COURSE TITLE: Electrical Circuits Lab

COURSE CODE: CSE122

Name of the project: LED DIMMER LIGHT

SUBMITED TO:

Name: MOSHARRAF HOSSAIN KHAN

Senior Lecture

Department of CSE

Daffodil International University

SUBMITED BY:

Name: GULAM MOHAMMED RAYHUN

Student ID: 0242310005101354

Name:MUJAHIDUL ISLAM SHIHAB

Student ID: 0242310005101476

Name: MD. MUSHFIQ HASSAN CHOWDHURY

Student ID: 0242310005101386

Name:ILLIN NOKIB

Student ID: 0242310005101394

Name: BAPPY BHAKTA

Student ID: 0242310005101405

Project. LED Dimmer Circuit

Project Overview:

The project aims to design and build an LED dimmer circuit that allows users to efficiently control light-emitting diode (LED) brightness. LED dimmer circuits are essential for various applications, such as mood lighting, energy conservation, and creating ambiance in residential, commercial, and industrial settings. This project will focus on developing a cost-effective, versatile, and user-friendly LED dimmer circuit.

Component	Price
Resistor 220 ohm	2tk
Transistor BD 139	40tk
Potentiometer	50tk
Battery	150tk
LED light	40tk

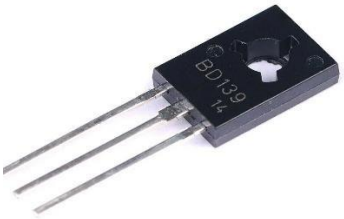
Tools Required:

1 Resistor:

A resistor is an electronic component that restricts the flow of electric current in a circuit. It's like a traffic cop for electricity, controlling the amount of current that passes through.

2 Transistor:

A transistor is another important electronic component. It's like a tiny switch that can control the flow of current in a circuit.



3 Potentiometer:

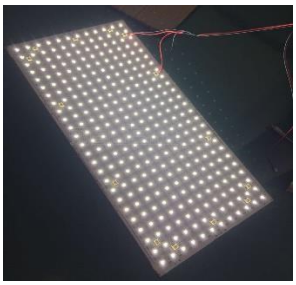
A potentiometer is a handy electronic component that acts like a variable resistor. This allows us to control the flow of current in a circuit and adjust things like volume or brightness.

4Battery:

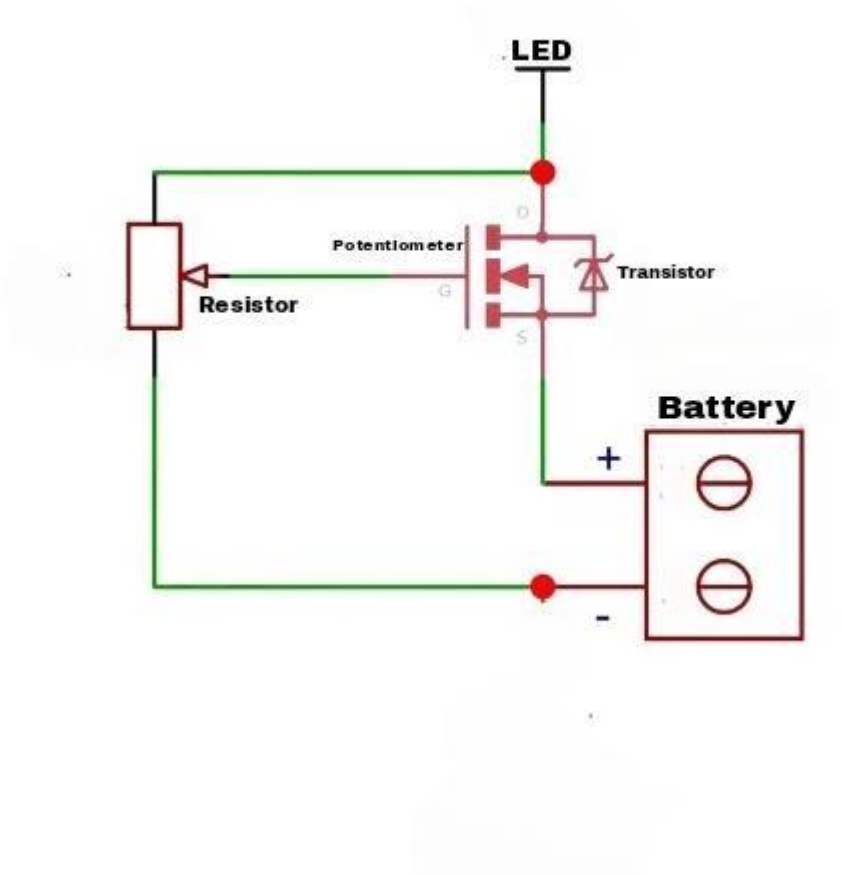
A battery is a portable device that stores chemical energy and converts it into electrical energy. It typically consists of one or more cells, each containing a positive electrode, a negative electrode, and an electrolyte.

5led light:

LED stands for Light Emitting Diode. It's a small electronic device that emits light when an electric current passes through it.



Circuit Diagram:



Basic LED Setup:

1. Connecting one end of the resistor to the positive (longer leg) of the LED.

2. Connect the other end of the resistor to the collector (C) pin of the transistor.

3. Connecting the emitter (E) pin of the transistor to the ground.

4. Connect the middle pin of the potentiometer to the base (B) pin of the transistor.

5. Connecting one end of the potentiometer to the positive rail.

6. Connecting the other end of the potentiometer to the ground rail.

7. Ensuring the transistor is oriented correctly.

8. Turning on the power and observing the LED.

9. After rotating, the potentiometer will give us a result in a variation in LED brightness.

Project video link:

https://youtu.be/v4OU3lANfao

Conclusion:

The LED dimmer light project has proven to be a successful and valuable endeavor. Through the implementation of this project, we have achieved the desired outcome of creating a flexible and efficient system for controlling the brightness of LED lights. The dimmer functionality allows users to customize the lighting intensity according to their preferences, providing both practical and aesthetic benefits.