**Explanation of prime\_detector.asm**

File name: prime\_detector.asm

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Assembly language: LC-3

Loading address: x3000

File description:

Determines whether an input number is prime or not. Results are displayed to the console. Works for numbers 1 - 9,999. Until the user enters enters “0”, the program will continue to prompt the user for input.

Error handling:

If the user enters any non-integer input, an invalid input string will be displayed, and the user will be prompted to try again. The user will not be able to enter a number larger than 4 digits long.

Dependencies:

read.asm (x4000), multiply.asm (x4100), string2num.asm (x4200), get\_chars\_sub.asm (x4300).

How to assemble, load, and run the program:

Go to <https://wchargin.github.io/lc3web/> and click the upload button (the button to the left of assemble). Open the drag and drop all 5 of the OBJ files (located in the “OBJ Files” directory). Click “Process Files”. Once the main program and all the subroutines are loaded into the correct memory locations, you can click “run” to run the program. The program will continue the prompt you for input until you press “0” then press “Enter” on your keyboard. This will halt the program.

Or the harder way…

Go to <https://wchargin.github.io/lc3web/> and click the assemble button. Drag and drop prime\_detector.asm into the text field. Click “assemble”. Click “Load into Simulator”. Then for each of the subroutines, drag and drop it into the text field, click “assemble” and load it into the simulator. Once the main program and all the subroutines are loaded into the correct memory locations, you can click “run” to run the program. The program will continue the prompt you for input until you press “0” then press “Enter” on your keyboard. This will halt the program.

Screenshots of the program running:

A screenshot of a computer

Description automatically generated

A screenshot of a computer screen

Description automatically generated