**Unit Test - Interpreter**

**Summary:**

A unit test was performed on the interpreter class of the UVSim software. The class was isolated from the main code and tested with a new main program which ran the interpreter through all implemented error cases and all nominal input functions. Through the testing phases a few bugs were found and corrected. The system was unsuccessfully inputting negative numbers to the memory. This was due to a double negation occurring during the parsing process. Additionally, the interpreter had the main memory size defined incorrectly and allowed writing outside of memory (into the PC and accumulator).

After corrections, the testing program was ran again and all tests passed, with the exception of one. Test #4 did not return the run-time error expected but did catch the error. This error check was decided to be redundant and acceptable.

**Program Output from all tests:**

|  |  |  |
| --- | --- | --- |
| **Test Case #** | **Input** | **Expected** |
| **1** | +10105 | Expected result: "invalid input: input length" |
| **2** | "" | Expected result: "no empty lines are allowed" |
| **3** | word | Expected result: "Incorrect argument, must be an integer" |
| **4** | ^1596 | Expected result: "invalid first character" |
| **5** | ZZZZ | Expected result: 0 |
| **6** | +1112 | Expected result: 0 |
| **7** | 3456 | Expected result: 11123456 |
| **8** | +1155 | Expected result: 1155 |
| **9** | +2025 | Expected result: 2025 |
| **10** | +2130 | Expected result: 2130 |
| **11** | +3010 | Expected result: 3010 |
| **12** | +3145 | Expected result: 3145 |
| **13** | +3230 | Expected result: 3230 |
| **14** | +3316 | Expected result: 3316 |
| **15** | +4089 | Expected result: 4089 |
| **16** | +4156 | Expected result: 4156 |
| **17** | +4236 | Expected result: 4236 |
| **18** | +4300 | Expected result: 4300 |
| **19** | -2365 | Expected result: -2365 |
| **20** | Array of Numbers to check memory overflow | Expected result: "max memory exceeded, too many commands" |