Testing

1. Register values can be changed and displayed

Purpose: Checks for successful modification of a specified register's value.

Configuration: The register values are initially displayed, all with initialized value of 0x0000. Next, R0's value is modified to 0xFFFF. The register values are then displayed again.

Expected Results: The first register values should all be the initialized value of 0x0000. The second displayed values should reflect the change in R0.

Actual results: The instructions print as expected.

```
Option: r
R0:  0000
R1:  0000
R2:  0000
R3:  0000
R4 (BP):  0000
R5 (LR):  0000
R6 (SP):  0000
R7 (PC):  0000
Option: s
Enter regno (0..7) and value (0000..FFFFF)
0 FFFF
Option: r
R0:  ffff
R1:  0000
R2:  0000
R3:  0000
R4 (BP):  0000
R5 (LR):  0000
R6 (SP):  0000
R7 (PC):  0000
Option:
```

2. Value at specified instruction memory can be changed

Purpose: Checks for successful modification to instruction memory value at specified address.

Configuration: Display initial instruction memory values. Next, modify an instruction memory value within the displayed range. Then, display the same instruction memory values.

Expected Results: The second instruction memory display should show the changes.

Actual results: The instruction values print as expected.

Pass/Fail: PASS

```
Option: m
Display instruction or data memory?
I - instruction memory
D - data memory
i
Enter lower and upper bound
100 110
0100: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
Option: c
Change instruction or data memory?
I - instruction memory
D - data memory
i
Enter address and contents (word)
104 aabb
Option: m
Display instruction or data memory?
I - instruction memory
D - data memory
i
Enter lower and upper bound
100 110
0100: 00 00 00 00 bb aa 00 00 00 00 00 00 00 00 00 00 ................
Option:
```

3. Value at specified memory address can be changed

Purpose: Checks for successful modification to data memory value at specified address.

Configuration: Display initial data memory values. Next, modify a data memory value within the displayed range. Then, display the same data memory values.

Expected Results: The second data memory display should show the changes.

Actual results: The data values print as expected.

Pass/Fail: PASS

```
Option: m
Display instruction or data memory?
I - instruction memory
D - data memory
d
Enter lower and upper bound
200 210
0200: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
Option: c
Change instruction or data memory?
I - instruction memory
D - data memory
d
Enter address and contents (word)
208 7776
Option: m
Display instruction or data memory?
I - instruction memory
D - data memory
d
Enter lower and upper bound
200 210
0200: 00 00 00 00 00 00 00 00 76 77 00 00 00 00 00 00 ........vw......
Option:
```

4. Pipeline stops at specified breakpoint

Purpose: Checks for pipeline stops at specified breakpoint.

Configuration: Set a breakpoint within the instruction memory range of a .xme file and run the pipeline.

Expected Results: The pipeline will stop at the specified breakpoint.

Actual results: The pipeline stops as expected.

Pass/Fail: PASS

```
1014: ADD   RC: 1 WB: 0 CON: 2 DST: R0

1016: SUB   RC: 1 WB: 0 CON: 1 DST: R1

1018: 3ff9

101a: 3fff

101c: 0000

Option: b
Current breakpoint: 2500
Set breakpoint address
1008
Option: g

0ffe: MOV   WB: 1 SRC: R0 DST: R0

1000: MOVL  BYTE: 0040 DST: R0

1002: MOVH  BYTE: 0000 DST: R0

1004: 5801

1006: ADD   RC: 1 WB: 0 CON: 2 DST: R0

1008: 6802

Option:
```