

LAB 06

EC 2010

COMPUTER PROGRAMMING

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2020/E/189

GROUP D

SEMESTER 2

17 NOV 2021

1)

// C++ code

int ledPort1 = 12;

int ledPort2 = 11;

void setup()

{

pinMode(ledPort1, OUTPUT);

pinMode(ledPort2, OUTPUT);

}

void loop()

{

digitalWrite(ledPort1, HIGH);

delay(1000);

digitalWrite(ledPort1, LOW);

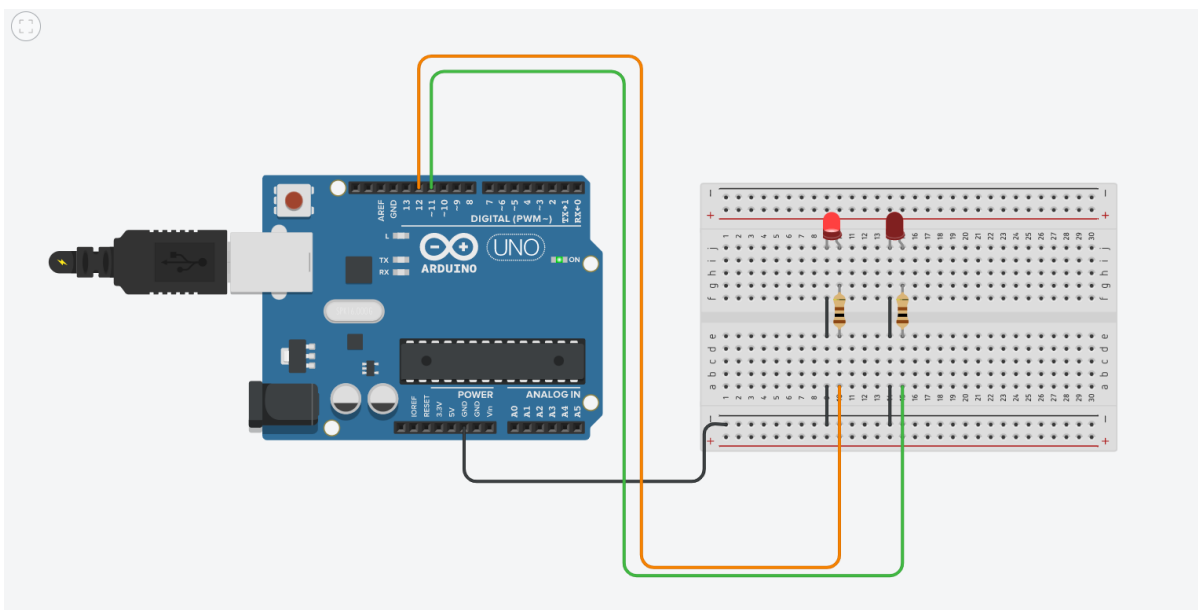
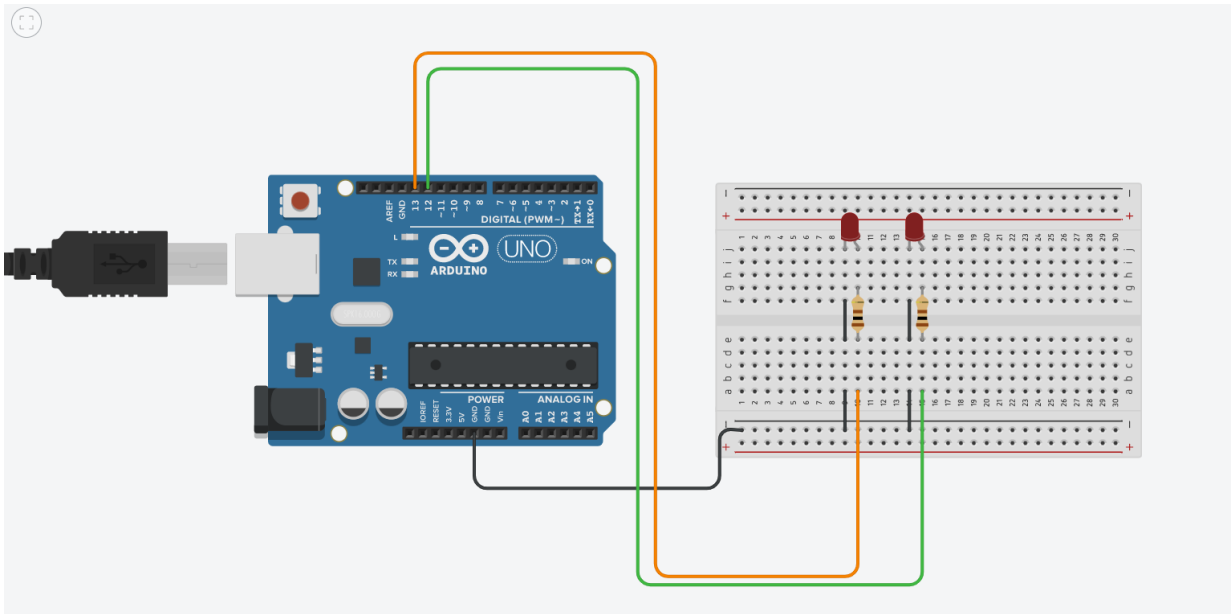
digitalWrite(ledPort2, HIGH);

delay(1000);

digitalWrite(ledPort2, LOW);

}

```
1 // C++ code
2 int ledPort1 = 12;
3 int ledPort2 = 11;
4 void setup()
5 {
6     pinMode(ledPort1, OUTPUT);
7     pinMode(ledPort2, OUTPUT);
8 }
9
10 void loop()
11 {
12     digitalWrite(ledPort1, HIGH);
13     delay(1000);
14     digitalWrite(ledPort1, LOW);
15     digitalWrite(ledPort2, HIGH);
16     delay(1000);
17     digitalWrite(ledPort2, LOW);
18 }
19
20
```



Link - https://www.tinkercad.com/things/gcWl8rKIZom-q1/editel?sharecode=dQpZw_Qge6nd3Cc_E258phhcmijaVDufK8KYfvbbtTI

2)

// C++ code

int i;

void setup()

{

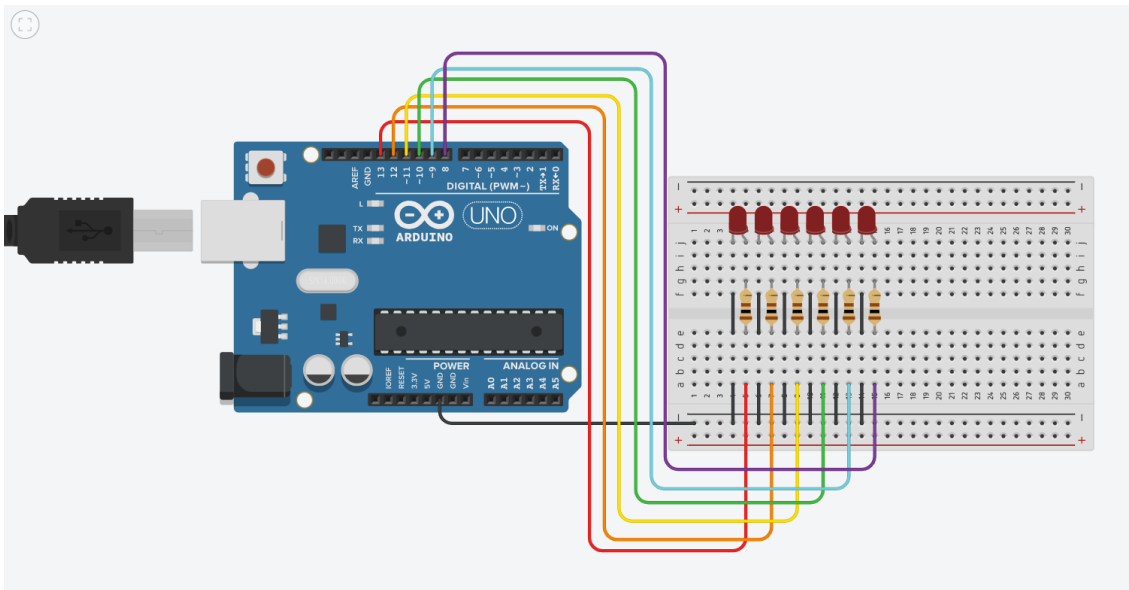
```
pinMode(13, OUTPUT);  
pinMode(12, OUTPUT);  
pinMode(11, OUTPUT);  
pinMode(10, OUTPUT);  
pinMode(9, OUTPUT);  
pinMode(8, OUTPUT);  
}
```

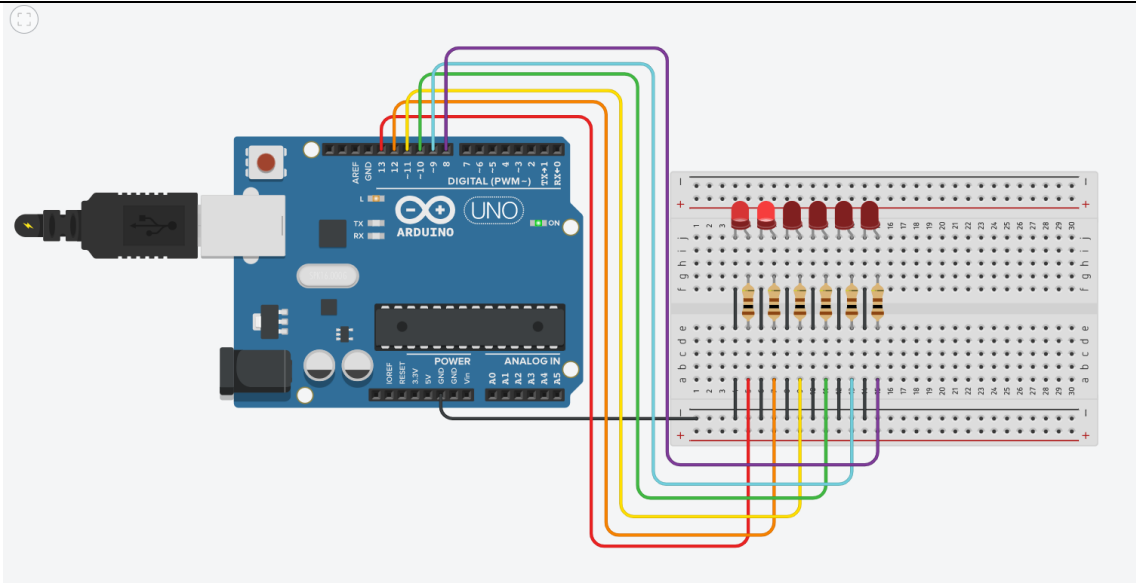
```
void loop()  
{  
  for (i = 13; 8 <= i; --i)  
  {  
    digitalWrite(i, HIGH);  
    delay(200);  
    digitalWrite(i, LOW);  
  }  
  for (i = 9; i <= 12; ++i)  
  {  
    digitalWrite(i, HIGH);  
    delay(200);  
    digitalWrite(i, LOW);  
  }  
}
```

```

1 // C++ code
2 int i;
3 void setup()
4 {
5     pinMode(13, OUTPUT);
6     pinMode(12, OUTPUT);
7     pinMode(11, OUTPUT);
8     pinMode(10, OUTPUT);
9     pinMode(9, OUTPUT);
10    pinMode(8, OUTPUT);
11 }
12
13 void loop()
14 {
15     for (i = 13; 8 <= i; --i)
16     {
17         digitalWrite(i, HIGH);
18         delay(200);
19         digitalWrite(i, LOW);
20     }
21     for (i = 9; i <= 12; ++i)
22     {
23         digitalWrite(i, HIGH);
24         delay(200);
25         digitalWrite(i, LOW);
26     }
27 }

```





Link - <https://www.tinkercad.com/things/9udTpKbZ5AB-q2/editel?sharecode=QWBzz2R4o5TbB2NFbGR26gL3pb-BUn4x9PTYRVCDsYU>

3.1)

```
int ledPin = 13;
```

```
int inPin = 7;
```

```
byte lastState = LOW;
```

```
byte currentState;
```

```
byte ledState = LOW;
```

```
void setup()
```

 $\{$

```
pinMode(ledPin, OUTPUT);
```

```
pinMode(inPin, INPUT);
```

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

}

```
void loop()
```

{

```
currentState = digitalRead(inPin);
```

```
Serial.println(currentState);
```

```
if (currentState != lastState)
```

```

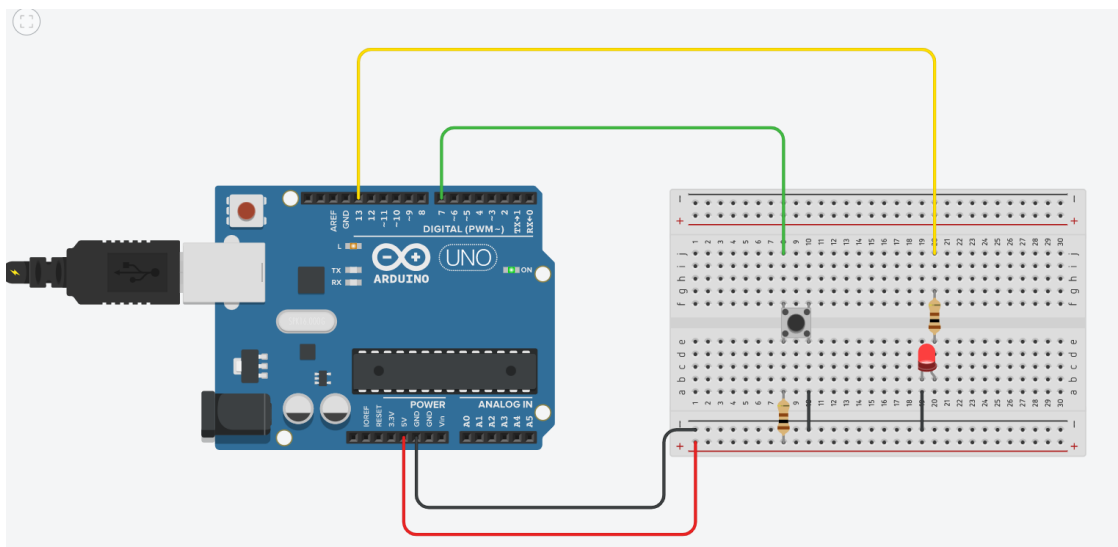
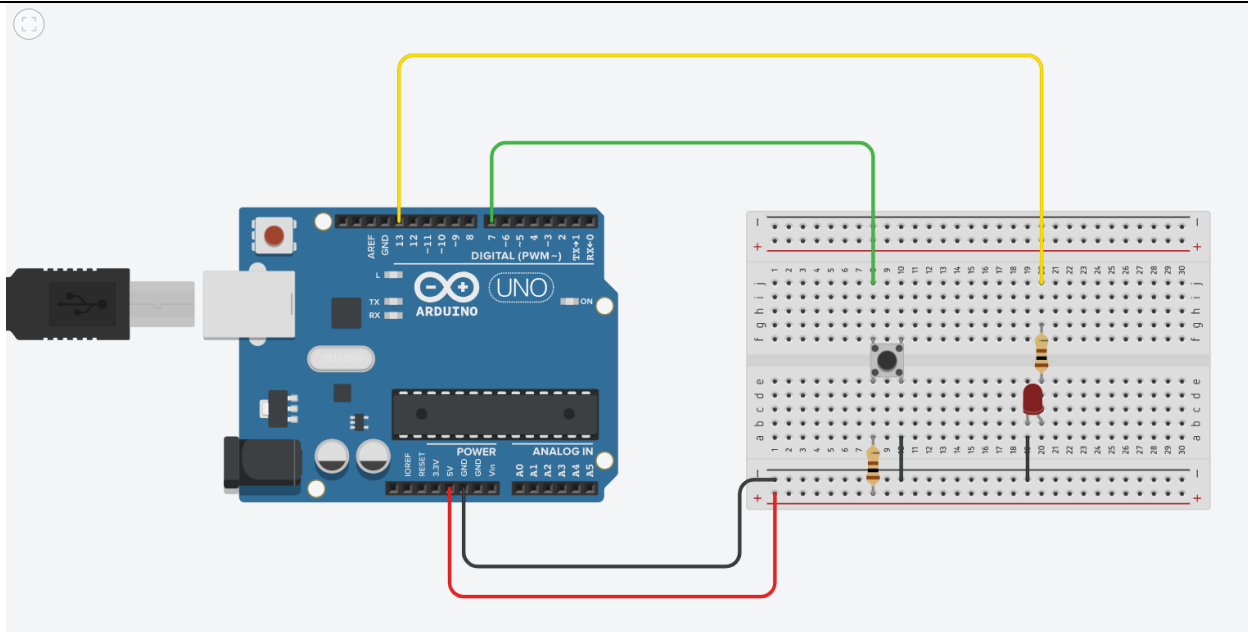
{
    lastState = currentState;
    if (currentState == LOW)
    {
        ledState = (ledState == HIGH) ? LOW : HIGH;
        digitalWrite(ledPin, ledState);
    }
}
}

```

```

1  int ledPin = 13;
2  int inPin = 7;
3  byte lastState = LOW;
4  byte currentState;
5  byte ledState = LOW;
6  void setup()
7  {
8      pinMode(ledPin, OUTPUT);
9      pinMode(inPin, INPUT);
10     Serial.begin (9600);
11 }
12 void loop()
13 {
14     currentState = digitalRead(inPin);
15     Serial.println(currentState);
16     if (currentState != lastState)
17     {
18         lastState = currentState;
19         if (currentState == LOW)
20         {
21             ledState = (ledState == HIGH) ? LOW : HIGH;
22             digitalWrite(ledPin, ledState);
23         }
24     }
25 }
26
27

```



Link - <https://www.tinkercad.com/things/4tIrY3vCwcr-q3-1/editel?sharecode=zatN4JsgpO7lle6LMBNUiwsko56haw1fFOu6WVrgFP0>

3.2)

```
int ledPort1 = 12;
```

```
int ledPort2 = 11;
```

```
int inPin = 7;
```

```
byte lastState = LOW;
```

```
byte currentState;
```



```
byte ledState = LOW;

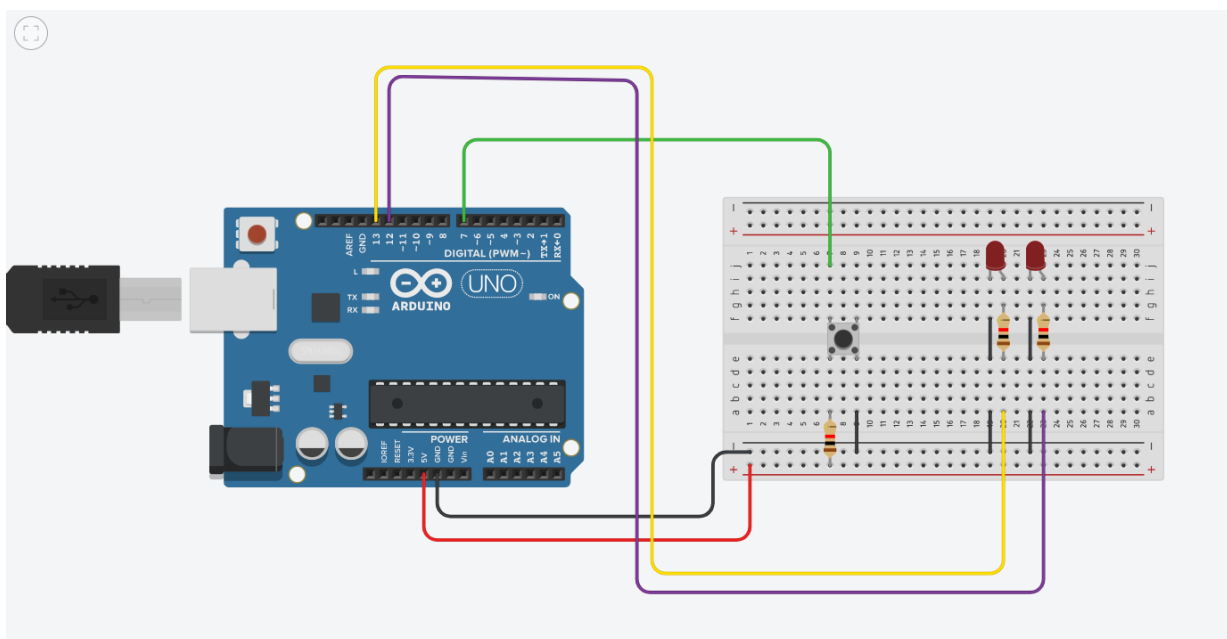
void setup()
{
    pinMode(ledPort1, OUTPUT);
    pinMode(ledPort2, OUTPUT);
    pinMode(inPin, INPUT);
    Serial.begin (9600);
}

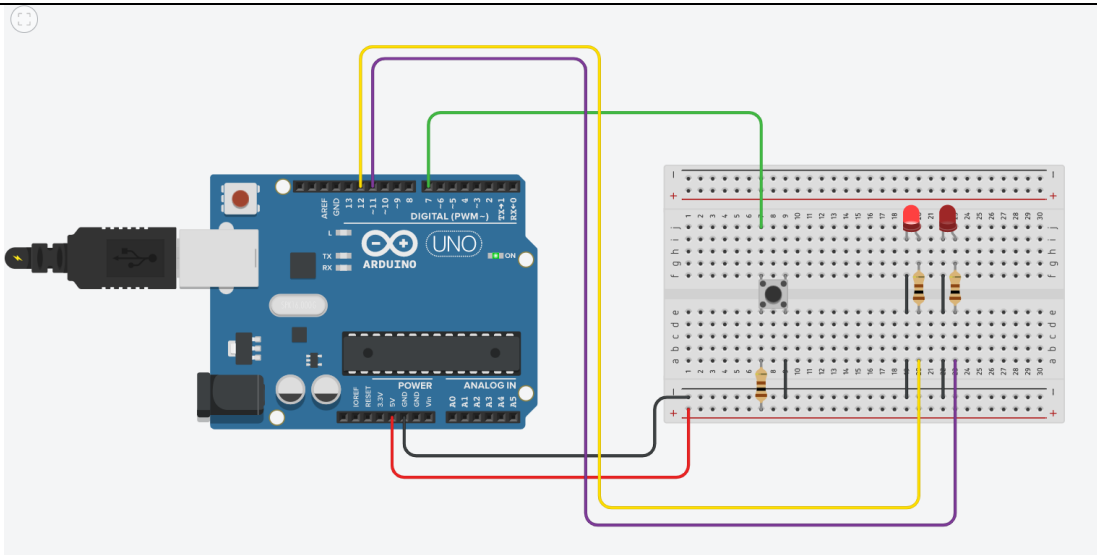
void loop()
{
    currentState = digitalRead(inPin);
    Serial.println(currentState);
    if (currentState != lastState)
    {
        lastState = currentState;
        if (currentState == LOW)
        {
            ledState = (ledState == HIGH) ? LOW : HIGH;
        }
    }
    if(ledState == HIGH)
    {
        digitalWrite(ledPort1, HIGH);
        delay(1000);
        digitalWrite(ledPort1, LOW);
        digitalWrite(ledPort2, HIGH);
        delay(1000);
        digitalWrite(ledPort2, LOW);
    }
}
```

```

1  int ledPort1 = 12;
2  int ledPort2 = 11;
3  int inPin = 7;
4  byte lastState = LOW;
5  byte currentState;
6  byte ledState = LOW;
7  void setup()
8  {
9      pinMode(ledPort1, OUTPUT);
10     pinMode(ledPort2, OUTPUT);
11     pinMode(inPin, INPUT);
12     Serial.begin (9600);
13 }
14 void loop()
15 {
16     currentState = digitalRead(inPin);
17     Serial.println(currentState);
18     if (currentState != lastState)
19     {
20         lastState = currentState;
21         if (currentState == LOW)
22         {
23             ledState = (ledState == HIGH) ? LOW : HIGH;
24         }
25     }
26     if(ledState == HIGH)
27     {
28         digitalWrite(ledPort1, HIGH);
29         delay(1000);
30         digitalWrite(ledPort1, LOW);
31         digitalWrite(ledPort2, HIGH);
32         delay(1000);
33         digitalWrite(ledPort2, LOW);
34     }
35 }
36

```





Link - <https://www.tinkercad.com/things/6TyjgJFsrXt-q3-2/editel?sharecode=ovIGvWqOyKcG6cM0voUIpLMxtvYyAfefZHDGLtsXeDM>

3.3)

```
int i;
```

```
int inPin = 7;
```

```
byte lastState = LOW;
```

```
byte currentState;
```

```
byte ledState = LOW;
```

```
void setup()
```

 $\{$

```
pinMode(13, OUTPUT);
```

```
pinMode(12, OUTPUT);
```

```
pinMode(11, OUTPUT);
```

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

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

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

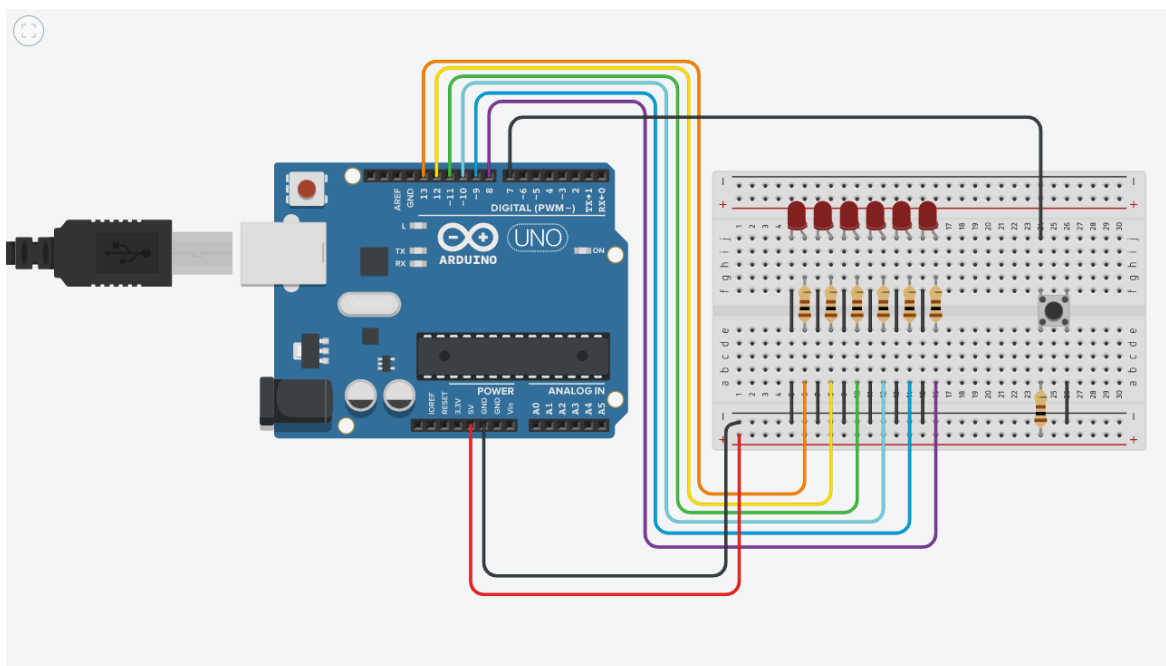
```
pinMode(inPin, INPUT);
```

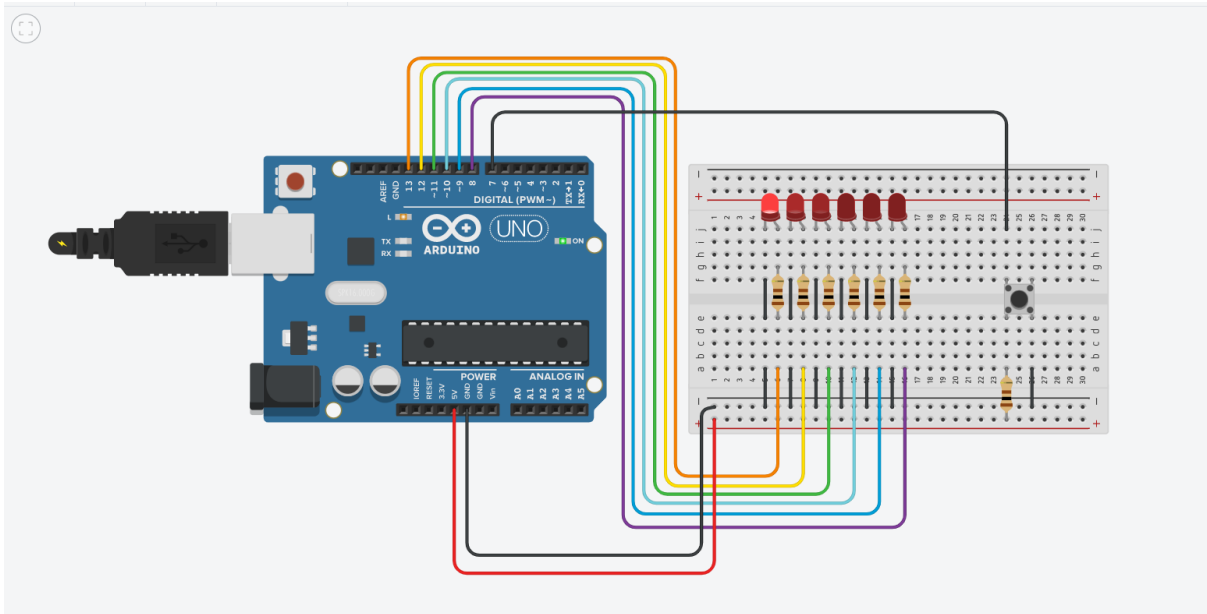
```
}  
  
void loop()  
{  
    currentState = digitalRead(inPin);  
    if (currentState != lastState)  
    {  
        lastState = currentState;  
        if (currentState == LOW)  
        {  
            ledState = (ledState == HIGH) ? LOW : HIGH;  
        }  
    }  
    if(ledState == HIGH)  
    {  
        for (i = 13; 8 <= i; --i)  
        {  
            digitalWrite(i, HIGH);  
            delay(200);  
            digitalWrite(i, LOW);  
        }  
        for (i = 9; i <= 12; ++i)  
        {  
            digitalWrite(i, HIGH);  
            delay(200);  
            digitalWrite(i, LOW);  
        }  
    }  
}
```

```

1  int i;
2  int inPin = 7;
3  byte lastState = LOW;
4  byte currentState;
5  byte ledState = LOW;
6  void setup()
7  {
8      pinMode(13, OUTPUT);
9      pinMode(12, OUTPUT);
10     pinMode(11, OUTPUT);
11     pinMode(10, OUTPUT);
12     pinMode(9, OUTPUT);
13     pinMode(8, OUTPUT);
14     pinMode(inPin, INPUT);
15 }
16 void loop()
17 {
18     currentState = digitalRead(inPin);
19     if (currentState != lastState)
20     {
21         lastState = currentState;
22         if (currentState == LOW)
23         {
24             ledState = (ledState == HIGH) ? LOW : HIGH;
25         }
26     }
27     if(ledState == HIGH)
28     {
29         for (i = 13; i >= 8; --i)
30         {
31             digitalWrite(i, HIGH);
32             delay(200);
33             digitalWrite(i, LOW);
34         }
35         for (i = 9; i <= 12; ++i)
36         {
37             digitalWrite(i, HIGH);
38             delay(200);
39             digitalWrite(i, LOW);
40         }
41     }
42 }
43

```





Link - <https://www.tinkercad.com/things/llwjxXxS9A9-q3-3/editel?sharecode=jzDkoJVoh8dzYpxRmiAvqDThnKfeOIEI7MMQALPbihc>

4)

// C++ code

int ledPin = 6;

int controller = A5;

int value;

void setup()

{

pinMode(ledPin, OUTPUT);

pinMode(controller, INPUT);

Serial.begin(9600);

}

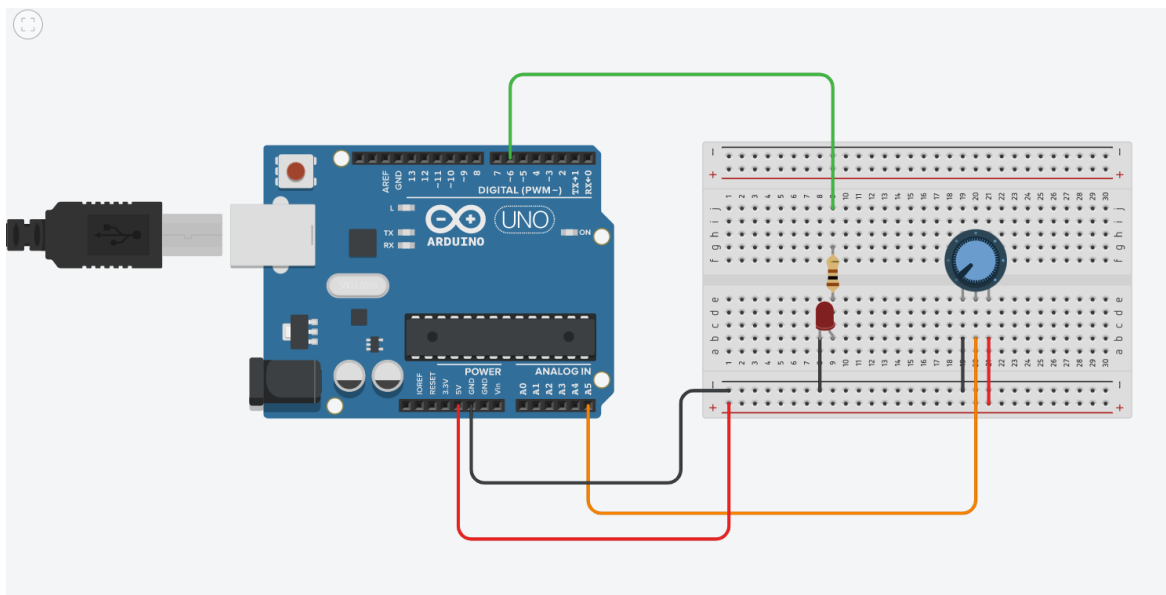
void loop()

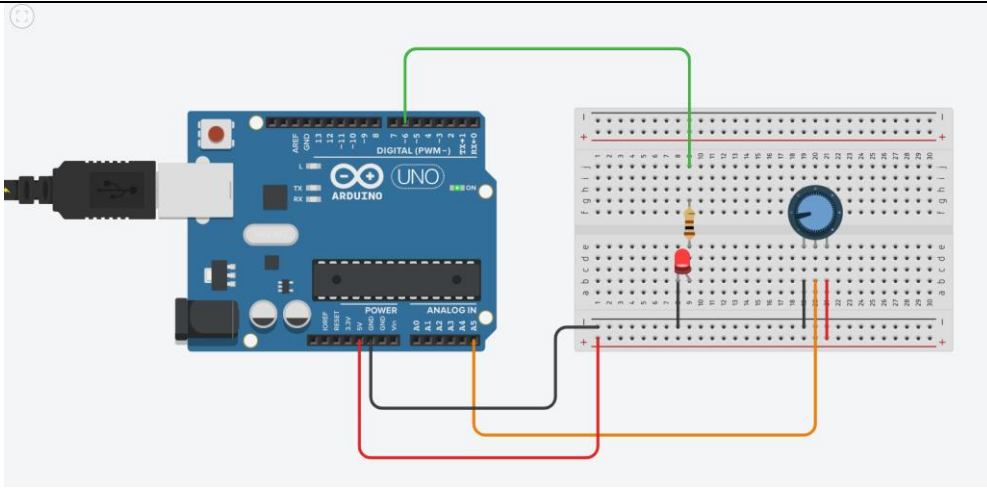
{

```
value = analogRead(controller);  
  
value = map (value, 0, 1024, 255, 0);  
  
Serial.println(analogRead(controller));  
  
analogWrite(ledPin,value);
```

```
}
```

```
1 // C++ code  
2 int ledPin = 6;  
3 int controller = A5;  
4 int value;  
5 void setup()  
6 {  
7   pinMode(ledPin, OUTPUT);  
8   pinMode(controller, INPUT);  
9   Serial.begin(9600);  
10 }  
11  
12 void loop()  
13 {  
14   value = analogRead(controller);  
15   value = map (value, 0, 1024, 255, 0);  
16   Serial.println(analogRead(controller));  
17   analogWrite(ledPin,value);  
18 }
```





Link - https://www.tinkercad.com/things/4KJxc2uXIDo-q4/editel?sharecode=55H0APhPUmU_zUZeZRdHXbOn8GCM7BznXBdoXZQ-b3E

5)

// C++ code

```
int tempPin = A5;
```

```
int greenLed = 6;
```

```
int redLed = 5;
```

```
double sensorValue;
```

```
double celsius;
```

```
void setup()
```

```
{
```

```
  pinMode (tempPin, INPUT);
```

```
  pinMode (greenLed, OUTPUT);
```

```
  pinMode (redLed, OUTPUT);
```

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

```
}
```

```
void loop()
```

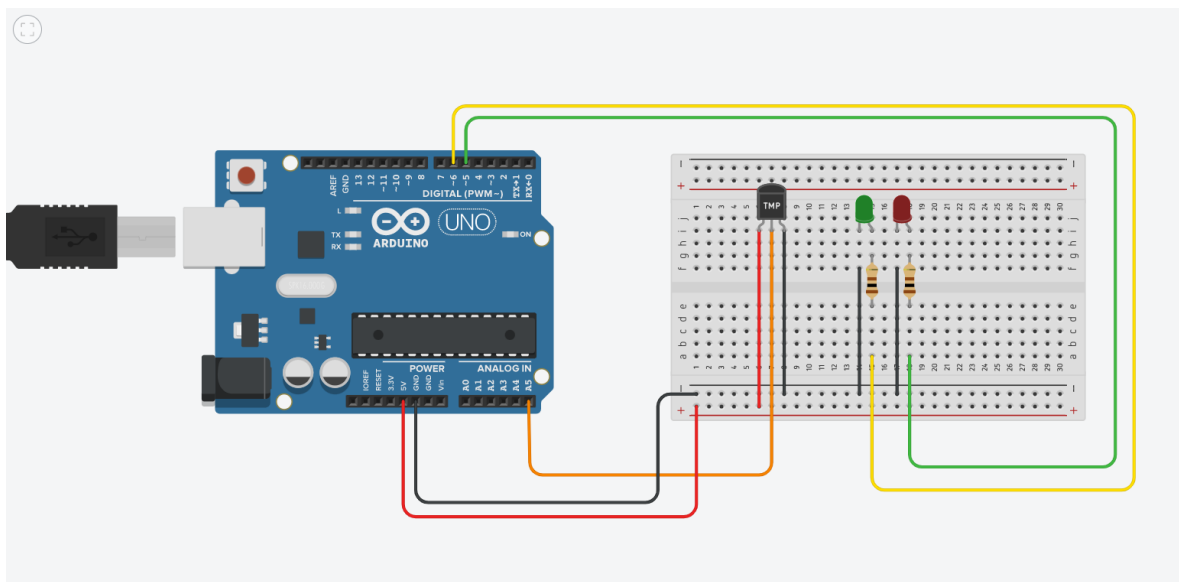


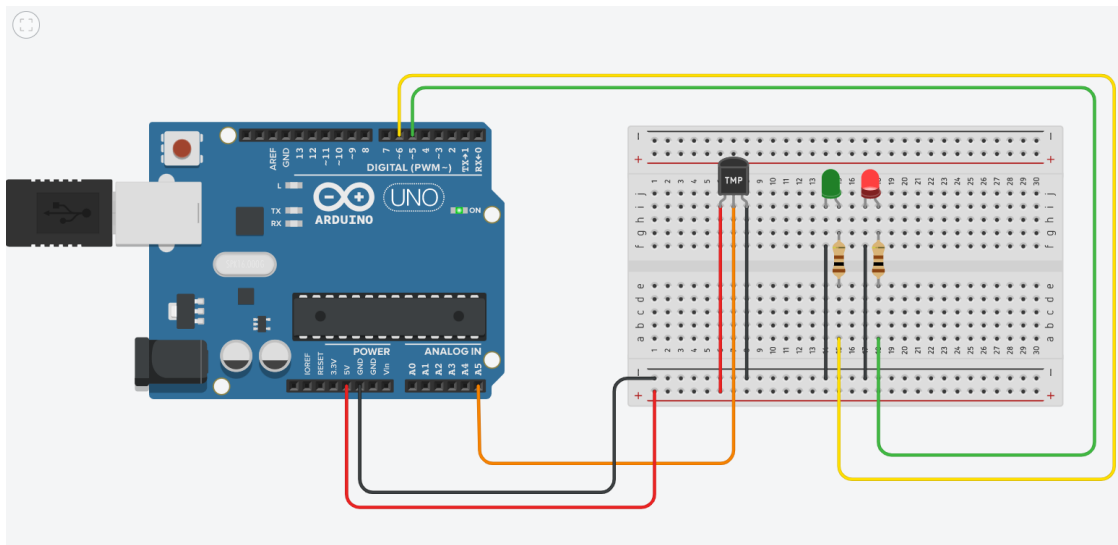
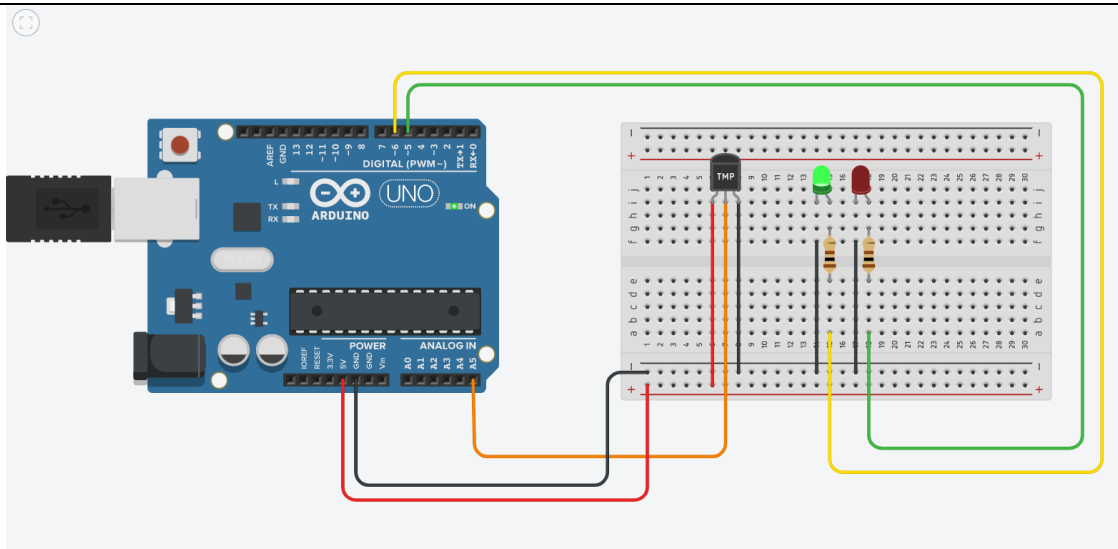
```
{  
  sensorValue = analogRead (tempPin);  
  celsius = sensorValue / 1024;  
  celsius = celsius * 5;  
  celsius = celsius - 0.5;  
  celsius = celsius * 100;  
  Serial.println(celsius);  
  if (celsius < 35)  
  {  
    digitalWrite (greenLed, HIGH);  
    digitalWrite (redLed, LOW);  
  }  
  else  
  {  
    digitalWrite (redLed, HIGH);  
    digitalWrite (greenLed, LOW);  
  }  
}
```

```

1 // C++ code
2 int tempPin = A5;
3 int greenLed = 6;
4 int redLed = 5;
5 double sensorValue;
6 double celsius;
7 void setup()
8 {
9     pinMode (tempPin, INPUT);
10    pinMode (greenLed, OUTPUT);
11    pinMode (redLed, OUTPUT);
12    Serial.begin(9600);
13 }
14
15 void loop()
16 {
17     sensorValue = analogRead (tempPin);
18     celsius = sensorValue / 1024;
19     celsius = celsius * 5;
20     celsius = celsius - 0.5;
21     celsius = celsius * 100;
22     Serial.println(celsius);
23     if (celsius < 35)
24     {
25         digitalWrite (greenLed, HIGH);
26         digitalWrite (redLed, LOW);
27     }
28     else
29     {
30         digitalWrite (redLed, HIGH);
31         digitalWrite (greenLed, LOW);
32     }
33 }
34 }

```





Link - <https://www.tinkercad.com/things/abkA214dcl4-q5/editel?sharecode=G3R3EZg2T8AoqocK-EJQzwJ2E12l4nVzXhK3X55etkg>