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**Title:** Mobile Library Book Checker (MLBC)

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**Abstract:**

Mobile Library Book Checker(MLBC) aims to provide more efficient library service to book borrowers by allowing them to check the availability status of the book(available, not available) using their mobile phones before going to library.

This app consists of 2 users: a borrower and an administrator. A borrower can check/verify the availability status of the book in the library while an administrator updates the availability status of the books in the library.

1. **The Charter**
   1. Vision:

A mobile application that will minimize the effort book borrowers’ checking

whether the book is available or not in the library.

* 1. Mission

To provide a user-friendly library book checker that checks the status of the book to be borrowed by the borrower - whether it is available or not.

* 1. Objectives
* On the 2nd week of July, developers will be familiar in using the programming language to be used in the project.
* On the 1st week of August, user should be able to search and view books by title and/or author and know the availability status of the book.
* On the 2nd week of August, administrator should be able to log in and out from the system.
* On the 4th week of August, administrator should be able to update status of the books in the library.

1. **Feature List and Feature Acceptance Criteria:**
   * Log in

* Administrator will have access to the system and will be redirected to the homepage with log out.
* Log out
* Administrator logs out of the system and will be redirected to homepage with log-in option.
* View Book
* Details of the book are shown.
* Search Book
* List of books that matches the keyword entered is shown.
* Update Status
* Status of the book is updated (available, not available, and not found).

1. **Roles:**

* Borrower – views the books availability
* Administrator – updates the books availability

1. **Role Attributes:**

* Borrower
  + Frequency of Use – As needed
  + Domain Expertise – Fair
  + Mobile Expertise – Low
  + General Goals – Speed (as few steps as possible) and convenience of use
* Administrator
* Frequency of Use - Everyday
* Domain Expertise – Excellent
* Computer Expertise – Good
* General Goals – Speed (as few steps as possible) and convenience of use

1. **Persona:**

* Borrower

Janssen is a student of MSU-IIT who used to borrow books from the library. Before, it is unsatisfying for him to know that the book is not available after going through all the book shelves. Now, he can view the book’s availability in just a matter of few seconds with fewer and easier steps.

* Administrator

Jalal is a librarian who manages books in the library. Before , he used to entertain a lot of people going in and out in the library just to help find if the book/s they wanted to borrow is available or not. Now, he can easily help borrowers who plan to borrow books by just updating the availability status of the books in the library.

1. **User Stories and Story Acceptance Criteria:**
   * As a user, I want to search any information about the book (title or author) to verify if the book is available or not.
   * As an administrator, I want to log in so that I can manage the books in the library.
   * As an administrator, I want to log out so that no one else can access my account and it will remain private.
   * As an administrator, I want to update the status of the books (available, not available) so that borrowers will be guided.
2. **Use Case Scenario**

7.1. Name: Log in

Description: Administrator logs in to the system.

Actor: Administrator

Pre-condition: Administrator has default account.

Post-condition: Administrator can access the system.

Main Course:

1. The administrator inputs a username and password.

Exceptions:

1a. The administrator inputs an invalid username or password.

1. The error message “Invalid username or password” appears.
2. Repeat step 1.
3. The administrator is redirected to the dashboard.
4. The use case exits.

7.2. Name: Log out

Description: Administrator logs out from the system.

Actor: Administrator

Pre-condition: The administrator is currently logged in to the system.

Post-condition: The administrator is logged out from the system.

Main Course:

1. The administrator clicks the Logout button.
2. The administrator is redirected to the login page.
3. The use case exits.

7.3. Name: Search Book

Description: User searches for one or more books.

Actor: Borrower, Administrator

Pre-condition: User has book in mind and the library’s record is not empty.

Post-condition: List of books matched the searched keyword is shown.

Main Course:

1. User enters keyword.
2. User clicks “Search” button.

2a. If the search field is left blank,

Display error message.

Use case exits.

2b. If no book matches the keyword,

Display “Not Found” message.

Use case exits.

1. The list of books matching the search keyword is returned.
2. Use case exits.

7.4. Name: View Book

Description: Shows the book info, including, but not limited to, title, author, ISBN

number, and publisher.

Actor: Borrower, Administrator

Pre-condition: There is at least one book entry in the book listing.

Post-condition: The book’s information is displayed.

Main Course:

1. The user clicks a book title from the list of books.
2. The book’s information is displayed on-screen.
3. Use case exits.

7.5. Name: Update Book Status (Borrow)

Description: Administrator updates the status of the book whether the book is available

or not.

Actor: Administrator

Pre-condition: The book is in the library and administrator selects book to be updated.

Post-condition: The book information has been updated.

Main Course:

1. Administrator clicks “Borrow” button.

1a. If the number of available copies is 0, the “Borrow” button is disabled

Use case exits

1. Book’s number of available copies is decremented.

2a. If the number of available copies is 1, the “Borrow” button is then disabled.

1. Use case exits.

7.6 Name: Update Book Status (Return)

Description: Administrator updates the status of the book.

Actor: Administrator

Pre-condition: The book is in the library and administrator selects book to be updated.

Post-condition: The book information has been updated.

Main Course:

1. Administrator clicks “Return” button.

1a. If the number of available copies and number of copies in the library are equal, the “Return” button is disabled

Use case exits

1. Book’s number of available copies is incremented.

2a. If the number of available copies is 1 less than the number of copies, the “Return” button is then disabled.

1. Use case exits.
2. **Test Cases**

8.1. Log in

Given (Setup)

                            Administrator has an account. (Initial state)

                            Administrator has the following data. (Initial state)

|  |  |
| --- | --- |
| Username | librarian1 |
| Password | Password1 |

            When (Trigger)

                            User clicks log-in button.

            Then (Verify)

                            User is redirected to home page of the system with log-out option. (Final state)

|  |
| --- |
| LOGOUT |
| HOMEPAGE |

8.1.1. Log-in (Exception 1)

            Given (Setup)

                            Administrator has an account. (Initial state)

                            Administrator has the following data. (Initial state)

|  |  |
| --- | --- |
| Username | librarian1 |
| Password | Jkshdfks |

            When (Trigger)

                            User clicks log-in button.

            Then (Verify)

                            An error message will be shown stating username and /or password did not match.

Invalid username and/or password

|  |  |
| --- | --- |
| Username | librarian1 |
| Password |  |

      8.1.2. Log-in (Exception 2)

            Given (Setup)

                            Administrator has an account. (Initial state)

                            Administrator has missing username/password. (Initial state)

|  |  |
| --- | --- |
| Username | librarian1 |
| Password |  |

When (Trigger)

                            Administrator clicks log-in button.

            Then (Verify)

                            An error message will be shown stating that some required field is/are missing.

                            Administrator is asked to fill-up required data.

Username and Password field is required

|  |  |
| --- | --- |
| Username | librarian1 |
| Password |  |

8.2. Log-out

            Given (Setup)

Administrator is logged in to the system. (Initial state)

            When (Trigger)

                            Administrator clicks the “logout” button.

            Then (Verify)

                            Administrator is redirected to home page with log-in option.

|  |
| --- |
| LOG-IN |
| HOMEPAGE |

8.3. Search Book

Search Book (Exception 1)

Given (Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: |  |
| Search By: | Any |

When (Trigger)

User clicks “search” button.

Then (Verify)

An error message displayed.

|  |
| --- |
| Error! Please don’t leave blank. |

8.3.1.1 By Title

Given(Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | Introduction to Algorithms |
| Search By: | Title |

When(Trigger)

User clicks “search” button.

Then(Verify)

List of books that matches the keyword is displayed.

|  |  |
| --- | --- |
| Title | ISBN |
| Introduction to Algorithms | 0-07-013151-1 |

8.3.1.2 By Title

Given(Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | intro |
| Search By: | Title |

When(Trigger)

User clicks “search” button.

Then(Verify)

List of books that matches the keyword is displayed.

|  |  |
| --- | --- |
| Title | ISBN |
| Introduction to Algorithms | 0-07-013151-1 |

8.3.1.3 By Title (Exception 1)

Given (Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | Robotics |
| Search By: | Title |

When (Trigger)

User clicks “search” button.

Then (Verify)

“Not Found” message is displayed.

|  |
| --- |
| Search Result: Not Found |

8.3.2.1 By ISBN

Given(Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | 0-07-013151-1 |
| Search By: | ISBN |

When(Trigger)

User clicks “search” button.

Then(Verify)

List of books that matches the keyword is displayed.

|  |  |
| --- | --- |
| Title | ISBN |
| Introduction to Algorithms | 0-07-013151-1 |

8.3.2.2 By ISBN

Given (Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | 0-07-013151- |
| Search By: | ISBN |

When (Trigger)

User clicks “search” button.

Then (Verify)

|  |  |
| --- | --- |
| Title | ISBN |
| Introduction to Algorithms | 0-07-013151-1 |
| Data Structures Using C++ | 0-07-013151-2 |

8.3.2.3 By ISBN (Exception 1)

Given (Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | 0-07-013151-20 |
| Search By: | ISBN |

When (Trigger)

User clicks “search” button.

Then (Verify)

“No Book Found” message is displayed.

|  |
| --- |
| Search Result: No Book Found |

8.3.2.4 By ISBN (Exception 2)

Given (Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | asdf |
| Search By: | ISBN |

When (Trigger)

User clicks “search” button.

Then (Verify)

“No Book Found” message is displayed.

|  |
| --- |
| Search Result: No Book Found |

8.3.3.1 By Author

Given(Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | Cormen |
| Search By: | Author |

When(Trigger)

User clicks “search” button.

Then(Verify)

List of books that matches the keyword is displayed.

|  |  |
| --- | --- |
| Title | ISBN |
| Introduction to Algorithms | 0-07-013151-1 |

8.3.3.2 By Author

Given(Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | Cor |
| Search By: | Author |

When(Trigger)

User clicks “search” button.

Then(Verify)

List of books that matches the keyword is displayed.

|  |  |
| --- | --- |
| Title | ISBN |
| Introduction to Algorithms | 0-07-013151-1 |

8.3.3.3 By Author

Given(Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | i |
| Search By: | Author |

When(Trigger)

User clicks “search” button.

Then(Verify)

List of books that matches the keyword is displayed.

|  |  |
| --- | --- |
| Title | ISBN |
| Introduction to Algorithms | 0-07-013151-1 |
| Data Structures Using C++ | 0-07-013151-2 |

8.3.3.4 By Author (Exception 1)

Given(Setup)

User has the following data.

|  |  |
| --- | --- |
| Keyword: | Gwapo |
| Search By: | Author |

When(Trigger)

User clicks “search” button.

Then (Verify)

“Not Found” message is displayed.

|  |
| --- |
| Search Result: Not Found |

8.4. View Book

Given (Setup)

User has the following data.

|  |  |
| --- | --- |
| Title | Status |
| Introduction to Algorithms | Available |

When (Trigger)

User clicks the “Introduction to Algorithm”.

Then (Verify)

The following data is displayed.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |

8.5. Update Status

Given (Setup)

Administrator has the following data.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |
| Available Copies | 5 |

When (Trigger)

Administrator clicks “Borrow” button.

Then (Verify)

Status of the book is updated.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |
| Available Copies | 4 |

Given (Setup)

Administrator has the following data.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |
| Available Copies | 1 |

When (Trigger)

Administrator clicks “Borrow” button.

Then (Verify)

Status of the book is updated and “Borrow” button is disabled.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Not Available |
| Available Copies | 0 |

Given (Setup)

Administrator has the following data.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Not Available |
| Available Copies | 0 |

When (Trigger)

Administrator clicks “Borrow” button.

Then (Verify)

Cannot click button since it is disabled.

Given (Setup)

Administrator has the following data.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Not Available |
| Available Copies | 0 |

When (Trigger)

Administrator clicks “Return” button.

Then (Verify)

Status of the book is updated.

|  |  |
| --- | --- |
| Title | Introduction to Algorithms |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |
| Available Copies | 1 |

Given (Setup)

Administrator has the following data.

|  |  |
| --- | --- |
| Title | Introduction to Algorithm |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |
| Available Copies | 4 |

When (Trigger)

Administrator clicks “Return” button.

Then (Verify)

Status of the book is updated and “Return” button is disabled.

|  |  |
| --- | --- |
| Title | Introduction to Algorithm |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |
| Available Copies | 5 |

Given (Setup)

Administrator has the following data.

|  |  |
| --- | --- |
| Title | Introduction to Algorithm |
| Author/s | Cormen, Thomas H., Leiserson, Charles E. |
| Publication | MIT Press |
| ISBN | 0-07-013151-1 |
| Status | Available |
| Available Copies | 5 |

When (Trigger)

Administrator clicks “Return” button.

Then (Verify)

Cannot click button since it is disabled.