# Arduino Calculator Project Report


- ***SOLOMON .ADULE***
- ***OJUKWU .UGOCHUKWU .RHEMA.***

# Table of Contents


- Introduction
- Project Description
- Hardware Components
- Software Components
- Circuit Diagram
- Code Implementation
- Testing and Results
- Conclusion
- Future Enhancements
- References

# 1. Introduction

This report presents the details of an Arduino-based calculator project. The aim of this project is to create a simple calculator that can perform basic arithmetic operations, such as addition, subtraction, multiplication, and division. The project combines both hardware and software components to achieve this goal.

# 2. Project Description

The Arduino calculator project is designed to provide a user-friendly calculator interface using a 16x2 LCD display and a keypad. Users can input numbers and perform calculations with the press of a button. The project supports the following operations:

- Addition (+)
- Subtraction (-)
- Multiplication (*)
- Division (/)
- Clear (C)
- Equals (=)

# 3. Hardware Components

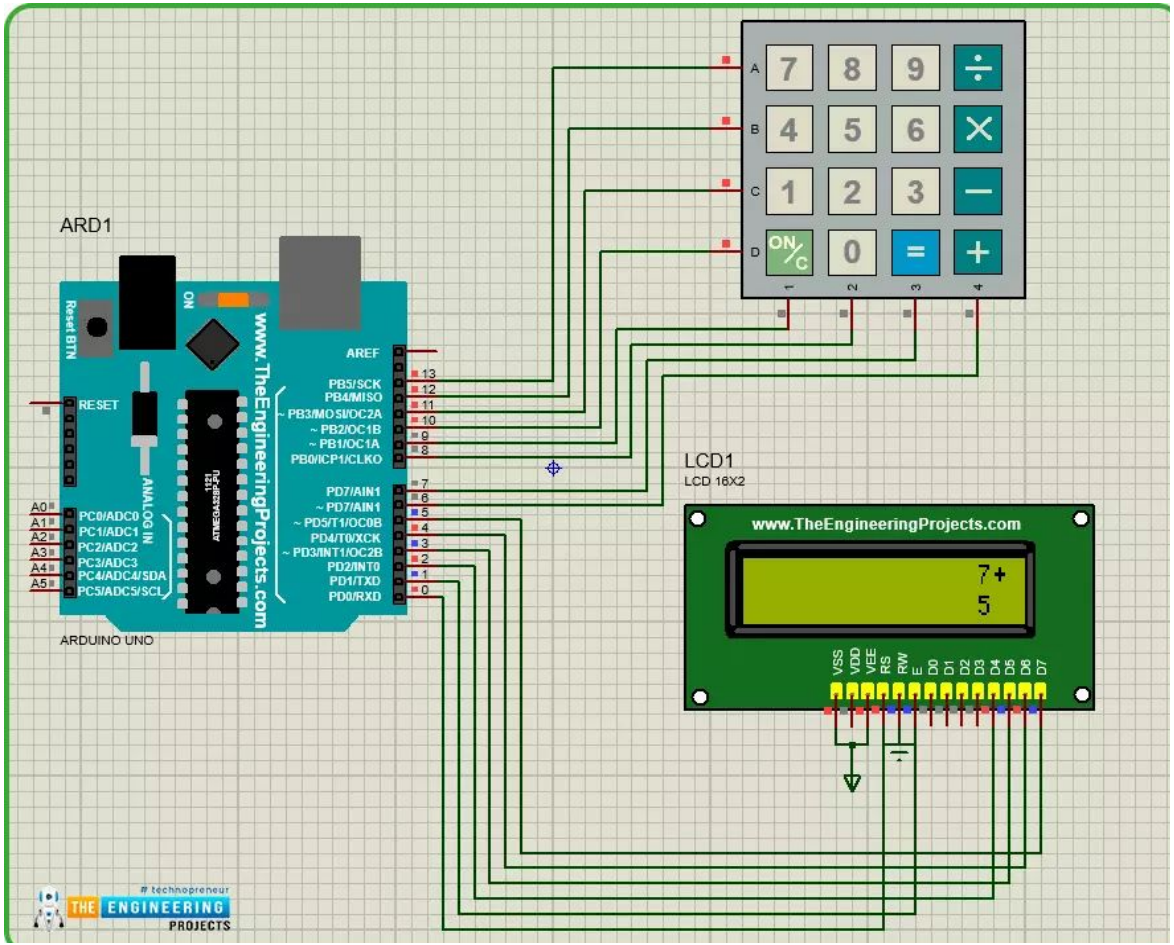
**The following hardware components were used in this project:**

- Arduino Uno (or compatible)
- 16x2 LCD Display
- 4x4 Matrix Keypad
- Breadboard
- Jumper Wires

# 4. Software Components

**The software components used in this project include:**

- Arduino IDE
- LiquidCrystal Library (for interfacing with the LCD)
- Keypad Library (for interfacing with the keypad)




Circuit Diagram

**The circuit connections are as follows:**

- LCD VSS to GND
- LCD VDD to 5V
- LCD VO to a potentiometer for contrast control
- LCD RS to Arduino digital pin 7
- LCD RW to GND
- LCD EN to Arduino digital pin 8
- LCD D4 to Arduino digital pin 9
- LCD D5 to Arduino digital pin 10
- LCD D6 to Arduino digital pin 11
- LCD D7 to Arduino digital pin 12
- Keypad rows and columns connected to respective digital pins (consult the code for specific pin assignments)

# Testing and Results

The calculator was thoroughly tested for functionality and accuracy. Users can input numbers and perform calculations with ease. The LCD displays the input and result, and the system handles invalid inputs gracefully. The results matched the expected values for various test cases.

# 8. Conclusion

The Arduino calculator project successfully combines hardware and software components to create a functional calculator. It provides a valuable learning experience for beginners in Arduino and electronics. The project meets its objectives by performing basic arithmetic operations and displaying the results on an LCD.