Calculator Using Arduino UNO

Description:

This Project is to design **Calculator** using **Arduino UNO** board, **4x4 Keypad** and a **LCD display**. This calculator do basic mathematical operations like **Addition (+), Subtraction (-), Multiplication (x),** and **Division (/)**. When the user enters the operands in the LCD and **based on the operator** the **operation** need to be **performed** (i.e. when user enters operator **"+" in the keypad** then **addition operation** need to be performed and follows…). The calculator will take **only two operands** and **single operator** at a time. The calculator takes **recent two operators and recent operand** only.
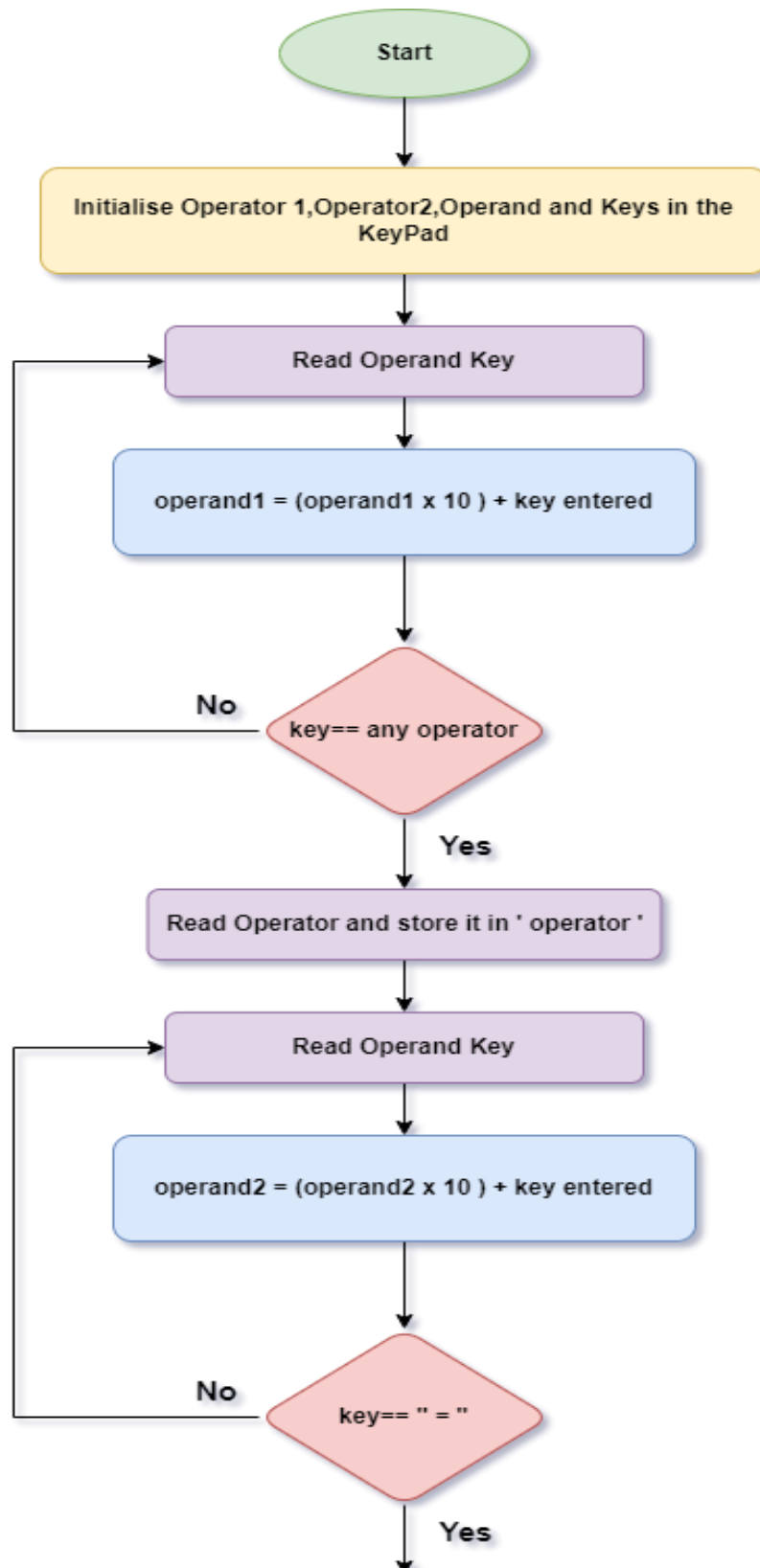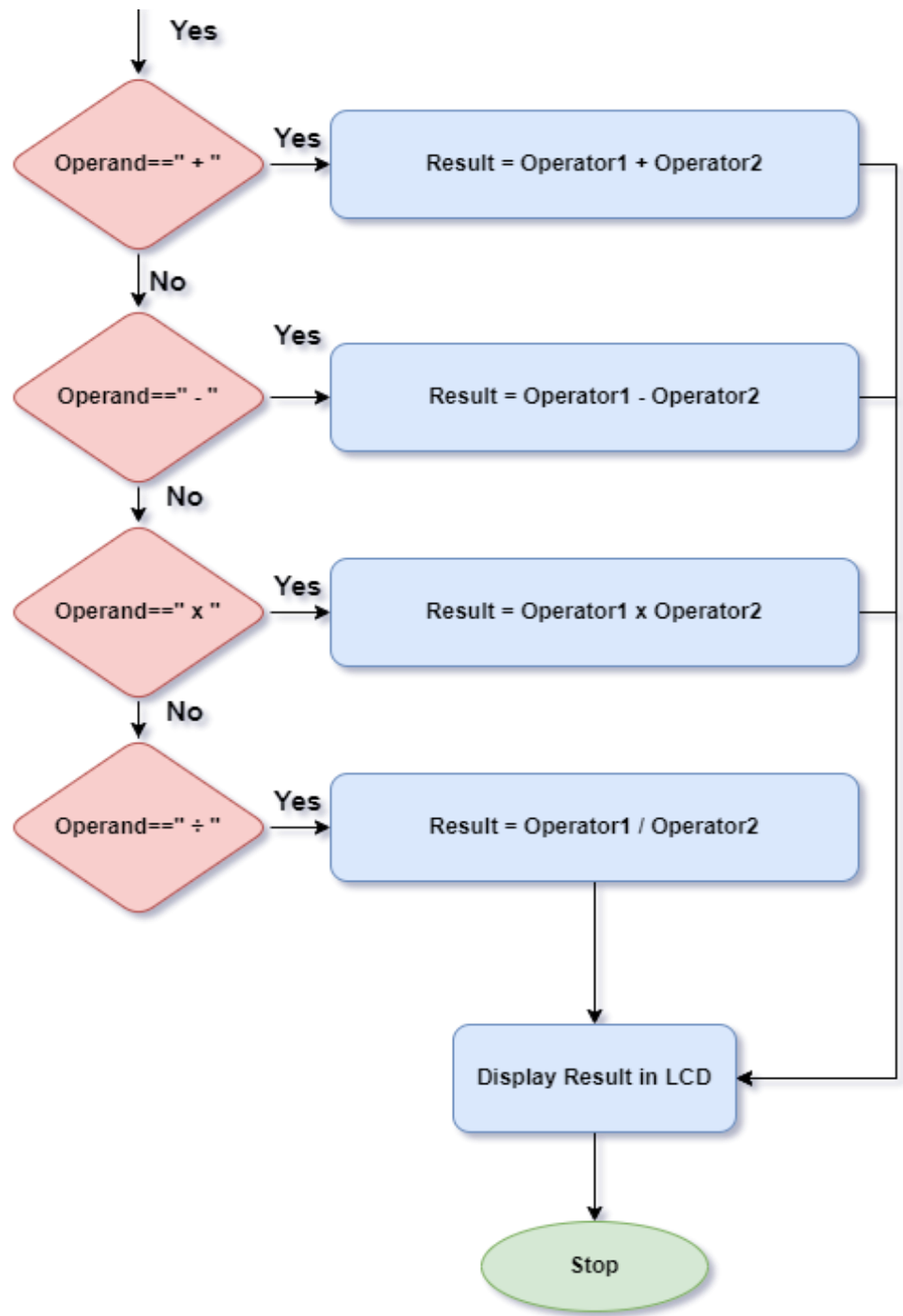
Block Diagram:

Inputs and Outputs:

S.No	Description	Name	Type	Data Direction	Spec	Remarks
1	KeyPad Row1 Pin	A	INP	DI	5VDC	Active High
2	KeyPad Row2 Pin	B	INP	DI	5VDC	Active High
3	KeyPad Row3 Pin	C	INP	DI	5VDC	Active High
4	KeyPad Row4 Pin	D	INP	DI	5VDC	Active High
5	KeyPad Column 1 Pin	1	INP	DI	5VDC	Active High
6	KeyPad Column 2 Pin	2	INP	DI	5VDC	Active High
7	KeyPad Column 3 Pin	3	INP	DI	5VDC	Active High
8	KeyPad Column 4 Pin	4	INP	DI	5VDC	Active High
9	LCD Reset Pin	RS	OUT	DO	5VDC	Active High
10	LCD Enable Pin	E	OUT	DO	5VDC	Active High
11	LCD Data Pin 1	D4	OUT	DO	5VDC	Active High
12	LCD Data Pin 2	D5	OUT	DO	5VDC	Active High
13	LCD Data Pin 3	D6	OUT	DO	5VDC	Active High
14	LCD Data Pin 4	D7	OUT	DO	5VDC	Active High

Flow Chart:

Yes

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              ┌──────────┐  Yes   ┌─────────────────────────────────┐
         ┌───►│Operand=="+"├──────►│   Result = Operator1 + Operator2 │───┐
              └────┬─────┘         └─────────────────────────────────┘   │
                   │ No                                                   │
              ┌────▼─────┐  Yes   ┌─────────────────────────────────┐    │
              │Operand=="-"├──────►│   Result = Operator1 - Operator2 │───┤
              └────┬─────┘         └─────────────────────────────────┘   │
                   │ No                                                   │
              ┌────▼─────┐  Yes   ┌─────────────────────────────────┐    │
              │Operand=="x"├──────►│   Result = Operator1 x Operator2 │───┤
              └────┬─────┘         └─────────────────────────────────┘   │
                   │ No                                                   │
              ┌────▼─────┐  Yes   ┌─────────────────────────────────┐    │
              │Operand=="÷"├──────►│   Result = Operator1 / Operator2 │    │
              └──────────┘         └─────────────────┬───────────────┘    │
                                                     │                    │
                                          ┌──────────▼───────────┐        │
                                          │ Display Result in LCD │◄───────┘
                                          └──────────┬───────────┘
                                                     │
                                               ┌─────▼─────┐
                                               │   Stop    │
                                               └───────────┘
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•• —————— **The END** ———— ••