

CS 1632 - DELIVERABLE 4: Automated Web Testing

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https://github.com/kmk189/CS1632_Deliverable4

Summary:

Deliverable 4 was an attempt at testing a website for defects. The website has a total of five different pages: the homepage, one which will calculate the factorial of a given number, another which will give the next number in the fibonacci sequence for a given number, a page which displays greetings, and one which shows pictures of the Cathedral of Learning. For testing this website, Katalon Automation Recorder was used.

For the initial homepage, there were two tests required to be sure that the appropriate two messages were displayed on the page (test_welcome_message, test_used_for_message). There was also the test to be sure that all five links appeared at the top of the page and that pressing the "CS1632 D3 Home" link would lead to this home page (test_home_links).

The "Factorial" page required the test to be sure all five links appeared and that pressing the "Factorial" button would lead to the factorial page (test_factorial_links). Other tests were based on checking the output of the factorial calculation. Multiple valid values were tested (1, 17, and 100) as well as invalid values (0, -17, and 101). There is also a test for a non-numeric value being entered to check for input sanitation (test_factorial_invalid). The values 1, 100, 0, and 101 are edge cases since they are boundary values, and the invalid input, ***, is also an edge case. The only issue on this page was that inputting a non-numeric value leads to an internal server error instead of the proper output.

The "Fibonacci" page had very similar tests to the factorial page. They test for a working link to the fibonacci page and all five links present at the top of the page (test_fib_links). The next tests tried valid values (3 and 34) which are part of the sequence and invalid values (100, 0, -5, and ***) which are not part of the sequence, outside the acceptable input range, or a different input type. The test values 0, 100, and *** are edge cases due to boundary or unexpected input. This page handled the invalid, numeric input correctly, but did not output the correct values for the valid input. It also created the internal server error with non-numeric values.

The "Hello" page has 3 tests associated with it. The first checks that the page shows the correct initial text displayed (test_hello_normal). The second tests that the page changes the name to a different output when a name is added to the end of the url (test_hello_kevin). The final test checks to make sure that other values display since the requirement said "This shall work for all input values." This enters a value with numbers and symbols to the url (test_hello_symbols). The final test did not pass since it did not display the symbols, only the numbers.

For the "Cathedral Pics" page, the same test for the links was done (test_cathy_links). Two tests were conducted on this page. One checks that the three pictures exist (test_cathy_pics). The other is for making sure there is a numbered list. This was more difficult to check for since the numbers do not show up as a type of text to search for. This was done by using "assertHtmlSource" to examine the HTML source code for an ordered list code, . These tests all passed for the Cathedral Pics page.

Screenshot:

Katalon Automation Recorder 3.4.10

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⊕ New ● Record ▶ Play ▶ Play Suite ▶ Play All || Pause {} Export ⌚ ⚙️ ?

Test Suites	Command	Target	Value
● test_fib_3	open	https://cs1632ex.herokuapp.com/cathy	
● test_fib_100	assertElementPresent	//img[@alt='Sunny Cathedral']	
● test_fib_34	assertElementPresent	//img[@alt='Alpenglow Cathedral']	
● test_fib_0	assertElementPresent	//img[@alt='Old Cathedral']	
● test_fib_neg5			
● test_fib_invalid			
● test_hello_normal			
● test_hello_kevin			
● test_hello_symbols			
● test_cathy_numbers			
● test_cathy_pics			

Passed: 20 Failed: 5

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Command

Target 📁 🔍

Value

Log Screenshots Variables Data Driven Reference 📄 📄 🗑️ ▼

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[info] Playing test case Deliverable4_testsuite / test_welcome_message
[info] Time: Tue Mar 27 2018 22:48:09 GMT-0400 (Eastern Daylight Time) Timestamp: 152205289084
[info] OS: Windows Version: 10
[info] Browser: Chrome Version: 65.0
[info] If the test cannot start, please refresh the active browser tab
[info] Executing: | open | https://cs1632ex.herokuapp.com/ | |
```

Traceability Matrix:

- Requirement 1:
 - test_welcome_message
 - test_used_for_message
- Requirement 2:
 - test_home_links
 - test_factorial_links
 - test_fib_links
 - test_hello_links
 - test_cathy_links
- Requirement 3:
 - test_factorial_1
 - test_factorial_17
 - test_factorial_100
- Requirement 4:
 - test_fib_3
 - test_fib_34
 - test_fib_100
- Requirement 5:
 - test_factorial_0
 - test_factorial_neg17
 - test_factorial_101
 - test_factorial_invalid
 - test_fib_0
 - test_fib_neg5
 - test_fib_invalid
- Requirement 6:
 - test_hello_normal
- Requirement 7:
 - test_hello_kevin
 - test_hello_symbols
- Requirement 8:
 - test_cathy_numbers
 - test_cathy_pics

Defects:

SUMMARY: Non-numeric input for “Factorial” page gives an internal server error.

DESCRIPTION: Requirement 5 says “if a user enters an invalid value of any kind, they shall be informed that the value is 1.” With the entry of a value that is not a number, the site goes to a blank screen with “Internal server error” on it showing that the site is unable to handle input of any kind. This can be seen by running the test: test_factorial_invalid

REPRODUCTION STEPS:

- Open the factorial page of the website (cs1632ex.herokuapp.com/fact).
- Enter *** into the text box and press the Submit button.

EXPECTED BEHAVIOR: “Factorial of *** is 1!” is displayed.

OBSERVED BEHAVIOR: “Internal server error” displayed.

SUMMARY: Valid inputs to the “Fibonacci” page do not give valid outputs

DESCRIPTION: Requirement 4 explains that the user should be able to enter valid inputs between 1 and 100 and be given the next number in the Fibonacci Sequence. This includes the numbers: 1, 2, 3, 5, 8, 13, 21, 34, 55, and 89. When testing the values 3 and 34, an incorrect number is given as the output. This is shown by the tests: test_fib_3 and test_fib_34.

REPRODUCTION STEPS:

- Open the fibonacci page of the website (cs1632ex.herokuapp.com/fib).
- Enter 3 or 34 into the text box and press the Submit button.

EXPECTED BEHAVIOR: “Fibonacci of 3 is 5!” or “Fibonacci of 34 is 55!” is displayed

OBSERVED BEHAVIOR: “Fibonacci of 3 is 3!” or “Fibonacci of 34 is 1!” is displayed

SUMMARY: Non-numeric input for “Fibonacci” page gives an internal server error.

DESCRIPTION: Requirement 5 says “if a user enters an invalid value of any kind, they shall be informed that the value is 1.” With the entry of a value that is not a number, the site goes to a blank screen with “Internal server error” on it showing that the site is unable to handle input of any kind. This can be seen by running the test: test_fibonacci_invalid

REPRODUCTION STEPS:

- Open the fibonacci page of the website (cs1632ex.herokuapp.com/fact).
- Enter *** into the text box and press the Submit button.

EXPECTED BEHAVIOR: “Fibonacci of *** is 1!” is displayed.

OBSERVED BEHAVIOR: “Internal server error” displayed.

SUMMARY: When entering any symbols into the “Hello” page, they are not displayed.

DESCRIPTION: Requirement 7 says that trailing values should be able to be added to the end of the url of the “hello” page to change the display text. It states, “This shall work for all input values.” However, on entering a value with non-alphabetic and non-numeric values, the symbols are not displayed in the output. This is shown with the test: test_hello_symbols.

REPRODUCTION STEPS:

- Open the hello page with the trailing value “5743#&”
(cs1632ex.herokuapp.com/hello/5743#&).

EXPECTED BEHAVIOR: “Hello CS1632, from 5743#&” is displayed.

OBSERVED BEHAVIOR: “Hello CS1632, from 5743” is displayed.