CS1632 DELIVERABLE 3: Selenium Web Testing

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Deliverable URL: <https://github.com/rpp25/CS1632/tree/master/WebTest/src>

For the third deliverable in CS1632, we wrote source code and system-level tests for a web application provided by Professor Laboon. The webpage is a sample web page created by the professor and it contains a few defects. The main challenge of the project was finding what the defects were. I admittedly couldn’t find all of them. Trying to figure out the Selenium API was also a significant challenge, as different tests required different approaches to check different web elements. While some elements were easy to find, usually by name or class, others proved to be more difficult. Overall, I wasn’t able to come up with twenty tests, having only come up with 15. I had three tests fail, as they were used to find defects. The tests are as follows:

**IDENTIFIER:** testFactInvalid

**TEST CASE:** A test to make sure the web page displays that the factorial of an invalid input is 1.

**PRECONDITIONS:** User is on the factorial page.

**EXECUTION STEPS:** Enter a letter or String into the input field. Click the “Submit” button.

**POSTCONDITIONS:** The program will display message that looks like “The factorial of [whatever was entered] is 1!”

**IDENTIFIER:** testFibInvalid

**TEST CASE:** A test to make sure the web page displays that the Fibonacci of an invalid input is 1.

**PRECONDITIONS:** User is on the Fibonacci page.

**EXECUTION STEPS:** Enter a letter or String into the input field. Click the “Submit” button.

**POSTCONDITIONS:** The program will display message that looks like “The Fibonacci of [whatever was entered] is 1!”

**IDENTIFIER:** testFibWorks

**TEST CASE:** A test to make sure the web page displays that the Fibonacci number of the entered value.

**PRECONDITIONS:** User is on the Fibonacci page.

**EXECUTION STEPS:** Enter a value between 1 and 100 into the input field. Click the “Submit” button.

**POSTCONDITIONS:** The program will display message that looks like “The Fibonacci of [whatever was entered] is [the calculated Fibonacci number]!”

The defects that these tests correspond to are as follows:

**SUMMARY:** testFactInvalid defect

**DESCRIPTION:** Entering any invalid values should cause the webpage to output a certain message, however it does not. This can be found by employing test case testFactInvalid.

**REPRODUCTION STEPS:** Starting on the factorial page, enter a letter or String into the input field. Click the “Submit” button.

**EXPECTED BEHAVIOR:** The website will catch this error and display a message informing the user that the factorial of the entered value is 1.

**OBSERVED BEHAVIOR:** The website displays a message reading “Internal server error”

**SUMMARY:** testFibInvalid defect

**DESCRIPTION:** Entering any invalid values should cause the webpage to output a certain message, however it does not. This can be found by employing test case testFibInvalid.

**REPRODUCTION STEPS:** Starting on the Fibonacci page, enter a letter or String into the input field. Click the “Submit” button.

**EXPECTED BEHAVIOR:** The website will catch this error and display a message informing the user that the Fibonacci of the entered value is 1.

**OBSERVED BEHAVIOR:** The website displays a message reading “Internal server error”

**SUMMARY:** testFibWorks defect

**DESCRIPTION:** Entering a value should cause the webpage to calculate the Fibonacci of the number, however it does not. This can be found by employing test case testFibWorks.

**REPRODUCTION STEPS:** Starting on the Fibonacci page, enter a value between 1 and 100 into the input box. Click the “Submit” button.

**EXPECTED BEHAVIOR:** The website will display the proper Fibonacci number, which is checked against the returned result of a Fibonacci number calculator method.

**OBSERVED BEHAVIOR:** The website displays the Fibonacci of the number that is one greater than the intended number (n+1).

