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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7:00 – 10:00 AM - Saturday / CPE 0412-1

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.

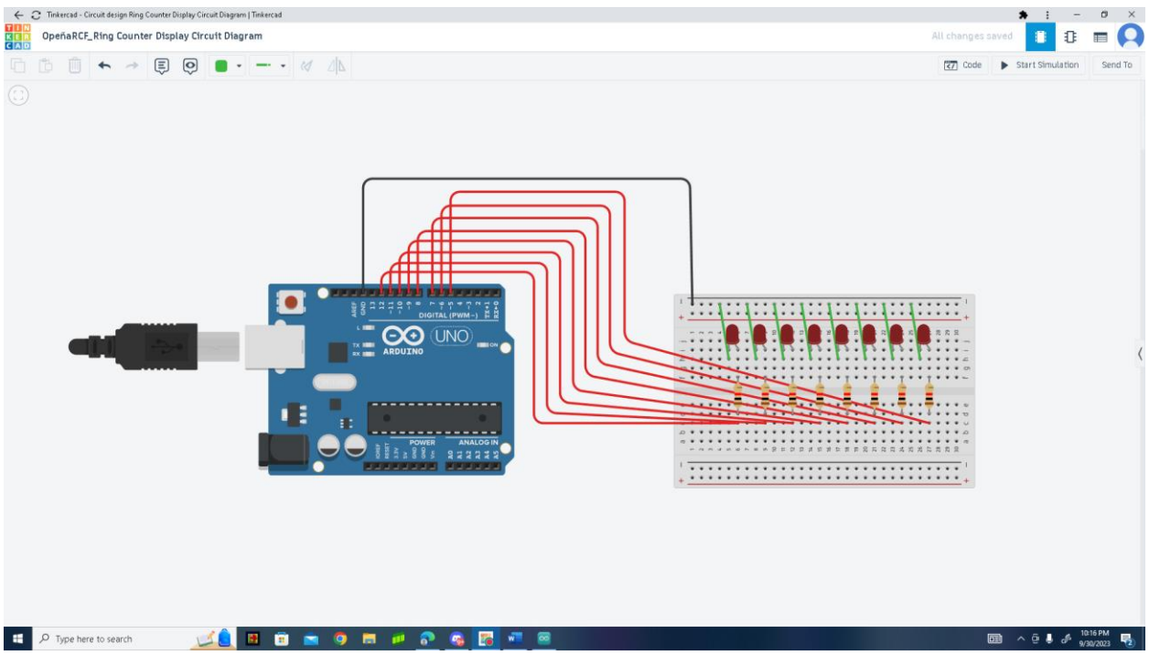


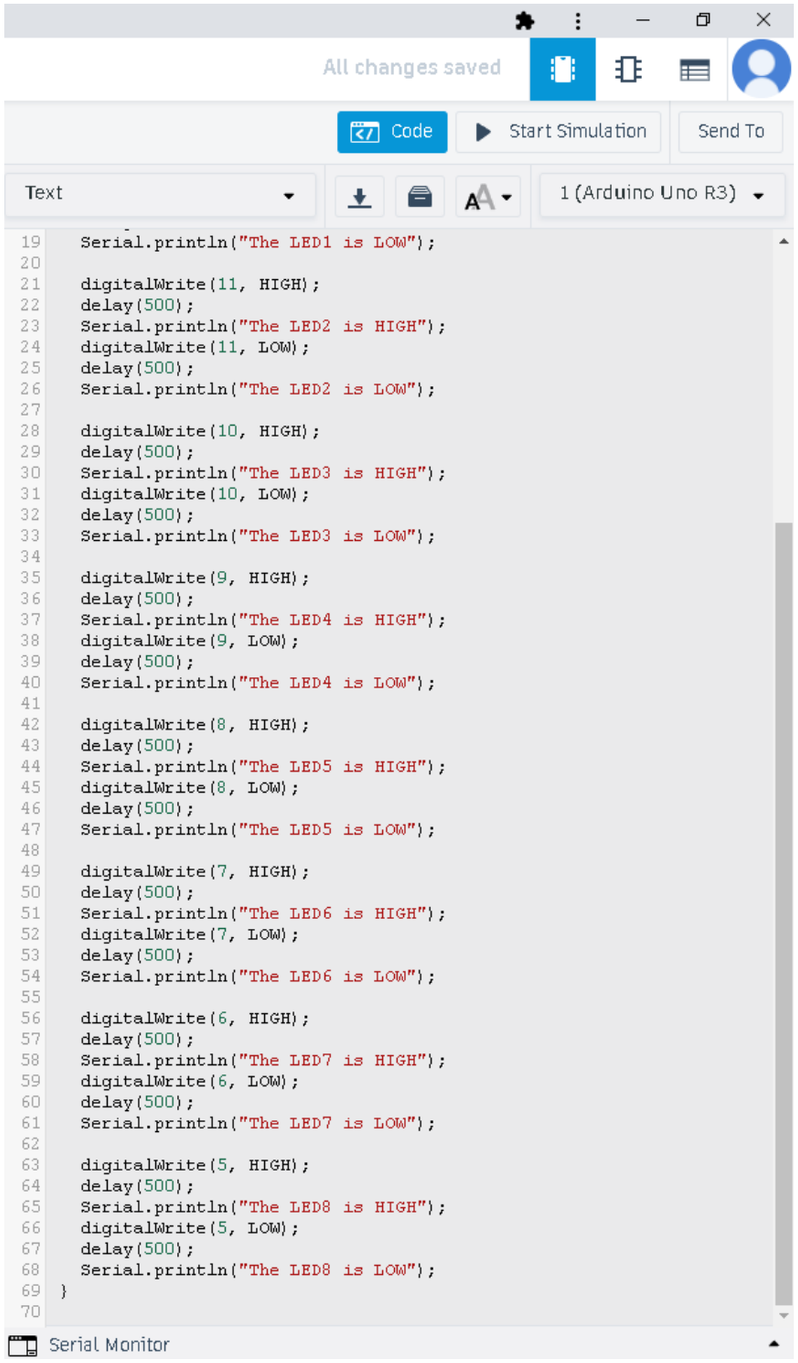
Figure No.1 Ring Counter Display Circuit Diagram

Components Used

1. 8 LEDs
2. Resistor
3. Breadboard

CODE:


```
void setup() {
  Serial.begin(9600);
  pinMode(5, OUTPUT);
  pinMode(6, OUTPUT);
  pinMode(7, OUTPUT);
  pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(10, OUTPUT);
  pinMode(11, OUTPUT);
  pinMode(12, OUTPUT);
}

void loop() {
  digitalWrite(12, HIGH);
  delay(500);
  Serial.println("The LED1 is HIGH");
  digitalWrite(12, LOW);
  delay(500);
  Serial.println("The LED1 is LOW");

  digitalWrite(11, HIGH);
  delay(500);
  Serial.println("The LED2 is HIGH");
  digitalWrite(11, LOW);
  delay(500);
  Serial.println("The LED2 is LOW");

  digitalWrite(10, HIGH);
  delay(500);
  Serial.println("The LED3 is HIGH");
  digitalWrite(10, LOW);
  delay(500);
  Serial.println("The LED3 is LOW");

  digitalWrite(9, HIGH);
  delay(500);
  Serial.println("The LED4 is HIGH");
  digitalWrite(9, LOW);
  delay(500);
  Serial.println("The LED4 is LOW");

  digitalWrite(8, HIGH);
  delay(500);
  Serial.println("The LED5 is HIGH");
  digitalWrite(8, LOW);
  delay(500);
  Serial.println("The LED5 is LOW");

  digitalWrite(7, HIGH);
  delay(500);
  Serial.println("The LED6 is HIGH");
  digitalWrite(7, LOW);
```



IV. Conclusion

The conclusion expresses the summary of the whole laboratory report as perceived by the authors of the report.

In conclusion, this laboratory exercise was successful in allowing me to explore the concepts and methods of Arduino hardware programming. The main goal of this lab exercise is to develop the Arduino program and related circuit schematic for an eight-LED ring counter that starts from left to right position. This lab exercise included a thorough investigation of Arduino hardware programming. It gave me the practical abilities, understanding, and innovative thinking that are essential for pursuing the field of electronics and embedded systems.

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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