

ASSIGNMENT - 1

HOME AUTOMATION

// C++ code

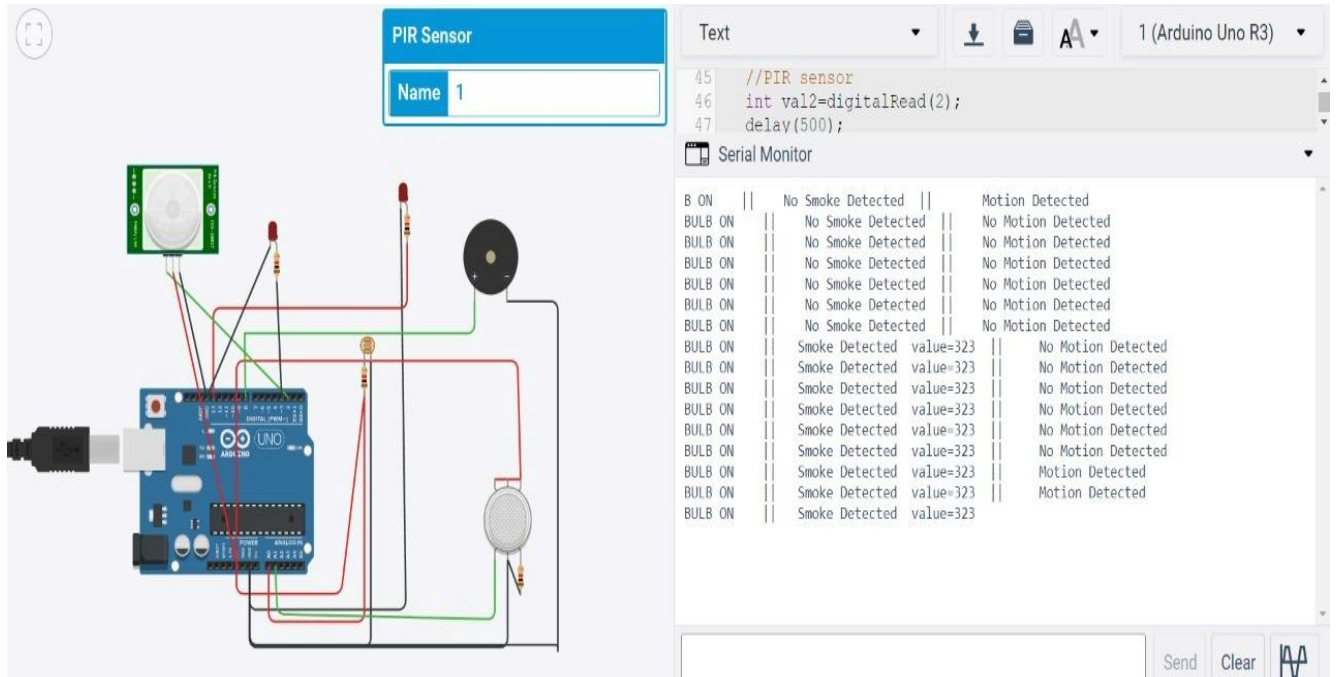
```
void setup()
{
  Serial.begin(9600); //initialize serial communication
  pinMode(A0, INPUT); //LDR
  pinMode(2, INPUT); //PIR sensor
  pinMode(A1, INPUT); //Gas sensor
  pinMode(13, OUTPUT); //led
  pinMode(8, OUTPUT); //buzzer
  pinMode(3, OUTPUT); //led
}

void loop()
{
  //LDR sensor
  int value=analogRead(A0);
  if(value>500)
  {
    digitalWrite(13, HIGH);
    Serial.print("BULB ON");
  }
  else
  {
    digitalWrite(13, LOW);
    Serial.print("BULB OFF");
  }
  delay(300);
  //Gas sensor
```

```
int val1=analogRead(A1);
if(val1>250)
{
  Serial.print(" || Smoke Detected value=");
  Serial.print(val1 );

  tone(8,650);
}
else
{
  Serial.print(" || No Smoke Detected");
}
delay(300);
noTone(8);
//PIR sensor
int val2=digitalRead(2);
delay(500);
if(val2==1)
{
  Serial.println(" || Motion Detected");
}
else
{
  Serial.println(" || No Motion Detected");
  digitalWrite(3,LOW);
}
}
```

OUTPUT:



The screenshot displays an Arduino IDE interface. On the left, a circuit diagram shows an Arduino Uno R3 connected to a PIR sensor, a smoke detector, and two buzzers. A 'PIR Sensor' component is highlighted with a 'Name 1' label. The code in the main editor is as follows:

```
45 //PIR sensor
46 int val2=digitalRead(2);
47 delay(500);
```

The Serial Monitor on the right shows the output of the program. It displays a sequence of status messages for 'BULB ON' and 'BULB OFF' states, indicating whether smoke or motion was detected and the corresponding buzzer status.

BULB ON	Smoke Detected	Motion Detected
BULB ON	No Smoke Detected	No Motion Detected
BULB ON	No Smoke Detected	No Motion Detected
BULB ON	No Smoke Detected	No Motion Detected
BULB ON	No Smoke Detected	No Motion Detected
BULB ON	No Smoke Detected	No Motion Detected
BULB ON	No Smoke Detected	No Motion Detected
BULB ON	No Smoke Detected	No Motion Detected
BULB ON	Smoke Detected value=323	No Motion Detected
BULB ON	Smoke Detected value=323	No Motion Detected
BULB ON	Smoke Detected value=323	No Motion Detected
BULB ON	Smoke Detected value=323	No Motion Detected
BULB ON	Smoke Detected value=323	No Motion Detected
BULB ON	Smoke Detected value=323	No Motion Detected
BULB ON	Smoke Detected value=323	Motion Detected
BULB ON	Smoke Detected value=323	Motion Detected