**Group 07’s Project Requiments**

**Group Members:**

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**Requirements:**

* Name: **Simple calculator with LCD**
* Purpose: Performs simple mathematical calculations.
* Input: 5x5 Keypad Matrix
* Output: 16x2 LCD

**Use Cases:**

**Arithmetic operations**

* *Brief description*: Allow user to perform arithmetic operation on numbers.
* *Basic functions*:

1. User keys in a legitmate arithmetic statement involves numbers, operators and/or brackets.
2. User presses “Calculate” button (=), result is then displayed on LCD screen.

* *Functions*:

Capable of handling simple arithmetic operations on numbers (additions, subtractions, multiplication, division), also some more sophisticated calculations (exomentiation, roots, logarithm, trigonometric functions).

* *Realibility*:

1. Calculate and display simple calculation results in less than 1s.
2. Able to handle simple mathematically errors (division by zero, integer over flow)

* *Performance requiments*:

1. Arithmetic statement must be syntactically correct and mathematically legimate (Only zero division and integer overflow errors are handled)
2. Input length of arithmetic statement is fewer than 16 characters due to the limitations of 1602 LCD.

* *Manufacturing costs*: estimated 300,000 VND
* *Power*: 9V Battery.
* *Physical size/weight*:
  1. Size: Estimated 15x10x5 cm.
  2. Weight: Estimated 500g.
* *Installation*: Portable device.
* *Working Environments*: Non-hostile environments for electronic devices [1]
* *Certifications*: None.

Reference links:

[1] – [Embedded Control Systems Design/Hostile Environment](https://en.wikibooks.org/wiki/Embedded_Control_Systems_Design/Hostile_Environment)