# NIODS II EMULATOR

## TEST PLAN

Team Name
Jake Ediger
Alex Michael
Alex Czarnick
Avinash Nooka
Raksharth Choudhary

### INTRODUCTION

The system will be rigorously tested with multiple assembly code files. The system will be loaded by the local host. Files will be inputted through the graphical user interface (GUI) and the output will be tested for correctness. While the file is running, the system will be started, paused, and restarted to test for functionality of the buttons.

### SYSTEM OVERVIEW

The system is designed to emulate the NIOS II processor. It is able to carry out all the instructions and processes of the regular NIOS II emulator. The graphical user interface of the system will display the registers and up to 16 user selected memory locations. While the system is running it is possible to pause, run, and restart the system.

### FEATURES TO BE TESTED

| Testing Requirement | System Requirement(s) | Short Description |
|---|---|---|
| 1 | F1, F2, F5, F8 | Testing Graphical User Interface |
| 2 | F1, F2, F4, F8 | Instruction handling and general execution of file |
| 3 | F1, F2, F4, F8 | Instruction handling and general execution of file |
| 4 | F1, F2, F4, F8 | Instruction handling and general execution of file |
| 5 | F1, F2, F4, F8 | Instruction handling and general execution of file |

### TEST ENVIRONMENT

The environment for testing is done locally. Installation of Node.js is required to run the software locally. Run the server by typing “node server.js” in the terminal or command prompt. This brings up the online GUI. Files can be inputted and buttons can be pressed at this point.

## Test Cases

### Test Case Number

1

### Component Under Test

Graphical User Interface

### Feature(s) to be Tested

F1, F2, F5, F8

### Initial Conditions

System is in browser being ran by local host.

### Expected Behavior

#### Input

1. Uploaded file
2. Clicked buttons
3. Picked Hexadecimal Values
4. Run file
5. Pause File
6. Restart File
7. Looked at registers

#### Output

Output was as expected. All actions resulted in expected functions.

### Test Case Number

2

### Component Under Test

Instruction handling and general execution of file

### Feature(s) to be Tested

F1, F2, F4, F8

### Initial Conditions

System is in browser being ran by local host.

### Expected Behavior

#### Input

testCaseCountTo100.txt

#### Output

Expected: r2 = 128, r3 = 320, r4 = 70

Actual: r2 = 128, r3 = 320, r4 = 70

### Test Case Number

3

### Component Under Test

Instruction handling and general execution of file

### Feature(s) to be Tested

F1, F2, F4, F8

### Initial Conditions

System is in browser being ran by local host.

### Expected Behavior

#### Input

testCaseInfiniteLoop.txt

### Output

Expected:  r2, r3, r4, should continue to infinity with each pause.

Actual: Registers are not updating on pause.

### Test Case Number

4

### Component Under Test

Instruction handling and general execution of file

### Feature(s) to be Tested

F1, F2, F4, F8

### Initial Conditions

System is in browser being ran by local host.

### Expected Behavior

### Input

testCaseInvalidRegister.txt

### Output

Expected:  Error: Invalid register “r45”

Actual: Runs file but fails to update r2.

### Test Case Number

5

### Component Under Test

Instruction handling and general execution of file

### Feature(s) to be Tested

F1, F2, F4, F8

### Initial Conditions

System is in browser being ran by local host.

### Expected Behavior

#### Input

testCaseCountTo100AndBack.txt

#### Output

Expected:  r2 = 0, r5 = 100

Actual:  r2 = 0, r5 = 100

### Test Case Number

6

### Component Under Test

Instruction handling and general execution of file

### Feature(s) to be Tested

F1, F2, F4, F8

### Initial Conditions

System is in browser being ran by local host.

### Expected Behavior

#### Input

testCaseMispelledInstruction.txt

#### Output

Expected:  File should not run. Return error.

Actual:  System returns error. File still runs.

### Test Case Number

7

### Component Under Test

Instruction handling and general execution of file

### Feature(s) to be Tested

F1, F2, F4, F8

### Initial Conditions

System is in browser being ran by local host.

### Expected Behavior

#### Input

testCaseWithComments.txt

#### Output

Expected:  File uploads with no errors. Displays correct registers.

Actual:  File uploads with no errors. Displays correct registers. .