

Aim:

To Develop and test the Technical services layer, Domain objects layer and User interface layer.

Ui Layer And Domain Layer :

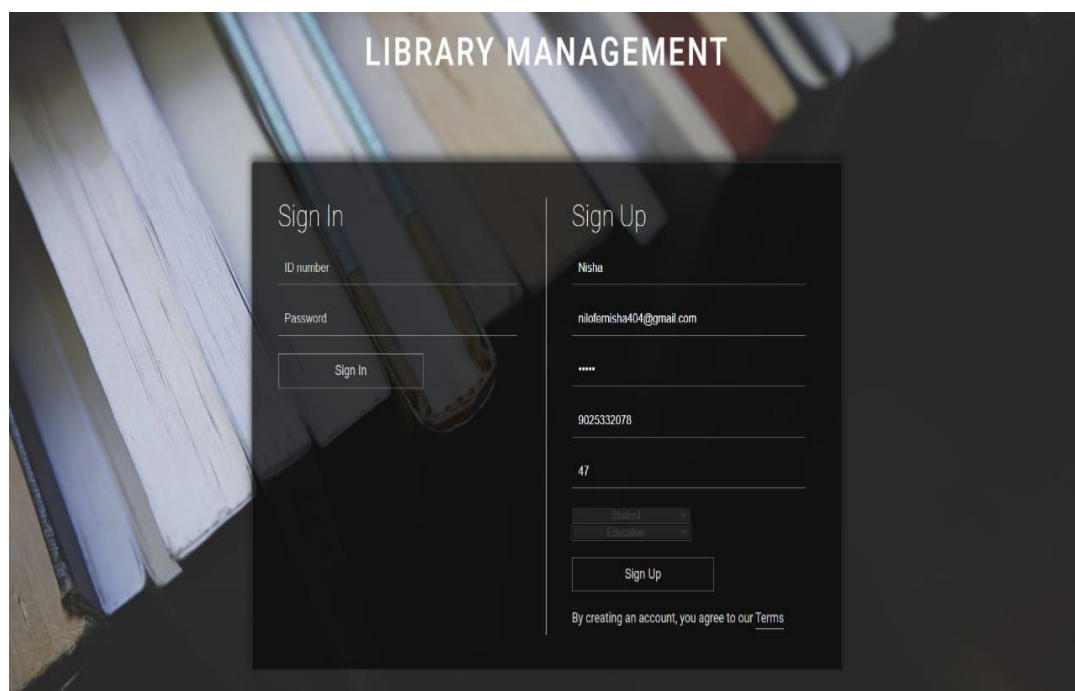
BLACK BOX TESTING:

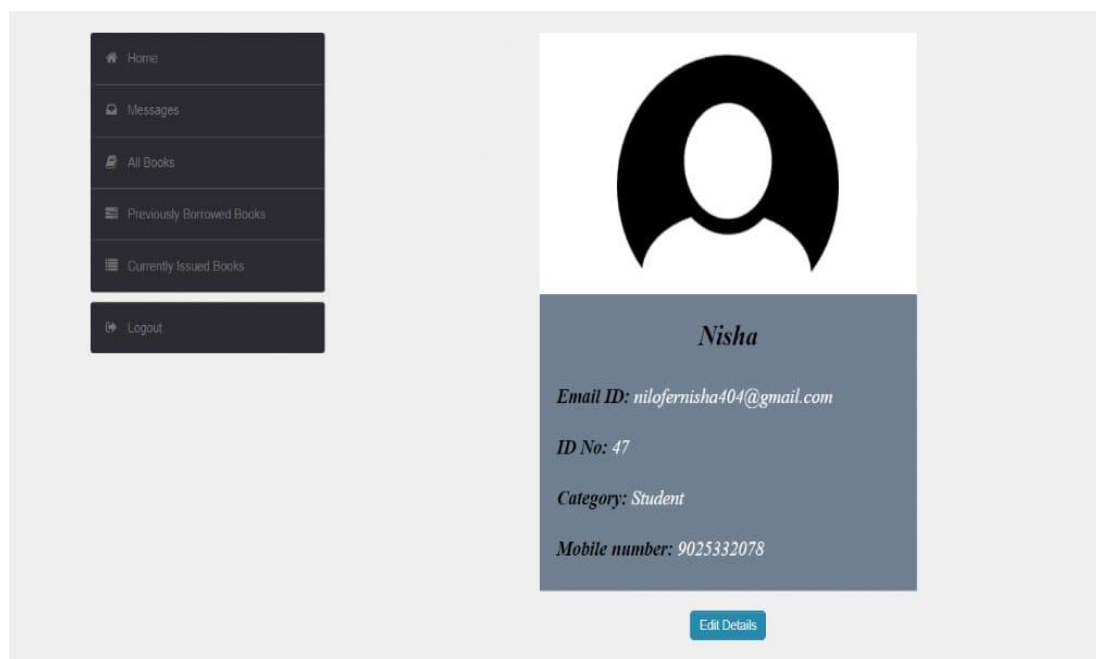
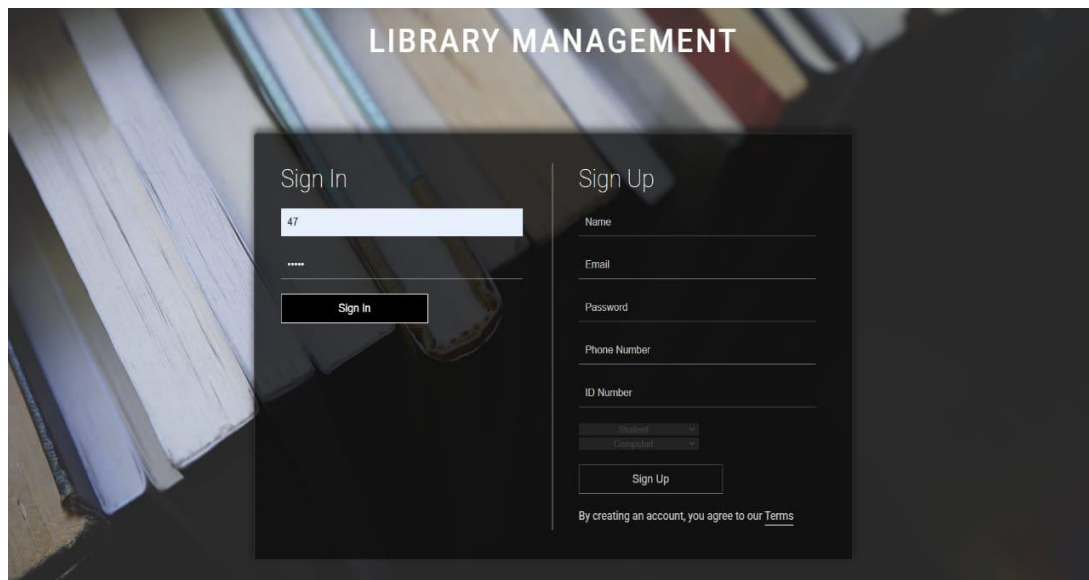
Test case Id : Screen001

Product : Library Management System

Module : Enter Student details.

Techniques: Equivalence Partitioning





Action to perform	Expected Result	Actual Result	Pass/Fail
Provide User information	New account should be created successfully.	As expected	Pass
Sign in with valid id number and password	Move to Home page .	As expected	Pass

LIBRARY MANAGEMENT

Sign In

ID number

Password

Sign In

Sign Up

Name

nilofernisha Please fill out this field.

9025332078

67

Student

Completed

Sign Up

By creating an account, you agree to our [Terms](#)

LIBRARY MANAGEMENT

Sign In

1000

.....

Sign In

Sign Up

Name

Email

Password

Phone Number

ID Number

Student

Completed

Sign Up

By creating an account, you agree to our [Terms](#)

localhost says
Failed to Login! Incorrect IDNo or Password

OK

Action to perform	Expected Result	Actual Result	Pass/Fail
Sign up with invalid or incomplete information.	Reject sign-up attempt and display error messages.	As expected	Pass
Sign in with invalid id number.	Display error message.	As expected	Pass

Test case Id : Screen2

Product: Library Management System

Module: Add a new book

Techniques: Equivalence Partitioning

Home

Visit Hours

Messages

Recieve Message

Manage Students

All Books

Add Books

Issue/Return Requests

Currently Issued Books

Previously Borrowed Books

Recent Deletion Books

Logout

Add Book

Book Section:General Reference

SubjectEnvironmental science

TextbookEVS

Volume2

Copyright Year2023

Number of Copies4

AuthorJohny

ISBNISBN-10

Book Status:GOOD

Add Book

Home

Visit Hours

Messages

Recieve Message

Manage Students

All Books

Add Books

Issue/Return Requests

Currently Issued Books

Previously Borrowed Books

Recent Deletion Books

Logout

Add Book

Book Section:General Reference

SubjectStory

TextbookStory

Volume1

Copyright Year2024

Number of Copies10

AuthorJohny

ISBN

Book Status:GOOD

Add Book

Home

Visit Hours

Messages

Recieve Message

Manage Students

All Books

Add Books

Issue/Return Requests

Currently Issued Books

Previously Borrowed Books

Recent Deletion Books

Logout

Search:Enter Book Section , Book Name, or book StatusSearch

Select Section:Select Status:Generate Report

Export All Books

Book Identification Number	Section	Book name	Availability	Actions
192	General Reference	EVS	4	<div>DetailsEdit</div>

LMS

localhost says
Success

OK

Add

Book Section:

Subject:

Textbook:

Volume:

Copyright Year:

Number of Copies:

Author:

ISBN:

Book Status:

Add Book

Action to perform	Expected Result	Actual Result	Pass/Fail
Add a new book with a valid ISBN number.	The book should be successfully added to the system.	As expected	Pass
Add a new book with an invalid ISBN number.	The system should reject the book addition.	-do-	Pass

Test case Id : Screen3

Product : Library Management System

Module : Search a book

Techniques: Decision Table Testing

Search: Search

Select Section: Select Status: Generate Report

Export All Books

Book identification Number	Section	Book name	Availability	Actions
191	General Reference	Story	10	<input type="button" value="Details"/> <input type="button" value="Edit"/>
192	General Reference	EVS	4	<input type="button" value="Details"/> <input type="button" value="Edit"/>
193	General Reference	Story	10	<input type="button" value="Details"/> <input type="button" value="Edit"/>

Home

Visit Hours

Messages

Recieve Message

Manage Students

All Books

Add Books

Issue/Return Requests

Currently Issued Books

Previously Borrowed Books

Recent Deletion Books

Logout

Search:

Enter Book Section , Book Name, or book Status

Search

Select Section:

Select Status:

Generate Report

Export All Books

Book Identification Number	Section	Book name	Availability	Actions
192	General Reference	EVS	4	<div>Details</div> <div>Edit</div>

© 2022 LMS Login. King A. Albaracin & Mariabil V. Caga-anan All rights reserved.

LMS

Home

Visit Hours

Messages

Recieve Message

Manage Students

All Books

Add Books

Issue/Return Requests

Currently Issued Books

Previously Borrowed Books

Recent Deletion Books

Logout

Search:

HISTORY

Search

Select Section:

Select Status:

Generate Report

No Results

© 2022 LMS Login. King A. Albaracin & Mariabil V. Caga-anan All rights reserved.

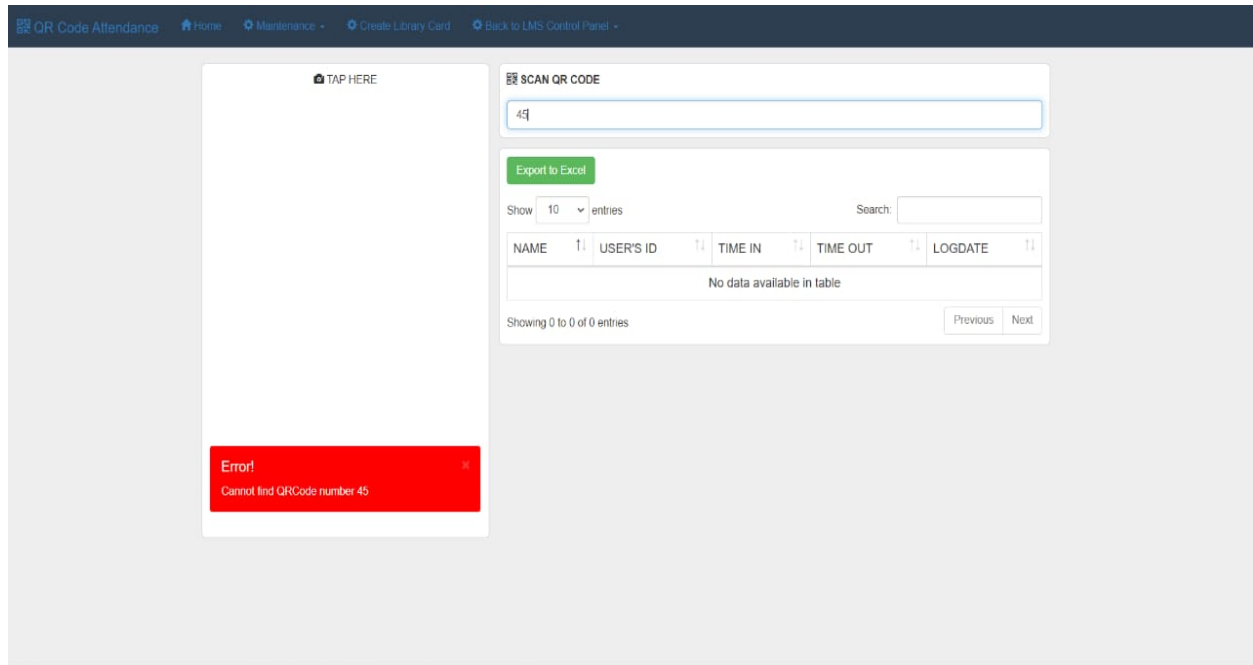
Action to perform	Expected Result	Actual Result	Pass/Fail
Search for a book with a valid author and title provided.	Display the book information.	As expected	Pass
Search for a book with an invalid author or title provided.	Display a message of no results.	As expected	Pass

Test case Id : Screen4

Product : Library Management System

Module : Scan QR code

Techniques: State Transition Testing



Action to perform	Expected Result	Actual Result	Pass/Fail
Scan a valid QR code and enter qr code number	Display an error message.	As expected	Pass

WHITE BOX TESTING

Product : Library Management System

Module : Book Available

Techniques: Branch Coverage

```
def is_book_available(book_id):  
    if book_id in library_books:  
        if library_books[book_id]['status'] == 'available':  
            return True  
        else:  
            return False  
    else:  
        return False
```

Action to perform	Expected Result	Actual Result	Pass/Fail
Test if a book is available in the library.	If the book is in the library , return True. Else False	As expected	Pass

Input And Result:

Input	Expected Result	Actual Result	Pass/Fail
Existing Book ID with status 'available'	True	True	Pass
Non-existing Book ID	False	False	Pass
Existing Book ID with status 'unavailable'	False	False	Pass

Product : Library Management System

Module : id card Generation

Techniques:Statement Coverage

```
def generate_id_card(name, id_number):
    if not name or not id_number:
        return None
    id_card = f"Name: {name}, ID: {id_number}"
    return id_card

name = "John Doe"
id_number = "12345"
id_card = generate_id_card(name, id_number)
print(id_card)
```

Action to Perform	Expected Result	Actual Result	Pass/Fail
Call function with valid name and ID number	Return ID card string with provided name and ID number	"Name: John Doe, ID: 12345" is returned	Pass
Call function with empty name	Return None	None is returned	Pass

Scenario:

Total Number of Statements =6

Number of Executed Statements=6

Formula:

$$\text{Statement Coverage} = (\text{Total Executable Statements} / \text{Number of Executed Statements}) * 100\%$$

$$=(6/6)*100\%$$

$$=100\%$$

The statement coverage for this scenario is 100%.

Result:

Thus the Technical services layer, Domain objects layer and User interface layer was tested and developed.