**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:*

**Sanchez, John Aris H.**

**<Saturday 10am-1pm> / <Microprocessor 412-1>**

*Date Submitted*
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*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:

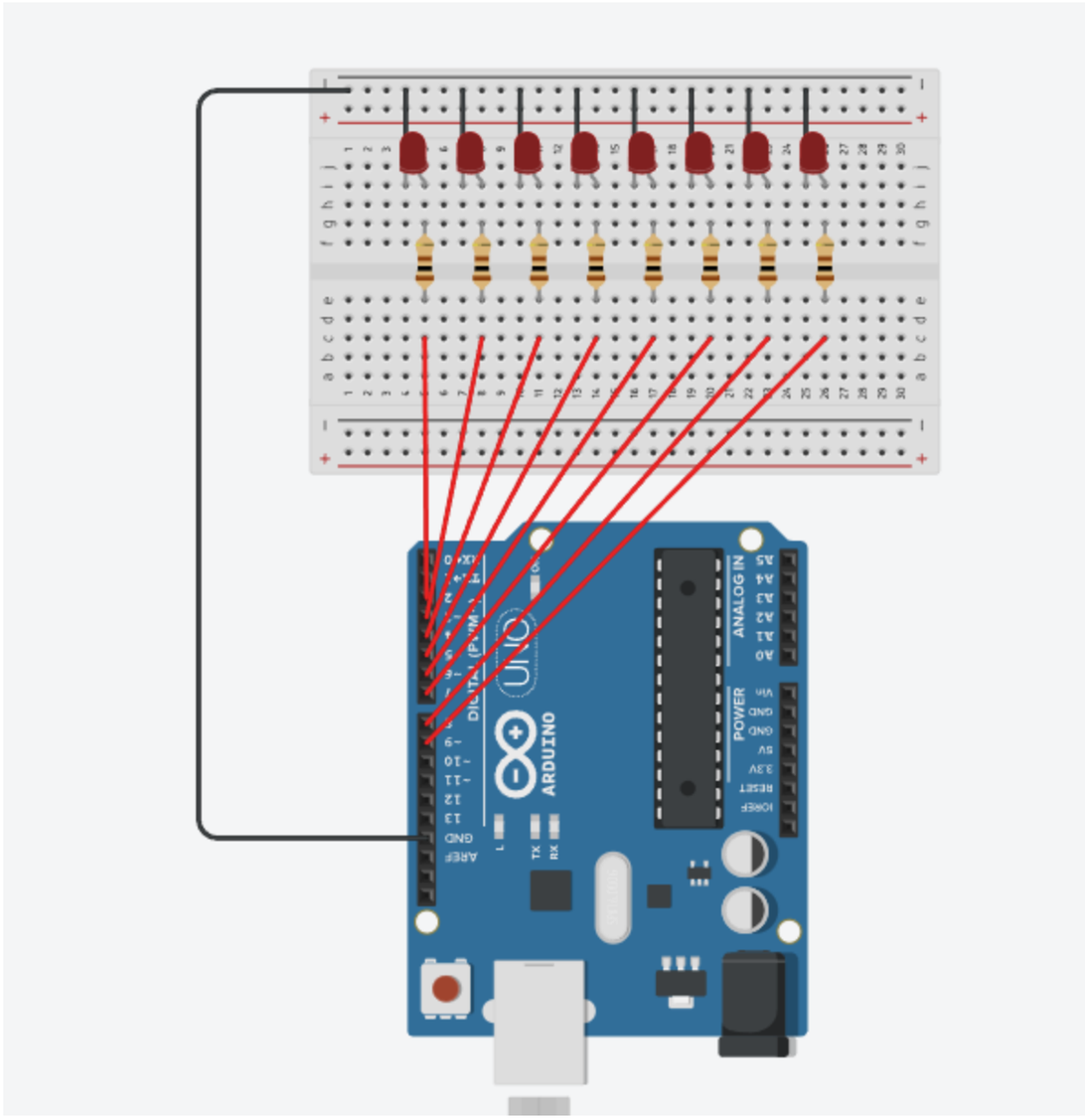
- creating an Arduino programming and circuit diagram.

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




**Components Used**

1. 8 LEDs
2. Resistor
3. Breadboard
4. Arduino Uno

**CODE:**

```
int ledPins[] = {2, 3, 4, 5, 6, 7, 8, 9};
int numLeds = 8;

void setup() {

  for (int i = 0; i < numLeds; i++) {
    pinMode(ledPins[i], OUTPUT);
  }
}

void loop() {

  for (int i = 0; i < numLeds; i++) {
    digitalWrite(ledPins[i], HIGH); // Turn on the current LED
    delay(200); // Adjust the delay as needed for the desired speed
    digitalWrite(ledPins[i], LOW); // Turn off the current LED
  }
}
```

IV. Conclusion

In this process, we successfully designed and simulated a ring counter circuit using Tinkercad. By combining an Arduino Uno, 8 LEDs, and appropriate resistors, we created a circuit where the LEDs sequentially light up in a ring counter pattern. The Arduino code, specifying pin configurations and timing, facilitated this sequential illumination. The simulation in Tinkercad provided a visual representation of the ring counter's behavior, offering a practical and educational experience in both hardware and software aspects of electronics.

## References

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

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