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Test Plan, Test Design Specifications and Test Cases
Version 1

CENG 408
Innovative System Design and Development II

MOBILE LIBRARY RESERVATION SYSTEM

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Table of Contents

INTRODUCTION	1
Version Control	1
Overview	1
Scope	1
Terminology	2
FEATURES TO BE TESTED	3
Initial Page (IP)	3
Sign Up (SU)	3
Sign In (SI)	3
Make Reservation (MR)	3
List Reservation (LR)	3
Admin Main Menu (AMM)	3
FEATURES NOT TO BE TESTED	4
ITEM PASS/FAIL CRITERIA	4
Exit Criteria	4
REFERENCES	4
TEST DESIGN SPECIFICATIONS	5
Initial Page (IP)	5
Subfeatures to be tested	5
Sign Up (IP.SU_BTN)	5
Sign In (IP.SI_BTN)	5
Test Cases	5
Sign In (SI)	5
Subfeatures to be tested	5
Library Member (SI.LM)	5
Test Cases	5
Sign In (SI)	6
Subfeatures to be tested	6
All Users (SI.AU)	6
Test Cases	6
Make Reservation (MR)	6
Subfeatures to be tested	6
Continue (MR.C_BTN)	6
Search Table (MR.ST_BTN)	6
Make Reservation(MR.MR_BTN)	6

Test Cases	6
List Reservation (LR)	7
Subfeatures to be tested	7
Library Member (LR.LM)	7
Librarian(LR.LB)	7
QR Code (LR.QR)	7
Cancel Reservation (LR.CR)	7
Test Cases	8
Admin Main Menu (AMM)	8
Subfeatures to be tested	8
List Libraries (AMM.LL_BTN)	8
Delete Library (AMM.DL_BTN)	8
Add Library (AMM.AL_BTN)	8
Save Changes (AMM.SC_BTN)	9
Test Cases	9
DETAILED TEST CASES	10
SU.LM.01	10
SU.LM.02	11
SI.AU.01	12
SI.AU.02	13
MR.C_BTN.01	14
MR.C_BTN.02	15
MR.ST_BTN.01	16
MR.ST_BTN.02	16
AMM.DL_BTN.01	17
AMM.DL_BTN.02	18
AMM.AL_BTN.01	19
AMM.AL_BTN.02	20
AMM.SC_BTN.01	21
AMM.SC_BTN.02	22
LR.LM.01	23
LR.LB.01	24
LR.QR.01	25
LR.CR.01	26
LR.CR.02	27
MR.MR_BTN.01	28
MR.MR_BTN.02	29

1. INTRODUCTION

This test plan has been created to organize the testing processes to be applied for the Mobile Library Reservation System application. This document has been prepared in order to create a common language among the team members on the features to be tested or not, details about the test cases, workflow and methods planned to be tested.

1.1 Version Control

Version No	Description of Changes	Date
1.0	First Version	April 16, 2021

1.2 Overview

In this document, we aim to test the functionality of the mobile application pages and to check whether they fulfill the promises we indicated in the SRS and SDD phase of the project. Each of the pages in the Mobile Library Reservation System application will be subjected to a test.

1.3 Scope

This document includes test cases for login, registration, library listing, reservation, table selection, filtering time slot information, library addition/deletion, QR code for reservation and user information pages. Each page and its functions will be examined in detail. This document explains test requirements, test cases, pass/fail criteria and detailed test cases. The aim of the document is explaining what will be tested and how test cases will be performed.

1.4 Terminology

Acronym	Definition
SI	SIGN IN
SU	SIGN UP
MR	MAKE RESERVATION
LR	LIST RESERVATION
C	CONTINUE
ST	SEARCH TABLE
LL	LIST LIBRARIES
DL	DELETE LIBRARY
AL	ADD LIBRARY
SC	SAVE CHANGES
AD	ADMIN
LM	LIBRARY MEMBER
LB	LIBRARIAN
GUI	GRAPHICAL USER INTERFACE

2. FEATURES TO BE TESTED

The graphical user interface(GUI) of Mobile Library Reservation System contains 17 pages, which the users(library member, librarian and admin) will use to interact with the application. In general, we classify the pages as Sign In(SI), Sign Up(SU), Make Reservation(MR) , List Reservation(LR), Continue(C), Search Table(ST), List Libraries(LL), Add Libraries(AL), Save Changes(SC) and the User Information(UI) pages. Brief descriptions of all the major features to be tested are listed in below. Major feature there will be a Test Design Specification added at the end of this document.

2.1 Initial Page (IP)

The start page contains basic buttons to interact with the application such as sign up and sign in.

2.2 Sign Up (SU)

Library members enter an email and password. Then clicks the Sign Up button, and the account should be successfully created.

2.3 Sign In (SI)

Users(library member, librarian or admin) enter their email and password. After clicking the Sign In button, the library member directs to the library member menu, librarian directs to librarian menu and admin directs to admin menu.

2.4 Make Reservation (MR)

Library Members click on the Make Reservation button from the library member main page. Then the user directs to the Make Reservation page. On this page, users choose a library and click the Continue button. Then, choose the date and time slot to filter empty seats in the library. If reservation is completed in a correct way, the system creates an QR code for the reservation.

2.5 List Reservation (LR)

After clicking the List Reservation button the user directs the List Reservation Page which includes all reservation information of the user made.

2.6 Admin Main Menu (AMM)

Admin main menu includes functions such as adding, deleting, updating and listing libraries.

3. FEATURES NOT TO BE TESTED

Technical work related to the hardware of the mobile device will not be tested. Features such as reading the qr code, whether the device for reading the qr code is working or not, and whether the internet connection is working will not be tested during the test scenario.

4. ITEM PASS/FAIL CRITERIA

The criteria to decide when a test case passes and when it fails.

4.1 Exit Criteria

Under what conditions the testing of the product is considered successful is explained below.

- 100% of the test cases are executed
- 95% of the test cases passed
- All High and Medium Priority test cases passed

5. REFERENCES

[1] Group9_SRS_V1.0, March 29, 2021

[2] Group9_SDD_V1.0, March 29, 2021

6. TEST DESIGN SPECIFICATIONS

6.1 Initial Page (IP)

6.1.1 Subfeatures to be tested

6.1.1.1 Sign Up (IP.SU_BTN)

The Sign Up button directs the user to the Sign Up page.

6.1.1.2 Sign In (IP.SI_BTN)

The Sign In button directs the user to the Sign In page.

6.1.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
IP.SU_BTN		H	Click to Sign Up button and direct to Sign Up page

TC ID	Requirements	Priority	Scenario Description
IP.SI_BTN		H	Click to Sign In button and direct to Sign In page

6.2 Sign In (SU)

6.2.1 Subfeatures to be tested

6.2.1.1 Library Member (SU.LM)

Admin and Librarian are registered in the system by the admin, but the library member must be registered in the system.

6.2.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
SU.LM.01		H	Enter a valid email and password
SU.LM.02		H	Enter a valid email and empty password

6.3 Sign In (SI)

6.3.1 Subfeatures to be tested

6.3.1.1 All Users (SI.AU)

All users are required to login to the system. Users log in with email and password.

6.3.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
SI.AU.01		H	Enter a valid email and password
SI.AU.02		H	Enter a valid email and blank/wrong password

6.4 Make Reservation (MR)

6.4.1 Subfeatures to be tested

6.4.1.1 Continue (MR.C_BTN)

In the Make Reservation page, a library list appears to users. Users should choose a library from the list then click the Continue button to choose date and time slot.

6.4.1.2 Search Table (MR.ST_BTN)

After the user chooses a library from the list and clicks the Continue button. Users should select date and time slots. Then the user clicks the Search Table button to scan empty tables.

6.4.1.3 Make Reservation(MR.MR_BTN)

After the user chooses an empty table for reservation, clicks the Make Reservation Button. Then, a QR is created for the reservation by the system.

6.4.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
MR.C_BTN.01		H	Click to Continue button after select a library
MR.C_BTN.02		H	Click to Continue button without selection a library

TC ID	Requirements	Priority	Scenario Description
MR.ST_BTN.01		H	Click to Select Table button after choose valid date and time slot
MR.ST_BTN.02		H	Click to Select Table button when one of them or both of them are empty for date and time slot

TC ID	Requirements	Priority	Scenario Description
MR.MR_BTN.01		H	Choose an empty table and click to Make Reservation button
MR.MR_BTN.02		H	Not choose a table and click to Make Reservation button

6.5 List Reservation (LR)

6.5.1 Subfeatures to be tested

6.5.1.1 Library Member (LR.LM)

After clicking the List Reservation button the user directs the List Reservation Page which includes all reservation information of the user made.

6.5.1.2 Librarian(LR.LB)

After clicking the List Reservation button the librarian directs the List Reservation Page which includes all reservation information of the user made for the librarian's library.

6.5.1.3 QR Code (LR.QR)

User clicks the QR button near the reservation and accesses the QR Code page which includes the QR Code of the reservation. This QR code should include library, time and table information of the reservation.

6.5.1.4 Cancel Reservation (LR.CR)

User clicks the “X” button near the reservation and a warning appears on the page. It asks the user whether to cancel the reservation or not. If a user wants to cancel a reservation, the reservation will be canceled and the table and time slot will be empty in the database.

6.5.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
LR.LM.01		L	Library member login and clicks to List Reservations Button

TC ID	Requirements	Priority	Scenario Description
LR.LB.01		L	Librarian login and clicks to List Reservations Button

TC ID	Requirements	Priority	Scenario Description
LR.QR.01		H	Click QR code button which in List Reservation Page and check reservation information

TC ID	Requirements	Priority	Scenario Description
LR.CR.01		M	Click Cancel Reservation button and choose Yes in
LR.CR.02		M	Click Cancel Reservation button and choose No in warning prompt

6.6 Admin Main Menu (AMM)

6.6.1 Subfeatures to be tested

6.6.1.1 List Libraries (AMM.LL_BTN)

After clicking the list libraries button, the admin is directed to the library list page that includes all libraries .

6.6.1.2 Delete Library (AMM.DL_BTN)

It is the process of deleting a library from the system of the administrator user. In order to delete the library, click on yes or no option after selecting the library name to be deleted.

6.6.1.3 Add Library (AMM.AL_BTN)

It is the process of deleting a library from the system of the administrator user. In order to delete the library, click on yes or no option after selecting the library name to be deleted.

6.6.1.4 Save Changes (AMM.SC_BTN)

It is the process of changing the status of the existing library in the admin system. A specific date and time slot must be entered to change the status of the current library in the system. Later, the user must select one of the open and closed options in the status bar. If all information is entered and clicked Save changes button, changes are saved to the system.

6.6.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
AMM.LL_BTN		M	Admin clicks to List Libraries button and shown all libraries in the screen

TC ID	Requirements	Priority	Scenario Description
AMM.DL_BTN.01		M	Select a library for deleting in the library list, click “Yes” button.
AMM.DL_BTN.02		M	Select a library for deleting in the library list, click “No” button.

TC ID	Requirements	Priority	Scenario Description
AMM.AL_BTN.01		M	Enter a new library information and add to the library.
AMM.AL_BTN.02		M	Enter an existing library in the database.

TC ID	Requirements	Priority	Scenario Description
AMM.SC_BTN.01		L	Enter a valid date, a valid time slot and a valid library capacity then click the “Save Changes” button.
AMM.SC_BTN.02		L	Enter a invalid date, a valid time slot and a valid library capacity then click the “Save Changes” button.

7. DETAILED TEST CASES

7.1 SU.LM.01

TC_ID	SU.LM.01
Purpose	Enter a valid library member email and password
Requirements	-
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	Register library member test cases should pass.
Setup	Library members should be registered.
Procedure	[A01] Go to the Sign Up page.
	[A02] Enter a valid library member email.
	[A03] Enter the valid password for library member
	[A04] Click on the “Sign Up” button.
	[V01] Observe that the sign up is successful.
	-
Cleanup	Add library members to the database in the system.

7.2 SU.LM.02

TC_ID	SU.LM.02
Purpose	Enter a valid library member email and blank/wrong password
Requirements	-
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	Do not register library member test cases should pass.
Setup	Library members should not be registered.
Procedure	[A01] Go to the Sign Up page.
	[A02] Enter a valid library member email.
	[A03] Enter blank/wrong password for library member
	[A04] Click on the “Sign Up” button.
	[V01] Observe that the sign up is not successful.
	-
Cleanup	Do not add library members to the database in the system.

7.3 SI.AU.01

TC_ID	SI.AU.01
Purpose	Enter a valid user email and password
Requirements	-
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	Add Users test cases should pass.
Setup	All users should be created.
Procedure	[A01] Go to the Sign In page.
	[A02] Enter a valid user email.
	[A03] Enter the valid password.
	[A04] Click on the “Sign In” button.
	[V01] Observe that the sign in is successful and the main page appears.
	-
Cleanup	Logout

7.4 SI.AU.02

TC_ID	SI.AU.02
Purpose	Enter a valid user email and blank/wrong password.
Requirements	-
Priority	High.
Estimated Time Needed	1 Minutes
Dependency	Do not add users test cases should pass
Setup	Users should enter the system.
Procedure	[A01] Go to the Sign In page.
	[A02] Enter a valid user email.
	[A03] Enter blank/wrong password
	[A04] Click on the “Sign In” button.
	[V01] Observe that the sign in is successful and the main page appears.
	-
Cleanup	Do not add users to database in the system

7.5 MR.C_BTN.01

TC_ID	MR.C_BTN.01
Purpose	Click to Continue button after select a library
Requirements	-
Priority	High.
Estimated Time Needed	1 Minutes
Dependency	Sign In of Library Member and click Make Reservation from Main Page test cases should pass
Setup	Bring library list from database
Procedure	[A01] Go to Make Reservation Page
	[A02] Choose a library from library list
	[V01] Click Continue button
Cleanup	Logout

7.6 MR.C_BTN.02

TC_ID	MR.C_BTN.02
Purpose	Click to Continue button without selection a library
Requirements	-
Priority	High.
Estimated Time Needed	1 Minutes
Dependency	Sign In of Library Member and click Make Reservation from Main Page test cases should pass
Setup	Bring library list from database
Procedure	[A01] Go to Make Reservation Page
	[A02] Do NOT choose a library from library list
	[V01] Click Continue button
Cleanup	Logout

7.7 MR.ST_BTN.01

TC_ID	MR.ST_BTN.01
Purpose	Click to Select Table button after choose valid date and time slot
Requirements	-
Priority	High.
Estimated Time Needed	2 Minutes
Dependency	Choose a Library test cases should pass
Setup	Date and Time Slot boxes
Procedure	[A01] Choose date and Time Slot
	[V01] Click Search Table button
Cleanup	Appropriate tables from database will be shown in the screen

7.8 MR.ST_BTN.02

TC_ID	MR.ST_BTN.02
Purpose	Click to Select Table button when one of them or both of them are empty for date and time slot
Requirements	-
Priority	High.
Estimated Time Needed	2 Minutes
Dependency	Choose a Library test cases should pass
Setup	Date and Time Slot boxes
Procedure	[A01] Empty Date and Time Slot
	[V01] Click Search Table button
Cleanup	Appropriate tables cannot taken from database will be shown in the screen

7.9 AMM.DL_BTN.01

TC_ID	AMM.DL_BTN.01
Purpose	Select a library for deleting in the library list, click “Yes” button.
Requirements	-
Priority	Medium.
Estimated Time Needed	1 - 3 Minutes
Dependency	Click the Yes button to delete valid library test cases should pass.
Setup	Selected library removed from the library list.
Procedure	[A01] Go to the Library List page.
	[A02] Select a library from the library list.
	[A03] Click on the “Yes” button.
	[V01] Observe that the selected library is deleted from the library list.
	-
Cleanup	Delete a selected library from the database in the system.

7.10 AMM.DL_BTN.02

TC_ID	AMM.DL_BTN.02
Purpose	Select a library for deleting in the library list, click “No” button.
Requirements	-
Priority	Medium.
Estimated Time Needed	1 - 3 Minutes
Dependency	Click the Yes button to delete valid library test cases should pass.
Setup	Selected library removed from the library list.
Procedure	[A01] Go to the Library List page.
	[A02] Select a library from the library list.
	[A03] Click on the “No” button.
	[V01] Observe that the selected library is not deleted from the library list.
	-
Cleanup	Not delete a selected library from the database in the system.

7.11 AMM.AL_BTN.01

TC_ID	AMM.AL_BTN.01
Purpose	Enter a new library information and add to the library.
Requirements	-
Priority	Medium.
Estimated Time Needed	5 Minutes
Dependency	Add New Library test cases should pass
Setup	A new library added to the library list.
Procedure	[A01] Go to the Add Library page.
	[A02] Enter a library name.
	[A03] Enter a library address.
	[A04] Enter a library capacity.
	[A05] Click on the “Add” button.
	[V01] Observe that the added library has been added to the library list.
Cleanup	Add a new library to the database in the system

7.12 AMM.AL_BTN.02

TC_ID	AMM.AL_BTN.02
Purpose	Enter an existing library in the database.
Requirements	-
Priority	Medium.
Estimated Time Needed	5 Minutes
Dependency	Does not add new library test cases should pass.
Setup	A new library does not add to the library list.
Procedure	[A01] Go to the Add Library page.
	[A02] Enter an existing library name.
	[A03] Enter a library address.
	[A04] Enter a library capacity.
	[A05] Click on the “Add” button.
	[V01] Observe that the not added library has been added to the library list.
Cleanup	Does not add a new library to the database.

7.13 AMM.SC_BTN.01

TC_ID	AMM.SC_BTN.01
Purpose	Enter a valid date, a valid time slot and a valid library capacity then click the “Save Changes” button.
Requirements	-
Priority	Low.
Estimated Time Needed	5 Minutes
Dependency	Change and save selected library information test cases should pass
Setup	Library information has been changed.
Procedure	[A01] Go to Change Library Status page.
	[A02] Enter a valid date.
	[A03] Enter a valid time slot.
	[A04] Enter a valid status.
	[A05] Click on the “Save Changes” button.
	[V01] Observe if the changes made to the existing library information are saved.
Cleanup	Registering changed library information to the database.

7.14 AMM.SC_BTN.02

TC_ID	AMM.SC_BTN.02
Purpose	Enter a invalid date, a valid time slot and a valid library capacity then click the “Save Changes” button.
Requirements	-
Priority	Low.
Estimated Time Needed	5 Minutes
Dependency	Library information does not change test cases should pass
Setup	Library information does not change.
Procedure	[A01] Go to Change Library Status page.
	[A02] Enter an invalid date.
	[A03] Enter a valid time slot.
	[A04] Enter a valid status.
	[A05] Click on the “Save Changes” button.
	[V01] Observe if the changes made to the existing library information are saved.
Cleanup	Entered library information does not update in the database.

7.15 LR.LM.01

TC_ID	LR.LM.01
Purpose	Library member login and clicks to List Reservations Button
Requirements	-
Priority	High
Estimated Time Needed	1 - 3 Minutes
Dependency	Sign In of Library member and click List Reservation from Main Page test cases should pass
Setup	Reservations made are listed and viewed
Procedure	[A01] Go to the Reservation List page.
	[V01] Observe that the library list can be displayed.
Cleanup	Logout

7.16 LR.LB.01

TC_ID	LR.LB.01
Purpose	Librarian login and clicks to List Reservations Button
Requirements	-
Priority	High
Estimated Time Needed	1 - 3 Minutes
Dependency	Sign In of librarian and click List Reservation from Main Page test cases should pass
Setup	Reservations made are listed and viewed by librarian
Procedure	[A01] Go to the Reservation List page.
	[V01] Observe that the library list can be displayed.
Cleanup	Logout

7.17 LR.QR.01

TC_ID	LR.QR.01
Purpose	Click QR code button which in List Reservation Page and check reservation information
Requirements	-
Priority	High
Estimated Time Needed	1 - 3 Minutes
Dependency	Library member login and click List Reservation on Home Page then click on QR button test cases must pass
Setup	A personal QR code was assigned.
Procedure	[A01] Go to the Reservation List page.
	[A02] Click the 'QR' button
	[V01] Qr code page opened and displayed
Cleanup	Logout

7.18 LR.CR.01

TC_ID	LR.CR.01
Purpose	Click Cancel Reservation button and choose Yes
Requirements	-
Priority	High
Estimated Time Needed	1 - 3 Minutes
Dependency	Click the Yes button to delete valid reservation test cases.
Setup	Selected reservation removed from the reservation list.
Procedure	[A01] Go to the Reservation List page.
	[A02] Select a reservation from the reservation list.
	[A03] Click on the “Yes” button.
	[V01] Observe that the selected reservation has been deleted from the reservation list.
Cleanup	Selected reservation is deleted from database

7.19 LR.CR.02

TC_ID	LR.CR.02
Purpose	Click Cancel Reservation button and choose No
Requirements	-
Priority	High
Estimated Time Needed	1 - 3 Minutes
Dependency	Click the Yes button to delete valid reservation test cases.
Setup	Selected reservation removed from the reservation list.
Procedure	[A01] Go to the Reservation List page.
	[A02] Select a reservation from the reservation list.
	[A03] Click on the “No” button.
	[V01] Observe that the selected reservation has been not deleted from the reservation list.
Cleanup	Selected reservation is not deleted from database

7.20 MR.MR_BTN.01

TC_ID	MR.MR_BTN.01
Purpose	Choose an empty table and click to Make Reservation button
Requirements	-
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	Sign In of Library Member test cases should pass
Setup	An admin user should be created.
Procedure	[A01] Choose an appropriate table
	[V01] Click Make Reservation button
Cleanup	Add the reservation information to database and create QR Code

7.21 MR.MR_BTN.02

TC_ID	MR.MR_BTN.02
Purpose	Not choose a table and click to Make Reservation button
Requirements	-
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	Sign In of Library Member test cases should pass
Setup	An admin user should be created.
Procedure	[A01] Not choose a table
	[V01] Click Make Reservation button
Cleanup	No changes in database