WEB ROUTING

Testing Manual

SLIPPERY ROCK UNIVERSITY

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# 1.Overview

This manual is to highlight testing, it will discuss the tests written in the Webrouting application, how to run them as well as other measurements of testing that was done.

# 2. testing

Section 2 highlights the testing that was completed within the Webrouting Application. Testing that was done to the system, and how to run those tests.

2.1 HUMAN-COMPUTER TESTING

Human-Computer Testing was conducted throughout the continued development of the Webrouting Application. This was done by the contributors to the project at length. These tests were to ensure things were working like they should from a user perspective as well as to make changes and improvements to user experience.

2.2 WHITEBOX TESTING

Whitebox Testing was performed by contributors to this project. Whitebox testing is performed by testers who have an inside knowledge of the system. Whitebox testing was performed specifically with a focus on elevation of privilege and attempts to gain access to places where access should be denied. This was done by understanding the file structure of the System as well as the html. Whitebox testing was implemented to ensure that users could not access pages of the application with an account Due to Whitebox Testing the application errors were found and changes were made to the WebSecurityConfig Class to ensure that users could not access pages they were not supposed to access.

2.3 UNIT TESTING

The Webrouting Application was missing a complete testing framework before this update. While updating this project testing was focused on heavily. Many tests were written thoroughly to ensure that the program’s methods were working efficiently. Junit 5 was implemented into the program. Through this project we also mitigated the run all tests method, it is deprecated in Junit 5. However, all tests can be run at once by right clicking the ***src/test/java*** folder in the project and selecting ***Run As*** and then choosing ***Junit***.

***Tests written:***

* ReceiveCaptchaTest
* RestConfigTest
* All edu.sru.thangiah.webrouting.domain classes (Exception: VehicleTypesTest)
* EmailingImplTest
* UserRepositoryTest
* UserServiceImplTest
* UserValidatorTest

***Note: Approximately 58% of all tests written.***

### 2.3.1 Running Tests

This section highlights running tests in the **Webrouting Application**, To run a single test class, select a test class in the ***src/test/java*** folder of the project, once finding a test class you’d like to run right click on the class and select ***Run As***, next you will select ***JUnit Test*** (Figure 1 & Figure 2).

A screenshot of a computer

Description automatically generated with medium confidence

Figure 1 – Run As Button

Text

Description automatically generated

Figure 2 – Select Junit Test

If you wish to run all available tests, right click on the ***src/test/java*** folder of the Webrouting project and repeat the same steps for running single tests(Figures 1 & 2). If done correctly you will see the console start to load and process at the bottom of the screen, once finished you will see a Junit tab. To review the tests, click the Junit tab (Figure 3).

Graphical user interface, text, application, Teams

Description automatically generated

Figure 3 – Junit Tab

2.4 UNIMPLEMENTED TESTS

Due to some issues, with getting tests to run and applying values to those, not all tests were finished. However, in aspects of testing the application has seen great improvement. Before this update the application had one test class which was the contacts controller class. It wasn’t a real test class despite that, tests were implemented as time allowed. However, this was not complete. Below are the tests not written:

* RecaptchaTest
* All edu.sru.thangiah.webrouting.controller classes
* VehicleTypesTest
* MailSendingTest
* PopulateDatabaseTest
* MyAccessDeniedHandlerTest
* SecurityServiceImplTest
* UserDetailsServiceImpl

# 3. Figures

Figure 1 – Run As Button 3

Figure 2 – Select Junit Test 4

Figure 3 – Junit Tab 4