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:
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Saturday 10:00 AM to 1:00 PM / CPE 0412.1-1 Microprocessor Lab

Date Submitted
30-09-2023

Submitted to:

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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.

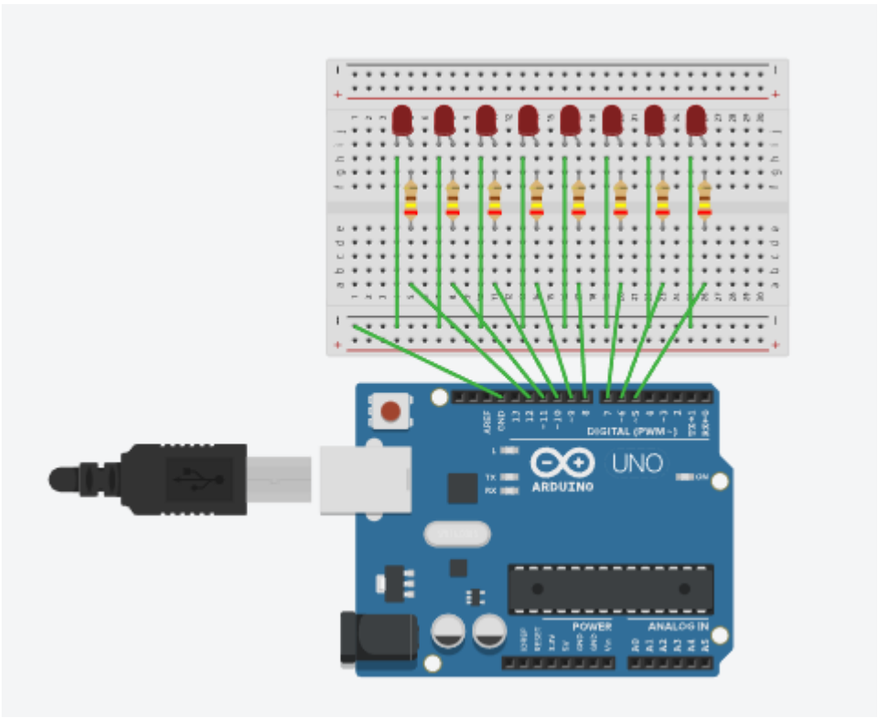


Figure No.1 Ring Counter Display Circuit Diagram

Components Used

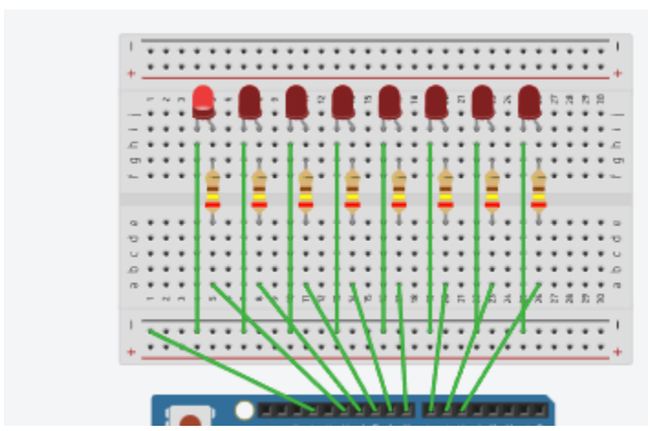
1. 8 - LEDs
2. 8 - 240 Ohms Resistors
3. Breadboard
4. Arduino Uno

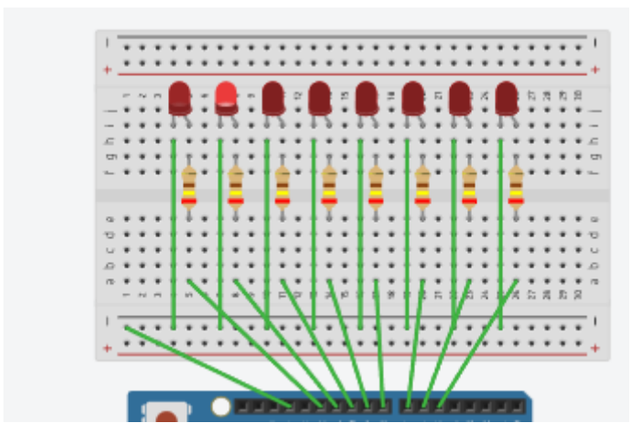
CODE:

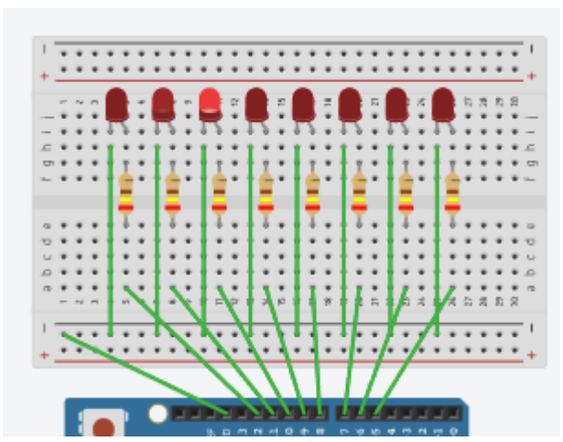
```
// C++ code
// Ring Counter display for 8 LEDs starting from left.
int led[] = {5,6,7,8,9,10,11,12};

void setup()
{
  Serial.begin(9600);
  for(int i=0; i<8; i++){
    pinMode(led[i], OUTPUT);
  }

}

void loop()
{
  for(int i=7; i>=0; i--){
    digitalWrite(led[i], HIGH);
    delay(500);
    digitalWrite(led[i], LOW);
  }
}
```

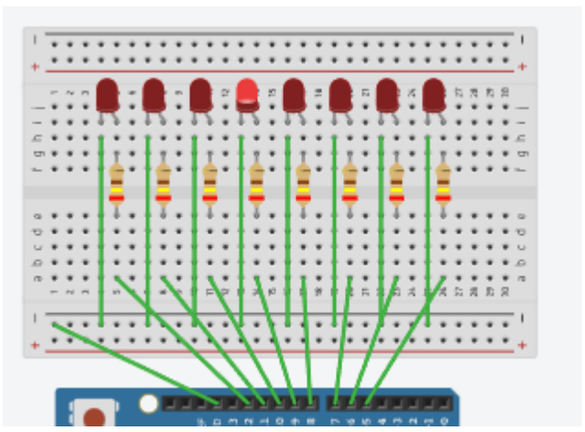
Output:

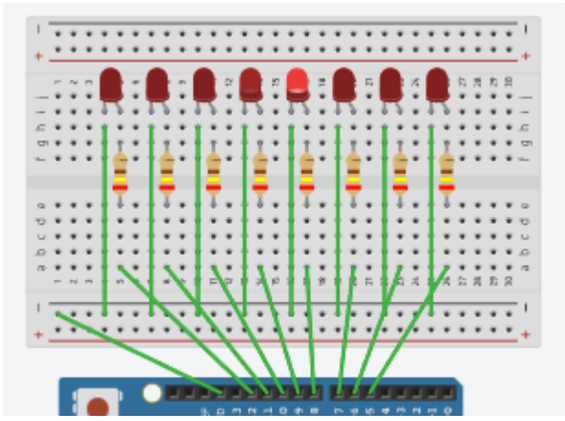
From LED 1(Pin 12) to LED 8(Pin 5)

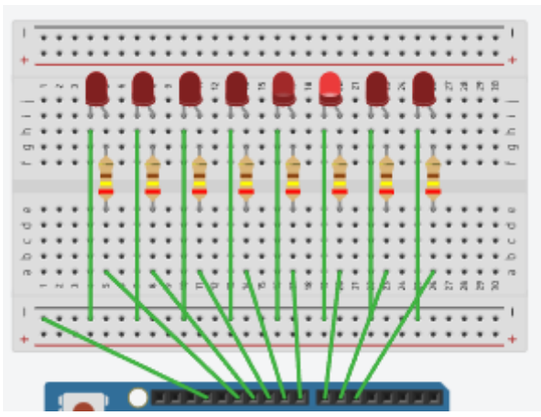


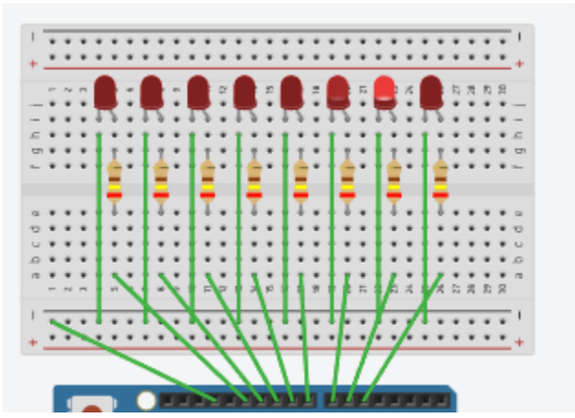


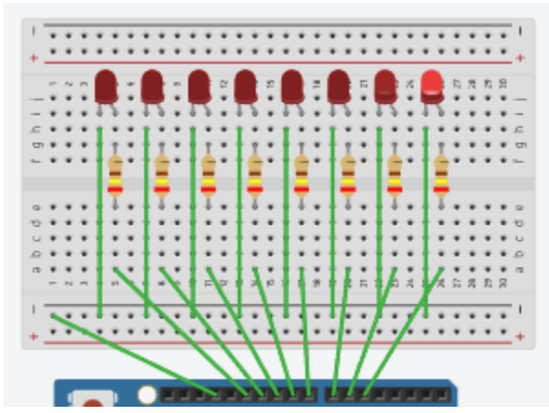












IV. Conclusion

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.