**Functional Requirements**

**UVSim**

1. A user shall be able to pick a file to run from their computer
2. The system shall load the file into the program and notify the user of errors
3. The system shall determine which method to run for each line of code

**IO Operations**

1. A user shall be able to input numbers into the GUI when necessary
2. The system shall display program output to the GUI

**Arithmetic Operations**

1. The system shall be able to execute the add instruction and store the result in the accumulator
2. The system shall be able to execute the subtract instruction and store the result in the accumulator
3. The system shall be able to execute the multiply instruction and store the result in the accumulator
4. The system shall be able to execute the divide instruction and store the result in the accumulator

**Control Operations**

1. The system shall be able to branch to a specific location in memory
2. The system shall be able to branch to a specific location in memory if the accumulator is negative
3. The system shall be able to branch to a specific location in memory if the accumulator is zero
4. The system shall be able to halt execution when instructed

**LoadStore Operations**

1. The system shall be able to load a word from memory and store it in the accumulator
2. The system shall be able to store a word from the accumulator into a specified location in memory

**Non-Functional Requirements**

1. No more than 7 seconds of latency on any operation
2. The application must be made in python
3. GUI Must be color-blind accessible