

1. Project Title and Authors

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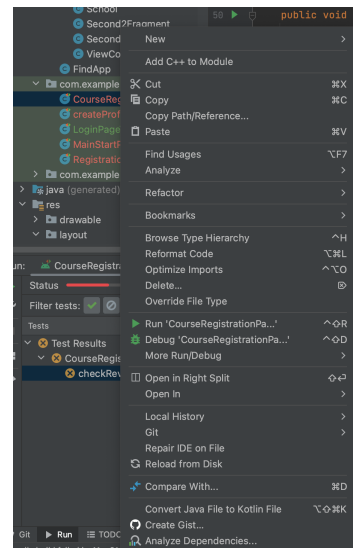
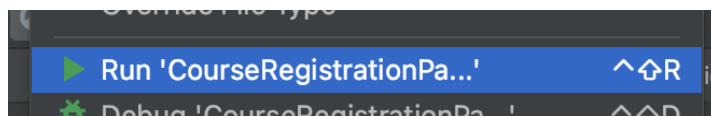
2. Preface

This document is a guide to the testing process for our Android application: Find my Classmate. The document will provide a set of executable test cases and a testing document. We will work on both black-box and white-box testing methods. We will cover the core requirements as well as fix bugs during the process.

We will provide an in-depth explanation of how we approached the testing process, including the rationale behind the creation of our test cases, the tools we used, and the bugs we encountered and resolved.

3. Instruction (Instruction on how to execute your test cases)

- Black box testing
 - We have a total of 5 files for black box testing
 - CourseRegistrationPageTests
 - createProfileTests
 - LoginPageTests
 - MainStartPageTests
 - RegistrationPageTests
 - Each test file is related to a page we have in the application. To run each file, we can right click on the test file and click on the Run "[Name of File]". Then, the file will run all the test cases.



For white box testing, these are the same instructions except the files are:

- MainActivityTest
- RegistrationEmailPasswordTest
- ViewCourseTest
- CreateProfileTest
- DepartmentArrayAdapterTest

4. Black-box Testing

Charles wrote test case 1-5

Vincent wrote test case 6-10

Jeffrey wrote test case 11-15

1. usernameregistration()
 - i. Location:
app/src/androidTest/java/com/example/findmyclassmate/RegistrationPageTests.java
 - ii. Description: This test checks if the username text box in the RegistrationPage works and the text input works.
 - iii. Rationale: Signing up for the application is a critical feature of this app. This test case was created to ensure that users can appropriately enter their username for registration
 - iv. Bug: No bug was found during this test.
2. passwordRegistration()
 - i. Location:
app/src/androidTest/java/com/example/findmyclassmate/RegistrationPageTests.java
 - ii. Description: This test checks if the password text box in the RegistrationPage works and the text input works.
 - iii. Rationale: Signing up for the application is a critical feature of this app. This test case was created to ensure that users can appropriately enter their password for registration
 - iv. Bug: No bug was found during this test.
3. RegistrationCheck()
 - i. Location:
app/src/androidTest/java/com/example/findmyclassmate/RegistrationPageTests.java
 - ii. Description: This test checks if the the user can input the username and password to register for the application
 - iii. Rationale: User Registration is a critical feature of this app. This test case was created to ensure that users can appropriately register with their username and password.
 - iv. Bug: No bug was found during this test.
4. usernamelogin()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/LoginPageTests.java

ii. Description: This test checks if the user can input their username in the login page of the application

iii. Rationale: User Authentication and login is a critical feature of this app. This test case was created to ensure that users can appropriately enter their username in the login page

iv. Bug: No bug was found during this test.

5. passwordlogin()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/LoginPageTests.java

ii. Description: This test checks if the user can input their password in the login page of the application

iii. Rationale: User Authentication and login is a critical feature of this app. This test case was created to ensure that users can appropriately enter their password in the login page

iv. Bug: No bug was found during this test.

6. loginValidation()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/LoginPageTests.java

ii. Description: This test checks if the user can login with the right credentials including username and password

iii. Rationale: User Authentication and login is a critical feature of this app. This test case was created to ensure that users can appropriately login with the right credentials

iv. Bug: No bug was found during this test.

7. invalidloginValidation()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/LoginPageTests.java

ii. Description: This test checks if the user can not login with the wrong username and password

iii. Rationale: User Authentication and login is a critical feature of this app. This test case was created to ensure that users can not login with the wrong credentials

iv. Bug: No bug was found during this test.

8. uploadname()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/createProfileTests.java

ii. Description: This test checks if the user can input their name in the textbox for the createProfile page

- iii. Rationale: Creating the profile for the user is a crucial feature for this application. This test case ensures that the user can input their correct name for their profile
- iv. Bug: No bug was found during this test.

9. uploadtype()

- i. Location:
app/src/androidTest/java/com/example/findmyclassmate/createProfileTests.java
- ii. Description: This test checks if the user can input their student type in the textbox for the createProfile page
- iii. Rationale: Creating the profile for the user is a crucial feature for this application. This test case ensures that the user can input their correct student type, whether that is undergraduate or graduate for their profile
- iv. Bug: No bug was found during this test.

10. CreateProfileErrorNoPhoto()

- i. Location:
app/src/androidTest/java/com/example/findmyclassmate/createProfileTests.java
- ii. Description: This test checks if the user can create a profile without uploading the photo. More specifically, it checks if the user can create a profile when there is no profile photo inputted.
- iii. Rationale: Creating the profile for the user is a crucial feature for this application, and the profile photo is crucial to recognize and distinguish students. This test case will ensure that the user cannot create a profile when the photo is not uploaded.
- iv. Bug: No bug was found during this test.

11. CreateProfileErrorNoInformation()

- i. Location:
app/src/androidTest/java/com/example/findmyclassmate/createProfileTests.java
- ii. Description: This test checks if the user can create a profile without inputting any information.
- iii. Rationale: Creating the profile for the user is a crucial feature for this application, and the name, student status, and photo are all needed information for the application.
- iv. Bug: No bug was found during this test.

12. checkSignInButton()

- i. Location:
app/src/androidTest/java/com/example/findmyclassmate/MainStartPageTests.java
- ii. Description: This test checks if the user can click the sign in button in the opening page of the application
- iii. Rationale: This button is crucial for the user to sign in and access the application. Therefore, we are testing this functionality.
- iv. Bug: No bug was found during this test.

13. checkSignUpButton()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/MainStartPageTests.java

ii. Description: This test checks if the user can click the sign up button in the opening page of the application

iii. Rationale: This button is crucial for the user to sign up and access the application. Therefore, we are testing this functionality.

iv. Bug: No bug was found during this test.

14. checkAddButton()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/CourseRegistrationPageTests.java

ii. Description: This test checks if the user can click the add courses button to add courses

iii. Rationale: This button is crucial for the user to add courses to the course list. Therefore, we are testing this functionality

iv. Bug: No bug was found during this test.

15. checkReviewButton()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/CourseRegistrationPageTests.java

ii. Description: This test checks if the user can click the review courses button to review courses

iii. Rationale: This button is crucial for the user to review courses that the student wants. Therefore, we are testing this functionality

iv. Bug: No bug was found during this test.

16. checkSpinnerWorking()

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/CourseRegistrationPageTests.java

ii. Description: This test checks if the user can click the spinner to display all the necessary courses in the university

iii. Rationale: This button is crucial for the student to look at all the course options in the university. It is also crucial since the user needs to select the department and school.

iv. Bug: No bug was found during this test.

4. White-box Testing

Jeffrey wrote test case 1 - 4
Charles wrote test case 5 - 7
Vincent wrote test case 8 - 10

1. MainActivity Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/MainActivityTest.java

ii. Description: Test if the MainActivity class initializes with the correct default values and state.

iii. Rationale: Ensure the main activity initializes correctly to provide a stable entry point for the application.

iv. Bug: No bug was found during this test.

2. Registration Process Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/RegistrationEmailPasswordTest.java

ii. Description: Test Registration class to verify that it correctly processes new user registrations.

iii. Rationale: Test the registration process to verify that new users can successfully register, providing a smooth onboarding experience.

iv. Bug: No bug was found during this test.

3. Successful Registration Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/RegistrationEmailPasswordTest.java

Description: Test the Registration feature after Registration to make sure it correctly handles valid and invalid login credentials.

iii. Rationale: Validate that the Registration functionality handles valid credentials properly, ensuring secure user authentication.

iv. Bug: No bug was found during this test.

4. Empty Email Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/RegistrationEmailPasswordTest.java

Description: Test the Registration feature to ensure it correctly handles valid and invalid login credentials.

iii. Rationale: Validate that the login functionality handles both valid and invalid credentials properly, ensuring secure user authentication.

iv. Bug: No bug was found during this test.

5. Empty Password Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/RegistrationEmailPasswordTest.java

Description: Test the Registration feature to ensure it correctly handles invalid login credentials.

iii. Rationale: Validate that the login functionality correctly errors invalid credentials properly, ensuring secure user authentication.

iv. Bug: No bug was found during this test.

6. Create Profile Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/CreateProfileTest.java

Description: Test createProfile class to ensure that profile created correctly.

iii. Rationale: Validate the create profile functionality to ensure that users can create their profile information.

iv. Bug: No bug was found during this test.

7. View Course Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/ViewCourseTest.java

Description: Test the Course class to ensure that courses are added correctly.

iii. Rationale: Check that courses can be added correctly, which is crucial for users to build their academic schedules.

iv. Bug: No bug was found during this test.

8. Department Initialization Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/ViewCourseTest.java

Description: Test Department class to ensure it correctly handles department-related information.

iii. Rationale: Ensure that the application handles department-related information accurately, supporting various functionalities that depend on department data.

iv. Bug: No bug was found during this test.

9. School initialization Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/DepartmentDataTest.java

Description: Test School class to ensure it correctly handles department-related information.

- iii. Rationale: Ensure that the application handles department-related information accurately, supporting various functionalities that depend on school data.
- iv. Bug: No bug was found during this test.

10. Department Array Adapter Test

i. Location:

app/src/androidTest/java/com/example/findmyclassmate/DepartmentArrayAdapterTest.java

Description: Validate that DepartmentArrayAdapter correctly handles and displays department data in lists or dropdowns.

- iii. Rationale: Ensure that the application handles department-related information accurately, supporting various functionalities that depend on department data.
- iv. Bug: No bug was found during this test.

White Box Test Cases: Authentication Module:

Valid Login Credentials:

Test with correct email/password combination.

Ensure the user can log in successfully.

Invalid Login Credentials:

Test with incorrect email/password combination.

Ensure the user receives an error message or cannot log in.

Empty Fields:

Test logging in without providing email/password.

Ensure the app prompts to enter both email and password.

Sign Out:

Test the log-out functionality.

Ensure the user is redirected to the login screen.

Profile Module:

Profile Display:

Test if the user's profile information loads correctly after login.

Ensure the profile information is accurate and matches the user's data.

Edit Profile:

Test updating profile information (e.g., name, profile picture).

Ensure the changes reflect correctly and persist.

Course Registration Module:

View Registered Courses:

Test if the registered courses are displayed for the logged-in user.

Ensure all relevant course details are accurately shown.

Register for a Course:

Test registering for a new course.

Ensure the course is added to the user's profile.

Unregister from a Course:

Test unregistering from a course.

Ensure the course is removed from the user's profile.

Error Handling and Edge Cases:

Network Disconnection:

Test the app behavior when the network connection is lost during different operations.

Ensure the app provides appropriate feedback or handles the situation gracefully.

Boundary Testing:

Test edge cases for input fields (e.g., maximum and minimum lengths for text fields).

Ensure the app behaves correctly when limits are reached or exceeded.

Security Testing:

Test for any security vulnerabilities, such as SQL injection, if your app interacts with a database.

Performance Testing:

Test the app's performance under various conditions (low battery, low memory, high network latency).

Ensure the app remains responsive and stable.