**University of Pittsburgh**

**CS1632 – DELIVERABLE 3**

**Automated System Testing of a Web Application**

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https://github.com/minj131/D3

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**Summary**

When writing the application for the deliverable, one of the challenges I faced determining in how the application would be tested. Additionally, learning and maneuvering through the Katalon software as challenging as first. I was not sure how to verify output but eventually settled on determining if a certain element or text was present to verify that the test was being run correctly.

Writing the test cases and having it automated was much less intensive than writing the test cases and running them each manually. A challenge I faced was trying to figure out additional test cases to meet and test all of the requirements.

As there were a lot of dependencies in testing the results of a page for different inputs, I had some difficulty in segmenting and modularizing the different test cases for the different requirements. I overcame these challenges by breaking down the requirements even further, defining the equivalence classes, and testing those.

**Traceability Matrix**

**REQ\_1:** 1-TEST\_VALID\_INDEX

**REQ\_2:** 2-TEST\_404\_BACK\_TO\_INDEX, 3-TEST\_400\_BACK\_TO\_INDEX,   
4-TEST\_INDEX\_BACK\_TO\_INDEX, 5-TEST\_TABLE\_BACK\_TO\_INDEX

**REQ\_3:** 6-TEST\_INVALID\_ARGS\_400\_ERROR

**REQ\_4:** 7-TEST\_INVALID\_TRUE\_SYMBOL\_NONSINGLE\_CHAR,   
8-TEST\_INVALID\_FALSE\_SYMBOL\_NONSINGLE\_CHAR,   
9-TEST\_INVALID\_ARGS\_SYMBOL\_EQUAL, 10-TEST\_INVALID\_SIZE\_NEG\_INT,   
11-TEST\_INVALID\_SIZE, 12-TEST\_INVALID\_SIZE\_NON\_INT

**REQ\_5:** 13-TEST\_VALID\_ARGS, 14-TEST\_COLUMNS\_EXIST

**REQ\_6:** 15-TEST\_AND\_RESULT, 16-TEST\_OR\_RESULT, 17-TEST\_XOR\_RESULT

**REQ\_7:** 18-TEST\_DEFAULT\_ARGS\_TRUE, 19-TEST\_DEFAULT\_ARGS\_FALSE,   
20-TEST\_DEFAULT\_ARGS\_SIZE, 21-TEST\_ALL\_DEFAULT\_ARGS

**REQ\_8:** 22-TEST\_INVALID\_INDEX\_404\_ERROR

Table 1 - Traceability Matrix for Deliverable 3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| REQ\_1 | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| REQ\_2 |  | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| REQ\_3 |  |  |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| REQ\_4 |  |  |  |  |  |  | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |
| REQ\_5 |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |
| REQ\_6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** | **X** |  |  |  |  |  |
| REQ\_7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** | **X** | **X** |  |
| REQ\_8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** |

