AIM: Programs based on interfacing LDR with Arduino.

THEORY:

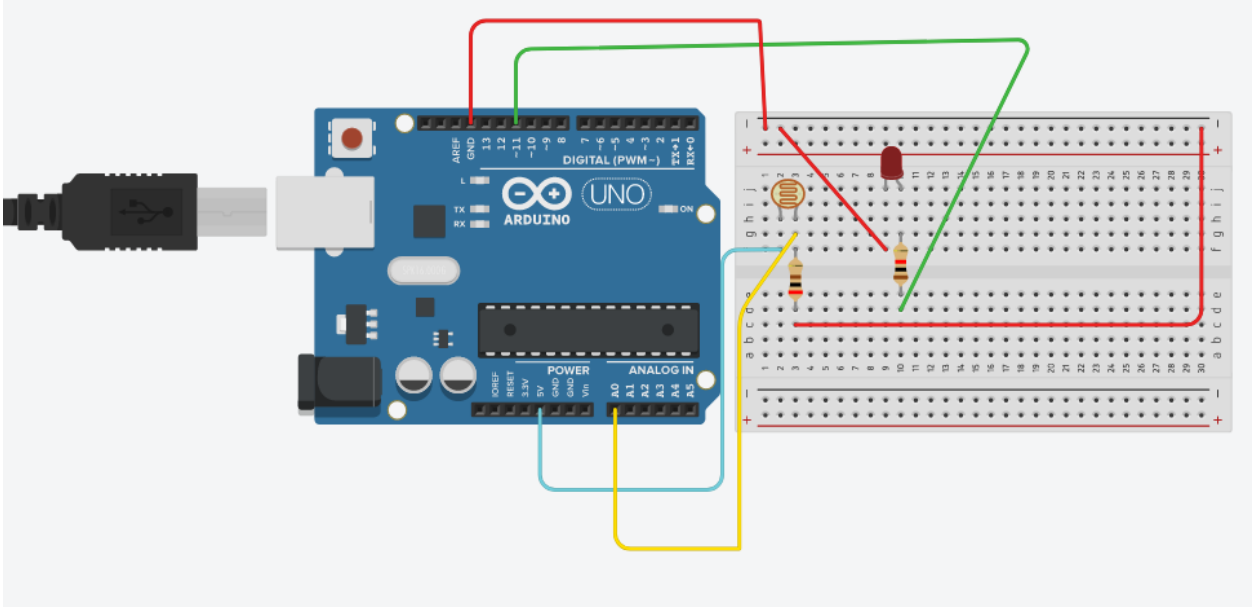
In order to detect the intensity of light or darkness, we use a sensor called an

LDR (light dependent resistor). The LDR is a special type of resistor that allows higher voltages to pass through it (low resistance) whenever there is a high intensity of light, and passes a low voltage (high resistance) whenever it is dark. We can take advantage of this LDR property and use it in our DIY Arduino LDR sensor project.

How Does It Work?

This system works by sensing the intensity of light in its environment. The sensor that can be used to detect light is an LDR. It's inexpensive, and you can buy it from any local electronics store or online. The LDR gives out an analog voltage when connected to VCC (5V), which varies in magnitude in direct proportion to the input light intensity on it. That is, the greater the intensity of light, the greater the corresponding voltage from the LDR will be. Since the LDR gives out an analog voltage, it is connected to the analog input pin on the Arduino. The Arduino, with its built-in ADC (analog-to-digital converter), then converts the analog voltage (from 0-5V) into a digital value in the range of (0-1023). When there is sufficient light in its environment or on its surface, the converted digital values read from the LDR through the Arduino will be in the range of 800-1023.

CIRCUIT DIAGRAM:



SOURCE CODE:

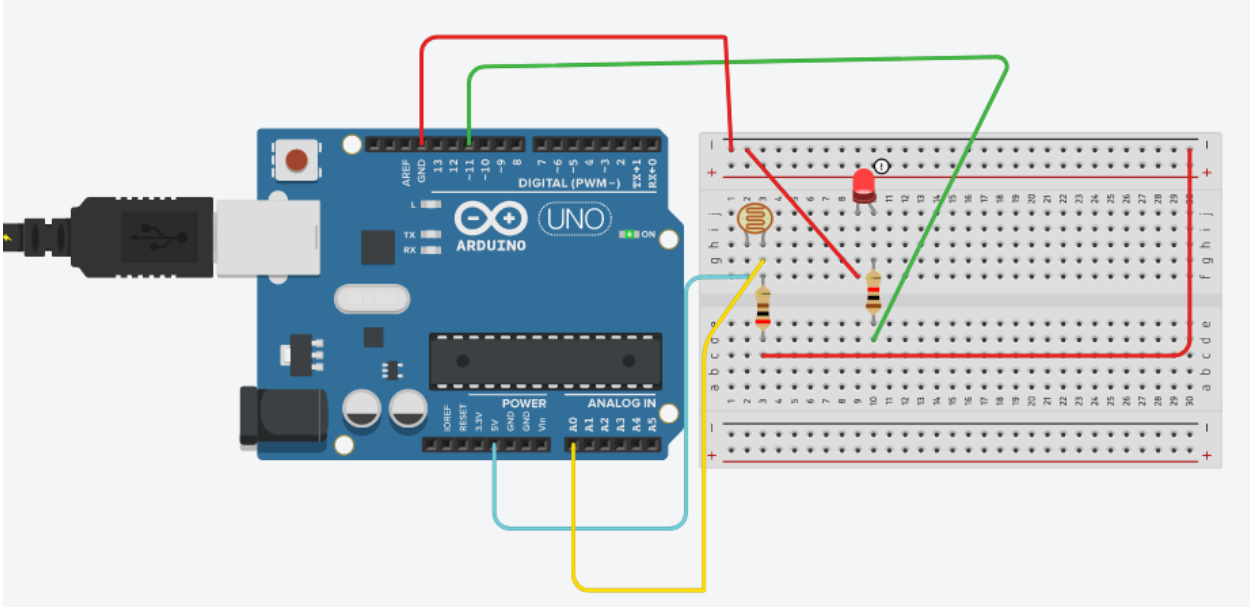
```
int value=0;
void setup()
{
  Serial.begin(9600);
  pinMode(11, OUTPUT);
  pinMode(A0, INPUT);
}

void loop()

{
  value= analogRead(A0);

  if(value<10)
  {
    digitalWrite(11, HIGH);
    Serial.println("Light ON");
    Serial.println(value);
  }
  else
  {
     digitalWrite(11, LOW);
    Serial.println("Light OFF");
    Serial.println(value);
  }
}
```

OUTPUT:



CONCLUSION:

From this practical I have learned about the LDR with arduino.