Document Title	CYRS of Digital Calculator
Project Name	PO1_DGC
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Document Change History				
Version	**Author**	**Date**	**Change**	**Status**
1.0	- Alzahraa Mohamed - Nada Mohamed	22/1/2020	- Initial creation	Draft
1.1	- Alzahraa Mohamed - Nada Mohamed	30/1/2020	- Change in Req_PO1_DGC_CYRS_005_V01, only one button for powering calculator instead of two buttons. - Change in system scenario diagram, adding powering button. - Explaining the type of input numbers that calculator accepts floating numbers. - Explaining the error message that displays on wrong input. - Specifying the styling of displaying operation and result on LCD on two separated lines.	Draft

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Project Description

This project is a digital calculator that takes input from user and displays the input and the result on a screen.

The hardware used in the calculator is Keypad which takes input from user, LCD to display the result, buzzer to generate tunes on each key press and micro controller that performs all operations in the system. The scenario is described in figure 1.1

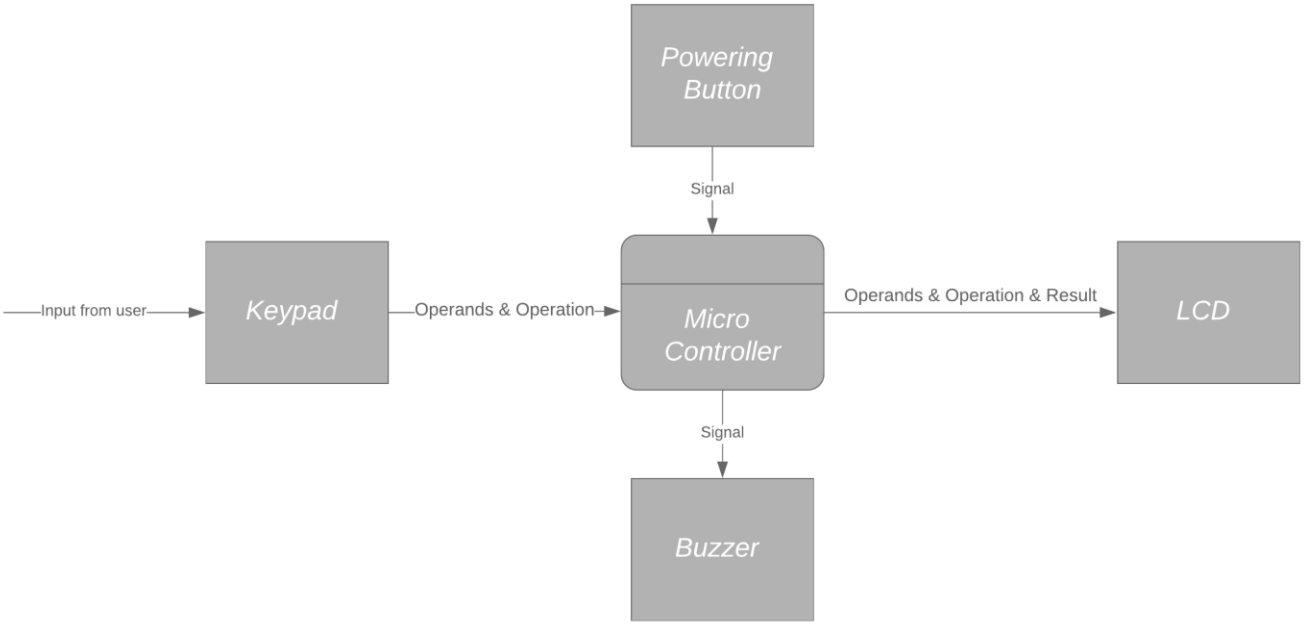

Figure 1.1 Scenario Diagram

Features:

1) Takes input from user through keypad.
2) Generates a tune on each key press.
3) Performs multiple basic operations and handle corner cases.
4) Displays the input and the result on LCD.
5) Switching calculator on and off.

Features description

Requirement Name	Requirement Description
Req_PO1_DGC_CYRS_001_V01	Calculator takes input from user through keypad, on each keypress number is sent to micro controller. The number could be decimal or floating number up to 2 digits after the point.
Req_PO1_DGC_CYRS_002_V01	Micro controller sends signal to buzzer on each key press to generate tunes.
Req_PO1_DGC_CYRS_003_V01	Micro controller performs basic operations which are addition, subtraction, division and multiplication on numbers token from keypad and handles exceptional cases such as division by zero and generates the accurate result or an error if it is required as an error message: “ERR: wrong input”.
Req_PO1_DGC_CYRS_004_V01	Micro controller sends input numbers, operation and generated result to be displayed on LCD on two separated lines, first line for input operation and second line for the result.
Req_PO1_DGC_CYRS_005_V01	Calculator which is switched on and off through one button. On state turns the LCD light on, clears the display and start a new session, while off state turns the LCD light off and terminates the session. If the LCD is off.