

TASK 1

REQ1:

- Actors: User, Management Team
- Use Case: Register as User
- **Description:**
- **Objective:** To register as a user of the system with a unique/valid email and strong password.
- **Preconditions:** The user is not registered in the system and is either a student, faculty member, non-faculty staff or visitor.
- **Postconditions:** The user is successfully registered in the system.
- **Main Flow:**
 1. The user initiates the registration process.
 2. user provides registration details including email and password.
 3. The user enters their email and a strong password (combination of uppercase letters, lowercase letters, numbers, and symbols).
 4. The system validates the email and password.
 5. If the email and password are valid, the system proceeds with registration. Otherwise, user is prompted to enter again.
 6. Select type of user (view extensions)
 7. Once approved by the management team, the user's registration is completed successfully.
- **Extensions:**
 - If the user's email is already registered in the system, they are prompted to use a different email address.
 - If the user registers as a student, faculty member, or non-faculty staff:
 - The system notifies the management team for further validation.
 - The management team reviews the registration request and approves or rejects it.

REQ2:

- Actors: User
- Use Case: Login, Rent item, open online book, subscribe to newsletter
- **Description:**
- **Objective:** Rent physical item or open online book or subscribe to online service.
- **Preconditions:** The user is registered in the system.
- **Postconditions:** The user successfully rents a physical item or subscribes to an online service.
- **Main Flow:**
 1. The user initiates the process to rent a physical item or subscribe to an online service.

2. The system presents the user with the three available options.
3. The user selects the desired item or service.
4. If the selected item is a physical item:
 - The system checks the availability of copies in the library.
 - If copies are available, the user proceeds to rent the item.
 - If no copies are available, the user is informed that the item is currently unavailable.
5. If selected item is to open an online book
 - The system processes the open online book request.
6. If the selected item is an online service:
 - The system processes the subscription request.
7. The user confirms the rental, open online book or subscription.
8. If the rented item is a physical item:
 - The system records the rental and due date.
 - The user is informed about the due date and any penalties for overdue items. (adding this feature not just for books, but all physical items)
- 6.If an online book is opened:
 - The user gains access to the book immediately.
9. If the subscribed service is an online service:
 - The user gains access to the subscribed service immediately.
- **Extensions:**
 - If the user attempts to rent more than 10 physical items, the system rejects the request and informs the user of the limit.
 - If the user attempts to keep a physical item for more than 1 month, the system applies penalties for overdue items.
 - If the user has more than 3 items overdue, the system revokes their borrowing privileges.
 - If a book is 15 days overdue, the system considers it lost and applies appropriate penalties.

REQ3:

- Actors: User
 - Use Case: View Rental Information and receive notifications (from sys)
- Description:**
- **Objective:** To view a list of hardcover books currently rented and their due dates, as well as receive notifications about books approaching or past the due date.
 - **Preconditions:** The user is logged in to the system.
 - **Postconditions:** The user receives information about their current rentals and any overdue books.
 - **Main Flow:**
 1. The user logs in to the system.
 2. The system retrieves the user's rental information, including hardcover books currently rented and their due dates.

3. The system displays the list of rented hardcover books and their respective due dates to the user.
4. If any rented books are approaching or past the due date:
 - The system prompts a warning to the user about the overdue or approaching books.
- **Extensions:**
 - If no hardcover books are currently rented, the system informs the user that there are no rentals to display.
 - If all rented books are returned before the due date, system will do nothing.

REQ4:

- Actors: User, Newsletter Service Provider
- Use Case: Subscribe and Read Paid-For Newsletter
- **Description:**
- **Objective:** To subscribe to and read a paid-for newsletter using the system's interface.
- **Preconditions:** The user is logged in to the system.
- **Postconditions:** The user successfully subscribes to the newsletter and can access it via the system's interface.
- **Main Flow:**
 1. The user logs in to the system.
 2. The user navigates to the newsletter subscription section.
 3. The user selects the desired newsletter service.
 4. The system opens a frame within the interface to load the website of the selected newsletter service.
 5. The user subscribes to the newsletter via the provided interface.
 6. The system confirms the subscription and allows the user to access the newsletter content.
- **Extensions:**
 - If the user decides to cancel the subscription, the system provides an option to do so within the interface at any time.

REQ5:

- Actors: User
- Use Case: Search for Books and View Recommendations
- **Description:**
- **Objective:** To search for a book using the application and view recommendations of similar books based on text similarity of book titles.
- **Preconditions:** The user is logged in to the system.
- **Postconditions:** The user successfully searches for a book and receives recommendations of similar books.
- **Main Flow:**
 1. The user logs in to the system.
 2. The user navigates to the book search section.
 3. The user enters the title of the book they are searching for.

4. The system retrieves search results matching the entered title.
 5. The system displays the search results to the user.
 6. The system retrieves recommendations of similar books based on the text similarity of book titles.
 7. The system displays the recommendations to the user.
- **Extensions:**
 - If the user does not find the desired book in the search results, the system provides suggestions for refining the search query such as searching by author's name. (optional)

REQ6:

- **Actors:** Faculty member, Management Team
- **Use Case:** Manage Teaching Courses and Textbooks, receive notifications (if new edition of textbook available), Receive textbook unavailable notifications, consult user

Description:

- **Objective:** To manage teaching courses and textbooks, receive notifications about new editions of textbooks, and notify the library management team if a textbook is unavailable.
- **Preconditions:** The user is logged in to the system and registered as faculty.
- **Postconditions:** The faculty member successfully manages their teaching courses and textbooks, receives notifications about new textbook editions, and notifies the library management team if a textbook is unavailable.
- **Main Flow:**
 1. The faculty member logs in to the system.
 2. The system retrieves information about the courses the faculty member is teaching and the textbooks previously used.
 3. The faculty member adds or updates or delete information about teaching courses and textbooks as needed.
 4. If a new edition of a textbook becomes available:
 - The system notifies the faculty member about the availability of the new edition.
 5. If a textbook is not available when user tries to add/update:
 - The system notifies the management team about the unavailability of the textbook.
 - The management team consults with the faculty member to procure the book.
- **Extensions:**
 - If the faculty member decides to stop teaching a course or no longer uses a textbook, they can remove it from their list of teaching courses and textbooks.
 - If the library management team is unable to procure the requested textbook, they inform the faculty member about the unavailability and discuss alternative options.

REQ7:

- Actors: Management Team
- Use Case: Manage Library Items

Description:

- **Objective:** To manage library items, including adding new items, enabling items for rental, and disabling items for rental.
- **Preconditions:** The manager is logged in to the system.
- **Postconditions:** The library items are successfully managed according to the manager's actions.
- **Main Flow:**
 1. The manager logs in to the system.
 2. The manager navigates to the item management section.
 3. The manager adds a new item to the library system, providing details such as identification number, location, and purchase availability.
 4. The manager enables an existing item for rental, making it available for users. if doesn't exist,
 5. The manager disables an existing item for rental, making it unavailable for users.
- **Extensions:**
 - If an item is enabled/disabled/added for rental, the system updates the availability status accordingly.

REQ8:

- Actors: Student User
- Use Case: view courses and textbooks, system manage Virtual Textbook Copies

Description:

- **Objective:** To access virtual copies of textbooks for courses they are taking for the duration of the course.
- **Preconditions:** The user is logged in to the system and identified as a student.
- **Postconditions:** The student user successfully accesses virtual textbook copies for the duration of the course.
- **Main Flow:**
 1. The student user logs in to the system.
 2. The system identifies the courses the student is taking. If student has courses/textbooks:

– The system makes virtual copies of textbooks for the identified courses available to the student's account.

1. The student user accesses the virtual textbook copies and utilizes them for the duration of the course.
 2. After the course duration, the system removes the virtual textbook copies from the student's account.
- **Extensions:**

- If the student user drops a course, the system removes the corresponding virtual textbook copies from the student's account.

REQ9:

- Actors: User
- Use Case: Request New Book, assess priority, notify user

Description:

- **Objective:** To request a new book, either for course teaching or self-improvement, and receive priority notifications.
- **Preconditions:** The user is logged in to the system and any user can request both types of books. (under the assumption that textbook for course teaching can be applied outside of faculty members)
- **Postconditions:** The user successfully requests a new book and receives priority notifications accordingly.
- **Main Flow:**
 1. The user logs in to the system.
 2. The user navigates to the book request section.
 3. The user submits a request for a new book, specifying whether it is for course teaching or self-improvement.
 4. The system prioritizes the request based on its type, giving higher priority to textbooks for course teaching.
 5. The user receives notifications about the priority of their request.
- **Extensions:**
 - If the requested book is not available, the system informs the user and provides alternative options, if possible.
 - If the requested book is available, the system processes the request accordingly.

REQ10:

- Actors: User, Payment Gateway, Publisher
- Use Case: Purchase Discounted Items

Description:

- **Objective:** To purchase discounted items offered by the system via special agreements with publishers, using various payment options.
- **Preconditions:** The user is logged in to the system.
- **Postconditions:** The user successfully purchases discounted items and completes the payment transaction.
- **Main Flow:**
 1. The user logs in to the system.
 2. The user navigates to the discounted items section.
 3. The user selects the desired item for purchase.
 4. The system provides payment options such as debit card, credit card, mobile wallet, etc.
 5. The user selects a preferred payment option and provides necessary payment details.
 6. The system processes the payment transaction through the selected

payment gateway.

7. If the payment is successful, the system notifies the user of the successful purchase and provides access to the item.

- **Extensions:**

- If the payment fails, the system informs the user and prompts them to try again or choose an alternative payment method.
- If the item is not available for purchase, the system informs the user and provides alternative options, if possible.

REQ11:

- Actors: Database
- Use Case: Store data

- **Description:**

- **Objective:** To manage system data stored in a database

- **Preconditions:** Must have database to store data

- **Postconditions:** The system data are successfully stored in database.

- **Main Flow:**

1. The system stores data in database.

- **Extensions:**

- If there are any issues with data manipulation or import/export processes, the management team troubleshoots and resolves them accordingly.