LAB 06

EC 2010

COMPUTER PROGRAMMING

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2020/E/189

GROUP D

SEMESTER 2

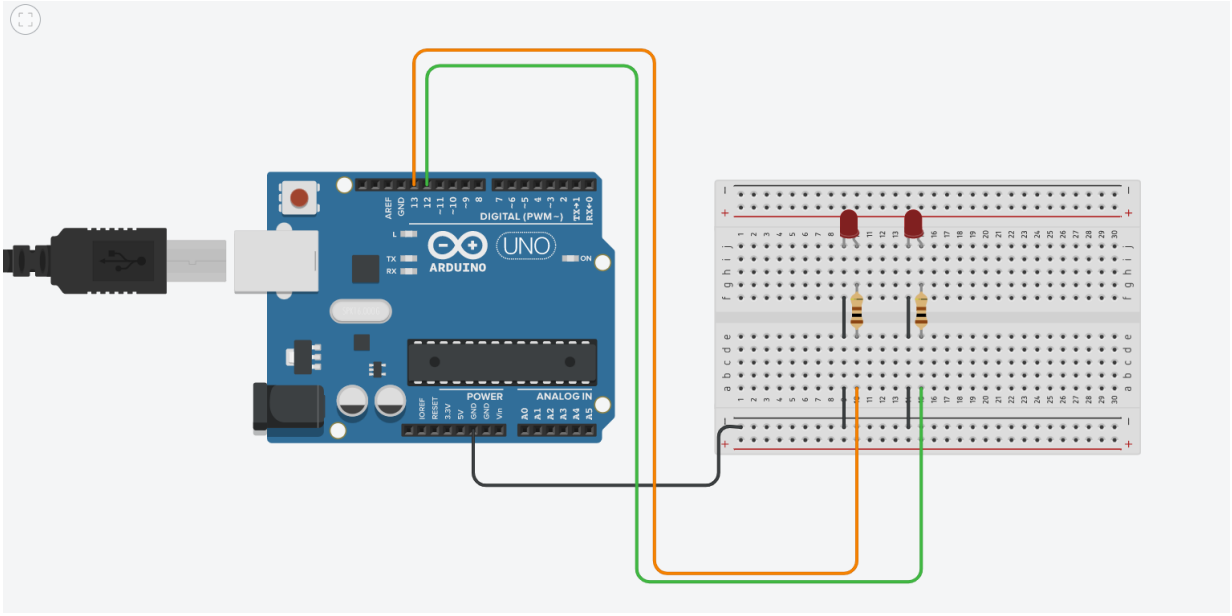
17 NOV 2021

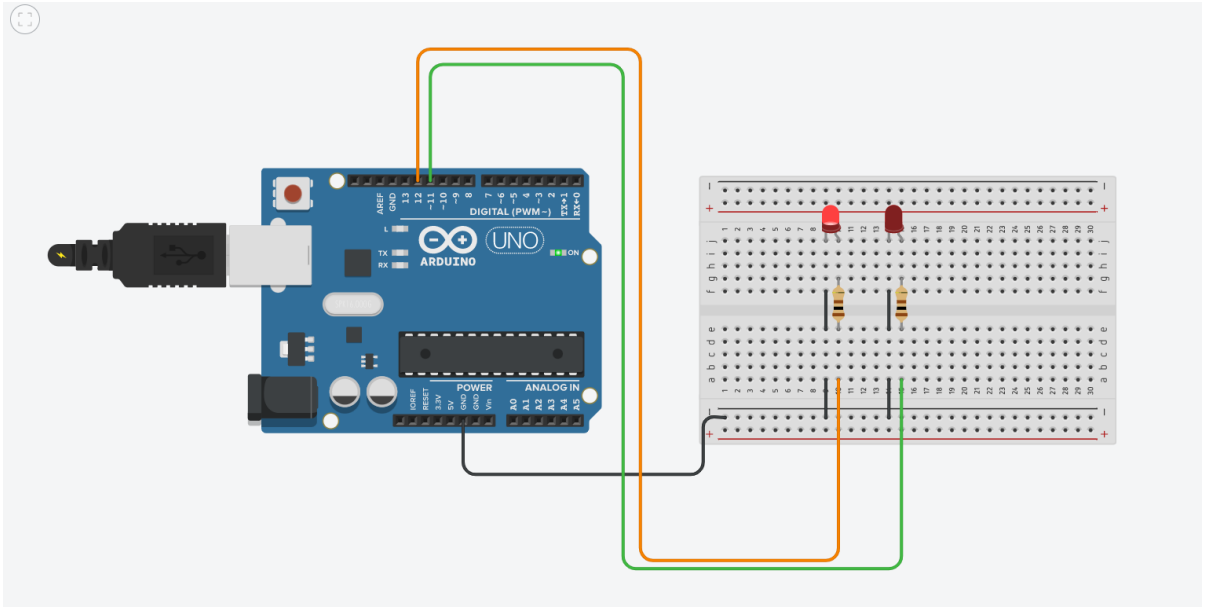
1)

```
// 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
```





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2)

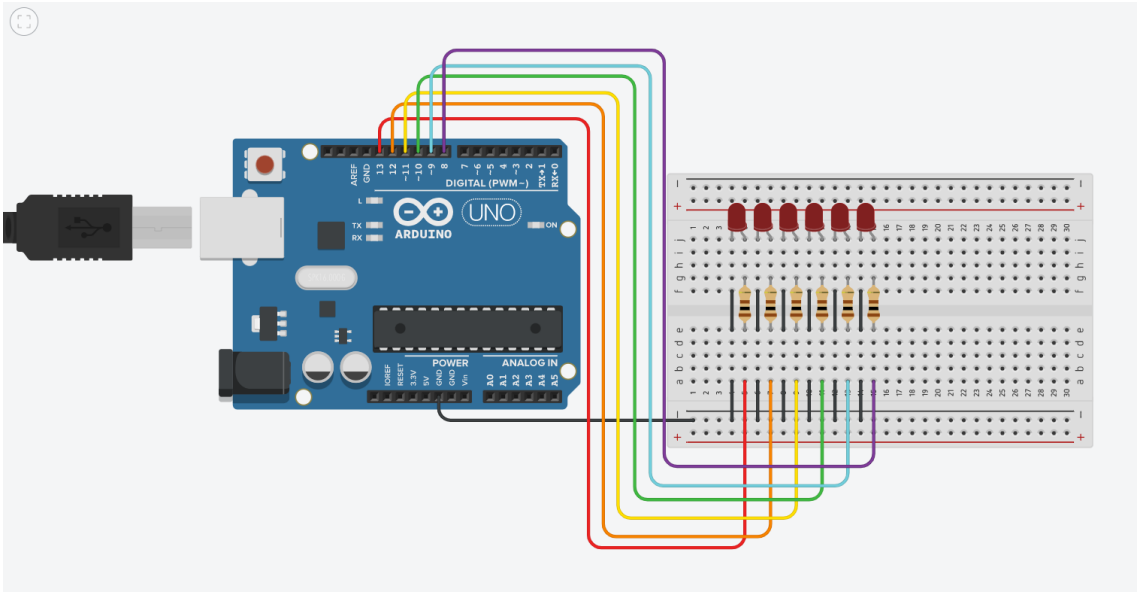
```
// C++ code
int i;
void setup()
{
```

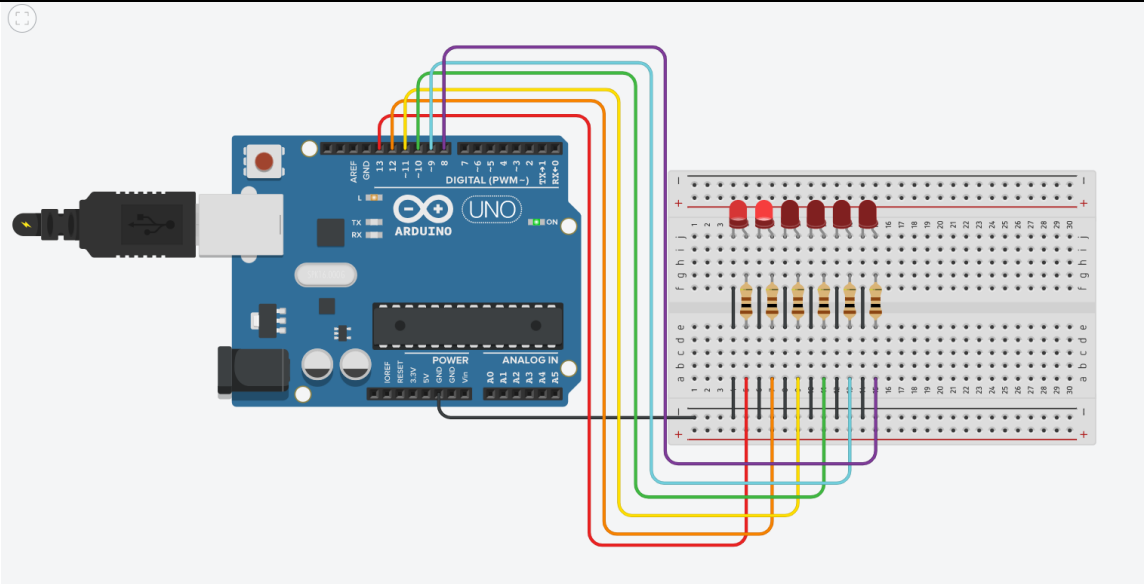
```
  pinMode(13, OUTPUT);
  pinMode(12, OUTPUT);
  pinMode(11, OUTPUT);
  pinMode(10, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(8, OUTPUT);
}

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);
  }
}
```

```cpp
// 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);
  }
}
```





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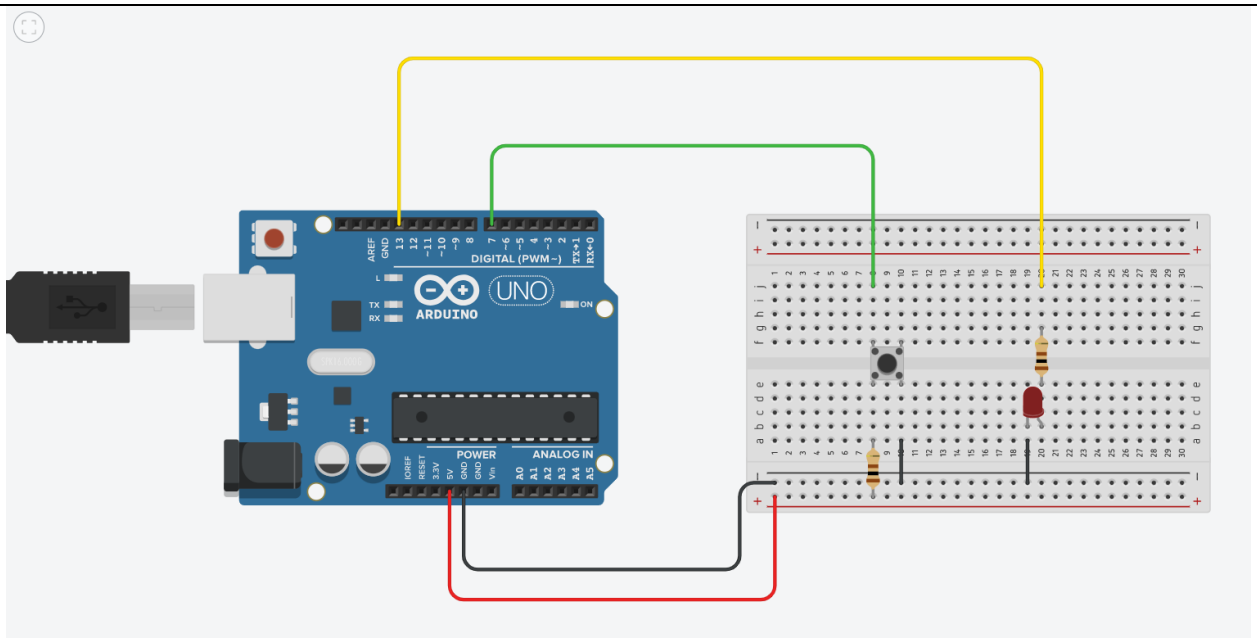
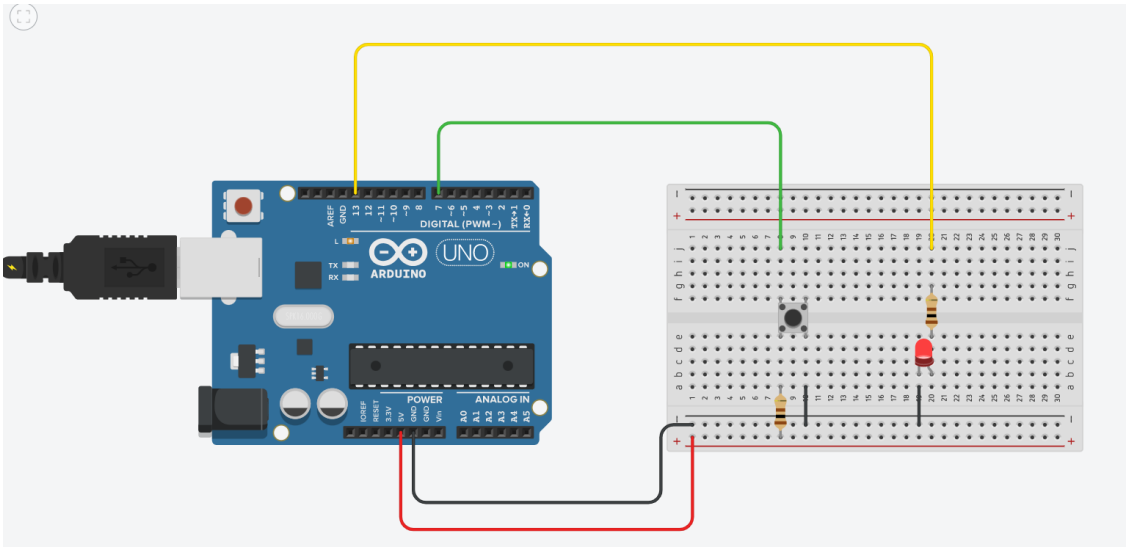
3.1)

```
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);
    }
  }
}
```

```
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);
    }
  }
}
```





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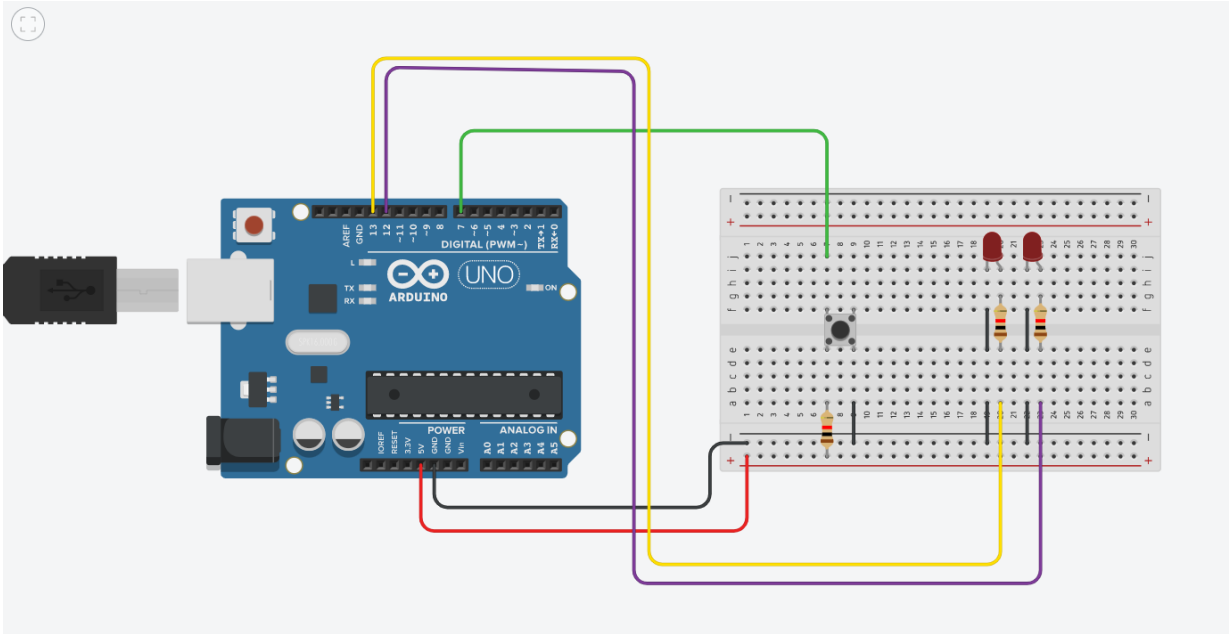
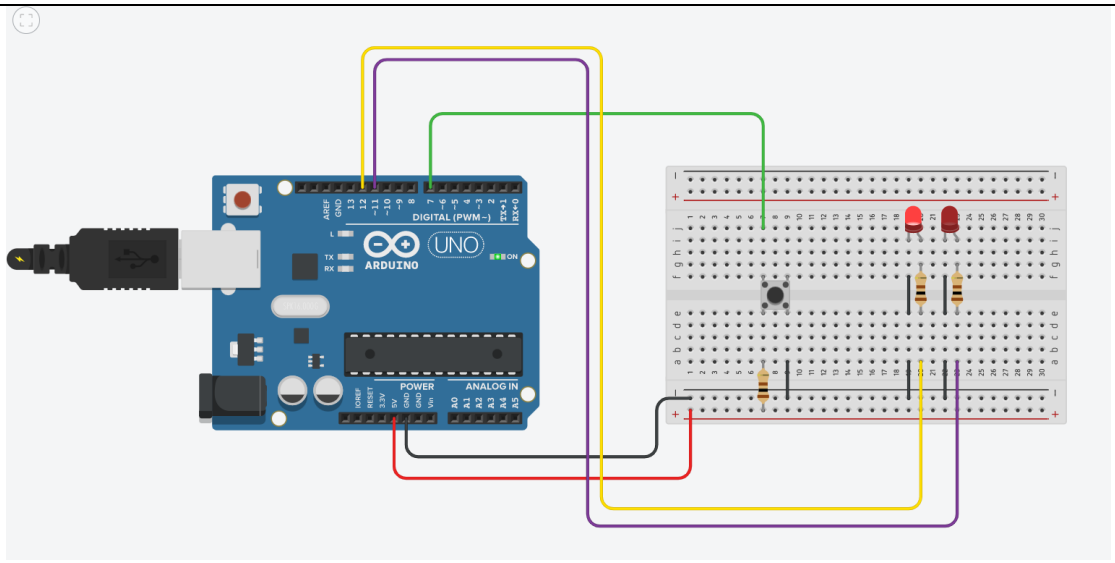
3.2)

```
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);
 }
}
```

```
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);
  }
}

```





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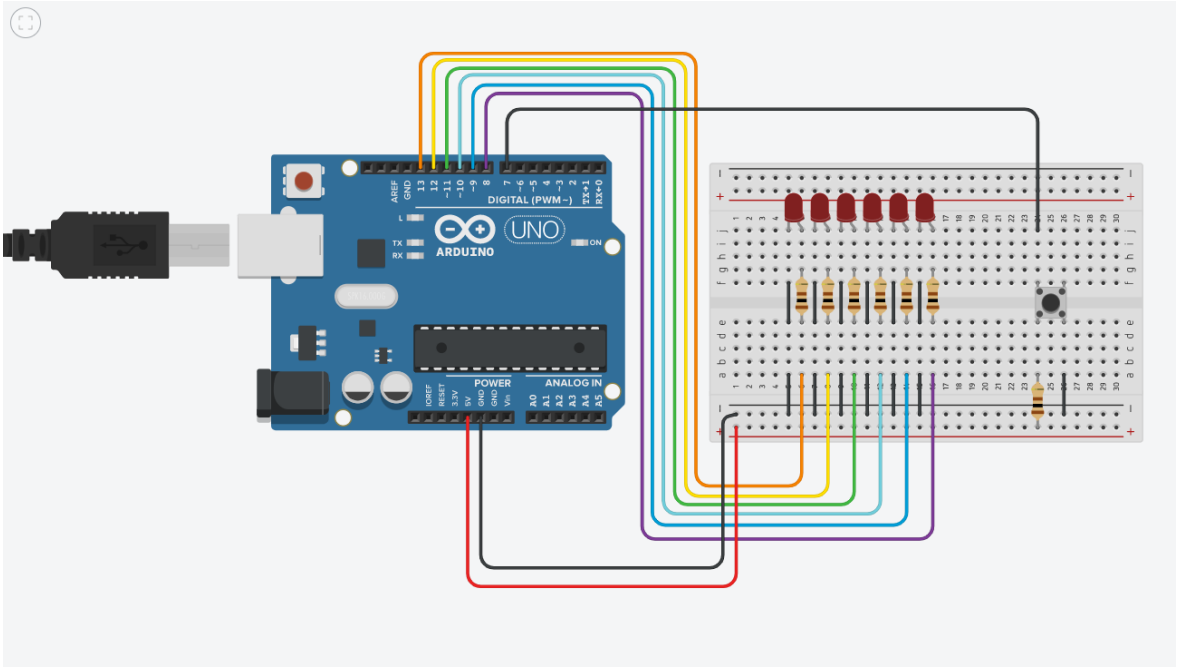
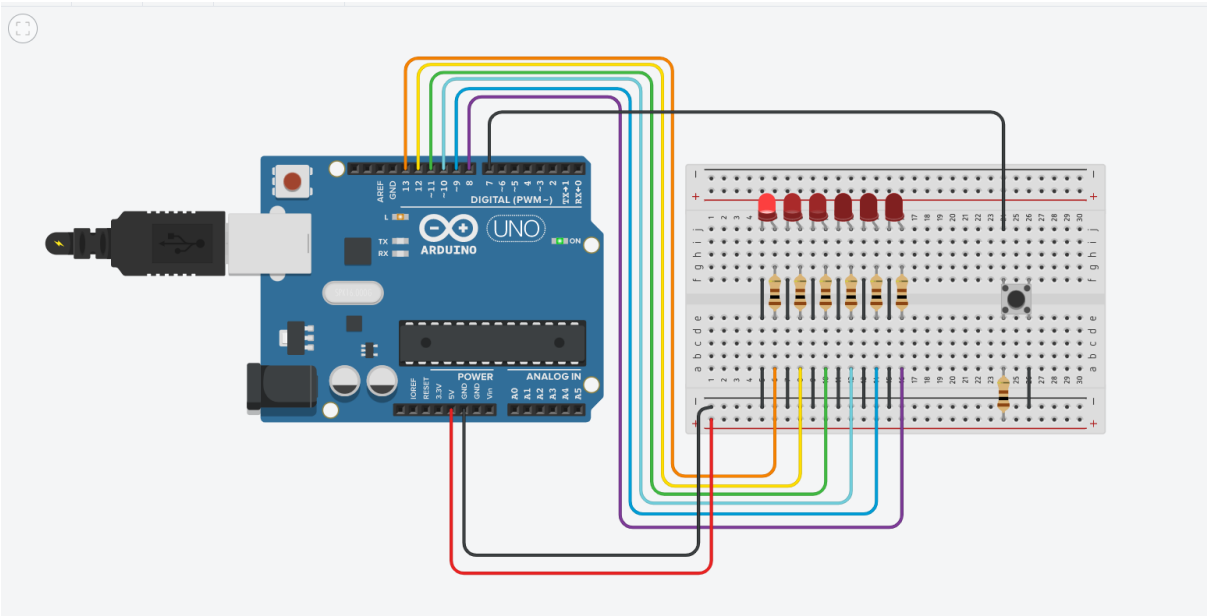
3.3)

```
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);
    }
  }
}
```

```ino
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);
    }
  }
}
```





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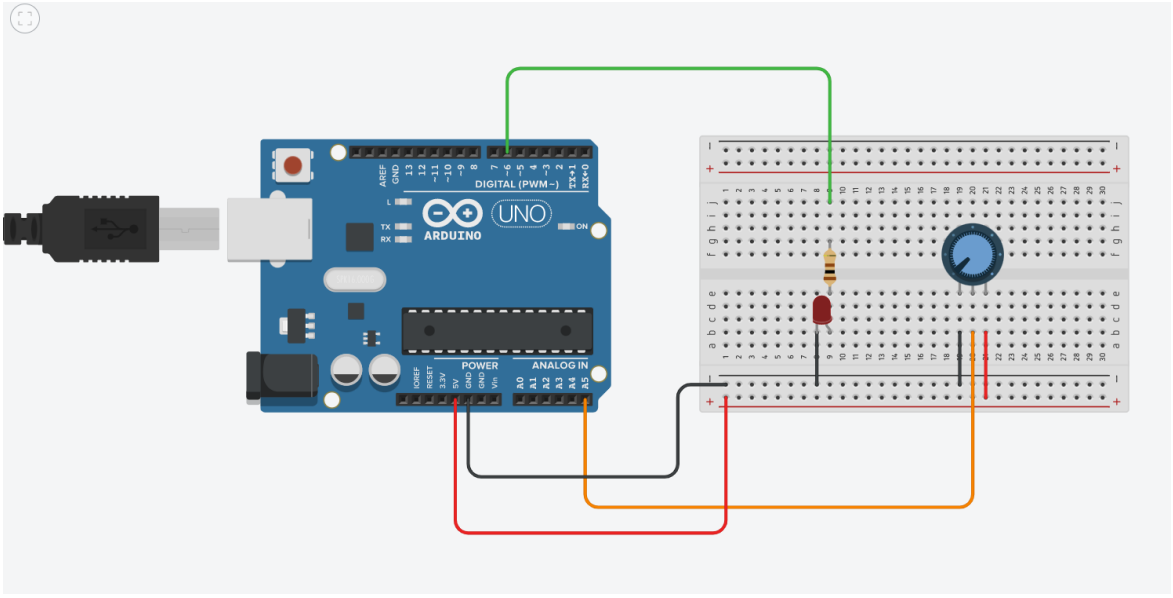
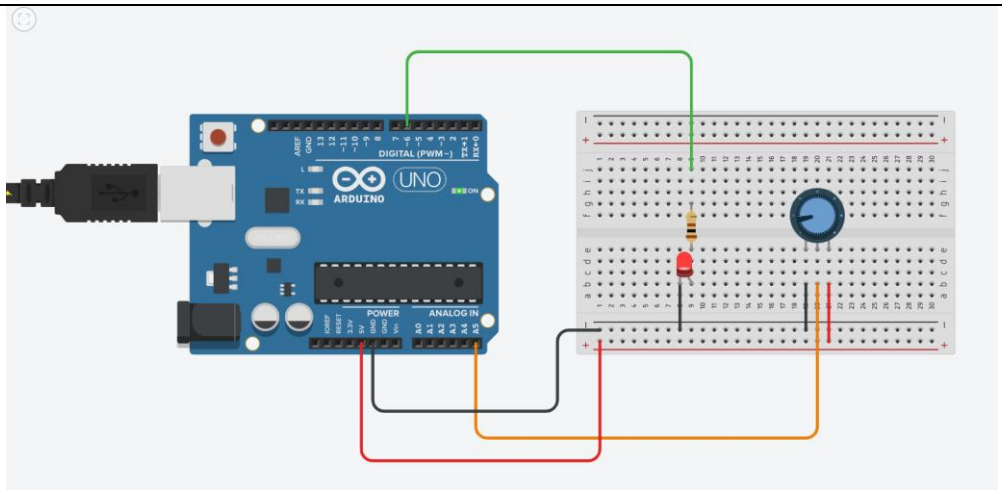
4)

```
// 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);
}
```

```
// 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);
}
```





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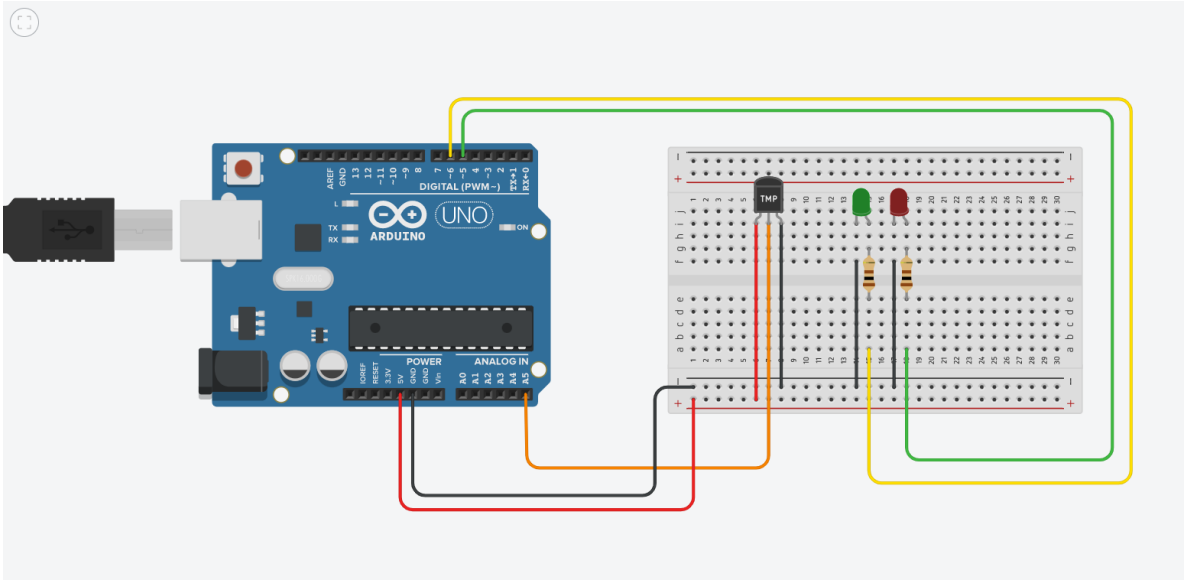
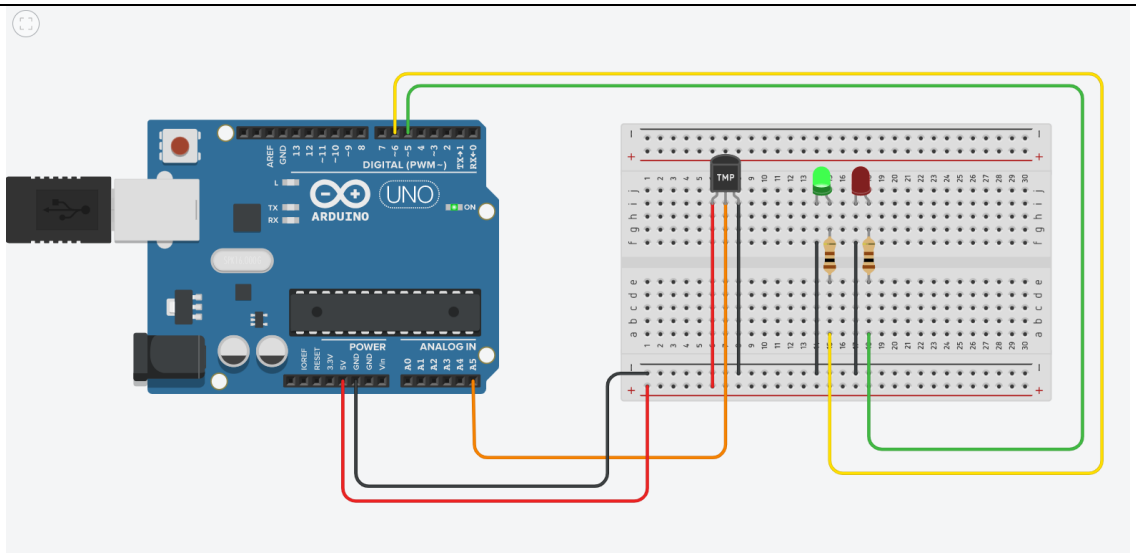
5)

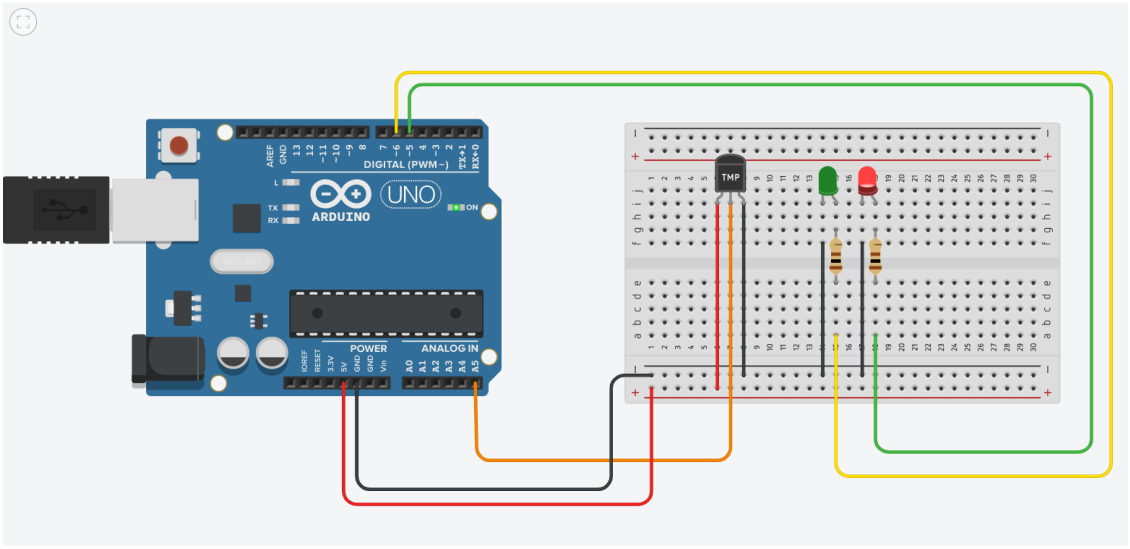
```
// C++ code
int tempPin = A5;
int greenLed = 6;
int redLed = 5;
double sensorValue;
double celsius;
void setup()
{
  pinMode (tempPin, INPUT);
  pinMode (greenLed, OUTPUT);
  pinMode (redLed, OUTPUT);
  Serial.begin(9600);
}

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);
  }

}
```

```ino
// 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);
  }

}
```







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