

LAB2

LDR (Light Dependent Resistor)

CODE:

```
const int ledPin = 13;

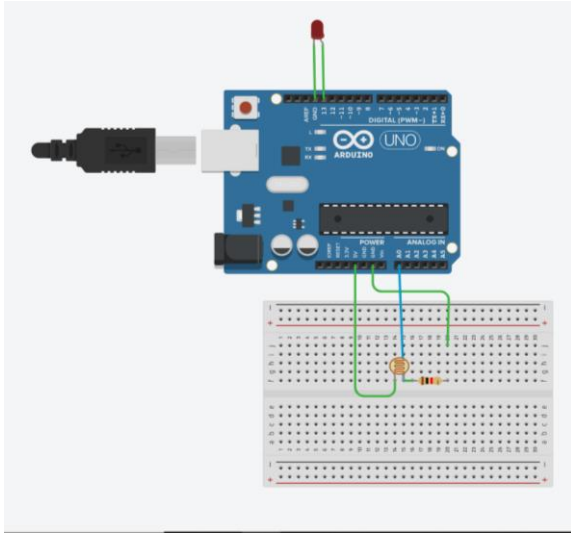
const int ldrPin = A0;

void setup()
{
    Serial.begin(9600);
    pinMode(ledPin, OUTPUT);
    pinMode(ldrPin, INPUT);
}

void loop()
{
    int ldrStatus = analogRead(ldrPin);
    Serial.println(ldrStatus);
    if(ldrStatus <=10)
    {
        digitalWrite(ledPin, HIGH);
        Serial.println("LDR is DARK, LED is ON");
    }
    else
    {
        digitalWrite(ledPin, LOW);
        Serial.println("LDR is BRIGHT, LED is OFF");
        Serial.println("-----");
    }
}
```

}

CIRCUIT:



OUTPUT:

Arduino IDE interface showing the LDR circuit simulation and the code used.

Code:

```
1 const int ledPin = 13;
2
3 const int ldrPin = A0;
4
5 void setup()
6 {
7   Serial.begin(9600);
8   pinMode(ledPin, OUTPUT);
9   pinMode(ldrPin, INPUT);
10 }
11
12 void loop()
13 {
14   int ldrStatus = analogRead(ldrPin);
15   Serial.println(ldrStatus);
16   if (ldrStatus <= 10)
17   {
18     digitalWrite(ledPin, HIGH);
19     Serial.println("LDR is DARK, LED is ON");
20   }
21   else
22   {
23     digitalWrite(ledPin, LOW);
24     Serial.println("LDR is BRIGHT, LED is OFF");
25     Serial.println("-----");
26   }
27 }
```

Serial Monitor Output:

```
497
-----
LDR is BRIGHT, LED is OFF
-----
6
LDR is DARK, LED is ON
6
LDR is DARK, LED is ON
6
LDR is DARK, LED is ON
```

PIR(Passive InfraRed sensor)

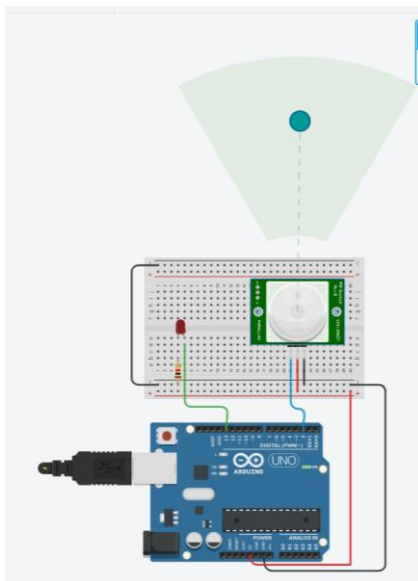
CODE:

```
int sensorState = 0;

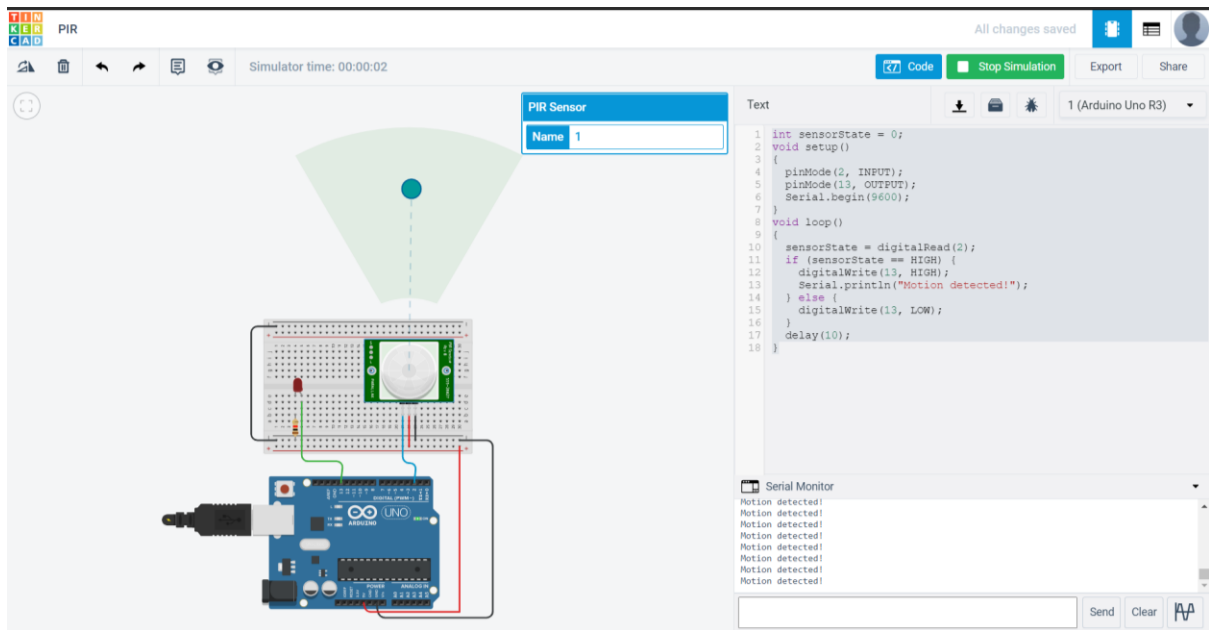
void setup()
{
  pinMode(2, INPUT);
  pinMode(13, OUTPUT);
  Serial.begin(9600);
}

void loop()
{
  sensorState = digitalRead(2);
  if (sensorState == HIGH) {
    digitalWrite(13, HIGH);
    Serial.println("Motion detected!");
  } else {
    digitalWrite(13, LOW);
  }
  delay(10);
}
```

CIRCUIT:



OUTPUT:



Temperature sensor:

CODE:

```
int outputpin=0;
```

```
void setup()
```

```
{
```

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

```
}
```

```
void loop()
```

```
{
```

```
  int rawvoltage=analogRead(outputpin);
```

```
  float millivolts=(rawvoltage/1024.0)*5000;
```

```
  int tempc=millivolts/10;
```

```
  int tempf=((tempc*9)/5 + 32);
```

```
  Serial.println("Temperature:");
```

```
  Serial.print("Celsius:");
```

```
  Serial.println(tempc);
```

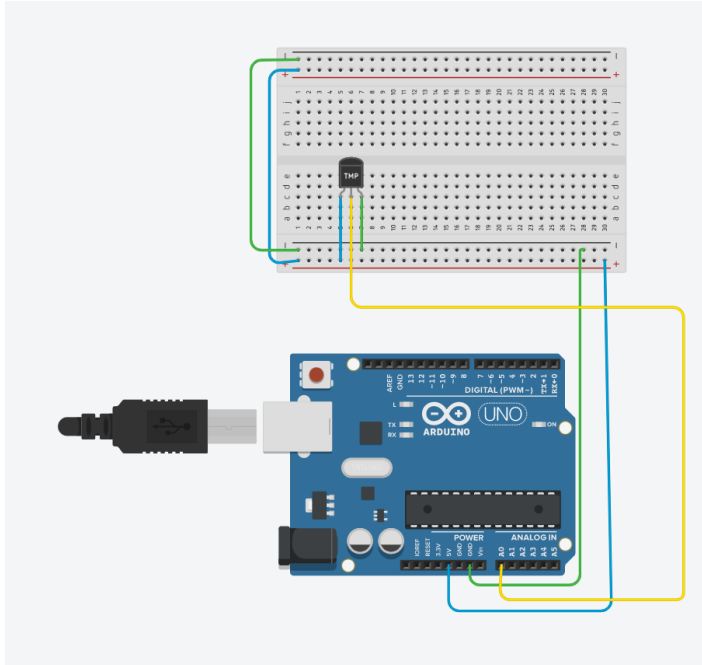
```
  Serial.print("Fahrenheit:");
```

```
Serial.println(tempf);

delay(3000);

}
```

CIRCUIT:



OUTPUT:

temp

All changes saved

Code Start Simulation Export Share

1 (Arduino Uno R3)

```
1 int outputpin=0;
2 void setup()
3 {
4   Serial.begin(9600);
5 }
6
7 void loop()
8 {
9   int rawvoltage=analogRead(outputpin);
10  float millivolts=(rawvoltage/1024.0)*5000;
11  int tempc=millivolts/10;
12  int tempf=((tempc*9)/5 + 32);
13  Serial.println("Temperature:");
14  Serial.print("Celsius:");
15  Serial.println(tempc);
16  Serial.print("Fahrenheit:");
17  Serial.println(tempf);
18  delay(3000);
19 }
```

Serial Monitor

```
Celsius:13/
Fahrenheit:278
Temperature:
Celsius:137
Fahrenheit:278
Temperature:
Celsius:137
Fahrenheit:278
```

Send Clear