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Sub: IoT
Practical – 3[Batch-71]

Interface PIR Motion Sensor with Arduino and blink LED.

Parts Needed

1. Arduino Uno
2. USB A-to-B Cable
3. LED 5mm
4. PIR Motion Sensor
5. Jump wires

Source Code:

```
int LEDpin = 13; // LED pin

int PIRpin = 8; // The pin of Arduino connected to the PIR output

int PIRvalue = 0; // It specifies the status of PIR sensor

void setup() {

  pinMode(LEDpin, OUTPUT);

  pinMode(PIRpin, INPUT);

  // the output from the sensor is considered as input for Arduino

  Serial.begin(9600);

}

void loop()

{

  PIRvalue = digitalRead(PIRpin);

  if (PIRvalue == HIGH)

  {

    digitalWrite(LEDpin, HIGH);
```

```

// turn ON LED if the motion is detected

Serial.println("hello, I found you...MAHADEV 😄");
}

else

{

digitalWrite(LEDpin, LOW);

// LED will turn OFF if we have no motion

Serial.println("I cannot find you 😞");

delay(1000);

}

}

```

Wakwi Simulation

The screenshot shows the Wakwi web-based simulation environment. The browser address bar indicates the URL `wokwi.com/projects/new/arduino-uno`. The interface includes a 'WOKWI' logo, 'SAVE' and 'SHARE' buttons, and a 'Docs' link with a 'SIGN UP' button.

Sketch Code (sketch.ino):

```

1 int LEDpin = 13; // LED pin
2 int PIRpin = 8; // The pin of Arduino connected to the PIR output
3 int PIRvalue = 0; // It specifies the status of PIR sensor
4 void setup() {
5   pinMode(LEDpin, OUTPUT);
6   pinMode(PIRpin, INPUT);
7   // the output from the sensor is considered as input for Arduino
8   Serial.begin(9600);
9 }
10 void loop()
11 {
12   PIRvalue = digitalRead(PIRpin);
13   if (PIRvalue == HIGH)
14   {
15     digitalWrite(LEDpin, HIGH);
16     // turn ON LED if the motion is detected
17     Serial.println("hello, I found you...MAHADEV 😄");
18   }
19   else
20   {
21     digitalWrite(LEDpin, LOW);
22     // LED will turn OFF if we have no motion
23     Serial.println("I cannot find you 😞");
24     delay(1000);
25   }
26 }
27

```

Simulation: The right pane shows a 3D model of an Arduino Uno board with a PIR sensor module connected. The serial monitor at the bottom displays the output: "I cannot find you 😞" repeated multiple times.

System Information: The bottom status bar shows the system clock at 09:39 on 10-09-2024, with a temperature of 27°C and weather conditions of Haze.

WOKWI

SAVE SHARE

Docs SIGN UP

sketch.ino diagram.json Library Manager

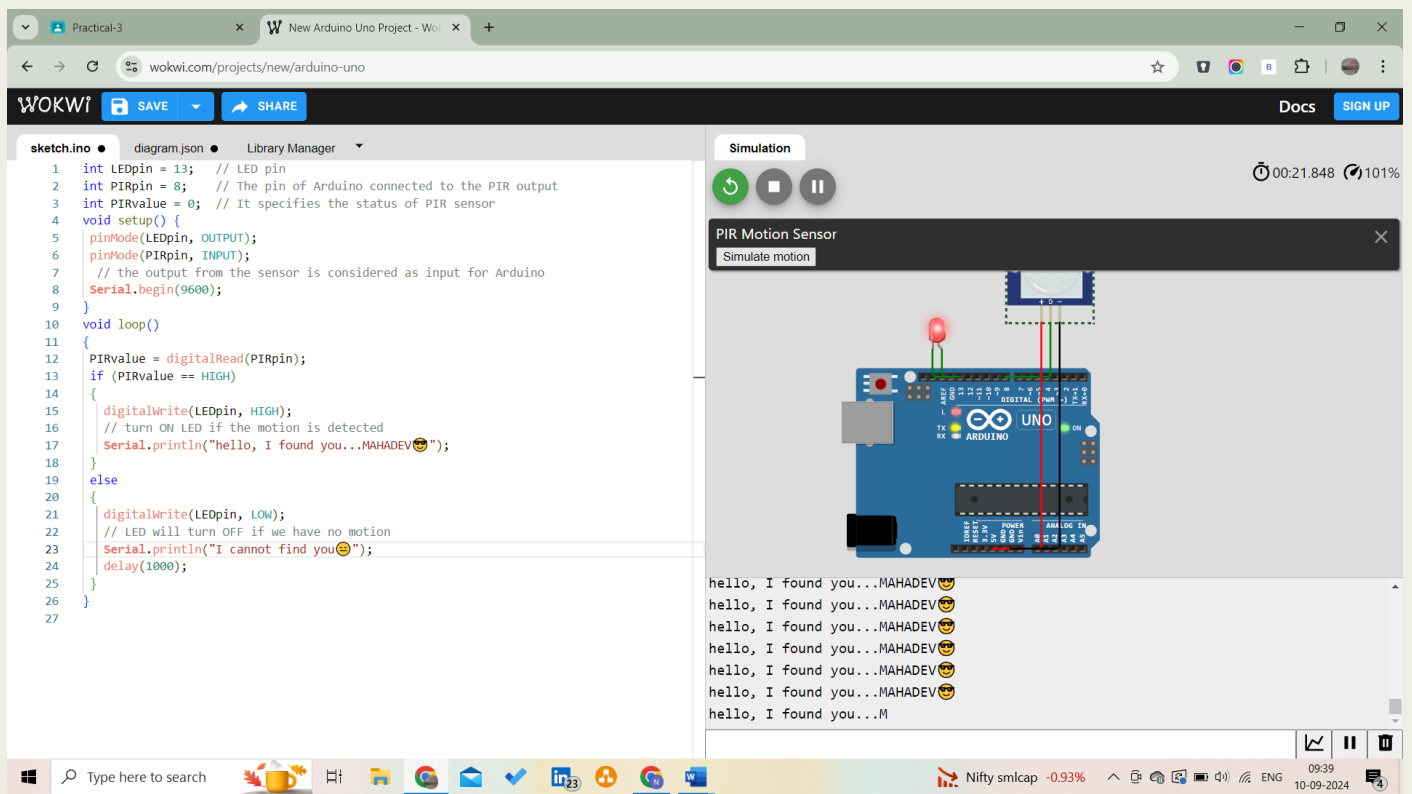
```
1 int LEDpin = 13; // LED pin
2 int PIRpin = 8; // The pin of Arduino connected to the PIR output
3 int PIRvalue = 0; // It specifies the status of PIR sensor
4 void setup() {
5   pinMode(LEDpin, OUTPUT);
6   pinMode(PIRpin, INPUT);
7   // the output from the sensor is considered as input for Arduino
8   Serial.begin(9600);
9 }
10 void loop()
11 {
12   PIRvalue = digitalRead(PIRpin);
13   if (PIRvalue == HIGH)
14   {
15     digitalWrite(LEDpin, HIGH);
16     // turn ON LED if the motion is detected
17     Serial.println("hello, I found you...MAHADEV😄");
18   }
19   else
20   {
21     digitalWrite(LEDpin, LOW);
22     // LED will turn OFF if we have no motion
23     Serial.println("I cannot find you😞");
24     delay(1000);
25   }
26 }
27
```

Simulation

00:21.848 101%

PIR Motion Sensor

Simulate motion



hello, I found you...MAHADEV😄

hello, I found you...MAHADEV😄

hello, I found you...MAHADEV😄

hello, I found you...MAHADEV😄

hello, I found you...MAHADEV😄

hello, I found you...MAHADEV😄

hello, I found you...M

Type here to search

Nifty smlcap -0.93%

09:39 10-09-2024

Circuit Simulation:

PR1 | Arduino 1.8.19

File Edit Sketch Tools Help

PR1

```
void setup() {  
  // Void setup is ran only once after each powerup or reset of the Arduino board.  
  pinMode(led, OUTPUT); // led is determined as an output here.  
  pinMode(sensor, INPUT); // EIR motion sensor is determined as an input here.  
  Serial.begin(9600);  
}  
  
void loop() {  
  // Void loop is ran over and over and consists of the main program.  
  val = digitalRead(sensor);  
  
  if (val == HIGH) {  
    digitalWrite(led, HIGH);  
    delay(100); // Delay of led is 100 ms  
  
    if (state == LOW) {  
      Serial.println("Motion detected");  
      state = HIGH;  
    }  
  } else {  
    digitalWrite(led, LOW);  
    delay(300);  
  
    if (state == HIGH) {  
      Serial.println("The action/motion has stopped");  
      state = LOW;  
    }  
  }  
}
```

COM6

10:56:10.454 -> Motion detected

☒ Autoscroll ☒ Show timestamp

Newline

9600 baud

Clear output

Done uploading

Sketch uses 2262 bytes (7%) of program storage space. Maximum is 32256 bytes.
Global variables use 236 bytes (11%) of dynamic memory, leaving 1612 bytes for local variables. Maximum is 2048 bytes.

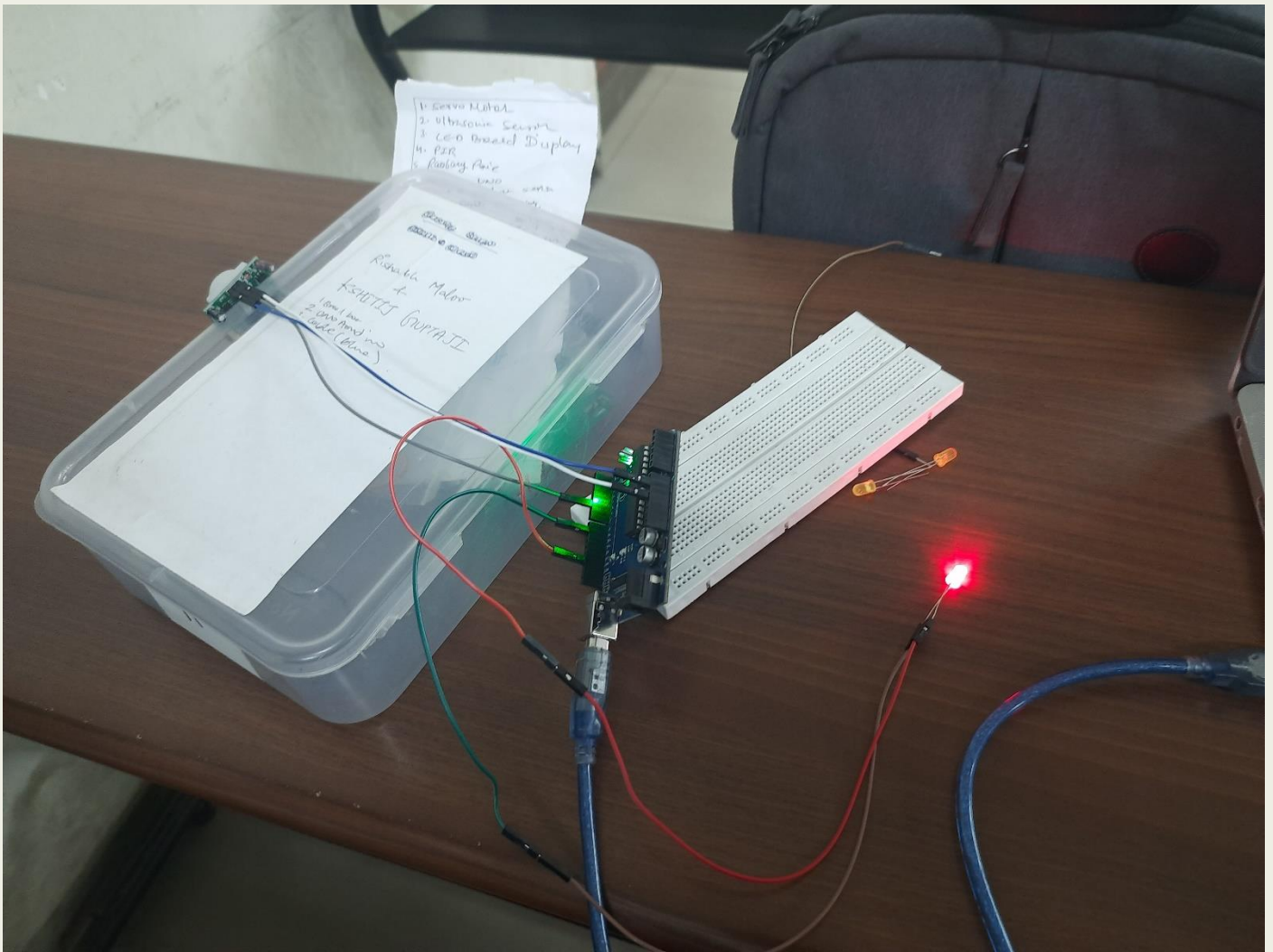
16

Type here to search

28°C Mostly cloudy

10:56

13-06-2024



Google Drive Link: <https://drive.google.com/file/d/1cN2b93g-m7zlw8KkA5xs88HAPSiWw1A/view?usp=sharing>