Personal SRS Document

Functional Requirements

1. The UVSim software simulator shall support the execution of BasicML machine language programs.
2. Users shall be able to load BasicML programs into the UVSim memory starting at location 00.
3. The UVSim shall provide functionality for reading from the keyboard (READ)
4. The UVSim shall provide functionality for writing to the screen (WRITE).
5. It shall support load operations, enabling the loading of data from memory into the accumulator (LOAD)
6. It shall support store operations, enabling the storing data from the accumulator into memory (STORE).
7. The UVSim shall facilitate addition (ADD) operation
8. The UVSim shall facilitate the subtraction (SUBTRACT) operation
9. The UVSim shall facilitate the division (DIVIDE) operation
10. The UVSim shall facilitate the multiplication (MULTIPLY) operation
11. The UVSim shall facilitate the branching (BRANCH) operation
12. The UVSim shall facilitate the branching if the accumulator is negative (BRANCHNEG) operation
13. The UVSim shall facilitate the branching if the accumulator is zero (BRANCHZERO) operation
14. The UVSim shall facilitate halting the program (HALT).
15. The UVSim shall provide a user-friendly interface for interacting with the simulator, including command-line input and output.

Non-Functional Requirements

1. Performance: The UVSim shall execute BasicML programs efficiently, with minimal latency between user inputs and program outputs.
2. Reliability: The UVSim shall accurately emulate the behavior of a physical computer, ensuring reliable execution of BasicML programs.
3. Portability: The UVSim shall be platform-independent and runnable on various operating systems without requiring additional dependencies.