



LocAdoc Test Report

Version 1.0

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Table of Contents

1.	Introduction	1
2.	Test Plan Overview	1
2.1	Objective	1
2.2	Approach	1
2.3	Black box testing	1
2.4	Features to be tested	2
2.4.1	Sign up	2
2.4.2	Login	2
2.4.3	Instance ID Verification	2
2.4.4	Home page	2
2.4.5	PDF Viewer	3
2.4.6	Import File	3
2.4.7	Add empty area	3
2.4.8	Area operations	3
2.4.9	File operations	3
2.4.10	Password recovery	4
2.4.11	Change password	4
2.4.12	Change name	4
2.4.13	Cloud storage	4
2.4.14	Change user	4
2.4.15	Delete user Testing	5
2.4.16	File and data synchronization Testing	5
2.4.17	GPS spoofing Testing	5
2.4.18	Area explorer	5
2.4.19	File explorer	6
2.5	Item Pass/Fail Criteria	6
2.6	Test Deliverables	6
2.7	Test Environment	6
2.8	Test Summary Report	6
2.8.1	Conclusion	7
2.8.2	Problems faced	7
2.8.3	Improve Test Assets.	7
2.8.4	Achievements	7

1. Introduction

This test plan describes the testing approach and overall framework that will drive the testing of the LocAdoc system.

It describes:

- The different features to be tested
- The test objective
- The result after testing
- The test environment

2. Test Plan Overview

This test plan will outline and define the strategy and approach taken to perform formal system qualification tests on LocAdoc app.

2.1 Objective

The objective of the test is to verify that the functionality of LocAdoc system works according to the specifications.

2.2 Approach

The test members will use Project Proposal and System Architecture Document to prepare the necessary test scripts and reports.

The testing phase is divided into 19 suites:

1. Sign up
2. Login
3. Instance ID Verification
4. Home page
5. PDF viewer
6. Import file
7. Add empty area
8. Area operations
9. File operation
10. Password recovery
11. Change password
12. Change name
13. Cloud storage
14. Change user
15. Delete user
16. File and data synchronization
17. GPS spoofing
18. Area explorer
19. File explorer

2.3 Black box testing

Black box testing is a software testing technique in which functionality of the software under test (SUT) is tested without looking at the internal code structure, implementation details and knowledge of internal paths of the software. This type of testing is based entirely on the software requirements and specifications.

The advantages of black box testing are:

- Tests are done from a user's point of view and will help in exposing discrepancies in the specifications.
- The tester can be non-technical
- Test cases can be designed as soon as the functional specifications are complete.
- Tests can be conducted by a body independent from the developers, allowing for an objective perspective and the avoidance of developer-bias.

2.4 Features to be tested

This plan will execute specific test that exists in order to exercise the features provided and specified in the System Requirements Document of LocAdoc application.

2.4.1 Sign up

Test Objective	Test plan for Sign up form
Technique	Create tests for each input field to verify if the Signup function is working.
Completion Criteria	Sign up must be successful only upon entering valid values in all the fields.
Special Considerations	NIL

Table 2.0: Sign Up Testing

2.4.2 Login

Test Objective	Test plan for login form
Technique	Perform a test on input validation and authentication. Check added delay timer on 3 invalid tries.
Completion Criteria	Login must be successfully completed, and delay timer should slow down any adversary from brute forcing the password.
Special Considerations	NIL

Table 2.1: Login Testing

2.4.3 Instance ID Verification

Test Objective	Test if the Instance ID is verified and the system logout on change.
Technique	Login to two devices to check if the instance ID is working.
Completion Criteria	The first device should logout when logged into second device.
Special Considerations	NIL

Table 2.2: Instance ID Verification Testing

2.4.4 Home page

Test Objective	To test if all the user interface components are responsive.
Technique	Try out various features (menu, search bar, floating action button) of homepage one by one.

Completion Criteria	If all homepage are features are responsive.
Special Considerations	NIL

Table 2.3: Home page Testing

2.4.5 PDF Viewer

Test Objective	To test if the PDF viewer renders the PDF file and close on moving out of the location.
Technique	The test was conducted by importing a pdf file and moving out of the current area
Completion Criteria	If the pdf file is properly rendered and close on moving out of the designated area.
Special Considerations	NIL

Table 2.4: PDF Viewer Testing

2.4.6 Import File

Test Objective	To test if the files are imported successfully
Technique	Try out various scenarios of importing file that the user may end up performing.
Completion Criteria	If the files are imported and can be opened successfully. Check if files are destroyed if the user choose to empty them. The app should block invalid inputs.
Special Considerations	NIL

Table 2.5: Import File Testing

2.4.7 Add empty area

Test Objective	To test if an empty area can be created.
Technique	By creating empty using deferent configuration and see if the area is created
Completion Criteria	If the area can be created successfully and if the app blocks the invalid inputs.
Special Considerations	NIL

Table 2.6: Add empty area Testing

2.4.8 Area operations

Test Objective	To check if area related operations work.
Technique	By changing radius and deleting 2 areas one with no file and one with file.
Completion Criteria	The radius should change dynamically. The app should not allow deletion of file with a file and should delete a area with no file successfully. If the user is not currently in within the radius of the area he cannot perform area related operations.
Special Considerations	NIL

Table 2.7: Area operations Testing

2.4.9 File operations

Test Objective	To test if the file related operations function as per the requirement.
Technique	Each file loaded into one are moved or copied to another area. Finally, the files are deleted.

Completion Criteria	If all file operation works according to requirement.
Special Considerations	NIL

*Table 2.8: File operations Testing***2.4.10 Password recovery**

Test Objective	To test if the password is reset success fully
Technique	By clicking forget password and trying out various invalid and valid inputs.
Completion Criteria	Invalid inputs should be rejected, and valid inputs should lead to successful recovery.
Special Considerations	NIL

*Table 2.9: Password recovery Testing***2.4.11 Change password**

Test Objective	To test if the password can be changed successfully
Technique	Try various valid and invalid inputs and try change password.
Completion Criteria	If the user is blocked on invalid ties and valid tries lead to successful login.
Special Considerations	NIL

*Table 2.10: Change password Testing***2.4.12 Change name**

Test Objective	To test if the user name can be changed successfully
Technique	Try input valid and invalid inputs.
Completion Criteria	The application should block invalid inputs and allow valid ones
Special Considerations	NIL

*Table 2.11: Change name Testing***2.4.13 Cloud storage**

Test Objective	To test if the cloud storage operations
Technique	Added, delete, copy files in S3. Try upload files above storage limit.
Completion Criteria	All operations should work as per the requirement and the application should block the user from uploading files once the storage limit is hit.
Special Considerations	NIL

*Table 2.12 Cloud storage limit Testing***2.4.14 Change user**

Test Objective	To test if another user can login.
Technique	Clicking change user and try login using a new user account.

Completion Criteria	All data and area should be set as per the new account.
Special Considerations	NIL

*Table 2.13: Change user Testing***2.4.15 Delete user Testing**

Test Objective	To test if the user can delete his account
Technique	The delete user functionality is executed on login and try to re-login using same deleted account.
Completion Criteria	If the re-Login fails and if all the user record is deleted from both Cognito, DynamoDB and S3.
Special Considerations	NIL

*Table 2.14: Delete user Testing***2.4.16 File and data synchronization Testing**

Test Objective	To test if the files and data are synchronized over multiple devices.
Technique	Login to one device and add a file, then login to second device using same account and see if the file can be viewed.
Completion Criteria	If the files and user data are consistent over multiple devices.
Special Considerations	NIL

*Table 2.15: File and data synchronization Testing***2.4.17 GPS spoofing Testing**

Test Objective	To test if the GPS spoofing can be detected.
Technique	Installing a GPS spoofing application in the phone and setting mock location. Then try login to the application.
Completion Criteria	The app should logout if the
Special Considerations	NIL

*Table 2.16: GPS spoofing Testing***2.4.18 Area explorer**

Test Objective	To check if the area based access control mechanism works as per the requirement
Technique	Add new area and see if the area is visible by moving in and out of the radius.
Completion Criteria	If the access control mechanism works based on the requirement.
Special Considerations	NIL

Table 2.16: Area explorer testing

2.4.19 File explorer

Test Objective	To test if the files are accessible based on location
Technique	Try open file with the designated area and outside designated area.
Completion Criteria	The file should not be accessible outside the designated area.
Special Considerations	NIL

Table 2.16: File explorer testing

2.5 Item Pass/Fail Criteria

This section specifies the Pass/Fail criteria for the tests covered in this plan. The test items detailed above act as the targets of this plan, which will be tested for the LocAdoc application.

The system will be deemed to have passed testing if:

- All tests defined have been executed, and
- The number of tests executed without any defects is more than 95% of the total, and
- Any defects detected have a severity classification of Low.

The system will be deemed to have failed testing if:

- The number of test executed with defects is more than 5% of the total, and
- There are defects with a severity classification of High.

2.6 Test Deliverables

The following documents will be generated by the test member and will be created after test completion.

S.No.	Deliverable Name	Author	Reviewer
1.	Test Plan	Testing team	
3.	Test Summary Report	Testing team	

2.7 Test Environment

We tested this app on 4 devices all running different hardware made within past five years (2013 to 2017). The test was conducted by keeping following things in mind: -

- Processing power.
- Android version.
- Screen size.
- Network and GSP connectivity hardware.

The phones used are :-

- **Moto G (1st Generation)** – Released in 2013 with 1Gb of RAM and Quad-core 1.2 GHz Cortex-A7 processor. It runs android version 5.1.1(Lollipop) and considered to be the lowest configuration required to run this app.
- **Sony Xperia Z5** – Released in 2015 3GB of RAM and Octa-core (4x1.5 GHz Cortex-A53 & 4x2.0 GHz Cortex-A57, Qualcomm MSM8994 Snapdragon 810 chipset) processor. It runs android version 7.1.1 (Nougat).
- **Samsung galaxy Note 5** - Released in 2015 with 4GB of RAM and Octa-core (4x2.1 GHz Cortex-A57 & 4x1.5 GHz Cortex-A53, Exynos 7420 Octa chipset) processor. It runs android version 7.1.1 (Nougat).
- **Samsung galaxy S8** - Released in 2015 with 4GB of RAM and Octa-core (4x2.3 GHz & 4x1.7 GHz, Exynos 8895 Octa). It runs android version 7.1.1 (Nougat).

2.8 Test Summary Report

In Total 138 cases tested.

2.8.1 Conclusion

After conducting 129 tests there is only one issue that is when is network connection is unstable during the login process or when changing password. This scenario may lead to app crashing. 128 (99.2%) testcases have generated a PASS.

2.8.2 Problems faced

The main difficulty faced is when there is poor network connection or GPS connection. The tester was setting small radius and see if the pdf file closes when he walks out of the specified radius, but the location update moves is not consistent with the testers current location. It requires him to wait few seconds before the location update catch up with him.

2.8.3 Improve Test Assets.

The purpose of this activity is to maintain and improve test assets. In our case, test cases that can be re-used are:

- Login
- Signup
- Settings

2.8.4 Achievements

We have achieved a 99.2% pass in the test case phase. The one test case that failed is due to weak network connection or hardware level issues which cannot be controlled or simulated. All the errors faced have been rectified during the construction phase and test confirmed that all functionalities are working according to the requirement. We have also managed to do small tweaks to improve performance.