

UVSim Requirements

Functional Requirements:

1. The system shall accept a instruction file as an input.
2. The system shall be equipped with a 100-word memory.
3. The system shall be equipped with an accumulator.
4. The system's accumulator shall only hold one word.
5. The system shall assume the sign of an instruction is always a plus unless indicated otherwise.
6. The system shall have a read operation that accepts a word as input.
7. The system's read operation shall store the accepted word into a specific location in memory as described by the instruction.
8. The system shall have a write operation that output a word from a specific location in memory as described by the instruction.
9. The system shall have a load operation.
10. The system's load operation will move a word from a specific location in memory memory as specified in the instruction into the accumulator.
11. The system shall have a store operation.
12. The system's store operation shall store a word from the accumulator into a specific location in memory as specified by the instruction.
13. The system shall have an add operation.
14. The system's add operation shall add a word that is currently in memory (as specified by the instruction) and the word that is in the accumulator.
15. The system's add operation shall store the result in the accumulator.

Non-Functional Requirements

1. The system should be stable enough to not crash if an invalid program file is input.
2. The system should be stable enough to not crash if a non-existent program file is input.
3. The system should not take any longer than 2 seconds to run 400 lines of UVSim instructions.