McMaster University

Test Report
Revision 0

Capstone Team 14

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Contents

Revision History

Date	Comments
March 26, 2017	Revision 0 of Test report created

1 Introduction

This test report details the results of the automated and systems tests performed on the HIV Regimen Generator. Also included are the non-functional tests performed, including usability, performance and robustness testing.

2 Automated Testing

Automated testing was not used for this project. Due to the fact that the project involved accessing information from an SQL database and checking for correctness, it was decided that the testing would be done better done and more effecient if inputs and outputted results were examined manually.The output of the generator is in String format throughout the webpage, so the group decided that manual testing would be more efficient.

3 System Tests

3.1 Landing Page

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
1.1	Landing Page	Empty web browser opened with Internet Explorer, Google Chrome, and Mozilla Firefox	Opening our web application (HRG.org)	Web application opens on corresponding browser successfully.	As expected	PASS
1.2	Landing Page	Landing page opened up in browser	Press Start Button	Go to the Form page	As expected	PASS
1.3	Landing Page	Landing page opened up in browser	Press About Button	Go to the About page	As expected	PASS

3.2   About

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
2.1	About	About page	Press the Home button	Go to Home page.	As expected	PASS

3.3 Patient Information Form

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
3.1	Patient Information Form	Height and weight empty fields.	Enter height and weight. Press the Calculate BSA button.	Display the BSA value in BSA field.	As expected	PASS
3.2	Patient Information Form	Empty form	Press submit button	Error message; asking user to fill in the required fields	As expected	PASS
3.3	Patient Information Form	Enter only the required	Press the submit button	Go to Combination Selection page	As expected	PASS
3.4	Patient Information Form	All required information filled out in the form. Leave non required information empty	Press the submit button	Go to the Combination Selection page	As expected	PASS
3.5	Patient Information Form	Form page open in browser	Press the Home button	Go to Home page.	As expected	PASS
3.6	Patient Information Form	Form page open in browser	Press the About button	Go to About page	As expected	PASS

3.4   Combination Selection

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
4.1	Combination Selection	Empty Combination Selection page	Select the required fields; pick two from the first group, and one from the second, and press submit	Go to medical results page	As expected	PASS
4.2	Combination Selection	Combination page opened up in browser	Press the Home button	Go to Home page	As expected	PASS
4.3	Combination Selection	Empty Combination Selection page	Select more from the fields than required	Display error message; please only select exactly two from the first group, and exactly one from the second	As expected	PASS
4.4	Combination Selection	Combination Selection page open in browser	Press Home button	Go to Home page	As expected	PASS
4.5	Combination Selection	Combination Selection page open in browser	Press About button	Go to About page	As expected	PASS

3.5   Medical Results

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
5.1	Medical Results	Result page opened up in browser	Press the link from the drugs information in Patients selected regimen field	Go to drugs information website	As expected	PASS
5.2	Medical Results	Select the correct required fields	Press submit	Medical results page lists the correct medications as previously selected	As expected	PASS
5.3	Medical Results	Result page opened up in browser	Press the Home button	Go to Home page	As expected	PASS
5.4	Medical Results	Medical Results page open in browser	Press About button	Go to About page	As expected	PASS

4   Non-Functional Tests

4.1   Usability

The usability of HIV Regimen Generator was evaluated using test participants. The participants were given a set of tasks as follows:

1. Fill out medical information on the Patient Information Form

2. Select one of the generated results to be used by the patient

3. Navigate to the about page and then to the home page

The given tests were sufficicent enough to gather the necessary information required to analyse the usability of our HIV regimen generator.

4.1.1 Results

Among the test participants, all of them were able to complete the form and receive a list of medical combinations to choose from. Upon selecting, all participants were able to view the details of their selected regimen and given an option to print the details of the medication found in their regimen.

On average, the performance of the given usability test was as expected. User's of the website took on average 1 to 2 minutes to complete the form and select a generated regimen.

4.1.2 Discussion

Overall, the process of generating an HIV regimen based on the inputted patient information is simple and easy to understand. The process requires filling out a basic web-form (that almost all frequent users of the internet are now familiar with) and the regimen generator will match its parameters with suitable choices to present to the user.

The target audience for the web application includes doctors and potential patients. It is not intended for an average internet user because a doctors input is critical in evauating and prescribing any medical regimen. An average user without proper medical background might not understand the requirements of an HIV regimen to select the appropriate medical combinations provided, but that is a minor issue.

The applications medical database is updated as it is developed. We do not plan on making any further updates/adjustments to the list of existing medications, so this might surface as a problem in the future as inaccurate information. The application will specify when the last updated date is to provide users with a general idea of the accuracy of our web application. If the group members or the supervisors choose to expand on the website, updating the medical information will be simple.

4.2 Performance

HIV Regimen Generator is able to produce a series of suitable regimen provided that the form is filled with criteria that is deemed suitable for a specific medication. Load times are consistent as the number of users that access the server increase and the database remains accurate with information.The performance was tested using Microsoft Edge. Testing was done using the Microsoft Edge Developers tools. The group found that any additional lag will be due to connectivity issues with the server.

4.3 Robustness

HIV Regimen Generator is tested with various browsers on different hardware devices to test its robustness.

Browser	Device	Look and Feel	Functionalities	Bugs
Microsoft Edge	Computer	As Expected	As Expected	None
Mozilla Firefox	Computer	As Expected	As Expected	None
	iOS	As Expected (size change)	As Expected	None
	Android	As Expected (size change)	As Expected	None
Google Chrome	Computer	As Expected	As Expected	None
	iOS	As Expected (size change)	As Expected	None
	Android	As Expected (size change)	As Expected	None
Opera	Computer	As Expected	As Expected	None
	iOS	As Expected (size change)	As Expected	None
	Android	As Expected (size change)	As Expected	None
Safari	Computer	As Expected	As Expected	None
	iOS	As Expected (size change)	As Expected	None

The application is open for public use, and because of that, will not use an account system for the HIV Regimen Generator. Users will not have to

worry about leaked medical information as information is managed within that session and that session only. Much of the managing and matching is done through the database.

5   Summary of Changes

The group will decide to implement some sort of dynamic SQL change in the future that will allow certain doctors to edit a webpage that contains all of the information for the SQL. The SQL will then detect and adapt to the changes made on the webpage through a JavaScript function. User accounts will also be added for the group to avoid a possible security issue. Another feature that the group is willing to implement will be a mobile application. This application would have the same functionality as the website, but the UI would be changed to make navigating the web page on a mobile device a lot easier. This will result either removing some features or moving certain aspects of the website closer together. For the current implementation, the group will continue to test for any bugs that the website might have. The group will also work on putting the website on an AWS server.