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, 7:00 AM – 10:00 AM / CPE 0412.1 – 1

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.

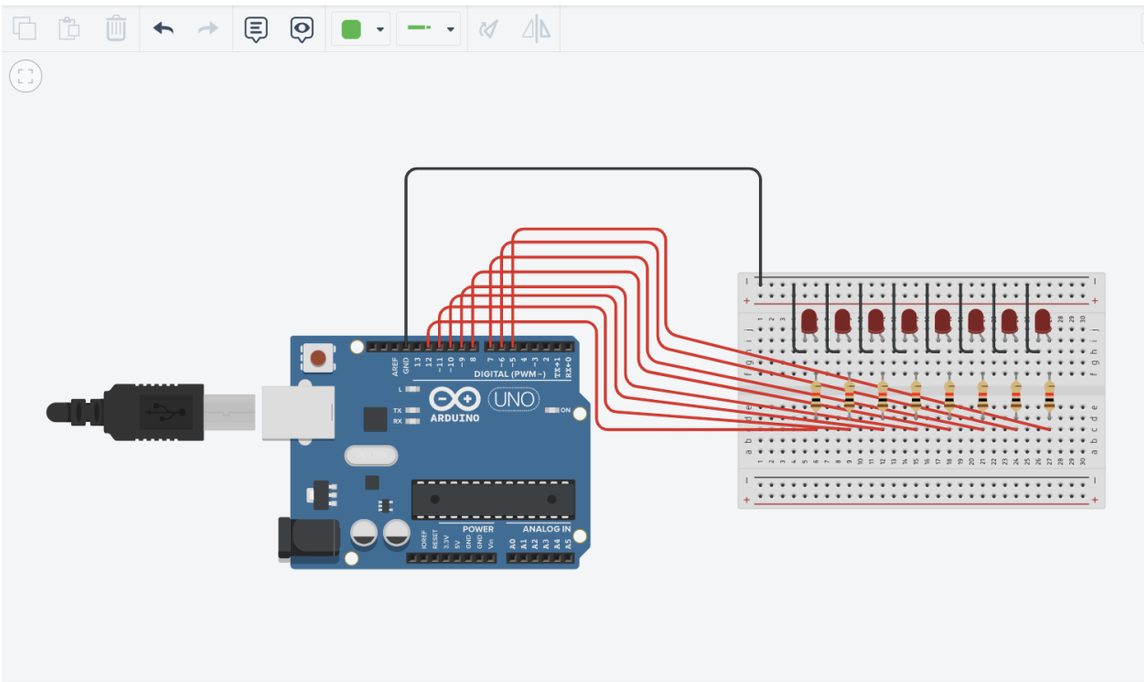


Figure No.1 Ring Counter Display Circuit Diagram

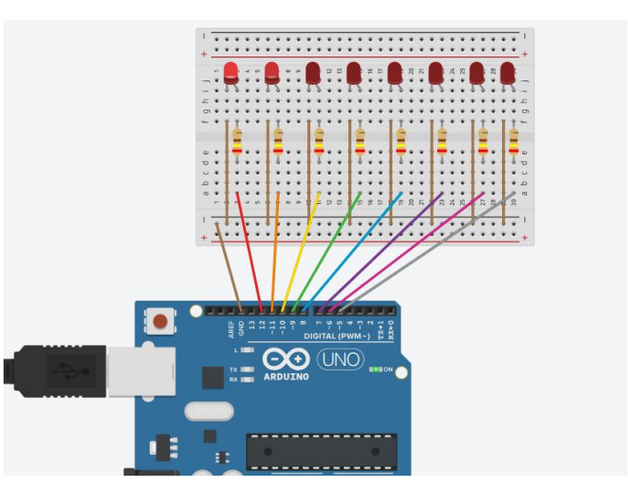
Components Used

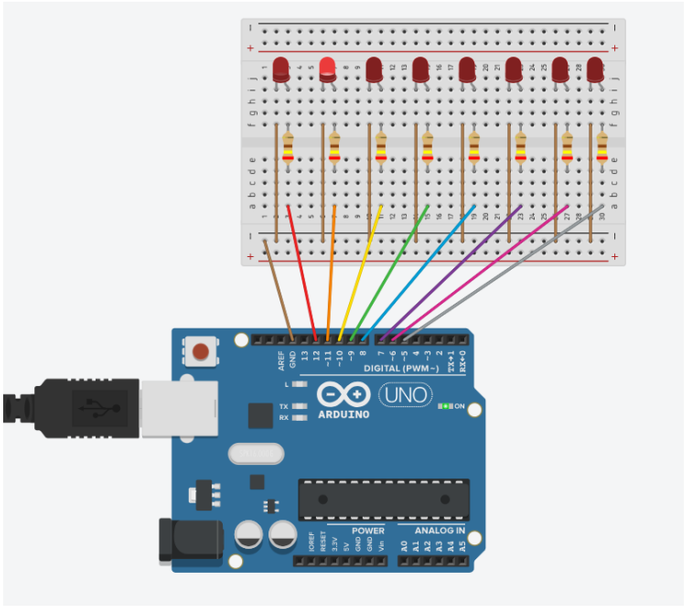
1. 8 LEDs
2. Resistor
3. Breadboard

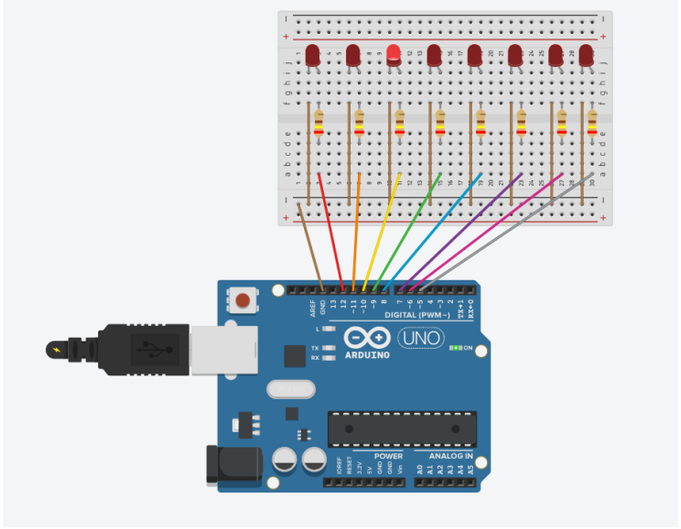
CODE:

```
// C++ code
//

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:




DIGITAL (PWM~)
UNO
ARDUINO
POWER
ANALOG IN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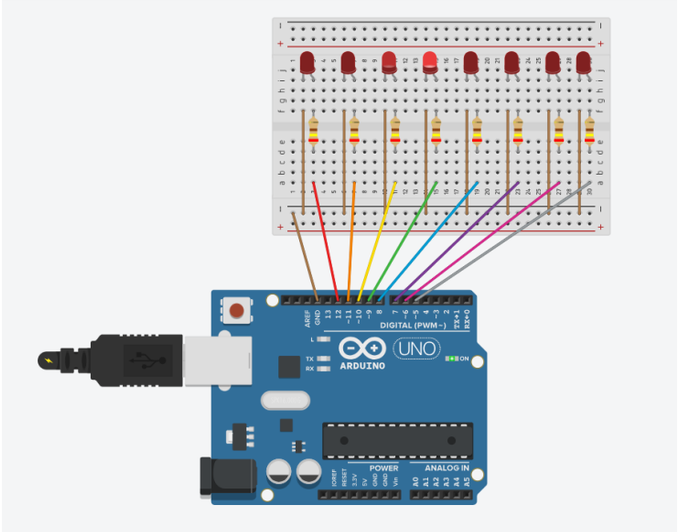
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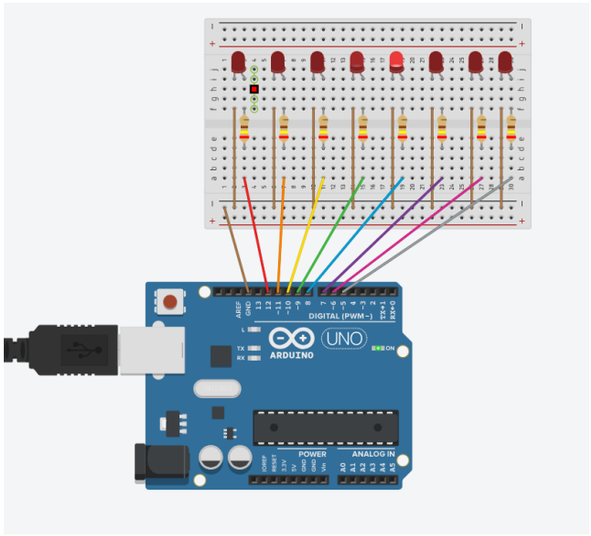
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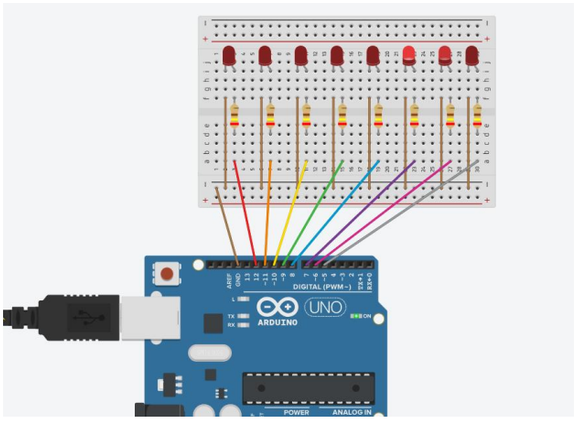
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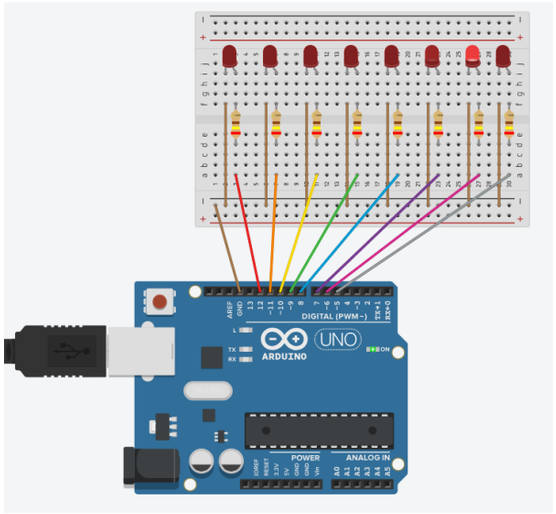
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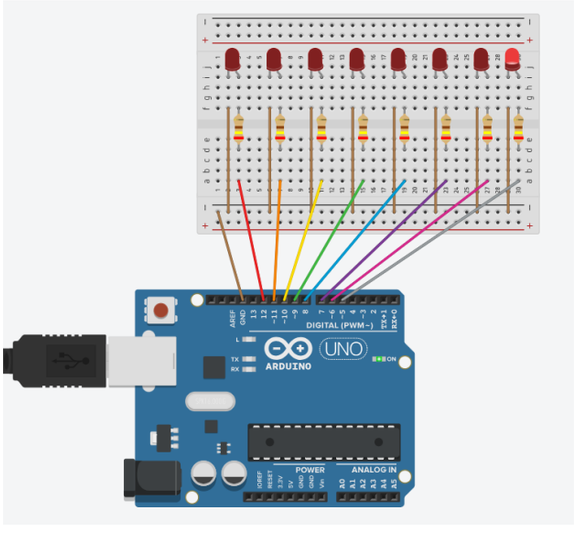
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IV. Conclusion

The code uploaded made it possible for the series of LED to blink in the expected pattern. The ring counter follows a blinking order from left to right with a specific amount of interval between each blinks. The output showcases the movement from left to right.

References

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