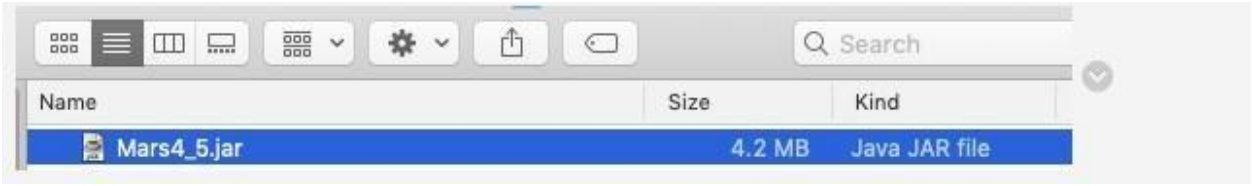
CS 3844 Computer Organization Term Project Part 1 Spring 2021 (100 pt)

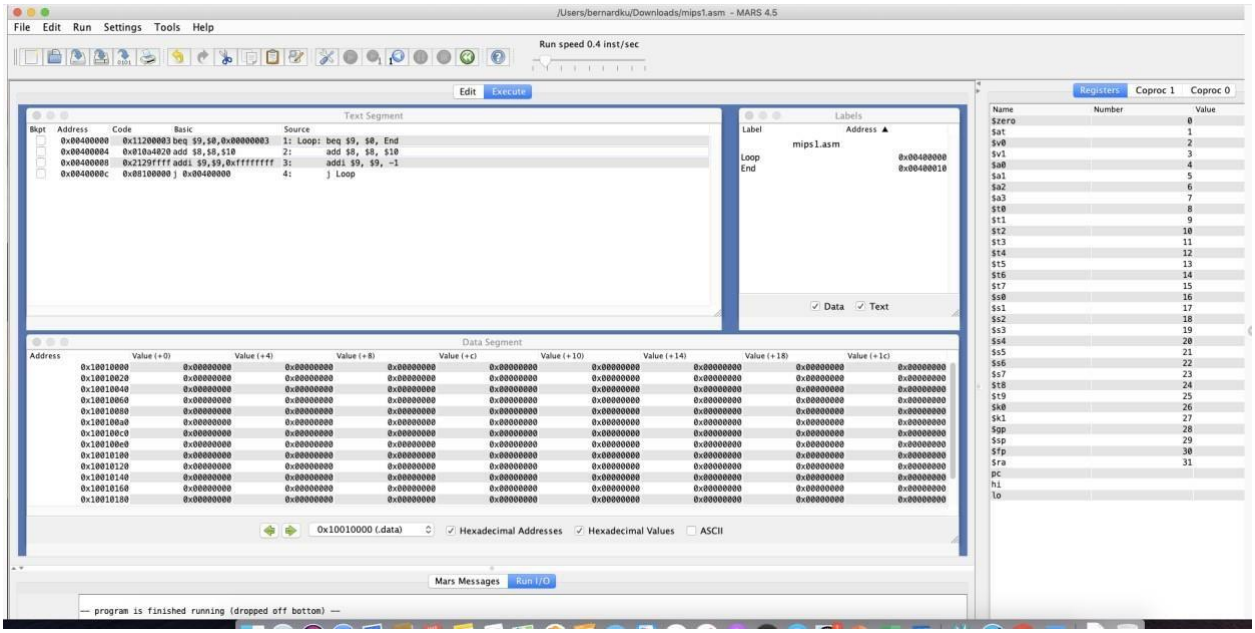
1. Follow the web link and download the MARS - MIPS Assembly Language Simulator. http://courses.missouristate.edu/KenVollmar/MARS/download.htm

2. Install the package **V4.5, Aug. 2014** (jar archive including Java source code) on your chosen platform (Window based or Mac Based)

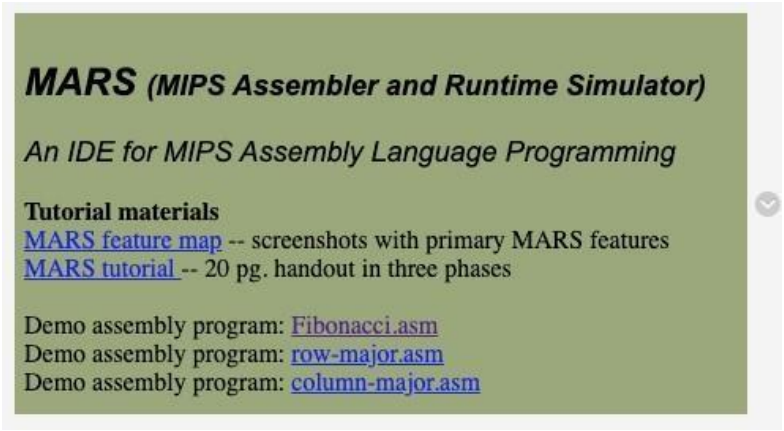
3. For Example, on my Mac, this is the Java source.



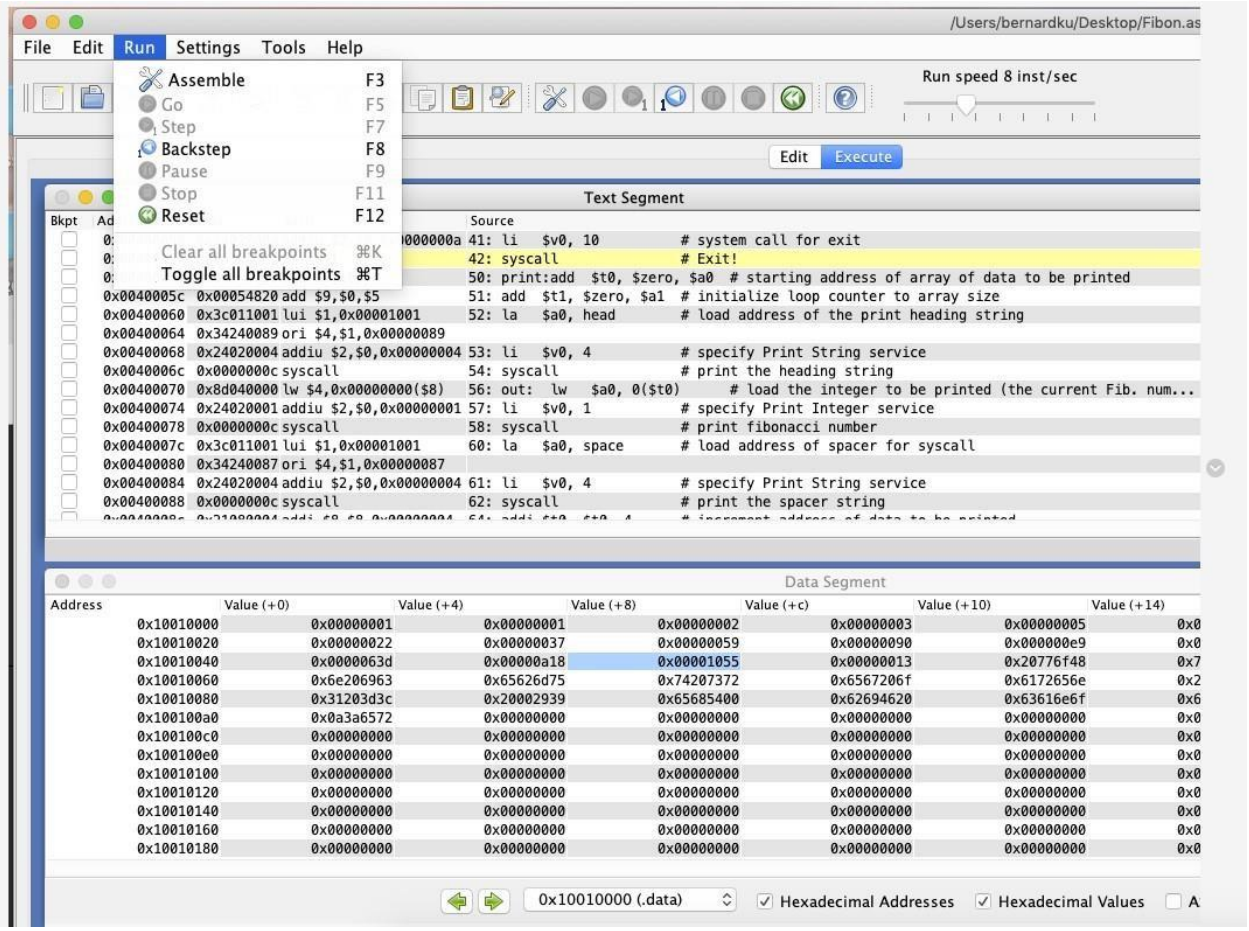
4. Install the MARS and run on your desktop - this is the GUI Layout after successful execution.



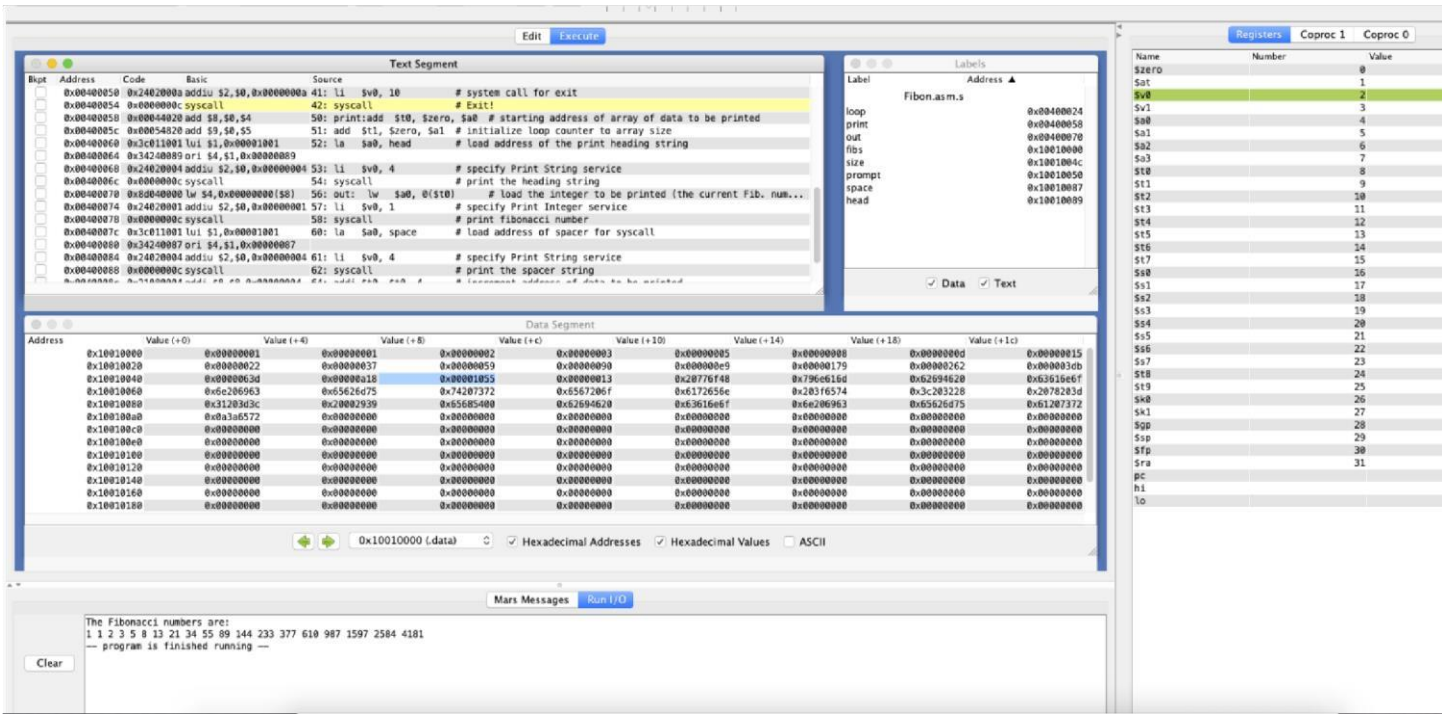
5. You can also download the MARS tool guide and the three .asm programs by clicking this web link: https://courses.missouristate.edu/KenVollmar/mars/tutorial.htm



6. You will load the Fibnacci.asm program, and go to run -> assembler -> go -> step



7. You can watch the program to execute in a stepwise manner, and the outputs are shown at the bottom runtime window.



8. Your deliverables are changing the outputs to the two different forms (50 pt)

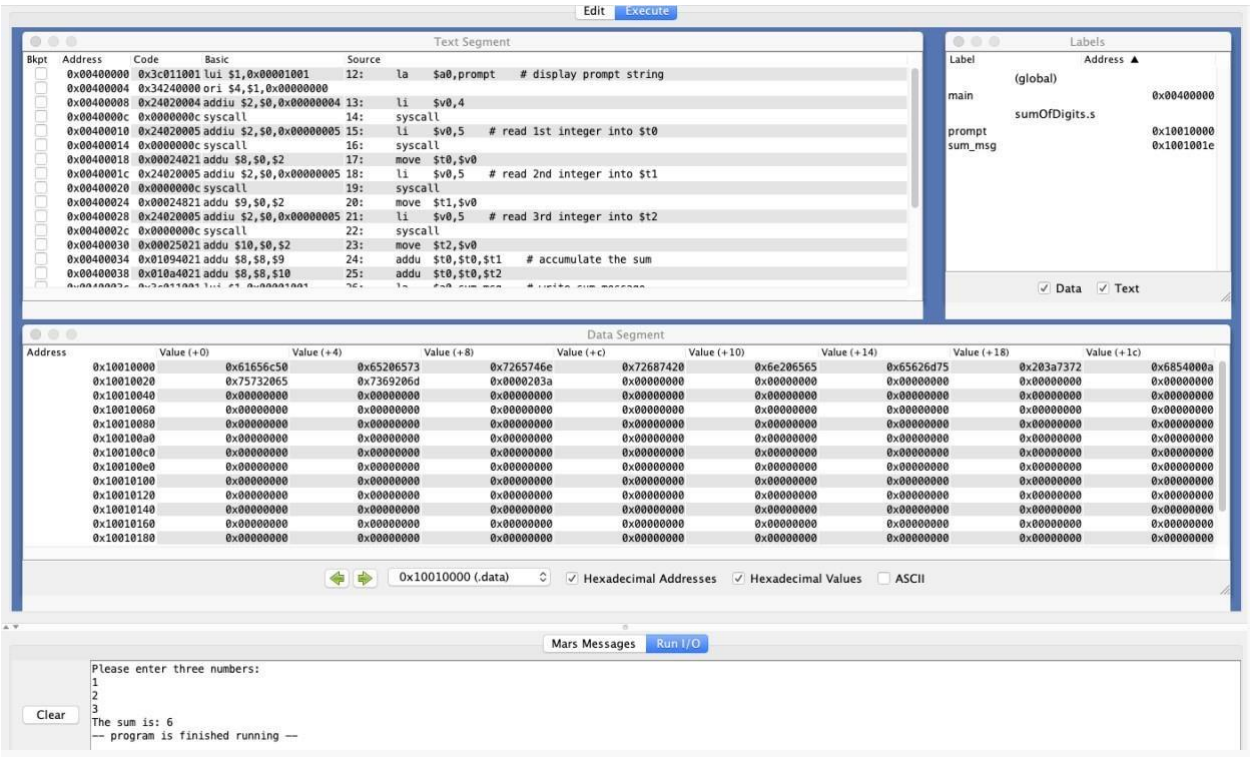
Case 1- Up to Fib(17) = 1597 – Program1.asm

Case 2 - Up to Fib(25) = 75025- Program2.asm

9. Modify the program to prompt the end user to enter Fib sequence length iteractively. (50 pt)

Hint: refer to the attached MIPS program. sumOfDigits.s Here is the screen shot of how it runs on MARS.

Submit your progam as Program3.asm.



9. Bonus (20 pt). Test and verify the upper bound of the Fibnacci.asm program, e.g. 60 that the program will crash. Rewrite the program to test the number entered by the user, e.g. if 61, the program will issue an error message saying the program will only between 1 to 60, and give the user a second chance to enter a new number within the working range.

10. Zip the followings to a folder:

    1. Required three .asm programs with comments to show the modified MIPS ASM codes
    2. a page detailing team member names and abc123, and their roles and responsibilities in this Term Project deliverable
    3. the screen shots showing the execution outputs in the three programs to BB

    Submit as ProjectP1.zip to BB.

Have FUN!!