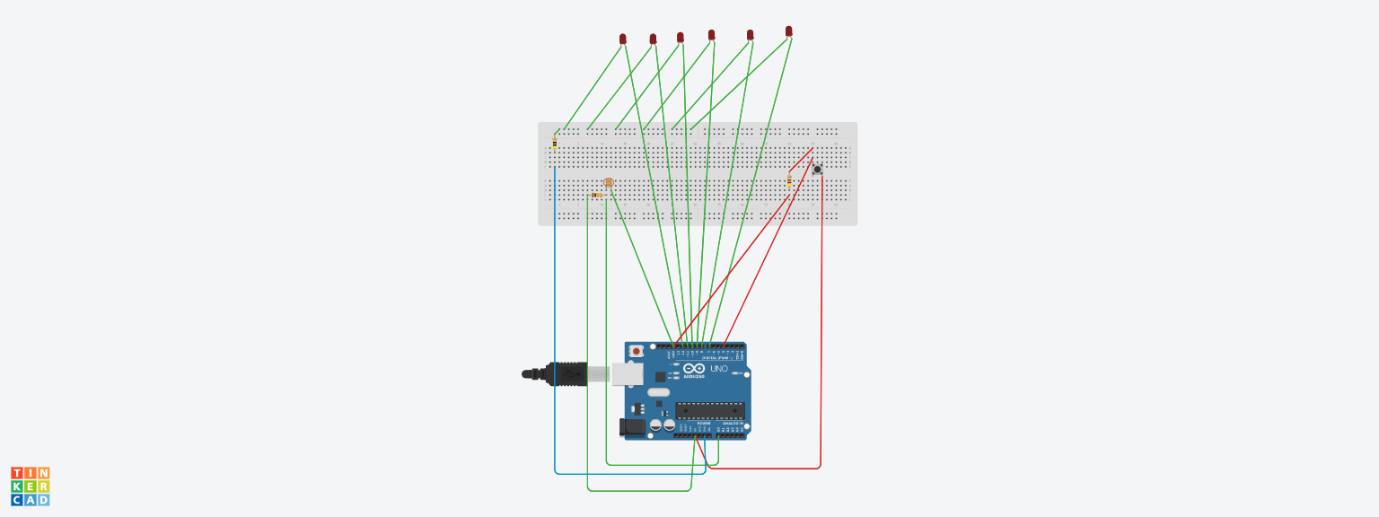
**AIM –** Make a Design automatic led Diwali lights such that it only works during night and can generate two patterns which can be toggled with switch a pattern 1-led chaser b. even odd led pattern.

**APPRATUS-** Arduino , Breadboard, wire, 3 Resistance (470 ohm,40 ohm,

10 kohm), LED, pushbutton, photoresitor(light dependent resistorLDR)

**Circuit Diagram-**

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**Theory:**

Concept of led used in parallel way by using breadboard and

Concept of for loop and if else for continuous call.

Concept of p n diode and its principle.

Concept of photoresistor as the darkness increases resistance increase, and light intensity increase resistance decrease.

Switch property as the when we push button the program can be changed.

**Observation and learning outcomes**

1 .LED flashing.

2. Breadboard working to the Led

3. Arduino working principle (microcontroller)

4. who led pattern works as a program is feed into the arduino.

5. push button and photresistor work in the circuit.

**Problems and Troubleshooting:**

**1.** Difficulty in differentiate cathode and anode terminal of LED.

**2.** Difficultly in using the for loops.

3. Difficulty in coding and differentiate between the braches which is used in the program.

4. difficulty to handle the circuit in the given problem.

**Precautions:**

**1**. Make connection and writing code very carefully.

**2**. Resistance should be used so that led may not damage due to high flow of current.

**3**. Right connection of wire in breadboard slots.

4. To make the perfect coding.

5.To make the wrong connection of the ldr and the pushbutton.

**Learning Outcomes:**

1. How to use the microcontroller.
2. Principle of Led how it works in forward bias and learn about the breadboard and it working principle.
3. Learn about the for and if else loop for dual led casher.
4. Use of resistance so that led may not damaged.
5. How ldr works in the circuit.
6. How push button works in the circuit.