**6 Function Calculator: Main Project Design Document**

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**Feature Descriptions**

This program will feature a way to input 2 four-digit numbers and the desired function, and a way to output. The functions it will have are add, subtract, multiply, divide, exponent, and root.

**User Interface**

First the program will tell the user how to input the numbers correctly and give an example of how to use it. After inputting and pressing equals, the output will be displayed in 5 digits as that’s the largest the LC-3 can handle.

**Procedural Design**

Output directions for inputting numbers

User inputs numbers and function

Decode characters from ASCII to decimal

Find the place the character was typed in

Convert each decimal place to one number

Perform specified function

Convert from decimal to ASCII and output each character as it is determined

**Process Flow Diagram**

R0

Yes

No

Positive?

R0 = R0 + R1 -> R2 - 1

No

Result is 0

Yes

Is R1 or R2 0?

Multiply

R0

NOT R2 -> ADD 1 to R2 -> R0 = R1 + R2

Subtract