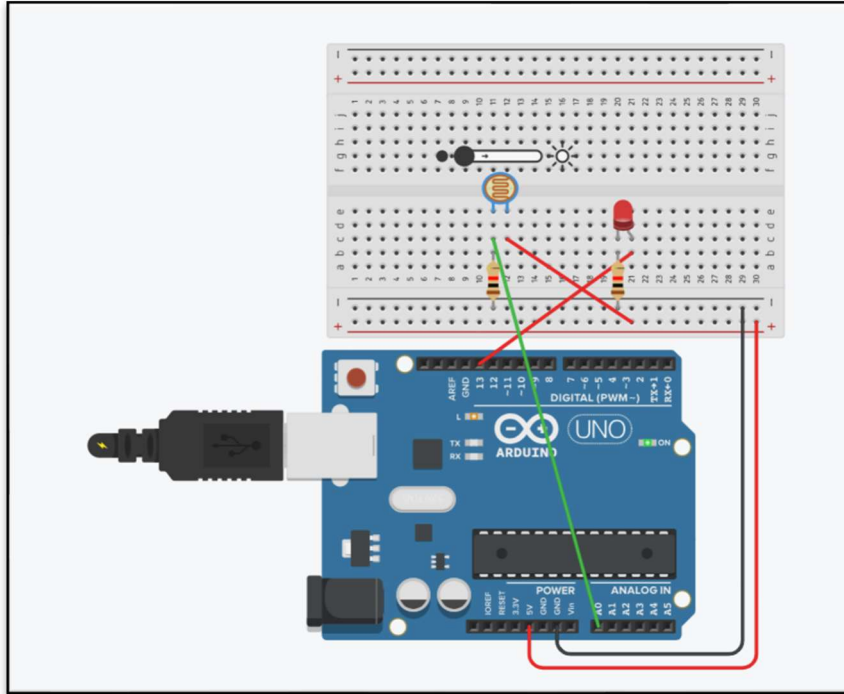


Experiment-2 LED Brightness Control with LDR

Aim:- Control an LED's brightness based on the intensity of light sensed by an LDR.

Apparatus:-



Software Code:-

```
int x;
void setup(){
  pinMode(A0,INPUT);
  pinMode(13,OUTPUT);
  Serial.begin(9600);
}
void loop(){
  x = analogRead(A0);
  if(x<10)
    digitalWrite(13,HIGH);
  else
    digitalWrite(13,LOW);
  delay(100);
}
```

New Commands Used:-

- i. **void setup()** : This function is called once when the program starts. It is used to initialize settings, such as pin modes and serial communication.
- ii. **pinMode()** : This command configures the specified pin to behave either as an input or an output.
- iii. **Serial.begin(baudrate)** : This command initializes serial communication at the specified baud rate (in this case, 9600 bits per second). It allows you to send and receive data between the Arduino and a computer or other devices.
- iv. **void loop()** : This function runs continuously after the setup() function. It contains the main logic of the program.
- v. **analogRead()** : This command reads the value from the specified analog pin (A0 in this case) and returns a value between 0 and 1023, corresponding to the voltage level (0V to 5V).
- vi. **digitalWrite()** : This command sets the specified digital pin to either HIGH (turns on the LED) or LOW (turns off the LED).
- vii. **delay()** : This command pauses the program for the specified number of milliseconds (1000 ms = 1 second). It is used to create a delay between readings.

Conclusion:-

In this project, we successfully implemented an LED brightness control system using an LDR (Light Dependent Resistor). The LDR detects ambient light intensity, and based on its resistance changes, the LED's brightness is adjusted accordingly. When the surrounding light is dim, the LED becomes brighter, and when the ambient light is high, the LED dims.