

# Final Merged SRS

## Functional Requirements:

### 1. File Input

- The GUI shall let a user select a file for use.
- The system shall read in a file of instructions from the chosen file.
- The system shall validate that the file is UVSim compatible.
- The system shall convert all 4-digit files to 6-digit files upon file input.
- The system shall display a GUI to the user when the program is done loading the text file.
- The system shall allow the user to edit and save files through the GUI.
- The system shall display the contents of the loaded file in a text box, allowing users to view and modify it before running the simulation.

### 2. Command Operations

- The system shall be able to load a number from a specific location in memory into the accumulator when the load command is executed.
- The system shall store a word from the accumulator in a specific location in memory when the store command is executed.
- The system shall add a specific number in memory to the accumulator when the add command is executed.
- The system shall subtract a specific number in memory from the accumulator when the subtract command is executed.
- The system shall divide a specific number in memory from the accumulator when the divide command is executed.
- The system shall multiply a specific number in memory to the accumulator when the multiply command is executed.
- The system shall support resetting the simulation to its initial state.

### 3. User Controls

- The GUI shall have a user input window.
- The system shall allow the user to run the loaded program.
- The GUI will have a button to reset the simulation to its initial state.
- The GUI will have a button to add another window for multiple instances of the program.
- The GUI will have an option to save edits before running the simulation.
- The GUI will include a settings button to customize the color scheme.

### 4. Display/Output

- The GUI shall display the accumulator value.
- The GUI shall display register numbers specified by the "write" command.
- The user shall be able to change the colors of the GUI through the settings button.

- The user shall be able to reset the colors of the GUI back to the original “UVU” colors.
- The GUI shall allow the user to save the current color scheme or reset it to default.

### **Updated Non-Functional Requirements:**

1. The system shall load the text file in 3 seconds.
2. The system shall run simulations and display results within 5 seconds of initiation.
3. The GUI shall have at least 2 customizable colors.
4. The system shall ensure that files with more than 250 lines trigger an error message and prevent further action until corrected.