

**Question:- Design a system for doors at home, such that whenever a door is opened, a light turns on for 1000 ms if it is day & 2000 ms if it is night.**

Components Used:-

Arduino UNO R3, LED Lights, Jumper cables, LDR Sensor, Bread board, PIR Sensor.

Theory:-

The sensors that can be used to detect light is called LDR. The LDR gives us an analog voltage when connected to 5Volt, which varies in magnitude in direct proportion to the input light intensity on it.

The greater the intensity of light the greater will be the corresponding to LDR. Since, the LDR gives an analog voltage, it is connected to analog pin of Arduino.

IR Sensor is also used in which we know that obstacle is in front or not. It easily detects the obstacle that is in front of PIR Sensors.

Code:-

```
int obstacle = HIGH;

void setup()
{
  pinMode(13,OUTPUT);
  pinMode(A0, INPUT);
  pinMode(9,INPUT);
  Serial.begin(9600);
}

void loop()
{
  obstacle=digitalRead(9);
  if(obstacle==LOW){
    if(analogRead(A0)<900){
      digitalWrite(13,HIGH);
      delay(2000);
      digitalWrite(13,LOW);
    }
  }
  else {
    digitalWrite(13,HIGH);
```

```
    delay(1000);  
    digitalWrite(13,LOW);  
  }  
}  
  
}
```

Precautions:-

1. Use the appropriate range for sensor value.
2. 2. Wires should be connected in proper manner.

Learning and Outcomes:-

1. We learn an another application of Arduino.
2. We learnt about the concept of LDR.