



# RU Healthy?

RU Healthy?  
Integration Test Summary  
**Class**  
ECE 567 – Software Engineering 1

**Semester**  
Fall 2017

**Group #2**  
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**Github Repository**  
[RU Healthy?](https://github.com/ruhealthy/ruhealthy)

**Website**  
<https://ruhealthy.github.io/ruhealthy/>

# TABLE OF CONTENTS

1	Setup.....	2
2	Test Cases.....	3
2.1	Mobile App .....	3
2.1.1	User Login.....	3
2.1.2	User registration.....	4
2.1.3	Step Counter .....	7
2.1.4	Heart Rate.....	8
2.1.5	Recovery Rate .....	9
2.1.6	Select physician.....	11
2.1.7	Logout .....	12
2.2	Web App .....	13
2.2.1	User Login.....	14
2.2.2	User registration.....	15
2.2.3	Get Patient list.....	18
2.2.4	Get Patient Activity .....	19
2.2.5	Get Patient Data .....	21
2.2.6	Logout .....	23

# 1 SETUP

Our group performed all integration test manually. The main objectives were as

- 1) Verify that the information and data could be collected via the mobile application
- 2) Verify that the physician can access this information from the web interface.

We performed these tests with several user accounts. However, for our results, we will focus on the patient and physician accounts listed below:

## **Patient:**

**Name:** Hima Bindu

**ID** = 7Owbl8fsHBMVeiKvUJxsilntE9C3

**Email:** [hima.bindu@rutgers.edu](mailto:hima.bindu@rutgers.edu)

## **Physician:**

**Name:** James Lee

**ID** = IpLI9SntEMeM03xJdkjMsEJlOFF2

**Email:** [john@this.com](mailto:john@this.com)

These tests differ from the unit test because there were performed with actual integrated applications rather than via Android Studio for individual units.

## 2 TEST CASES

### 2.1 Mobile App

In order to run the integration tests for the mobile app, the RU Healthy mobile app must be installed on your mobile device. This application can be installed via the RU Healthy.apk located on the Github site.

#### 2.1.1 USER LOGIN

##### 2.1.1.1 *Conditions*

Tested Unit	LogIn
<b>Assumption</b>	The application interface showed up and the sign in input screen is waiting for the user input.
<b>Expected Input</b>	User Email, User Password
<b>Expected Output</b>	Sign in successfully done with proper input, Sign in unsuccessfully done with improper input displays an error message.
<b>Pass</b>	Successful sign in with valid email or user name and valid password combination
<b>Fail and The Probable Error</b>	<ol style="list-style-type: none"><li>1. Sign in still success with improper input. Error related input checking.</li><li>2. Sign in success with proper input but no related data shown in database. Error related to connection with database.</li></ol>

##### 2.1.1.2 *Steps to perform tests*

###### Success Scenario:

- 1) Go the RU Healthy Home screen
- 2) Enter a valid email address and password  
(This will be the email address and password entered during registration)
- 3) Selected enter

#### Alternate Scenario:

- 4) Go the RU Healthy Home screen
- 5) Enter an invalid email address
- 6) Selected enter

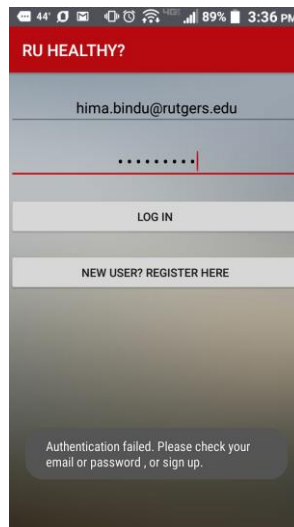
### 2.1.1.3 *Results*

#### Success Scenario

- The user was able to successfully login into the RU Health System.
- The user was directed to the RU Health User Home page

#### Alternate Scenario

- An error message popped up informing the user that the credentials were incorrect



### 2.1.2 USER REGISTRATION

#### 2.1.2.1 *Conditions*

<b>Tested Unit</b>	<b>Register</b>
<b>Assumption</b>	The Application interface showed up. The signUp input screen is waiting for the user input.
<b>Expected Input</b>	User Email, User Name, User Password
<b>Expected Output</b>	Sign up and Information registration to database successfully done with proper input, Sign up unsuccessfully done with improper input an error message is displayed.
<b>Pass</b>	Successful sign in with valid email or user name and valid password combination
<b>Fail and The Probable Error</b>	<ol style="list-style-type: none"> <li>1. Sign Up still success with improper input. Error related input checking.</li> <li>2. Sign Up success with proper input but no functional connection was found, Error related to connection with database.</li> </ol>

### 2.1.2.2 *Steps to perform tests*

#### Success Scenario:

- 1) Go the RU Healthy Home screen
- 2) Select the “New User? Register Here Button”
- 3) Enter a valid email address and password
- 4) Selected enter

#### Alternate Scenario (a):

- 5) Go the RU Healthy Home screen
- 6) Enter an invalid email address
- 7) Selected enter

#### Alternate Scenario (b):

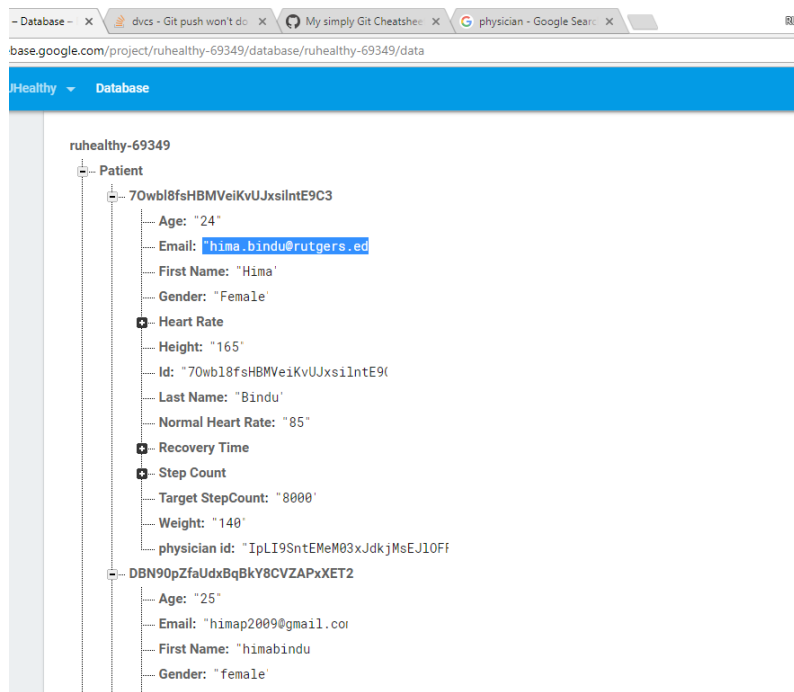
- 8) Go the RU Healthy Home screen

- 9) Enter an invalid password
- 10) Selected enter

### 2.1.2.3 Results

#### Success Scenario

- The user was able to successfully register for the RU Health System.
- An authentication account was added in the Firebase system for this user
- The user was assigned a unique user id.
- A data account was created for the user in the Firebase database
- The user was directed to the RU Health User Home page



#### Alternate Scenario

- An error message popped up informing the user that they the credentials were incorrect

### 2.1.3 STEP COUNTER

#### 2.1.3.1 *Conditions*

Tested Unit	Step-Counter
Assumption	User selects Step Counter Activity. Application is waiting for action
Expected Input	Click on start button
Expected Output	Step Counting-Miles Counting and Calories Burnt Calculations starts successfully and turns to other functions.
Pass	Step Counting-Miles Counting and Calories Burnt Calculations shows real and Actual calculations and Numbers.
Fail and The Probable Error	<ol style="list-style-type: none"><li>1. Click on start button, but nothing happens. Errors related training start function.</li><li>2. Click on start button, but No Hardware Detected Message Showed up.</li></ol>

#### 2.1.3.2 *Steps to perform tests*

##### Success Scenario:

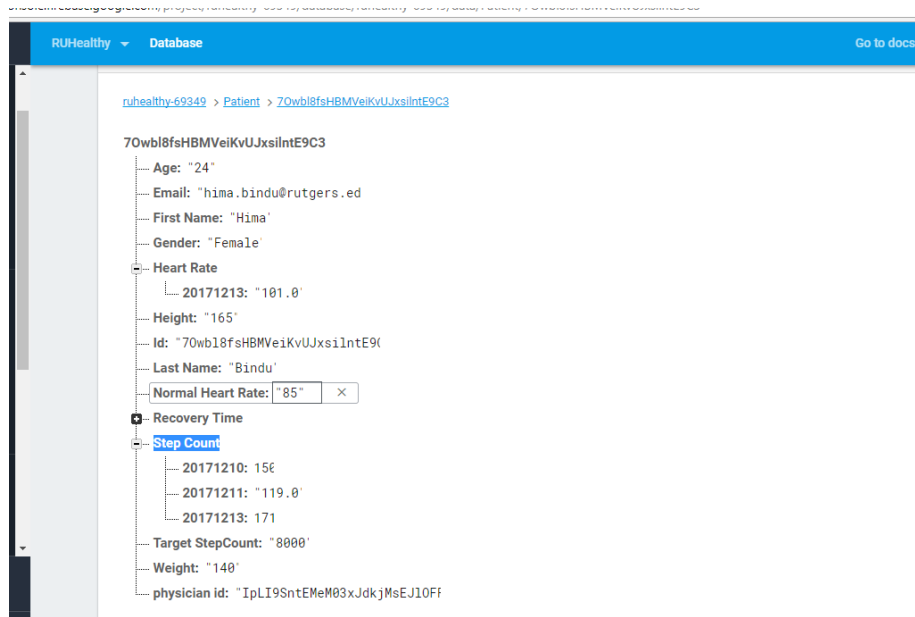
- 1) Go the RU Healthy User Home screen
- 2) Select the Steps icon
- 3) Start walking/running
- 4) Observe results

#### 2.1.3.3 *Results*

##### Success Scenario

- The application was able to open the step counter
- The application recorded results
- The application uploaded results to the Firebase database





## 2.1.4 HEART RATE

### 2.1.4.1 Conditions

Tested Unit	Heart Rate
Assumption	User selects Heart Rate Activity. Application is waiting for user's actions.
Expected Input	User's fingerprint.
Expected Output	Number of heartbeats per minute (BPM).
Pass	The BPM corresponds accurately to that of the user. Data is uploaded to the Firebase database Data available for recovery rate information

<b>Fail and The Probable Error</b>	<ol style="list-style-type: none"> <li>1. Incorrect BPM. Error related to fail in the algorithm.</li> <li>2. No BPM is given. Error related to absence of finger to read.</li> </ol>
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#### 2.1.4.2 *Steps to perform tests*

##### Success Scenario:

- 1) Go the RU Healthy User Home screen
- 2) Select the Heart icon
- 3) Place finger over camera
- 4) Start the heart rate monitor
- 5) Observe results

#### 2.1.4.3 *Results*

##### Success Scenario

- The application was able to open the heart rate monitor
- The application was able to obtain accurate heart rate data  
(The heart rate readings were within +/- 10 bpm or Fitbit readings)
- The application recorded results
- The application uploaded results to the Firebase database

#### 2.1.5 RECOVERY RATE

##### 2.1.5.1 *Conditions*

<b>Tested Unit</b>	<b>Recovery Heart Rate</b>
<b>Assumption</b>	User selects Recover Rate Activity. Application is waiting for user's actions.
<b>Expected Input</b>	Heart Rate Data

<b>Expected Output</b>	Recovery Rate
<b>Pass</b>	Recovery information is calculated and displayed Data is uploaded to the Firebase database Data is available for recovery rate information
<b>Fail and The Probable Error</b>	<ol style="list-style-type: none"> <li>3. Incorrect recovery rate. Error related to fail in the algorithm.</li> <li>4. No recovery rate is given. Error related to absence of finger to read.</li> </ol>

### 2.1.5.2 *Steps to perform tests*

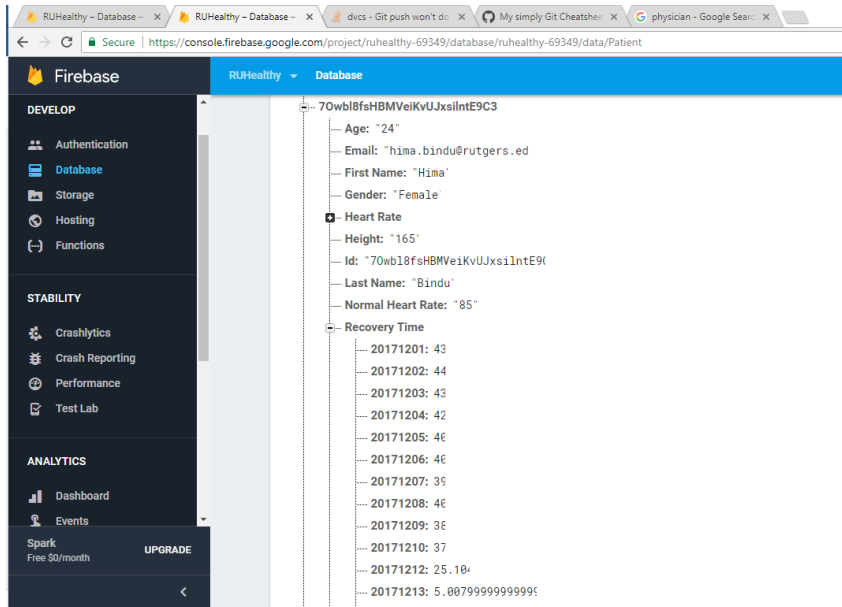
#### Success Scenario:

- 6) Go the RU Healthy User Home screen
- 7) Select the Recovery Rate icon
- 8) Observe that information is displayed regarding the recovery rate

### 2.1.5.3 *Results*

#### Success Scenario

- The application was able to calculate recovery rate data
- The application recorded results
- The application uploaded results to the Firebase database



## 2.1.6 SELECT PHYSICIAN

### 2.1.6.1 Conditions

Tested Unit	Select Physician
Assumption	User is in the Dashboard Activity and selects the physician function.
Expected Output	Application displays a list of physicians that the patient can select
Pass	Users is able to select a physician from the lists The information is updated in firebase
Fail and The Probable Error	<ol style="list-style-type: none"> <li>1. Physician list is not displayed</li> <li>2. Patient is not able to select a physician.</li> </ol>

### 2.1.6.2 Steps to perform tests

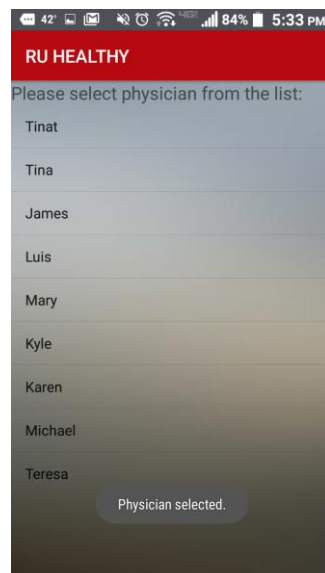
#### Success Scenario:

- 1) Go the RU Healthy User Home screen
- 2) Select the physician button
- 3) Select a physician from the list

### 2.1.6.3 Results

#### Success Scenario

- The application successfully displays the physician list
- The user is able to successfully select a physician
- The Firebase database is updated



### 2.1.7 LOGOUT

#### 2.1.7.1 Conditions

Tested Unit	LogOut
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<b>Assumption</b>	User is in the Dashboard Activity and selects the Logout function.
<b>Expected Output</b>	User profile is closed. Application shows Main Activity.
<b>Pass</b>	User's profile is successfully logged out of the system. No user's information is left.
<b>Fail and The Probable Error</b>	Display shows is logged out but when returning to the application, the profile is still open. Error related to connection to the database.

### 2.1.7.2 Steps to perform tests

#### Success Scenario:

- 4) Go the RU Healthy User Home screen
- 5) Select logout

### 2.1.7.3 Results

#### Success Scenario

- The application successfully logouts of system
- The user is redirected to initial RU Healthy page

## 2.2 Web App

In order to run the integration tests for the mobile app, just visit <https://ruhealthy.github.io/ruhealthy>. Enter the following credentials for

**Email:** [john@this.com](mailto:john@this.com)

**Password:** password

## 2.2.1 USER LOGIN

### 2.2.1.1 *Conditions*

Tested Unit	LogIn
<b>Assumption</b>	The application interface showed up and the sign in input screen is waiting for the user input.
<b>Expected Input</b>	User Email, User Password
<b>Expected Output</b>	Sign in successfully done with proper input, Sign in unsuccessfully done with improper input displays an error message.
<b>Pass</b>	Successful sign in with valid email or user name and valid password combination
<b>Fail and The Probable Error</b>	<ul style="list-style-type: none"><li>3. Sign in still success with improper input. Error related input checking.</li><li>4. Sign in success with proper input but no related data shown in database. Error related to connection with database.</li></ul>

### 2.2.1.2 *Steps to perform tests*

#### Success Scenario:

- 1) Go the RU Healthy Home screen
- 2) Enter a valid email address and password  
(This will be the email address and password entered during registration)
- 3) Selected enter

#### Alternate Scenario:

- 4) Go the RU Healthy Home screen
- 5) Enter an invalid email address
- 6) Selected enter

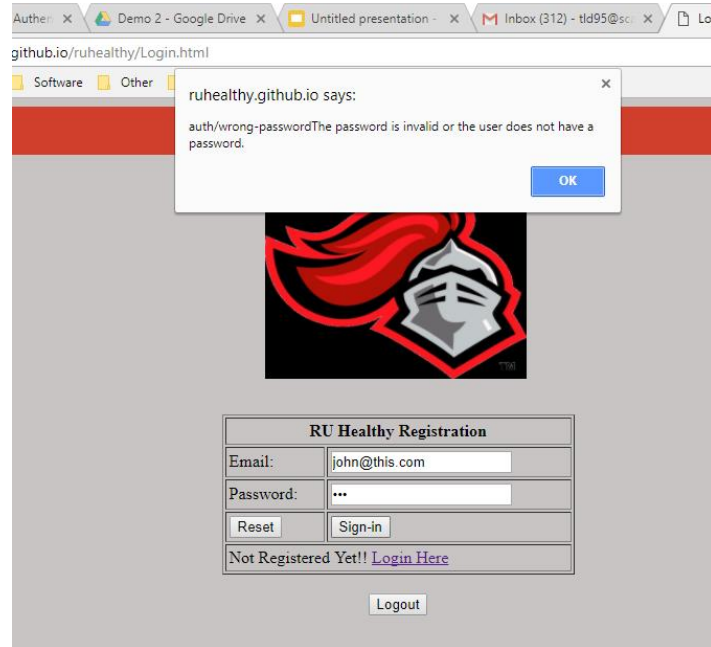
### 2.2.1.3 Results

#### Success Scenario

- The user was able to successfully login into the RU Health System.
- The user was directed to the RU Health User Home page

#### Alternate Scenario

- An error message popped up informing the user that the credentials were incorrect



## 2.2.2 USER REGISTRATION

### 2.2.2.1 Conditions

<b>Tested Unit</b>	<b>Register</b>
<b>Assumption</b>	The Application interface showed up. The signUp input screen is waiting



	for the user input.
<b>Expected Input</b>	User Email, User Name, User Password
<b>Expected Output</b>	Sign up and Information registration to database successfully done with proper input, Sign up unsuccessfully done with improper input an error message is displayed.
<b>Pass</b>	Successful sign in with valid email or user name and valid password combination
<b>Fail and The Probable Error</b>	<ol style="list-style-type: none"> <li>3. Sign Up still success with improper input. Error related input checking.</li> <li>4. Sign Up success with proper input but no functional connection was found, Error related to connection with database.</li> </ol>

#### 2.2.2.2 Steps to perform tests

##### Success Scenario:

- 11) Go the RU Healthy Home screen
- 12) Select the "New User? Register Here Button"
- 13) Enter a valid email address and password
- 14) Selected enter

##### Alternate Scenario (a):

- 15) Go the RU Healthy Home screen
- 16) Enter an invalid email address
- 17) Selected enter

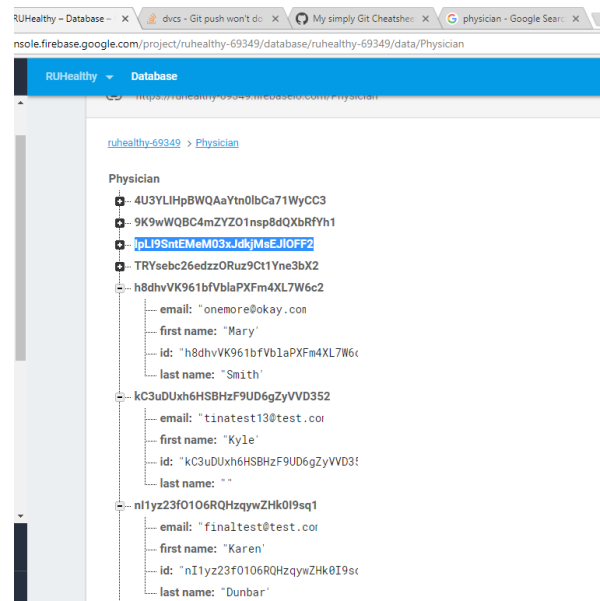
##### Alternate Scenario (b):

- 18) Go the RU Healthy Home screen
- 19) Enter an invalid password
- 20) Selected enter

### 2.2.2.3 Results

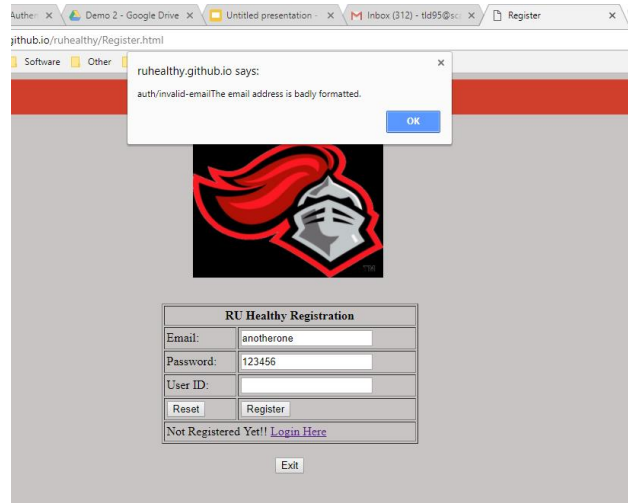
#### Success Scenario

- The user was able to successfully register for the RU Health System.
- An authentication account was added in the Firebase system for this user
- The user was assigned a unique user id.
- A data account was created for the user in the Firebase database
- The user was directed to the RU Health User Home page



#### Alternate Scenario

- An error message popped up informing the user that they the credentials were incorrect



## 2.2.3 GET PATIENT LIST

### 2.2.3.1 Conditions

Tested Unit	Get Patient List
Assumption	User has already navigated to the patient information page. Application is waiting for action
Expected Output	Page displays as list of patients that have selected this physician
Pass	A list of patients are displayed that have selected this physician.
Fail and The Probable Error	Patient list is not displayed Patients missing from the list or extra patients displayed

### 2.2.3.2 Steps to perform tests

#### Success Scenario:

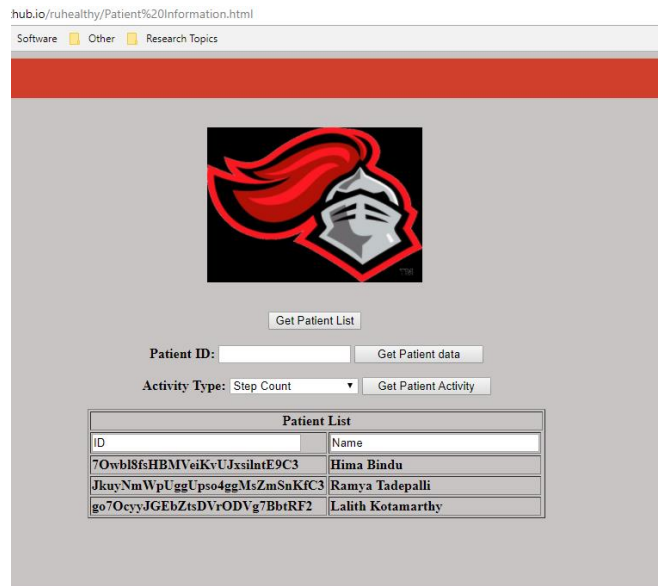
- 6) Go the RU Healthy Patient Information Webpage

- 7) Select the Get Patient List button
- 8) Observe results

### 2.2.3.3 Results

#### Success Scenario

- The application successfully displays the correct patient list



### 2.2.4 GET PATIENT ACTIVITY

#### 2.2.4.1 Conditions

Tested Unit	Get Patient Activity
Assumption	User has already navigated to the patient information page. Application is waiting for action
Expected Input	User enters patient ID number and selects activity type
Expected Output	Page displays output of patient activity information

<b>Pass</b>	If a correct patient ID is entered, the specified activity data is displayed. If the patient has not listed the physician, an alert message should be displayed.
<b>Fail and The Probable Error</b>	<ol style="list-style-type: none"> <li>1. Click the “Get Patient Activity button” and no data is displayed</li> <li>2. Information is displayed for patients that have not listed the current physician</li> </ol>

#### 2.2.4.2 *Steps to perform tests*

##### Success Scenario:

- 1) Go to the Patient Information webpage
- 2) Enter a patient ID listed in from the user’s patient list
- 3) Select the Get Patient Activity button
- 4) Observe results


##### Alternate Scenario:

- 5) Go to the Patient Information webpage
- 6) Enter a patient ID that is NOT listed the user’s patient list
- 7) Select the Get Patient Activity button
- 8) Observe results

#### 2.2.4.3 *Results*

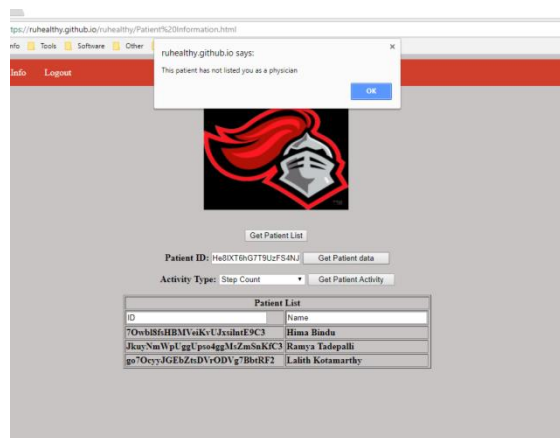
##### Success Scenario

- The application attains the correct patient activity data from the firebase database
- The application displays a summary of the specified patient activity

healthy/Patient%20Information.html	
Other	Research Topics
	
Recovery Time	
20171201	43
20171202	44
20171203	43
20171204	42
20171205	40
20171206	40
20171207	39
20171208	40
20171209	38
20171210	37
20171212	25.104
20171213	5.007999999999999
20171215	5.039
<a href="#">Return to Patient Information</a>	

### Alternate Scenario

- The application shows an error message stating that the patient has not selected this physician



## 2.2.5 GET PATIENT DATA

### 2.2.5.1 Conditions

Tested Unit	Get Patient Data
Assumption	User has already navigated to the patient information page. Application is waiting for action
Expected Input	User enters patient ID number and select the Get Patient Data button

<b>Expected Output</b>	Page displays output of patient data information
<b>Pass</b>	If a correct patient ID is entered, the specified data is displayed. If the patient has not listed the physician, an alert message should be displayed.
<b>Fail and The Probable Error</b>	Click the “Get Patient Data button” and no data is displayed  Information is displayed for patients that have not listed the current physician

### 2.2.5.2 *Steps to perform tests*

#### Success Scenario:

- 1) Go to the Patient Information webpage
- 2) Enter a patient ID listed in from the user’s patient list
- 3) Select the Get Patient Data button
- 4) Observe results

#### Alternate Scenario:


- 5) Go to the Patient Information webpage
- 6) Enter a patient ID that is NOT listed the user’s patient list
- 7) Select the Get Patient Data button
- 8) Observe results

### 2.2.5.3 *Results*

#### Success Scenario

- The application attains the correct patient information from the firebase database
- The application displays a summary of the specified patient data

Tools
Software
Other
Research Topics

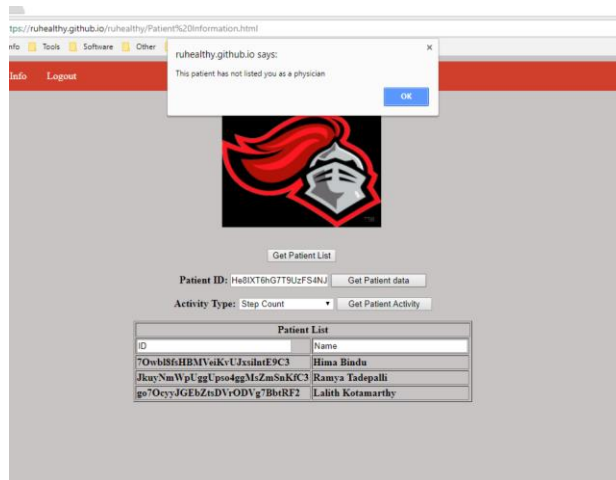

  
**RU Healthy?**

Age	24
Email	hima.bindu@rutgers.edu
First Name	Hima
Gender	Female
Height	165
Id	7Owb18f6HBMVeikvUJxslntE9C3
Last Name	Bindu
Normal Heart Rate	85
Target StepCount	8000
Weight	140
physician id	lpL19SntEMeM03xcJdkjMsEJlOFF2

[Return to Patient Information](#)

### Alternate Scenario

- The application shows an error message stating that the patient has not selected this physician



## 2.2.6 LOGOUT

### 2.2.6.1 Conditions

Tested Unit	Logout
Assumption	User is in the Dashboard Activity and selects the Logout function.



<b>Expected Output</b>	User profile is closed. Application shows Main Activity.
<b>Pass</b>	User's profile is successfully logged out of the system. No user's information is left.
<b>Fail and The Probable Error</b>	Display shows is logged out but when returning to the application, the profile is still open. Error related to connection to the database.

#### 2.2.6.2 *Steps to perform tests*

##### Success Scenario:

- 1) Go the RU Healthy User Home screen
- 2) Select logout

#### 2.2.6.3 *Results*

##### Success Scenario

- The application successfully logouts of system
- The user is redirected to initial RU Healthy page