1)IR SENSOR

```
int IRSensor = 9; // connect ir sensor module to Arduino pin 9
int LED = 13; // conect LED to Arduino pin 13
void setup()
{
  Serial.begin(9600); // Init Serila at 115200 Baud
  Serial.println("Serial Working"); // Test to check if serial is working or not
  pinMode(IRSensor, INPUT); // IR Sensor pin INPUT
  pinMode(LED, OUTPUT); // LED Pin Output
}
void loop()
{
  int sensorStatus = digitalRead(IRSensor); // Set the GPIO as Input
  if (sensorStatus == 1) // Check if the pin high or not
  {
    // if the pin is high turn off the onboard Led
    digitalWrite(LED, LOW); // LED LOW
    Serial.println("Object Not Detected!"); // print Object Not Detected! on the serial monitor
window
  }
  else
  {
    //else turn on the onboard LED
    digitalWrite(LED, HIGH); // LED High
    Serial.println("Object Detected!"); // print Object Detected! on the serial monitor window
  }
}
```

2)LM35 SENSOR

```
// Define pin numbers
const int sensorPin = A0; // LM35 connected to analog pin A0
float temperatureC = 0; // Variable to store temperature in Celsius
void setup() {
Serial.begin(9600); // Start Serial Monitor at 9600 baud rate
}
void loop() {
int sensorValue = analogRead(sensorPin); // Read analog value (0–1023)
// Convert analog value to voltage (0–5V)
float voltage = sensorValue * (5.0 / 1024.0);
// Convert voltage to temperature in Celsius
temperatureC = voltage / 0.01; // LM35 gives 10mV per °C
// Print result to Serial Monitor
Serial.print(&amp;quot;Temperature: &amp;quot;);
Serial.print(temperatureC);
Serial.println(&amp;quot; °C&amp;quot;);
//delay(1000); // Wait for 1 second before next reading
}
```

3) ULTRASONIC SENSOR

```
const int trigPin = 9;   // Trig pin connected to digital pin 9
const int echoPin = 10;  // Echo pin connected to digital pin 10

long duration;           // Variable to store pulse duration
float distanceCm;        // Variable to store calculated distance

void setup() {
  pinMode(trigPin, OUTPUT);  // Set Trig as output
  pinMode(echoPin, INPUT);   // Set Echo as input
  Serial.begin(9600);        // Start Serial communication
}

void loop() {
  // Send a 10µs HIGH pulse to trigger the ultrasonic burst
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);

  // Measure the time for echo to return
  duration = pulseIn(echoPin, HIGH);  // Time in microseconds

  // Calculate distance using speed of sound
  distanceCm = (duration * 0.0343) / 2;  // Divide by 2 for round-trip

  // Display the distance
  Serial.print("Duration: ");
  Serial.print(duration);
  Serial.print(" us    ");
  Serial.print("Distance: ");
  Serial.print(distanceCm);
  Serial.println(" cm");
  delay(500);  // Wait half a second before next reading
}
```