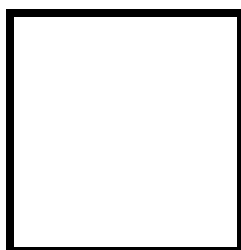




PAMANTASAN NG LUNGSOD NG MAYNILA
(University of the City of Manila)
Intramuros, Manila

Microprocessor Lab

Laboratory Activity No. 2
Arduino and Tinkercad Interface



Score

Submitted by:
Ariega, Reginald A.
Saturday 10:00 AM to 1:00 PM / CPE 0412.1-1 Microprocessor Lab

Date Submitted
30-09-2023

Submitted to:
Engr. Maria Rizette H. Sayo

I. Objectives

This laboratory activity aims to implement the principles and techniques of hardware programming using Arduino through:

- creating an Arduino programming and circuit diagram.

II. Method/s

- Perform a task problem given in the presentation.
- Write a code and perform an Arduino circuit diagram of a ring counter that display eight (8) LEDs starting from left.

III. Results

TinkerCad

Exercise 1: Write a code that does a ring counter display for eight (8) LEDs starting from left.

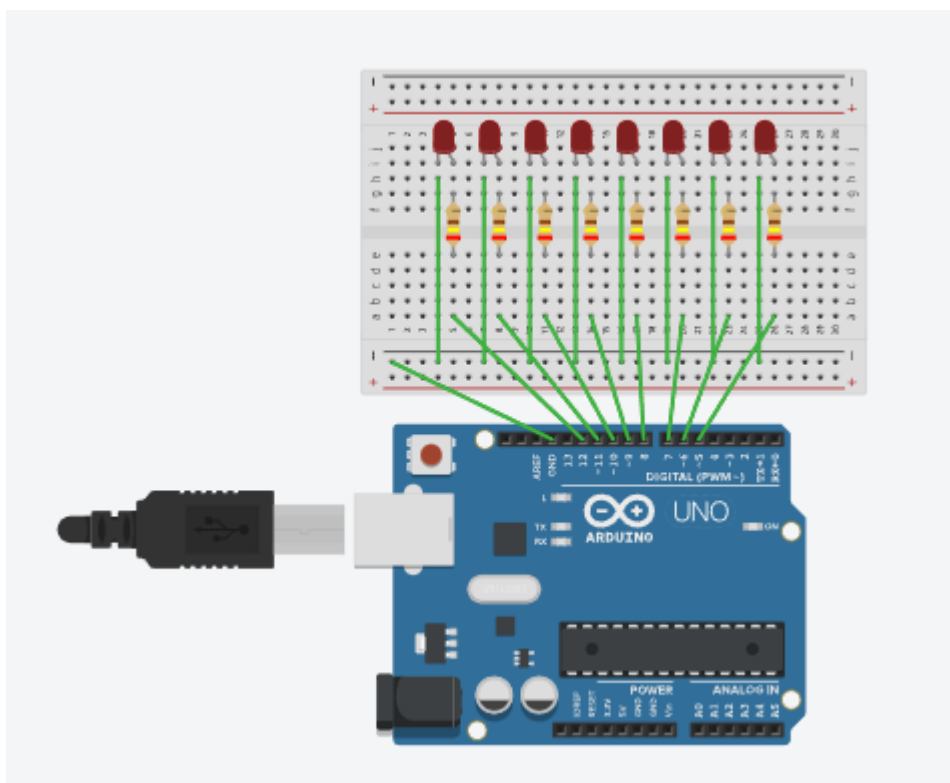


Figure No.1 Ring Counter Display Circuit Diagram

Components Used

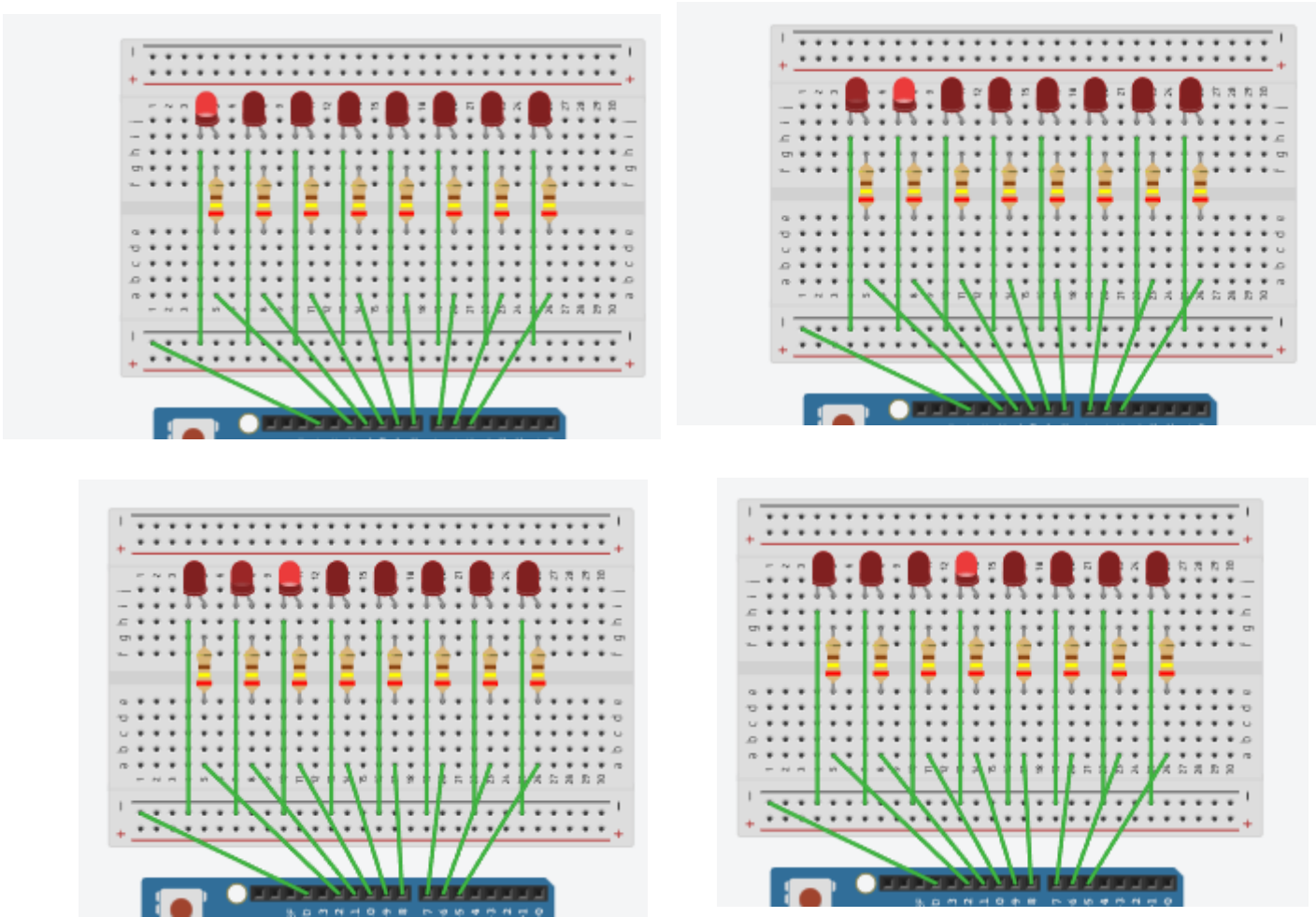
1. 8 - LEDs
2. 8 - 240 Ohms Resistors
3. Breadboard
4. Arduino Uno

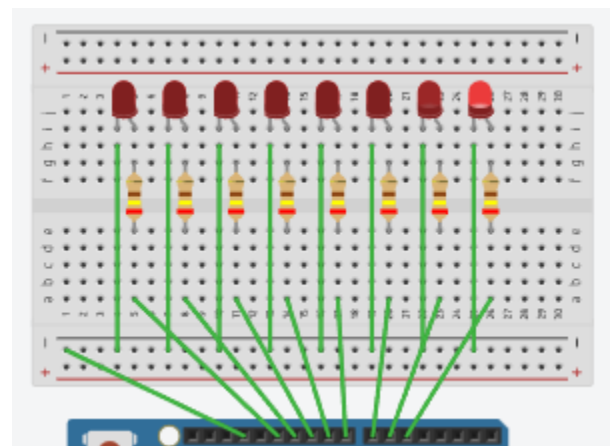
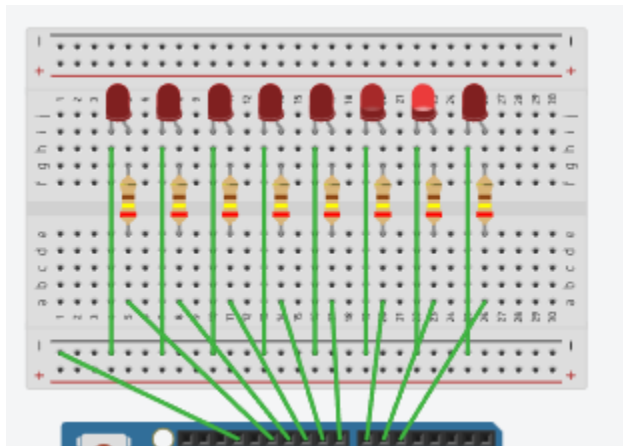
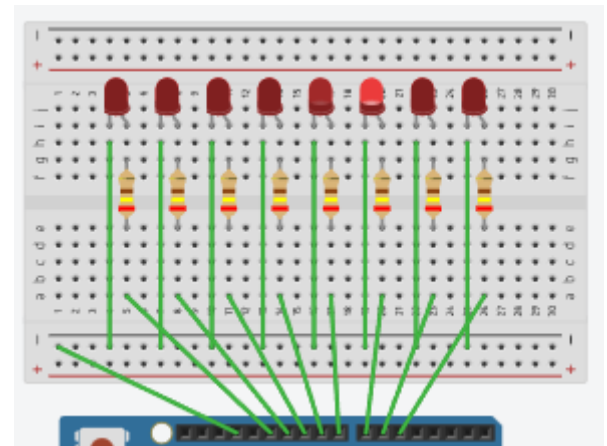
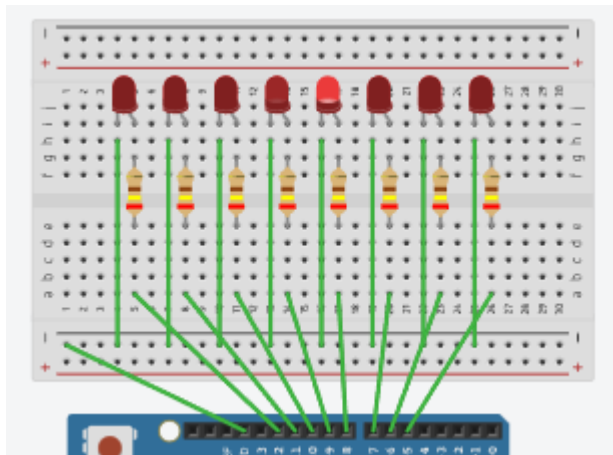
CODE:

```
1 // C++ code
2 // Ring Counter display for 8 LEDs starting from left.
3 int led[] = {5,6,7,8,9,10,11,12};
4
5 void setup()
6 {
7     Serial.begin(9600);
8     for(int i=0; i<8; i++){
9         pinMode(led[i], OUTPUT);
10    }
11
12 }
13
14 void loop()
15 {
16     for(int i=7; i>=0; i--){
17         digitalWrite(led[i], HIGH);
18         delay(500);
19         digitalWrite(led[i], LOW);
20         delay(500);
21     }
22 }
```

Output:

From LED 1(Pin 12) to LED 8(Pin 5)





IV. Conclusion

After uploading the code to the Arduino Uno or the Microcontroller, the expected output was attained which is coding a ring counter for 8 LEDs starting from left. The pictures in the OUTPUT section show the output of the program which are blinking LEDs from LED 1 to LED 8. Therefore I conclude that the simulation succeeded in reaching the objectives of the laboratory activity.

References

- [1] D.J.D. Sayo. “University of the City of Manila Computer Engineering Department Honor Code,” PLM-CpE Departmental Policies, 2020.