Functional Requirements

1. User will use a filepicker pop-up in order to select the file they would like to run in the program.
2. Program will prompt a user to input a word when read is ran and store that input into a location in memory
3. Program will output to users screen the word stored at a specified location in memory when Write operation is called.
4. Program will take a word stored in a specified place in memory and load the accumulator with that word when the Load operation is called.
5. Program will take a word stored in the accumulator and store that word into a specified place in memory when the Store operation is called.
6. Program will take a word stored in a specified place in memory and add that word to the accumulator leaving the result in the accumulator when the Add operation is called.
7. Program will take a word stored in a specified place in memory and subtract that word from the accumulator leaving the result in the accumulator when the Subtract operation is called.
8. Program will take a word stored in a specified place in memory and divide the accumulator by that word. It will then store that result in the accumulator when the Divide operation is called.
9. Program will take a word stored in a specified place in memory and multiply it by the word in the accumulator. Result of the multiplication will than be stored into the accumulator when the Multiply operation is called.
10. Program will branch to a specified place in memory when Branch operation is called.
11. Program will branch to a specified place in memory only when the accumulator value is a negative number when the BranchNeg operation is called.
12. Program will branch to a specified place in memory only when the accumulator’s value is zero when the BranchZero operation is called.
13. Program will exit when the Halt operation is called
14. Program will have a GUI interface that will have two options for user to input a word when prompted. Either using a visual 10-key pad and mouse or just tying the word with their keyboard into a input box.
15. Program will output any errors during the run of the program to the users GUI so that they can be aware of what failed.

Nonfunctional Requirements

1. The program will be implemented with Python only.
2. GUI will be color-blind friendly to make sure all users have a good experience.
3. The Program much function on both Windows and Apple operating systems.