  
  {  
    int val =myFunction(myArray[i],myArray[i+1]);  
  
    Serial.println(val);  
    delay(1000);  
  }  
}  
  
int myFunction(int x,int y)  
{  
  int result;  
  result=x*y;  
  return result;  
}
```

function_table | Arduino 1.8.13

File Edit Sketch Tools Help

function_table

```
//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)
//Functions Uses
int i;
int myArray[10]={1,2,3,4,5,6,7,8,9,10};
void setup()
{
  Serial.begin(9600);
}
void loop()
{
  for(int i=0;i<10;i++)
  {
    int val =myFunction(myArray[i],myArray[i+1]);

    Serial.println(val);
    delay(1000);
  }
}

int myFunction(int x,int y)
{
  int result;
```

COM5

Send

2
6
12
20
30
42
56
72
90
25730
2
6
12

☒ Autoscroll ☐ Show timestamp

No line ending 9600 baud Clear output

Sketch uses 1926 bytes (5%) of program storage space. Maximum is 32256 bytes.
Global variables use 208 bytes (10%) of dynamic memory, leaving 1840 bytes for local variables. Maximum is 2048 bytes.
Error downloading https://downloads.arduino.cc/packages/package_index.json

Activate Windows
Go to Settings to activate Windows.

Arduino IDE v1.8.13

```

No#34//Samandar Khan Afridi (19-Electrical-  

QUEST Nawabshah)  

//Flame sensor Fire detector  

int analogPin=A0;  

int ledPin=13;  

int buzzerPin=12;  

void setup() {  

    // put your setup code here, to run once:  

    pinMode(analogPin,INPUT);  

    pinMode(ledPin,OUTPUT);  

    pinMode(buzzerPin,OUTPUT);  

    Serial.begin(9600);  

}  

void loop() {  

    // put your main code here, to run repeatedly:  

    int analogVal=analogRead(analogPin);  

    if(analogVal<800)  

    {  

        digitalWrite(ledPin,HIGH);  

        digitalWrite(buzzerPin,HIGH);  

        Serial.println(" ,There is FIRE detected");  

    }  

    else  

    {  

        digitalWrite(ledPin,LOW);  

        digitalWrite(buzzerPin,LOW);  

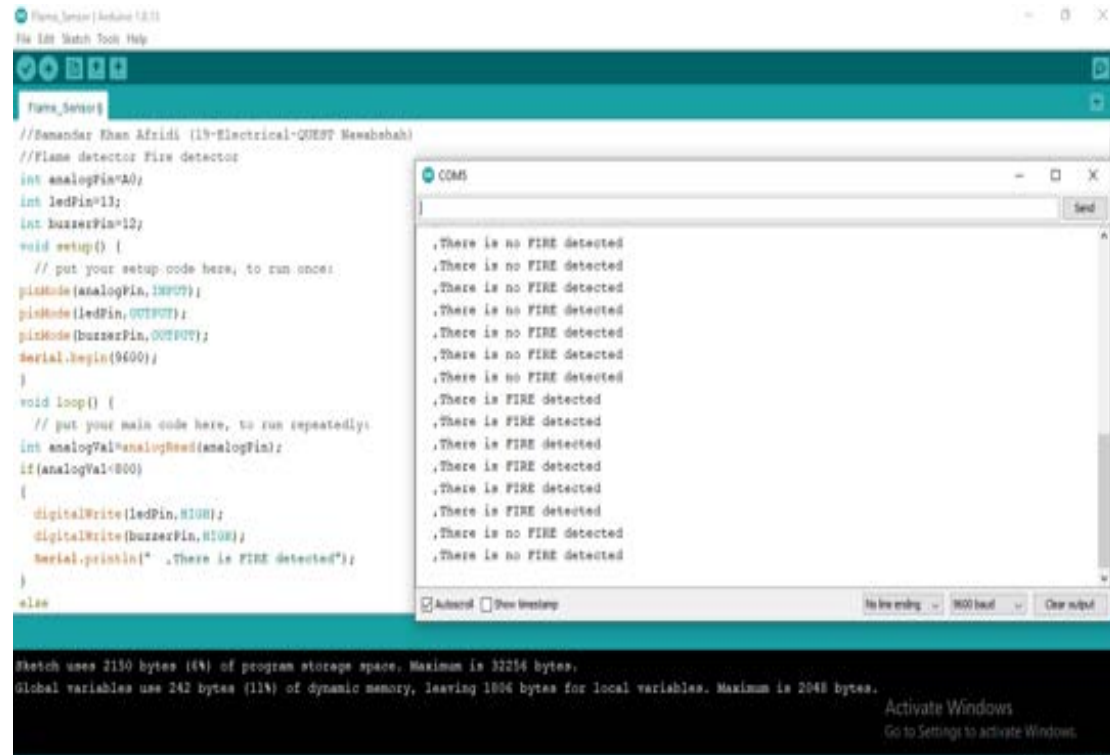
        Serial.println(" ,There is no FIRE detected");  

    }  

}

```

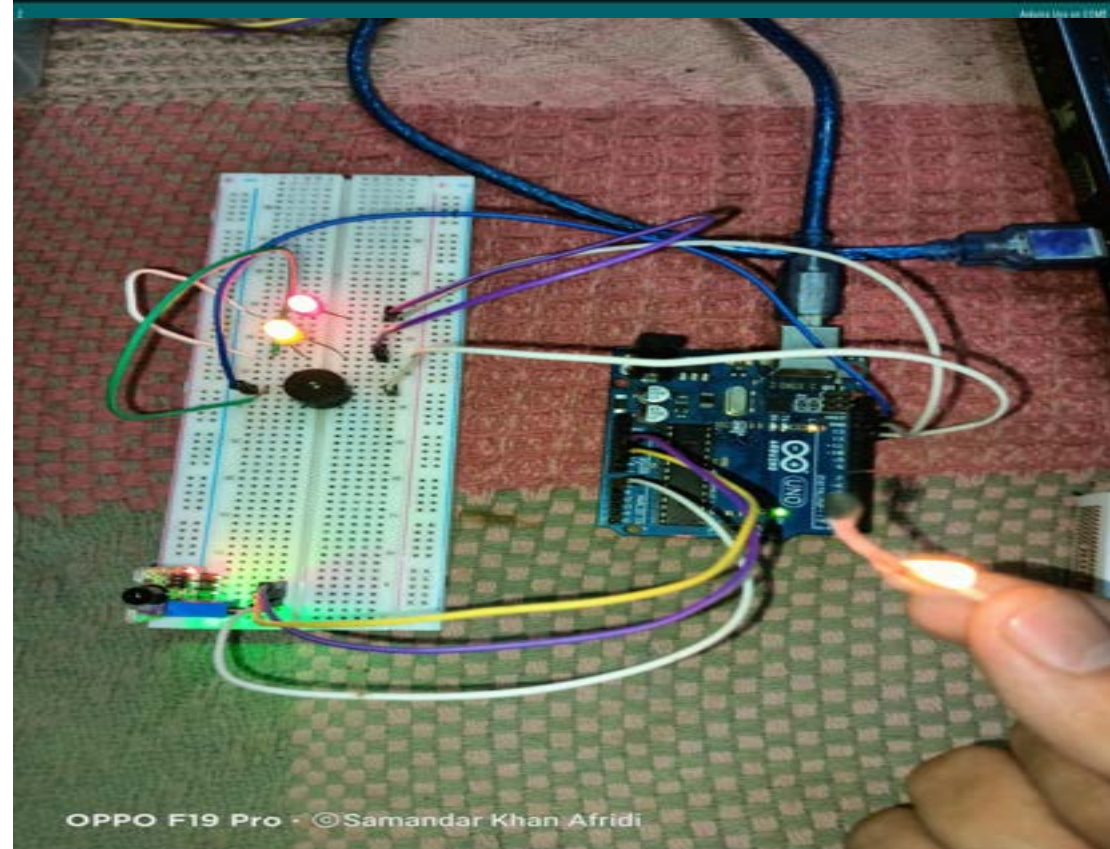
```
delay(1000);  
}
```



The screenshot shows the Arduino IDE interface. The main window displays a sketch titled "Flame_Sensor" by Samandar Khan Afridi. The code is as follows:

```
//Samandar Khan Afridi (19-Electrical-QUEST Nawabshah)  
//Flame detector Fire detector  
int analogPin=A0;  
int ledPin=13;  
int buzzerPin=12;  
void setup() {  
  // put your setup code here, to run once:  
  pinMode(analogPin,INPUT);  
  pinMode(ledPin,OUTPUT);  
  pinMode(buzzerPin,OUTPUT);  
  Serial.begin(9600);  
}  
void loop() {  
  // put your main code here, to run repeatedly:  
  int analogVal=analogRead(analogPin);  
  if(analogVal<800)  
  {  
    digitalWrite(ledPin,HIGH);  
    digitalWrite(buzzerPin,HIGH);  
    Serial.println(" .There is FIRE detected");  
  }  
  else
```

A serial monitor window is open, showing the output of the sketch. It displays a sequence of messages: "There is no FIRE detected" followed by "There is FIRE detected", and then back to "There is no FIRE detected". The messages are preceded by a comma. At the bottom of the IDE, a status bar indicates: "Sketch uses 2130 bytes (6%) of program storage space. Maximum is 32256 bytes. Global variables use 242 bytes (11%) of dynamic memory, leaving 1006 bytes for local variables. Maximum is 2048 bytes." An "Activate Windows" watermark is visible in the bottom right corner.



**No#35//Samandar Khan Afridi (19-Electrical-
QUEST Nawabshah)**

//Arithmetic operators(+,-,*,/,%)

int x=5;

int y=2;

float p=3;

float q=2;

int a;

int b;

int c;

float d;

int e;

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

int a=x+y;

int b=x-y;

int c=x*y;

float d=p/q;

int e=x%y;

Serial.println(a);

Serial.println(b);

Serial.println(c);

Serial.println(d);

Serial.println(e);

}

```
void loop() {  
    // put your main code here, to run repeatedly:
```

```
}
```

