EXP : 3(A)

Date: **Identify the objects using IR sensor**

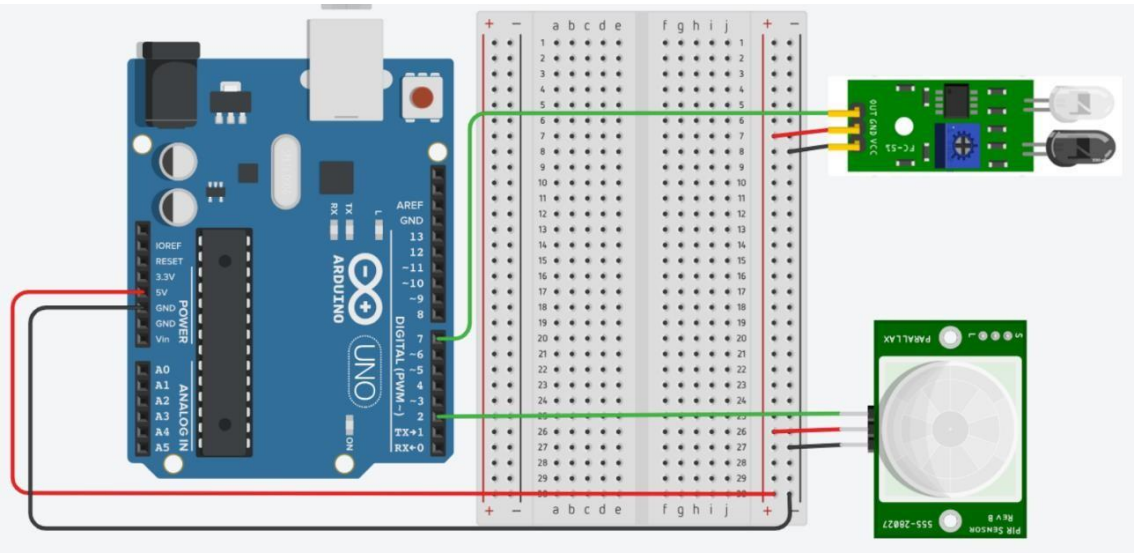
AIM:

The aim of this experiment is to identify objects using IR sensor and Arduino UNO.

COMPONENTS REQUIRED:

- Arduino Uno
- IR transmitter
- IR Receiver
- IR sensor
- Jumper wires
- Bread Board

Circuit Diagram:



ALGORITHM:

IR SENSOR:

- Connect the IR sensor to the breadboard using an IR interface cable with 3-pin header. Connect Ground to the – pin, Power to the + pin of the PIR sensor.
- Connect your power supply to the breadboard. The recommended power is within the range of +4.5 - +5.5 Volts.
- Fix the sensor to a table or wall so that it has 180 degrees of detection range.

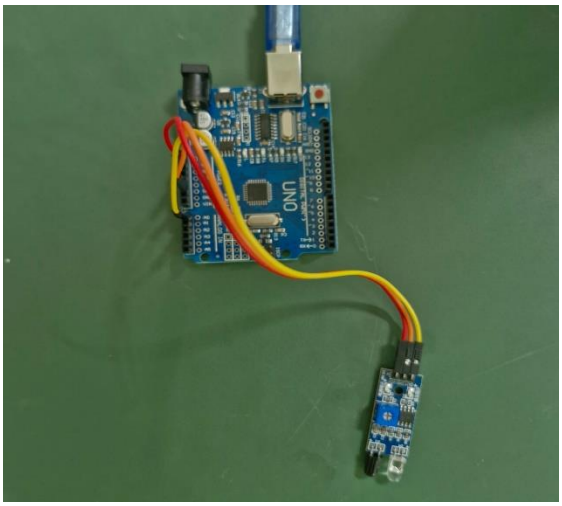
- Check your circuit, and turn on your power supply to test the IR distance sensor.
- Wait for approximately 44 milliseconds for the IR to start up.
- Place an object within the sensor's detection range.

Program:

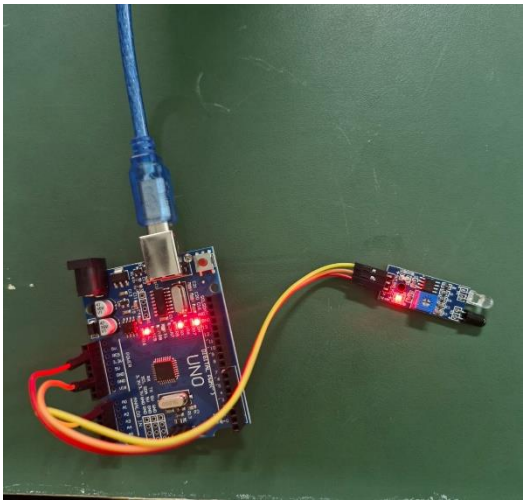
```
 int IR_sensor=8;
int value=0;
void setup() (
// put your setup code here, to run once:
Serial.begin(9600);
pinMode(IR_sensor,INPUT);
}
void loop() {
// put your main code here, to run repeatedly:
value=digitalRead(IR_sensor);
if(value==0)
{
Serial.println("OBJECT DETECT");
}
else
{
Serial.println("OBJECT CLEAR");
}
}
```

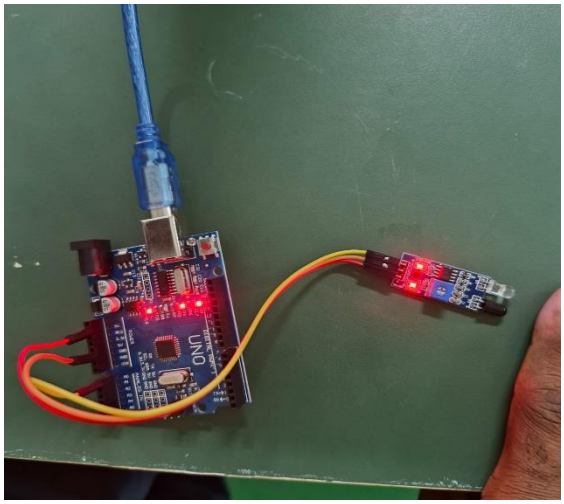
Output:

Input :



Output :





Result:

Thus, the objects have been identified successfully using IR sensors.

EXP : 3(B)

Date: **Identify the objects using PIR sensor**

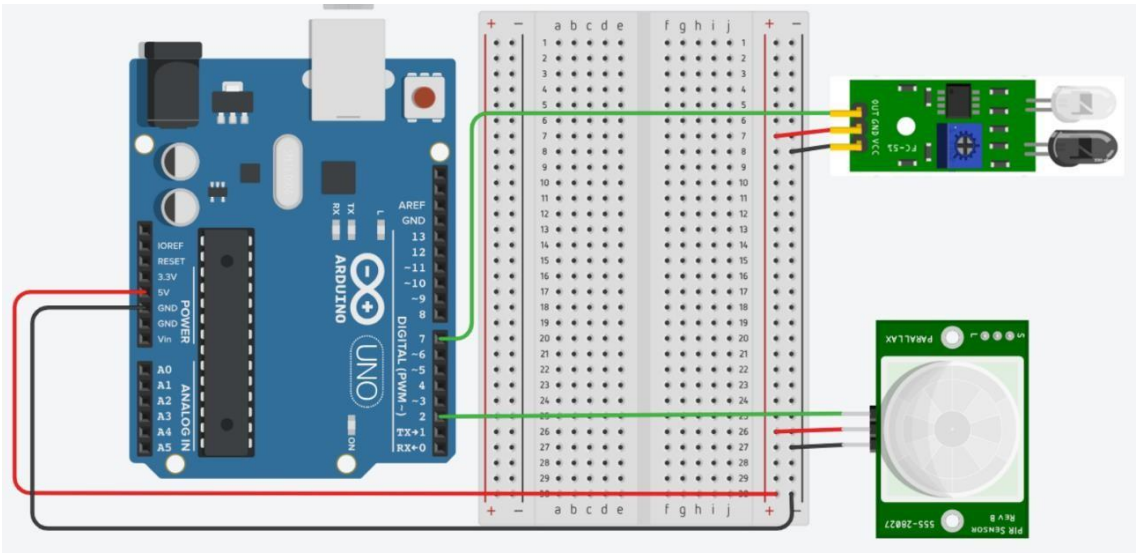
AIM:

The aim of this experiment is to identify objects using PIR sensors and Arduino UNO.

COMPONENTS REQUIRED:

- Arduino Uno
- IR transmitter
- IR Receiver
- PIR sensor
- Jumper wires
- Bread Board

Circuit Diagram:



ALGORITHM:

PIR SENSOR:

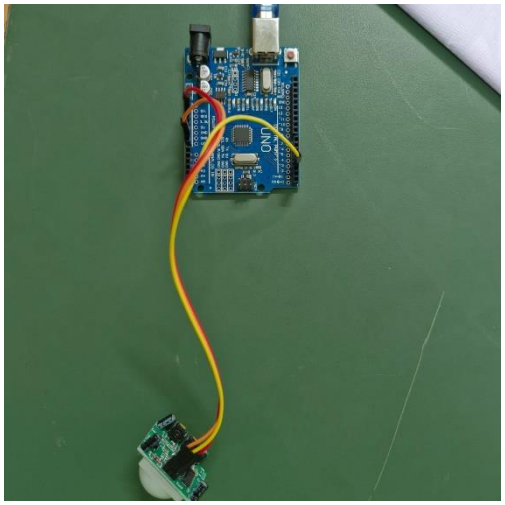
- Wire the PIR sensor to the breadboard making sure that Ground goes to the – pin, Power to the + pin of the PIR sensor.
- Connect your power supply to the breadboard. The recommended power is within the range of +3.3 - +5.0 Volts.
- Secure the sensor to a table or wall so that it is facing parallel to the scanning surface.
- Check your circuit, and turn on your power supply to test the PIR motion sensor.
- Wait for 10 to 60 seconds for the PIR sensor to calibrate itself.

Program:

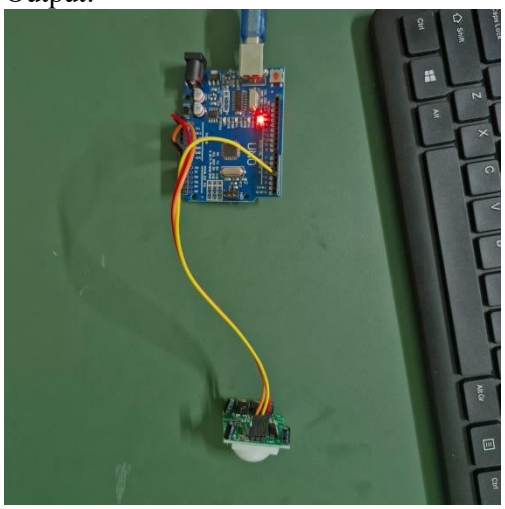
```
void setup() {
// put your setup code here, to run once:
Serial.begin(9600);
pinMode(13,OUTPUT );
}
void loop() {
// put your main code here, to run repeatedly:
  int v=analogRead(A0);
Serial.println(v);
delay(1000);
if(v>600)
{
digitalWrite(13, HIGH);
Serial.println("motion detected.");
}
else
{
digitalWrite(13, LOW) ;
}
}
```

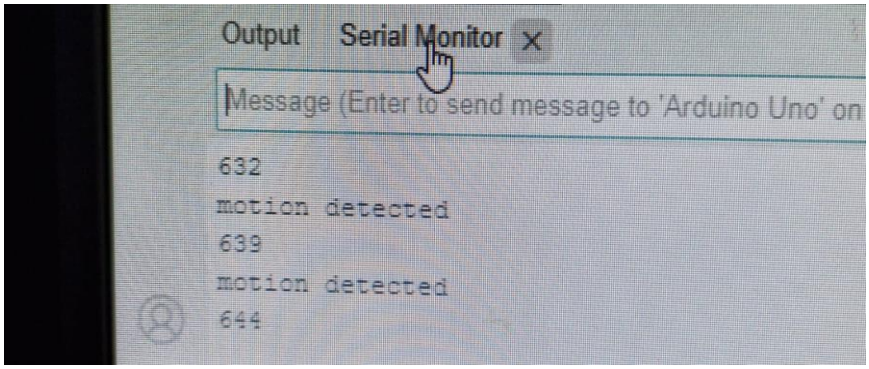
Output:

Input :



Output:





Result:

Thus, the objects have been identified successfully using PIR sensor.