**Software Requirements Specification (SRS) for UVSim**

## **Functional Requirements**

UVSim should be able to:

1. Accept a text file as user input.
2. Only accept text files that reside in the same directory as the project.
3. Parse the text file, one line at a time, and interpret instructions.
4. Store instructions using a dictionary with key/value pairs.
5. Use an Accumulator register to hold special values.
6. Read stored values from files as executable codes.
7. Perform arithmetic operations such as addition, subtraction, multiplication, and division on values stored in memory and the Accumulator register.
8. Execute all operations in memory from beginning to end without interruptions, except for those requiring user input.
9. Execute operations one instruction at a time, waiting for user interaction before proceeding.
10. Load and store values in memory locations.
11. Handle input operations so users can enter values to be stored in memory.
12. Handle output operations to display stored values.
13. Detect and handle errors for invalid instructions.
14. Save and load programs for future use by opening and writing to a text file.
15. Support branching operations like conditional and unconditional jumps.

## **Non-Functional Requirements**

1. The application must be executable in any operating environment where Python is available.
2. The interface should be designed using Kivy for GUI implementation.
3. The system should be designed for scalability, allowing easy expansion of instruction sets and memory size without major changes.