*Xpendit*

Test Plan

May 6, 2019

TABLE OF CONTENTS

[1 Introduction 3](#_Toc7953179)

[1.1 Purpose of The Test Plan Document 3](#_Toc7953180)

[2 Unit Testing 3](#_Toc7953181)

[2.1 Items to be tested/not tested 3](#_Toc7953182)

[2.2 Test Approach(s) 3](#_Toc7953183)

[2.3 Tests 3](#_Toc7953184)

[2.4 Test Pass / Fail Criteria 21](#_Toc7953185)

[3 Use Case Testing 21](#_Toc7953186)

[3.1 Overview 21](#_Toc7953187)

[3.2 Interface Use Cases 22](#_Toc7953188)

[3.3 Financial Use Cases 26](#_Toc7953189)

[4 Acceptance Testing 33](#_Toc7953190)

# Introduction

## Purpose of The Test Plan Document

The Test Plan Document outlines the tests which the Xpendit app will go through to ensure the application function as intended. These tests include unit tests, use case tests, and acceptance tests. Only tests for the features which are expected to be finished by the end of the semester (Deliverable 4) are outlined in this document, which will be update if changes occur. It’s intended audience is the project owner, scrum master, and development team. In the future, the document may be shared with others whose input or approval is needed.

# Unit Testing

## Items to be tested/not tested

The features being tested are creating account, logging in, creating a room, adding members to a room, creating a new shared expense and creating a group shared list and the functions related to them.

## Test Approach(s)

Tests will be done using the dart “Testing” package and by manually checking in the case of registering accounts. The package allows users to test each function or unit within Android Studio with fast results.

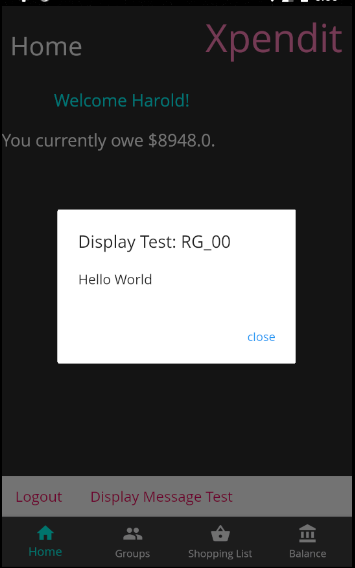
Currently Linking a database to Firebase is currently not working apart from login and register authorization, so local values are used for testing. The functions will work the same once implemented as the account, charges and room classes will be linked to each account in the Firebase system. Test code should not have to be changed when Firebase connection to Firebase is implementd.

## Tests

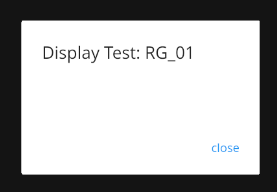
**For tests done though a flutter test document only a few of the implemented functions are shown. The full test documents can be found within the application: Xpendit\_app\test.**

**Test data used for testing the Register GUI, Login GUI, and Room Creation GUI. These tests will be done each GUI. The GUI must be able to display data correctly when passed into the GUI;**

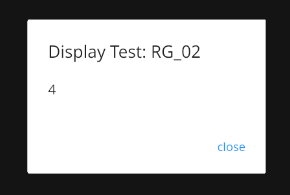
|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: GU\_00 | | | |
| GUI: Displaying a string – “displayMsg” | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Call an alert dialog with a passed string | string = “hello world” | GUI displays “hello world” |



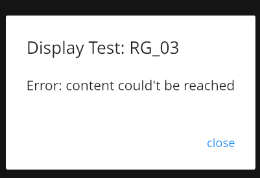
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| --- | --- | --- | --- |
| Test Case ID: GU\_01 | | | |
| Register GUI: Displaying a string – “displayMsg” | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | call “displayMsg()” with test data | string = “” | GUI displays empty string |



|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: GU\_02 | | | |
| Register GUI: Displaying a string – “displayMsg” | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | call “displayMsg()” with test data | string = “4” | GUI displays number. |



|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: GU\_03 | | | |
| Register GUI: Displaying a string – “displayMsg” | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | call “displayMsg()” with test data | string = null | GUI displays error message. |



**Test data used for testing the Account object. Accounts must be able to create a room, create a charge and sum charges. Tests will be done with valid and invalid inputs.**

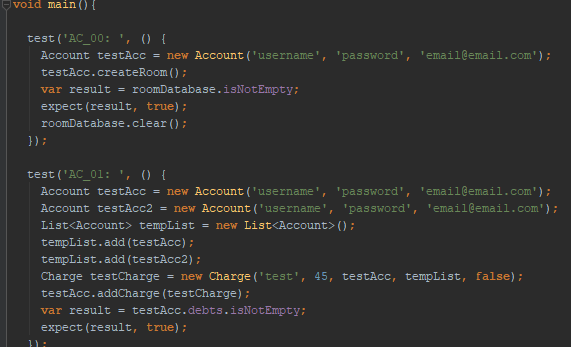
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| --- | --- | --- | --- |
| Test Case ID: AC\_00 | | | |
| Account: createRoom() | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | call “createRoom()” from an account | (No input empty constructor) | A room linked to the accounted is created in the room database |

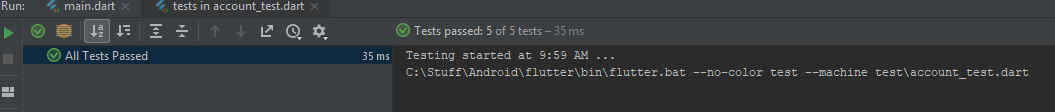
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| --- | --- | --- | --- |
| Test Case ID: AC\_01 | | | |
| Account: createCharge() | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | call “createCharge()” from an account | (No input empty constructor) | A charge is created on the account |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: AC\_02 | | | |
| Account: sumCharge() | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | No charges added to account | (No input empty method) | Total Charge = 0 |
| 3 | call “sumCharge()” from an account |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: AC\_03 | | | |
| Account: sumCharge(): double | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Charges added to account | Charges = [35, 10, 155] | Total Charge = 200 |
| 3 | call “sumCharge()” from an account |  |  |

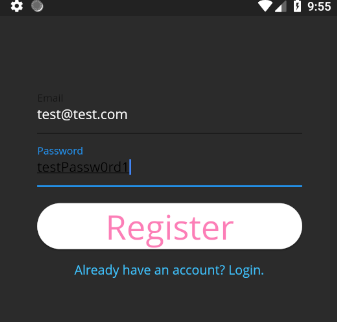
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| --- | --- | --- | --- |
| Test Case ID: AC\_04 | | | |
| Account: sumCharge() | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Charges added to account | Charges = [infinity, 12, 155] | Total Charges = “error” |
| 3 | call “createCharge()” from an account |  |  |

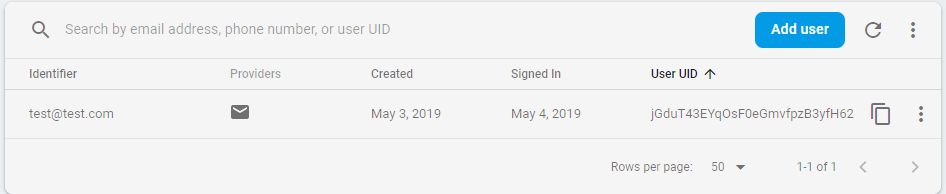
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**Test data used for testing the Register Controller. Register controller must be able to create a user and test passwords for minimum requirements. The minimum requirements being greater than 10 characters and contains at least three types of characters.**

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| --- | --- | --- | --- |
| Test Case ID: RC\_00 | | | |
| Account: register | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Register account with valid information | Email = “test@test.com”  Password = “testPassw0rd1” | A user is created and successfully added to the user database |
| 2 | Remove test account from database |  |  |





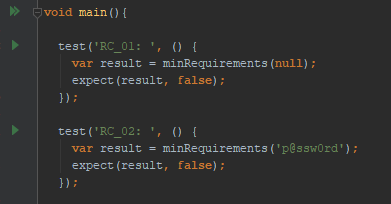
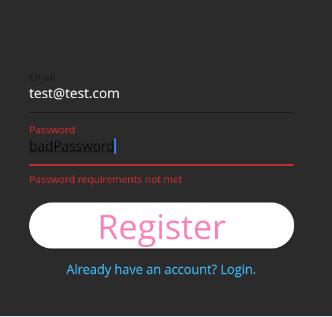
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| --- | --- | --- | --- |
| Test Case ID: RC\_01 | | | |
| Account: minRequirements()”bool | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create test password string | Password = null | false |
| 2 | Call “minRequirements” on test password |  |  |
| Test Case ID: RC\_02 | | | |
| Account: minRequirements()”bool | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create test password string | Password = “p@ssw0rd” | false |
| 2 | Call “minRequirements” on test password |  |  |

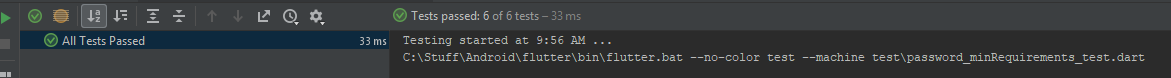
|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RC\_03 | | | |
| Account: minRequirements()”bool | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create test password string | Password = “g00dp@ssword” | true |
| 2 | Call “minRequirements” on test password |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RC\_04 | | | |
| Account: minRequirements()”bool | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create test password string | Password = “badPassword” | false |
| 2 | Call “minRequirements” on test password |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RC\_05 | | | |
| Account: minRequirements()”bool | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create test password string | Password = “badpassw0rd” | false |
| 2 | Call “minRequirements” on test password |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RC\_06 | | | |
| Account: minRequirements()”bool | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create test password string | Password = “b@dpassword” | false |
| 2 | Call “minRequirements” on test password |  |  |

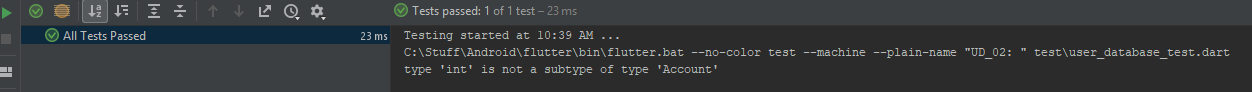
 



**Test data used for testing the User Database. The user data base must be capable of saving a user to the data base and finding a user though email and user name.**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_00 | | | |
| Account: saveUser() | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create an “Account” | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | The account is added to the user database. |
| 2 | Call “saveUser()” on the account |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_01 | | | |
| Account: saveUser() | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create an “Account” | Account = null; | User is not saved to the database |
| 2 | Call “saveUser()” on the account |  |  |

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| --- | --- | --- | --- |
| Test Case ID: UD\_02 | | | |
| Account: saveUser() | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create an integer | Integer = 45; | Database does not save number (non-Account object). |
| 2 | Call “saveUser()” on the account |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_03 | | | |
| Account: getUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add Account to data base | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | Database returns the created account object |
| 2 | Call “getUser(TestUser, g0odP@ssword)” |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_04 | | | |
| Account: getUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add Account to data base | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | Database returns null |
| 2 | Call “getUser(TestUser, wrongpassword)” |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_05 | | | |
| Account: getUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add Account to data base | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | Database returns null |
| 2 | Call “getUser(WrongUser, g0odP@ssword)” |  |  |

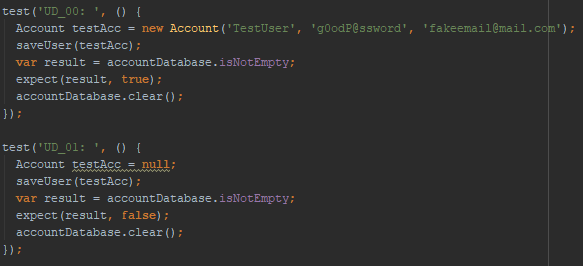
|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_06 | | | |
| Account: getUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | No account added to database | (none) | Database returns null |
| 2 | Call “getUser(TestUser, g0odP@ssword)” |  |  |

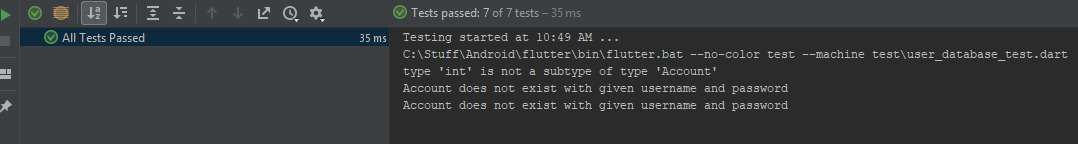
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| --- | --- | --- | --- |
| Test Case ID: UD\_07 | | | |
| Account: findUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add Account to data base | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | Database returns the added Account. |
| 2 | Call “findUser(TestUser)” |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_08 | | | |
| Account: findUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add Account to data base | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | Database returns null |
| 2 | Call “findUser(uncreatedUser)” |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_09 | | | |
| Account: findUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add Account to data base | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | Database returns added account |
| 2 | Call “findUser(fakeemail@mail.com)” |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: UD\_10 | | | |
| Account: findUser():Account | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add Account to data base | Account with:  Username= “TestUser”  Password= “g0odP@ssword”  Email = “fakeemail@mail.com” | Database returns null |
| 2 | Call “findUser(random@mail.com)” |  |  |

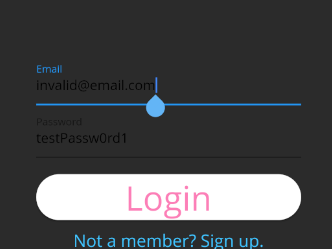




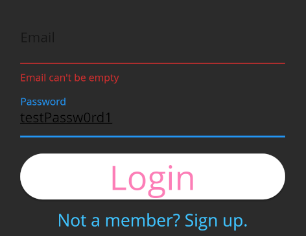
**Test data used for testing the Login GUI. The Login GUI must display the string correctly when the function is called. Tests will be done to test the function works with both valid and invalid inputs.**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: LC\_00 | | | |
| Login Controller: verify user in database | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email= “test@test.com”  Password = “testPassw0rd1” | Able to Login |
| 2 | Add account to user database |  |  |
| 3 | Try to Login to account with correct information |  |  |

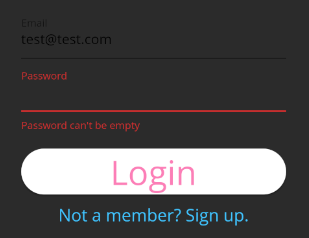
|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: LC\_01 | | | |
| Login Controller: verify(username): boolean | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email: “invalid@email.com” | Unable to login |
| 2 | Add account to user database |  |  |
| 3 | Login with incorrect email |  |  |



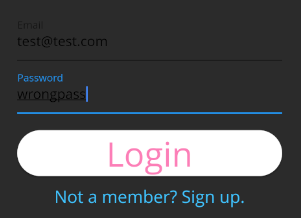
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| --- | --- | --- | --- |
| Test Case ID: LC\_02 | | | |
| Login Controller: Login with empty email | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email = “test@test.com”  Password=”testPassw0rd1” | Error message |
| 2 | Add account to user database |  |  |
| 3 | Login with empty email |  |  |



|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: LC\_03 | | | |
| Login Controller: Login with empty password | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email = “test@test.com”  Password=”testPassw0rd1” | Error message |
| 2 | Add account to user database |  |  |
| 3 | Login with empty password, but valid email |  |  |

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|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: LC\_04 | | | |
| Login Controller: Login with incorrect password | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email = “test@test.com”  Password=”testPassw0rd1”  IncorrectPass= “wrongpass” | Error message |
| 2 | Add account to user database |  |  |
| 3 | Login with incorrect passwords, but valid email |  |  |

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**Test data used for testing the Room/Room Manager. Rooms must be able to add users and add a group charge.**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RO\_00 | | | |
| Room: addUser(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create room and account | Username on account is “TestUsername” | The user is added to the room |
| 2 | Add account to user database |  |  |
| 3 | Call “addUser\_Name(TestUsername)” |  |  |

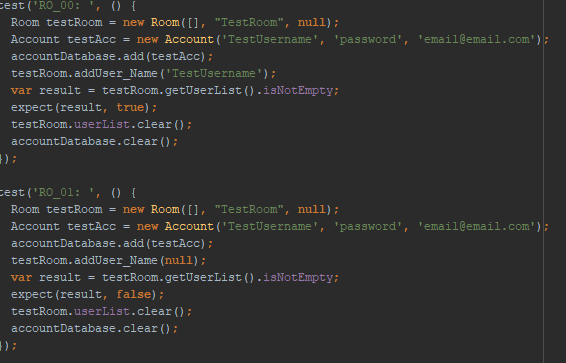
|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RO\_01 | | | |
| Room: addUser(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account and room | Username on account is “TestUsername” | Nothing added to room |
| 2 | Add account to user database |  |  |
| 3 | Call “addUser\_Name(null)” |  |  |

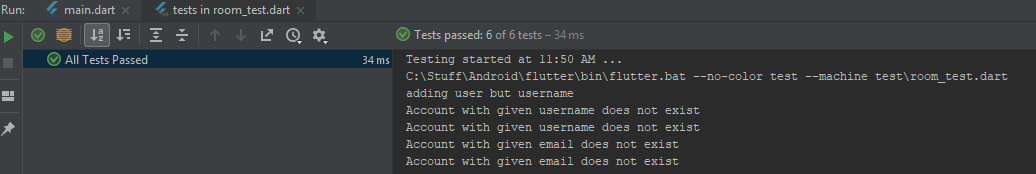
|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RO\_02 | | | |
| Room: addUser(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Username on account is “TestUsername” | Nothing added to room |
| 2 | Add account to user database |  |  |
| 3 | Call “addUser\_Name(“InvalidName”)” |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RO\_03 | | | |
| Room: addUser(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email on account is “fakeemail@mail.com” | User added to room |
| 2 | Add account to user database |  |  |
| 3 | Call “addUserEmail(fakeemail@mail.com)” |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RO\_04 | | | |
| Room: addUser(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email on account is “fakeemail@mail.com” | No user added to room |
| 2 | Add account to user database |  |  |
| 3 | Call “addUserEmail(wrongemail@mail.com)” |  |  |

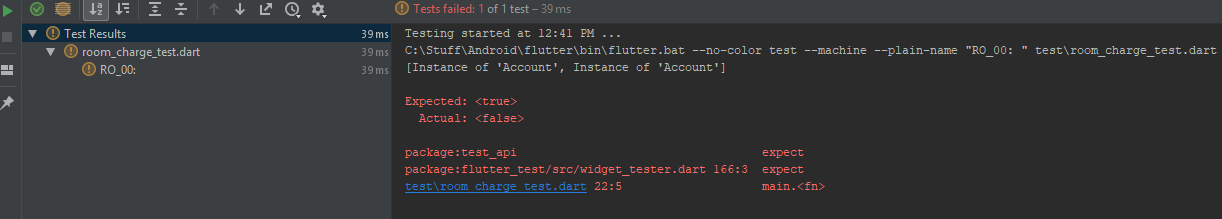
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| --- | --- | --- | --- |
| Test Case ID: RO\_05 | | | |
| Room: addUser(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create account | Email on account is “fakeemail@mail.com” | No user added to room |
| 2 | Add account to user database |  |  |
| 3 | Call “addUserEmail(“”)” |  |  |





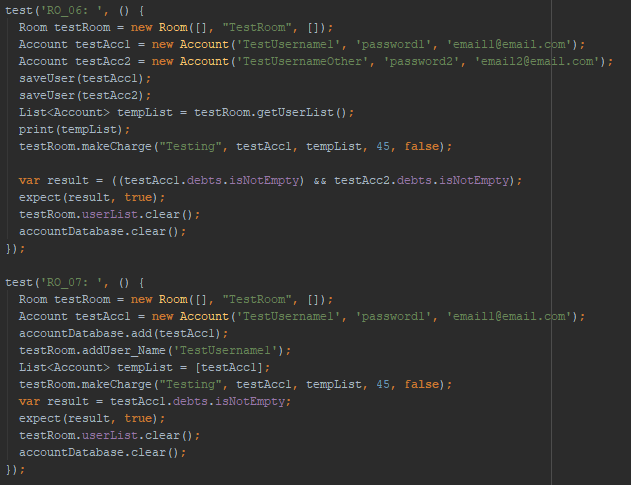
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| --- | --- | --- | --- |
| Test Case ID: RO\_06 | | | |
| Room: makeCharge(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create two accounts | Two accounts with different usernames | Charge added to each account |
| 2 | Add accounts to user database |  |  |
| 3 | Add accounts to the room |  |  |
| 4 | Create charge |  |  |
| 5 | Call “makeCharge()” | Charge values = (‘test’, 45, testAcc1,testRoom.userList, false) |  |

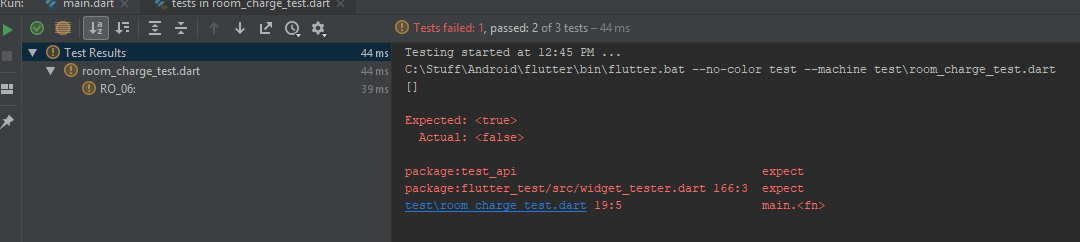
RO\_01 currently needs to be tested more to resolve issues. Second account is not receiving charges.



|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RO\_07 | | | |
| Room: addGroupCharge(): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Create one account | Sample account values from other tests | Charge added to the account |
| 2 | Add accounts to user database |  |  |
| 3 | Add accounts to the room |  |  |
| 4 | Call “makeCharge()” | Charge values = (‘test’, 45, testAcc1,testRoom.userList., false) |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case ID: RO\_08 | | | |
| Room: makeCharge (): void | | | |
| Step | Test Steps | Test Data(s) | Expected Result |
| 1 | Add no accounts to the room | Sample account values from other tests | No error occurs |
| 2 | Call “makeCharge ()” | Charge values = (‘test’, 45, testAcc1,testAcc1, false) |  |





## Test Pass / Fail Criteria

Each unit must provide the correct functionality when provided the expected input. For larger units, if applicable, proper error handling must occur as well for invalid inputs.

# Use Case Testing

## Overview

Use case testing is split into the two major categories of interface use cases and financial use cases.

## Interface Use Cases

|  |  |
| --- | --- |
| **Title** | Log In |
| **Actor(s)** | User |
| **Main Scenario** | 1: User enters username and password  2: User submits information  3: The system verifies user  4: The system logs user in |
| **Alternatives** | 3a: Username does not exist  3a1: Display error message asking to try again or register  3b: Password is incorrect  3b: Display error message asking to try again  3c: The user database cannot be reached  3c1: Connection error displayed asking user to try again  4a: System does not log user in  4a1: User remains at login page |
| **Test Situations** | 1: User logs in successfully  2: Username does not exist in database  3: Password is incorrect  4: Cannot connect to user database  5: User database malfunctioning (does not log user in) |

|  |  |
| --- | --- |
| **Title** | Create Account |
| **Actor(s)** | User |
| **Main Scenario** | 1: User enters desired username and password  2: User submits information  3: System checks if the minimum requirements are met  4. User is added to the database |
| **Alternatives** | 3a: Username already exists  3a1: Display message asking user to choose a new username or login  3b: Password does not meet minimum requirements  3b1: Display message asking to create stronger password  3c: User database cannot be reached  3c1: Connection error displayed asking user to try again  4a: System does not save user to database  4a1: User proceeds to login but is unable to login |
| **Test Situations** | 1: User creates account in successfully  2: Username already exists in database  3: Password requirements not met  4: Cannot connect to user database  5: User database malfunctioning (does not add user to database) |

|  |  |
| --- | --- |
| **Title** | View total outstanding debt |
| **Actor(s)** | User |
| **Main Scenario** | 1: User selects “total owed” button  2: The users total outstanding debt is displayed |
| **Alternatives** | 1a: Total owed button does not work  1a1: User cannot view total owed  2a: The incorrect debt is displayed  2a: User assumes they owe the incorrect amount and incorrectly plans  2b: No debt is displayed  2b1: User cannot view total owed |
| **Test Situations** | 1: User views total outstanding debt successfully  2: Button is malfunctioning (does nothing on press)  3: The incorrect amount is shown  4: Prompt is shown but debt amount is missing |

|  |  |
| --- | --- |
| **Title** | View individual charges assessed |
| **Actor(s)** | User |
| **Main Scenario** | 1: User selects “History”  2: System displays list of individual charges  3: User exists dialog  4: User returned to previous menu |
| **Alternatives** | 1a: History button does not work  1a1: User cannot view charges  2a: The incorrect charges are displayed  2a: User assumes they have different charges than they actually do  2b: Charges are shown (when there are)  2b1: User cannot view charges |
| **Test Situations** | 1: User views individual charges successfully  2: Button is malfunctioning (does nothing on press)  3: The incorrect charges are shown (incorrect amounts or missing some)  4: Prompt is shown but charges are missing |

|  |  |
| --- | --- |
| **Title** | Share list |
| **Actor(s)** | User |
| **Main Scenario** | 1: User enters list name  2: System adds list to database  3: All group members can view/edit list |
| **Alternatives** | 2a: The system does not add list to database  2a1: Users are not able to use the list  3a: Not all the users gain access to the list  3a2: |
| **Test Situations** | 1: User views individual charges successfully  2: Button is malfunctioning (does nothing on press)  3: The incorrect charges are shown (incorrect amounts or missing some)  4: Prompt is shown but charges are missing |

|  |  |
| --- | --- |
| **Title** | Edit List |
| **Actor(s)** | User |
| **Main Scenario** | 1: User adds item to list  2: System adds the item to list |
| **Alternatives** | 1a: User removes item from the list  1a1: Item is removed from database  1b: User unable to remove item from list  2a: The system does not add item to list  2a1: Systesm displays error message asking to try again |
| **Test Situations** | 1: User successfully adds item to list  2: User successfully removes item from list  3: System is malfunctioning (cannot add item to list)  4: System is malfunctioning (cannot remove item from list) |

|  |  |
| --- | --- |
| **Title** | Create room |
| **Actor(s)** | User |
| **Main Scenario** | 1: User inputs group name  2: System saves group to database |
| **Alternatives** | 1a: User does not input group name  1a1: System displays error message prompting user to input name  2a: Room is not added to database  2a1: User is unable to access room  2b: Connection to the database is interupted  2b1: Display connection error asking the user to try again |
| **Test Situations** | 1: User successfully creates group  2: User does not enter group name  3: Database is malfunctioning (does not add group to database)  4: Connection to database interrupted |

|  |  |
| --- | --- |
| **Title** | Add members to group |
| **Actor(s)** | User |
| **Main Scenario** | 1: User enters a user email  2: User is added to group |
| **Alternatives** | 1a: Invalid email input  1a1: System displays error message asking to try again  1b: User inputs email for and account that doesn’t exist  1b1: System displays a message stating no account exists  2b: Connection to the database is interrupted  2b1: Display connection error asking the user to try again |
| **Test Situations** | 1: User successfully adds user to group  2: User enter email of an account that doesn’t exist  3: Database is malfunctioning (does not add member to the group)  4: Connection to the database interrupted |

## Financial Use Cases

|  |  |
| --- | --- |
| **Title** | Create new shared expense |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Create new charge”  2: Dialogue box appears  3: Input charge details  4: Select “Confirm” or enter  5: Dialogue box disappears |
| **Alternatives** | 3a: “Create recurring, evenly split charge”  3b: “Create standalone charge” |
| **Test Situations** | 1: Dialogue box does not appear  2: Dialogue box does not disappear upon action  3: System returns correct prompt |

|  |  |
| --- | --- |
| **Title** | Create recurring, evenly split charge |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Create new charge”  2: Dialogue box appears  3: Input charge details  4: Select “Confirm” or enter  5: Dialogue box disappears |
| **Alternatives** | 3a: Select “Recurring Charge”; describe it  3b: Select interval  3c: Select group members to be charged  3d: Enter total amount of bill |
| **Test Situations** | 1: User inputs information  2: System returns correct prompt  3: Charge not created  4: Charge not evenly split |

|  |  |
| --- | --- |
| **Title** | Create standalone charge |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Create new charge”  2: Dialogue box appears  3: Input charge details  4: Display three choices for how the bill should be split: “Charge Evenly”, “Charge by Dollar Amount”, “Charge by Percentage”  5: Use case “Split charge evenly”  6: Assess charges  7: Select “Confirm” or enter  8: Dialogue box disappears |
| **Alternatives** | 3a: Select “One-time charge”; describe it  3b: “Create standalone charge”  3c: Enter total amount of bill  5a: Use case “Split by dollar amount”  5b: Use case “Split charge by percentage” |
| **Test Situations** | 1: Description of charge saved  2: Description seen by other members  3: Charge is stored by system  4: Correct charge is seen by other members  5: System returns correct use case |

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| --- | --- |
| **Title** | Split charge evenly |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Create new charge”  2: Dialogue box appears  3: Input charge details  4: Display three choices for how the bill should be split: “Charge Evenly”, “Charge by Dollar Amount”, “Charge by Percentage”  5: Select “Charge Evenly”  6: Assess charges  7. Select “Confirm” or enter  8. Dialogue box disappears |
| **Alternatives** | 3a: Select “One-time Charge”; describe it  3b: Select group members to be charged  3c: Enter total amount of bill |
| **Test Situations** | 1: User inputs information  2: System returns correct prompt  3: Charge not created  4: Charge not evenly split |

|  |  |
| --- | --- |
| **Title** | Split charge by dollar amount |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Create new charge”  2: Dialogue box appears  3: Input charge details  4: Display three choices for how the bill should be split: “Charge Evenly”, “Charge by Dollar Amount”, “Charge by Percentage”  5: Select “Charge by Dollar Amount”, input dollar amounts to be assessed  6: Assess charges  7. Select “Confirm” or enter  8. Dialogue box disappears |
| **Alternatives** | 3a: Select “One-time Charge”; describe it  3b: Select group members to be charged  3c: Enter total amount of bill |
| **Test Situations** | 1: User inputs information  2: System returns correct prompt  3: Charge not created  4: Charge not split correctly |

|  |  |
| --- | --- |
| **Title** | Split by percentage |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Create new charge”  2: Dialogue box appears  3: Input charge details  4: Display three choices for how the bill should be split: “Charge Evenly”, “Charge by Dollar Amount”, “Charge by Percentage”  5: Select “Charge by Percentage”, input percentages to be assessed  6: Assess charges  7. Select “Confirm” or enter  8. Dialogue box disappears |
| **Alternatives** | 3a: Select “One-time Charge”; describe it  3b: Select group members to be charged  3c: Enter total amount of bill |
| **Test Situations** | 1: User inputs information  2: System returns correct prompt  3: Charge not created  4: Charge not split correctly |

|  |  |
| --- | --- |
| **Title** | Enter Payments Manually |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Enter Payment”  2: Dialogue box appears  3: Select group member that was paid; enter  4: Ask for payment amount  5: Enter dollar amount paid  6: Dialogue box disappears |
| **Alternatives** | N/A |
| **Test Situations** | 1: System accepts input information  2: System returns correct prompt  3: Amount to be paid |

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| --- | --- |
| **Title** | Make payment via credit card |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “Enter Payment”  2: Dialogue box appears  3: Select group member that was paid  4: Display text boxes  5: Enter credit card information  6: Dialogue box disappears |
| **Alternatives** | N/A |
| **Test Situations** | 1: System accepts input information  2: System returns correct prompt  3: Amount to be paid  4: Credit card information  5: System handling of transaction |

|  |  |
| --- | --- |
| **Title** | View itemized list of assessed charges |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “History”  2: Display charges  3: User views charges and initiator  4: User exits dialog  5: Return to previous menu |
| **Alternatives** | N/A |
| **Test Situations** | 1: System displays only user charges  2: Prompts respond to user input |

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| --- | --- |
| **Title** | View Creditor/who the charge is owed to |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “History”  2: Display list of charges in reverse chronological order, including description of charge, charge amount.  3: Select individual charge from list  4: Display all individual charges |
| **Alternatives** | N/A |
| **Test Situations** | 1: System returns correct prompt  2: Details of charges  3: System responding to input |

|  |  |
| --- | --- |
| **Title** | Dispute charges assessed in error |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “History”  2: Display list of charges in reverse chronological order.  3: Select individual charge from list  4: Display all individual details  5: Select “Dispute This Charge”  Optional: “Message the charge originator”  6: Mark charge as “Pending Dispute” |
| **Alternatives** | N/A |
| **Test Situations** | 1: System returns correct prompt  2: Details of charges  3: System responding to input  4: Message use case initiated |

|  |  |
| --- | --- |
| **Title** | Message the charge originator |
| **Actor(s)** | User |
| **Main Scenario** | 1: Select “History”  2: Display list of charges in reverse chronological order.  3: Select individual charge from list  4: Display all individual details  5: Select “Dispute This Charge”  6: Mark charge as “Pending Dispute”  7: Select Message Originator”  8: Display text box  9: Type message; enter  10: Text box disappears |
| **Alternatives** | N/A |
| **Test Situations** | 1: System returns correct prompt  2: Details of charges  3: System responding to input  4: Message is sent to originator  5: System accepts message |

# Acceptance Testing

|  |  |  |
| --- | --- | --- |
| **Story** | Acceptance | Acceptance Test Description |
| 1.1 Customer Login | AC\_0 | Verify that customer with valid username and login can login successfully |
| 1.1 Customer Login | AC\_1 | Verify users without an account are unable to login |
| 1.1 Customer Login | AC\_2 | Verify correct prompts and messages are displayed |
| 1.1 Customer Login | AC\_3 | Verify database function to return data to user |
| 1.2 Account Creation | AC\_4 | Verify user can create account successfully |
| 1.2 Account Creation | AC\_5 | Verify user can’t make two accounts |
| 1.2 Account Creation | AC\_6 | Verify user can create account upon entering valid information |
| 1.3 View Account | AC\_7 | Verify user can see total outstanding debt |
| 1.3 View Account | AC\_8 | Verify all buttons work |
| 1.3 View Account | AC\_9 | Verify correct debt amount is shown |
| 1.3 View Account | AC\_10 | Verify all prompts are correct |
| 1.4 Edit Lists | AC\_11 | Verify user can create a list |
| 1.4 Edit Lists | AC\_12 | Verify user can add items to list |
| 1.4 Edit Lists | AC\_13 | Verify user can remove items from list |
| 1.4 Edit Lists | AC\_14 | Verify user can see items in the list |
| 2.0 Create Rooms | RM\_0 | Verify user can create room |
| 2.0 Create Rooms | RM\_1 | Verify user must enter room name |
| 2.0 Create Rooms | RM\_2 | Verify user can access room |
| 2.1 Add Member | RM\_3 | Verify user can add another user to group |
| 2.1 Add Member | RM\_4 | Verify user added to group can access group |
| 2.1 Add Member | RM\_5 | Verify system only add member that has an account |
| 2.1 Add Member | RM\_6 | Verify system returns correct prompts |
| 3.0 Create Expense | FC\_0 | Verify user can create an expense |
| 3.0 Create Expense | FC\_1 | Verify user can select type of expense, e.g. recurring or one-time event |
| 3.0 Create Expense | FC\_2 | Verify user can split charge an even amount |
| 3.0 Create Expense | FC\_3 | Verify user can split charge by a percentage |
| 3.0 Create Expense | FC\_4 | Verify user can split charge by a specific dollar amount |
| 3.0 Create Expense | FC\_5 | Verify user can create a standalone charge |
| 3.1 Make Payment | FC\_6 | Verify user can enter payment manually |
| 3.1 Make Payment | FC\_7 | Verify user can see a received payment |
| 3.1 Make Payment | FC\_8 | Verify user can enter amount to be paid |
| 3.1 Make Payment | FC\_9 | Verify system can accept payment |
| 3.1 Make Payment | FC\_10 | Verify user can make credit card payment |
| 3.1 Make Payment | FC\_11 | Verify system can handle credit card transaction |
| 3.1 Make Payment | FC\_12 | Verify user receives payment from credit card |
| 3.1 Make Payment | FC\_13 | Verify system updates debt after payments |
| 3.1 Make Payment | FC\_14 | Verify user can see charge history |
| 3.1 Make Payment | FC\_15 | Verify user can see where debt is owed |
| 3.1 Make Payment | FC\_16 | Verify user can dispute charges |
| 3.1 Make Payment | FC\_17 | Verify user can see charge disputes |
| 3.1 Make Payment | FC\_18 | Verify user can send message to other users |
| 3.1 Make Payment | FC\_19 | Verify user can see message about charge disputes |