PiSonal Trainer: Weight Lifting Performance Tracker
Test Report

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Revision History

Date	Version	Primary Author	Comment
03/25/2017	1.00	Micaela Estabillo	Finalize document draft
03/25/2017	1.00	Birunthaa Umamahesan	Create document outline

Table 1: Revision history

1 Introduction

This report illustrates the results of both the system tests and requirements tests on PiSonal Trainer. The system tests for the functional requirements are reported based on each individual module of the application. The non-functional tests include tests for user experience.

2 Automated Tests

Automated tests have been used in this project to unit test various parts of the system, and to gather data for coverage analysis. The application's components fall into two main parts: the front end react-native mobile application, and the back end transmission of data to and from the mobile application.

The client side react-native components were tested using Jest, a JavaScript unit-testing framework. Unit tests were written for each module of the application to ensure that every method functions as intended, and that all exceptions are handled.

The server side data processing and transmitting was tested using the using PostMan. PostMan is a tool for testing APIs, which can be used to test operations by setting endpoints and the expected server responses. We use PostMan because it provides features that enhance the testing experience, such as calculating a response's total round trip time, and enabling overloading to test the server's performance. Through this server side testing we can detect broken links and endpoints.

Moreover, we have been executing these tests on a daily basis and also between every pull request submission. This ensures that new code changes do not break the system.

3 Manual Tests

We manually tested the system ourselves. All the group members used the PiSonal Trainer app on a daily basis, in order to ensure that the application is executing to its potential.

Whenever a new exercise or movement was added to those that the app can detect, we extensively tested that it could be detected during typical (i.e., in a gym or with real weights) usage of the app.

Moreover, we added analytics collection that run in the background in order for us to see the overall endurance of the system. Since the app will be used by users, they will play the role of manual testers by sending back usage data.

4 System Tests

In this section the test cases conducted on each module is illustrated. The test cases are mapped to the requirements. [Note: our current requirements have changed from our previous document and will be updated].

4.1 Registration

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
1.1	User Registration	Landing page, empty fields	Enter your full name, username, email, and password into the field	Redirected to main application page	As expected.	PASS
1.2	User Registration	Landing page, empty fields	Empty fields and click register	Remain on same page and display error message.	As expected.	PASS
1.3	User Registration	Landing page, empty fields	Enter email address that already exists in database	Remain on same page and display error message.	As expected.	PASS

Table 2: Registration test case

4.2 Login

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
2.1	User Login	Landing page, empty fields	Enter valid username and password into the field	Redirected to explorer page	As expected.	PASS
2.2	User Login	Landing page, empty fields	Enter invalid username and password combination into the field	Remain on login page and display error message	As expected.	PASS
2.3	User Login	Landing page, empty fields	Empty username and/or password	Remain on login page and display error message	As expected.	PASS

Table 3: Login test case

4.3 Explorer

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
3.1	Navigate to explorer page	Currently on any other page	Click on the exlorer button using the navigation bar	Redirected to explorer page	As expected.	PASS
3.2	Explorer page updates feed in real time	On explorer page	No input	Display latest news feed if any	As expected.	PASS

Table 4: Explorer test case

4.4 Progress

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
4.1	Navigate to progress page	Currently on any other page	Click on the progress button using the navigation bar	Redirected to progress page	As expected.	PASS
4.2	Update progress view to display weekly from daily	On progress page	Click the weekly button	Display data in a weekly format. List data and graph gets updated.	As expected.	PASS
4.3	Update progress view to display daily from weekly	On progress page	Click the daily button	Display data in a daily format.List data and graph gets updated.	As expected.	PASS

Table 5: Progress test case

4.5 Log

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
5.1	Navigate to log page	Currently on any other page	Click on the log button using the navigation bar	Redirected to log page	As expected.	PASS
5.2	Launch camera to log workout	On log page	Choose the appropriate work out type. Click the "Use camera" button	Camera is launched from application.	As expected.	PASS
5.3	Detect weight using camera	Camera turned on	Stand in your workout position. Hold the weight facing camera.	Green dot should appear on the screen if weight is detected	As expected.	PASS
5.4	Track weight movement using camera	Camera turned on and green dot is displayed on screen	Move the weight as per workout	Green dot should follow the weight movement	As expected.	PASS
5.5	Count sets and repetitions using movement	Camera turned on and green dot is displayed on screen	Move the weight as per workout	On the top right of the screen the set and repetition counter should update accordingly.	As expected.	PASS
5.6	Input workout data manually	On log page	Choose the appropriate work out type from following options.	Fields should appear to enter data regarding workout. Must be able to save data	As expected.	PASS

Table 6: Log test case

4.6 Settings

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
6.1	Navigate to settings page	Currently on any other page	Click on the settings button using the navigation bar	Redirected to settings page	As expected.	PASS
6.2	Log out of application	On settings page	Click logout option button	Redirect to Log In page	As expected.	PASS
6.3	Report bug	On settings page	Click "Report bug" button	Redirect to report bug page. Fields should be enabled for text to be entered and submitted.	As expected.	PASS

Table 7: Settings test case

5 Non-Functional Tests

No.	Test Case	Initial State	Input	Expected Output	Actual Output	Result
7.1	Textual content on the screen check	On explorer page	Navigate through all pages	Textual content on the application is only 20%	As expected.	PASS
7.2	Application simple to use	On log page	Click on "Use camera" option to log data	The time taken for users to use the application must be less than the time for manual entry of their work out.	As expected.	PASS
7.3	Scalability and Extensibility	On log page	Click on "Use camera" button	The camera gives the accurate count of moving objects in the screen (at least one when there is someone working out).	As expected.	PASS

Table 8: Non-functional test case

5.1 User Experience Test

The user experience test for PiSonal Trainer was evaluated by surveying test participants their opinion on the functionality of the application. The results from the survey are displayed in table User Experience Survey Results.

Participant	**Age**	**Camera is non-obtrusive**	**Personalization and Internalization**	**Learning Period**
A	22	Yes	Yes	4 minutes
B	25	Yes	Yes	5 minutes
C	15	Yes	No	15 minutes
D	16	Yes	Yes	13 minutes
E	20	Yes	Yes	6 minutes
F	20	Yes	Yes	5 minutes
G	15	No	Yes	12 minutes
H	16	Yes	Yes	11 minutes

Table 9: User Experience Survey Results

5.1.1 User Experience Survey Discussion

Examining the survey results, we came to understand the common trends of users experience. Overall the users appreciated the camera's functionality to track and update their workout. Only one person from our test population had a concern with the camera, out of 8 people. Also, the average time spent to handle the application, as a new user was approximately 9 minutes. From the provided feedback, this number decreased over time as they continue to use the application. Hence, the results are positive and meets our current expectations.

6 Summary of Changes

In the future, the manual tests can be improved by having non-members of the group perform tasks and report back their observations. This would improve our testing by revealing whether the app is intuitive to use, and if it works as expected even if the user is not aware of how the backend software functions. Moreover, the user interface can be improved by getting feedback from more testers, and refining the flow of the application based on the results. With these changes, we hope to make using PiSonal Trainer easy and intuitive for others.