

## Final SRS Document

### Functional Requirements

1. The program will execute BasicML codes.
2. The program will have a GUI for users to navigate the functions.
3. Input validation must ensure only valid integer values are accepted when reading user input.
4. The program will be able to store 100 words at once.
5. The program will have an accumulator that will hold info for operations.
6. The program should allow users to choose between keyboard input and file input for data entry
7. The simulator will detect and display errors like invalid instructions, memory overflows, and divide-by-zero.
8. The program will show the results through a GUI to the user.
9. The simulator will let users search through memory.
10. The program's GUI will allow users to see what is stored in memory.
11. Include help sections/tooltips explaining commands and GUI functions.
12. The program will allow for users to execute ADD, SUBTRACT, MULTIPLY, and DIVIDE
13. The simulator will display a history of executed commands.
14. The program will stop when a HALT code is executed.
15. The program will show the accumulator and instruction counter in real time.

### Non Functional Requirements

1. The program will have an intuitive design that users can easily navigate.

2. The simulator must handle invalid input intuitively, preventing crashes and providing error messages.
3. Execute an instruction in under 100 ms for smooth interaction.