



## **CSE347 (Information System Analysis and Design)**

**Summer 2025**

**Section: 06**

**Group No: 05**

### **Project Report**

### **Accessories and Equipment Rental System**

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# **1. Introduction**

## **1.1 Purpose**

We have created this report to explain the software requirements for the Accessories and Equipment Rental System. This system is made to give people in a community an easy way to share and rent items. The goal is to help owners list their unused items and allow borrowers to find and book them. The platform will support account creation, item listings, booking, notifications, and reviews.

## **1.2 Scope**

The system will mainly be used by anyone who wants to borrow or lend items. Moreover, it is a way to reduce unnecessary purchase and wastage of resources. This project can help people earn side income while also helping others.

## **1.3 Intended Audience and Reading Suggestions**

This document is for:

1. Users (Owners & Borrowers): They will use the platform to rent, borrow, and manage items.
2. Admins: They will manage the overall system, check activities, and solve problems like remove inappropriate posts and users
3. Developers (Project Team): They will use this document to know the requirements and build the system step by step.
4. Project Testers: They can use this to understand if the project is working as intended.

This document is not only for the developers but also for anyone involved in the project, so everyone understands the system goals, features, and how it should work.

## **2. Usage Scenario**

The Accessories and Equipment Rental System is created to make it easy for community members, students, and organizations to share and borrow items. When a new user wants to join, they first create an account by giving their full name, email, and password. The email must be unique, and duplicate accounts are not allowed. Once registered, the user can log in using their email and password.

After logging in, users are taken to the home dashboard. From here, they can see different options such as search items, book items, listing their own items, searching for items, or checking booking requests.

When an item owner wants to rent out something, they go to the "Add Item" page. Here they can provide details such as item name, description, rental cost, photos, and location. Once submitted, the item becomes visible to other users in the search results. Owners can also manage their listed items, update availability, or remove items whenever needed.

Borrowers can search for items by category, name, or location. Search results show the item's details, rental cost, photos, and the owner's basic contact info. If the borrower wants to rent the item, they send a booking request with the desired rental period. The system then notifies the owner, who can either approve or reject the request. When approved, a digital rental agreement is generated, including booking ID, rental duration, and total cost.

After the item is returned, the owner marks it as "returned" in the system, which makes it available again for others to borrow. Borrowers can also leave reviews about the item and their experience, which helps future users trust the platform. Notifications play an important role in the system. Users receive alerts about booking requests, approvals or rejections, and return reminders.

Admins can view user accounts and remove inappropriate posts. Admins also have access to reports, such as number of active users, and rental activity statistics.

### 3. System Features and Requirements

#### 3.1 Functional Requirements

Stakeholders	Stakeholder Goals	Functional Requirement
Borrower	We want to manage our accounts easily	The system shall allow users to create, update, and manage their accounts.
	We want to find items quickly	The system shall allow users to search for items by name, category, or location.
	We want to book items we need	The system shall allow users to send booking requests for selected items.
	We want the option to cancel if needed	The system shall allow users to cancel a booking request before it is approved.
	We want to stay updated	The system shall notify users about booking approvals, rejections and returns
	We want a smooth return process	The system shall allow users to return items and mark the completion of the rental process.
	We want to ask for items not listed	The system shall allow users to post requests for items not currently available in the listings.
	We want to share feedback	The system shall allow users to leave reviews on items they have rented.
Item Owners	We want to rent out our items	The system shall allow item owners to list new items with details, photos, price, and availability.
	We want to manage our listings	The system shall allow item owners to update or remove their listed items.
	We want to know when requests come in	The system shall notify item owners when a booking request is received.
	We want control over requests	The system shall allow item owners to approve or reject booking requests.

	We want proper agreements	The system shall generate a digital rental agreement when a booking is approved.
	We want to confirm returns	The system shall allow item owners to mark items as returned after the rental period.
	We want to keep track of past rentals	The system shall allow item owners to view rental history of their items.
Admin	We want to manage user accounts	The system shall allow administrators to manage user accounts, including the ability to block or delete accounts.
	We want to keep listings appropriate	The system shall allow administrators to view, edit, or remove listed items that violate rules.
	We want useful statistics	The system shall generate reports and analytics such as popular categories, rental statistics, and user activity.

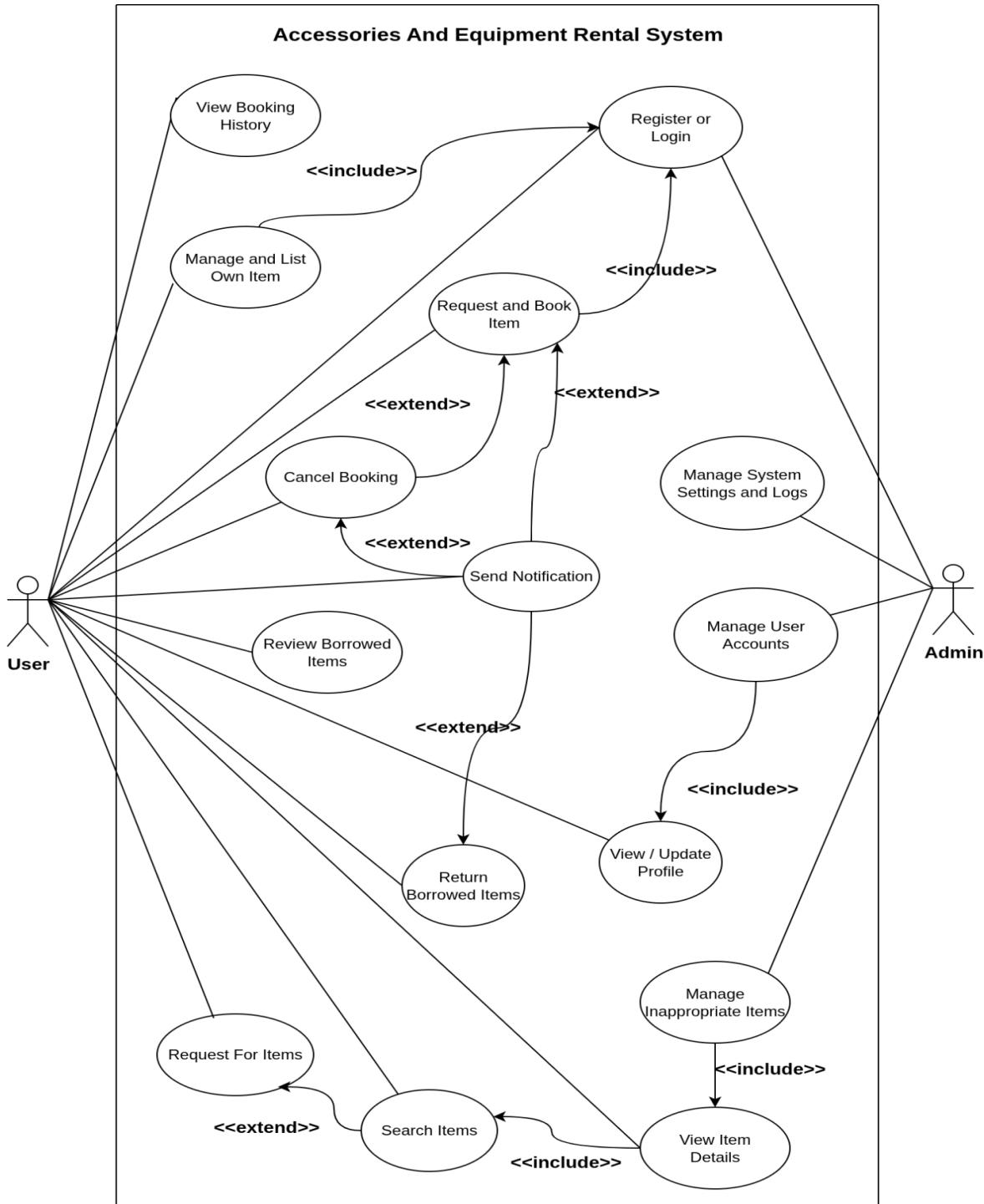
### 3.2 Non-Functional Requirements

Stakeholders	Stakeholder Goals	Non-Functional Requirement
Borrower	We want a simple system	The system shall provide an easy-to-use interface for account management, item search, and booking.
	We want fast responses	The system shall respond to user actions within a few seconds to ensure smooth interaction.
	We want to use it on different platforms	The system shall be accessible on common devices (laptop, tablet, mobile phone).
	We want the service always on	The system shall ensure availability of borrower services (search, booking,

		notifications) at least 95% of the time.
Item Owners	We want quick item posting	The system shall allow owners to quickly add and update items without complex steps.
	We want instant updates	The system shall send booking notifications to owners in real time.
	We want safe uploads	The system shall ensure uploaded item photos and details are stored securely and displayed properly.
	We want no booking conflicts	The system shall maintain accurate availability information so owners do not face conflicts in bookings.
	We want reliable records	The system shall provide reliability so owners can track their items' rental history without errors.
Admin	We want a clear dashboard	The system shall give admins a clear and organized dashboard for monitoring activities.
	We want secure access	The system shall be secure so only authorized administrators can access admin features.
	We want to handle growth	The system shall allow admins to take moderation actions (remove items, users) within a few clicks.

## 4. Use Case Diagram

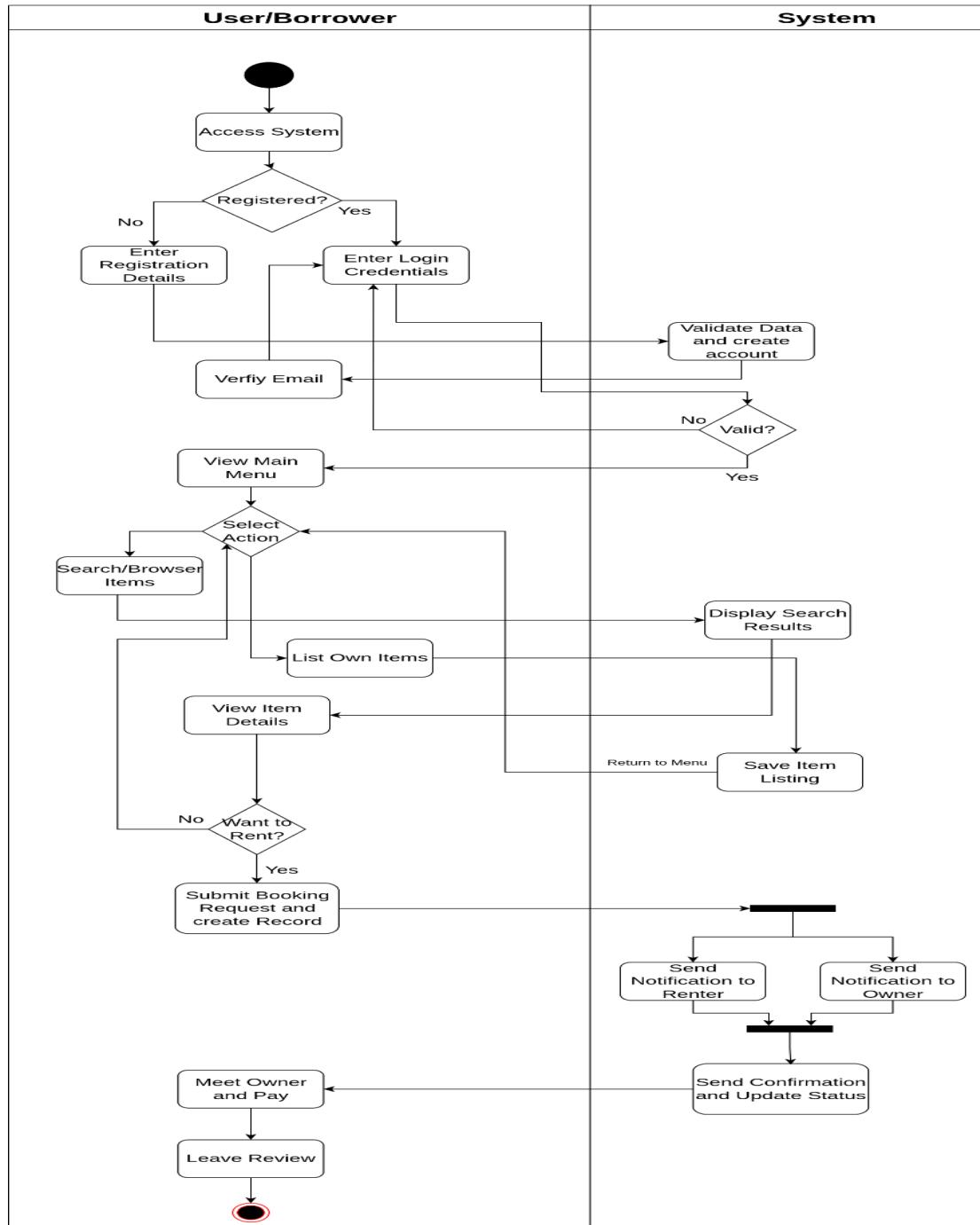
In our use case diagram, we have combined borrower and item owner as one actor, since each borrower can also be item owner and have the same system in place. This follows the functional requirements of our project properly.



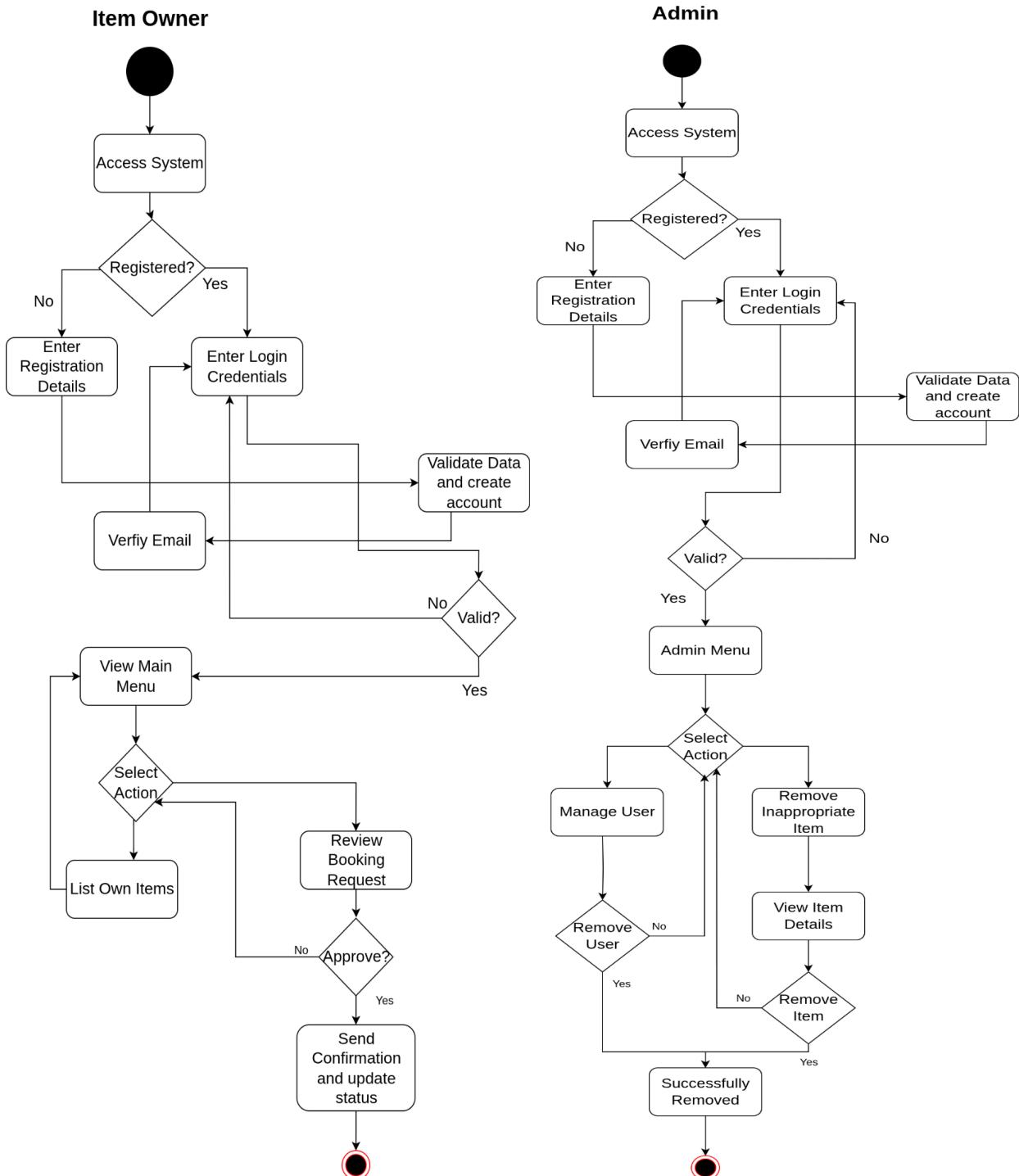
## 5. Activity Diagram

The activity diagram shows the flow of tasks for each actor. We have three actors here to show their defined task in the form of a UML diagram.

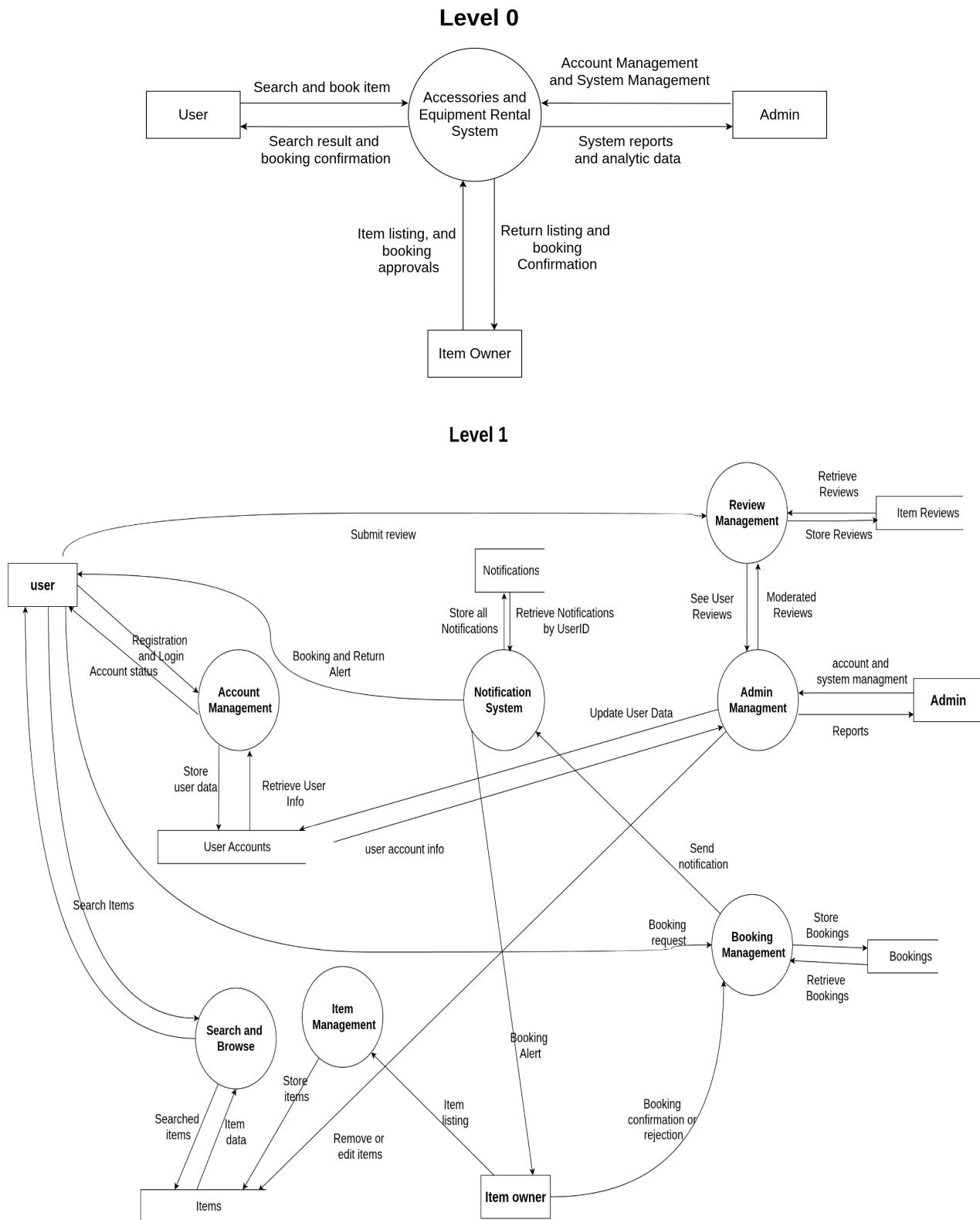
### 5.1 Borrowers



## 5.2 Item Owners and Admin

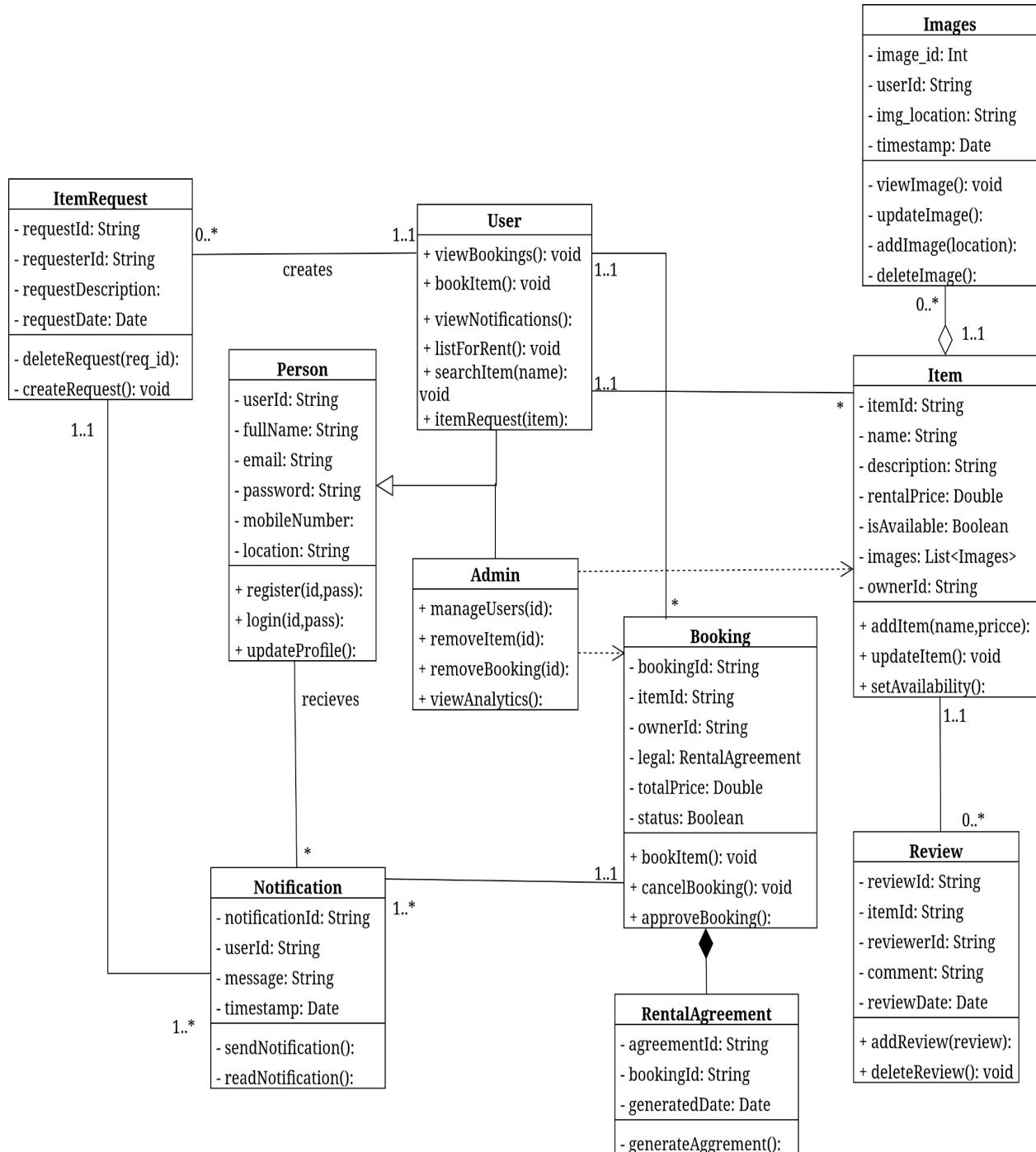


## 6. Data Flow Diagram



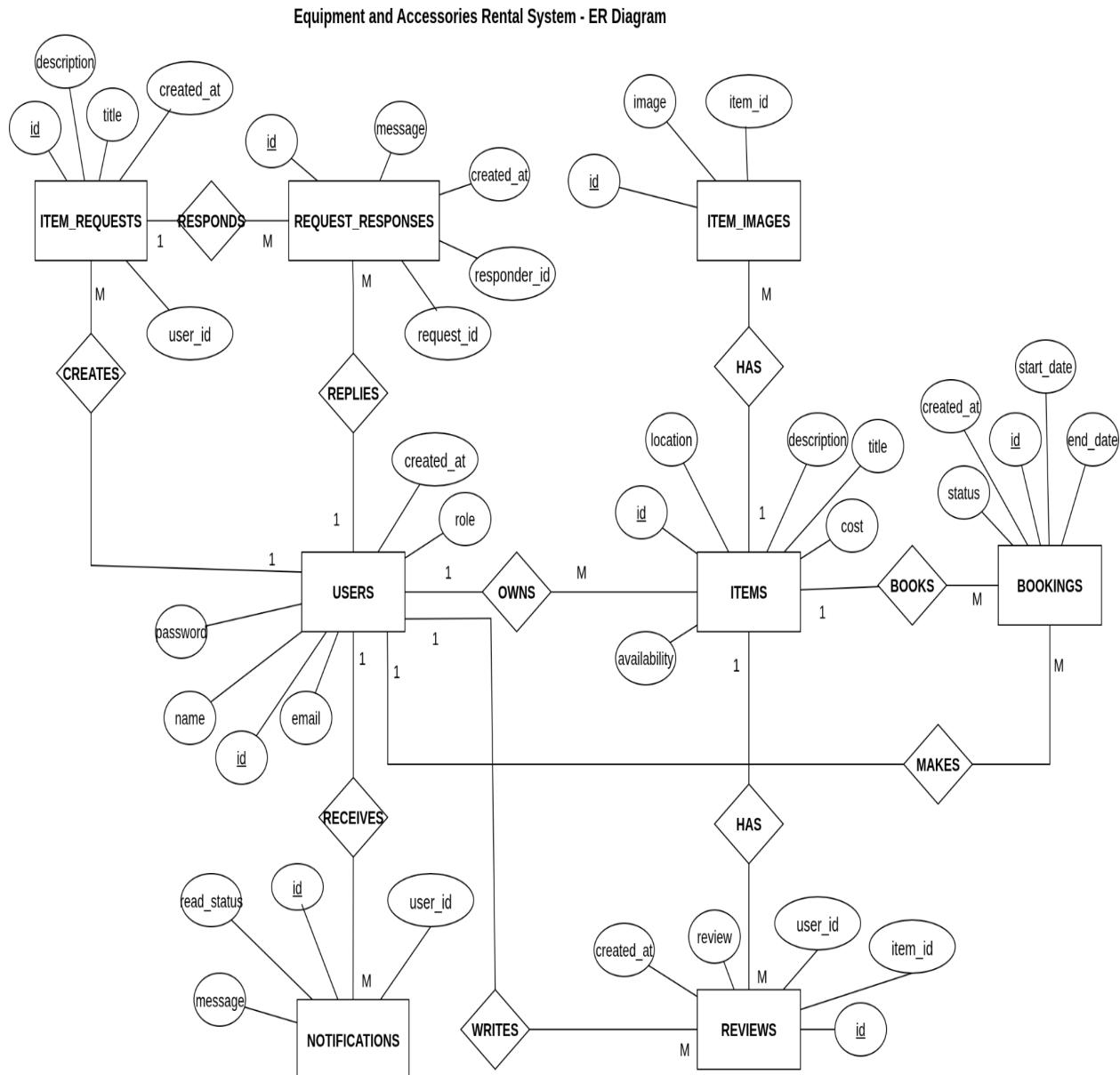
## 7. Class Diagram

Our class diagram shows each object and that we have created to build this system. Each class in the UML has functionalities in the form of methods and their connections.



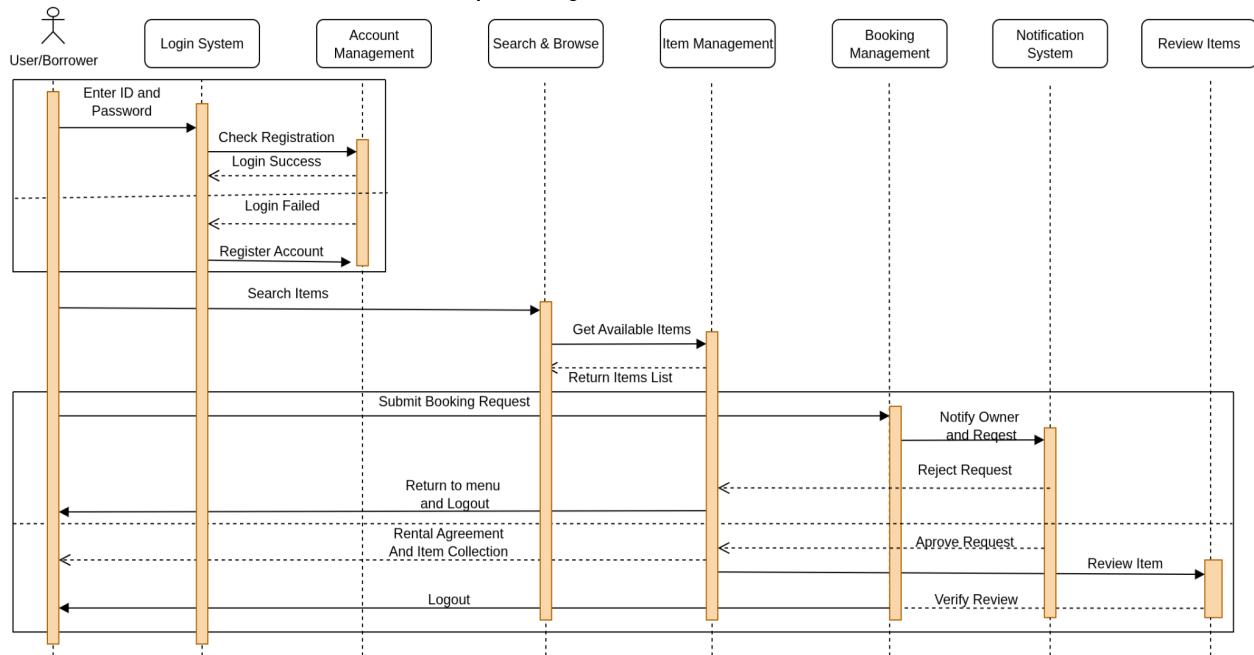
## 8. ER Diagram

This diagram shows the tables that we have created on our database for managing user data of this project. This diagram also shows how the tables are connected to each other.

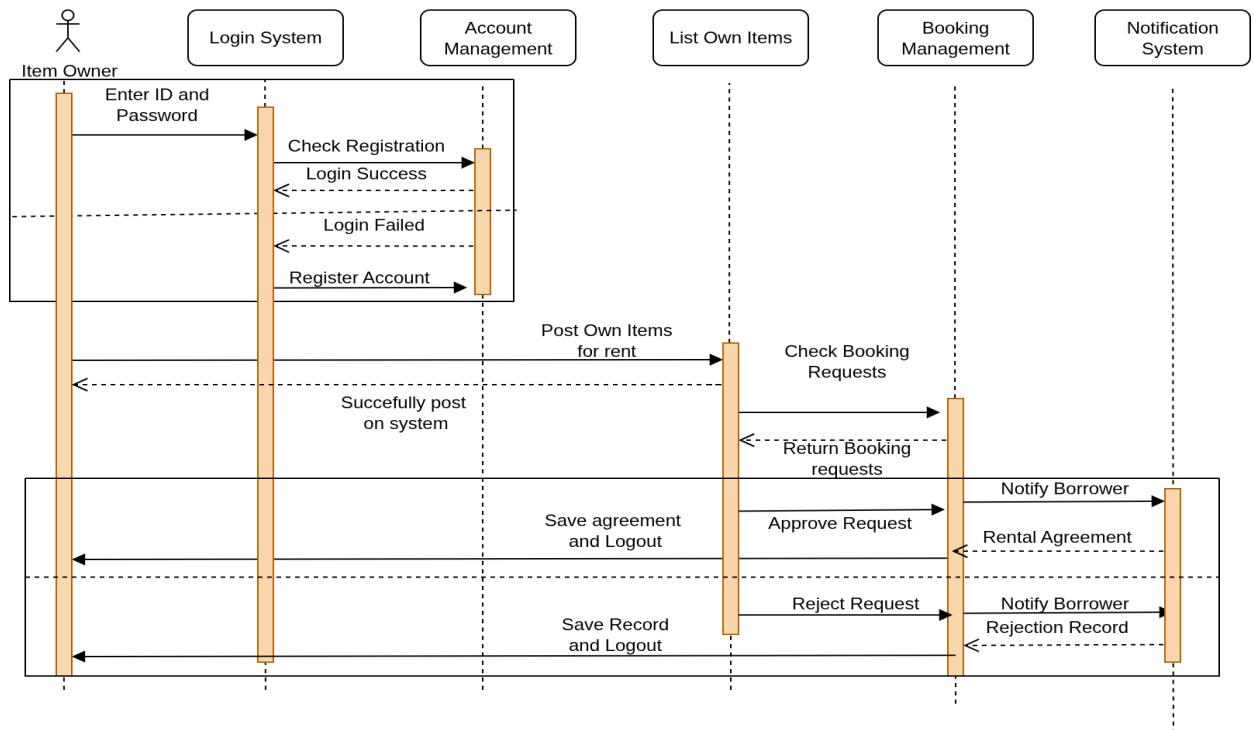


## 9. Sequence Diagram

Sequence Diagram Of Borrower

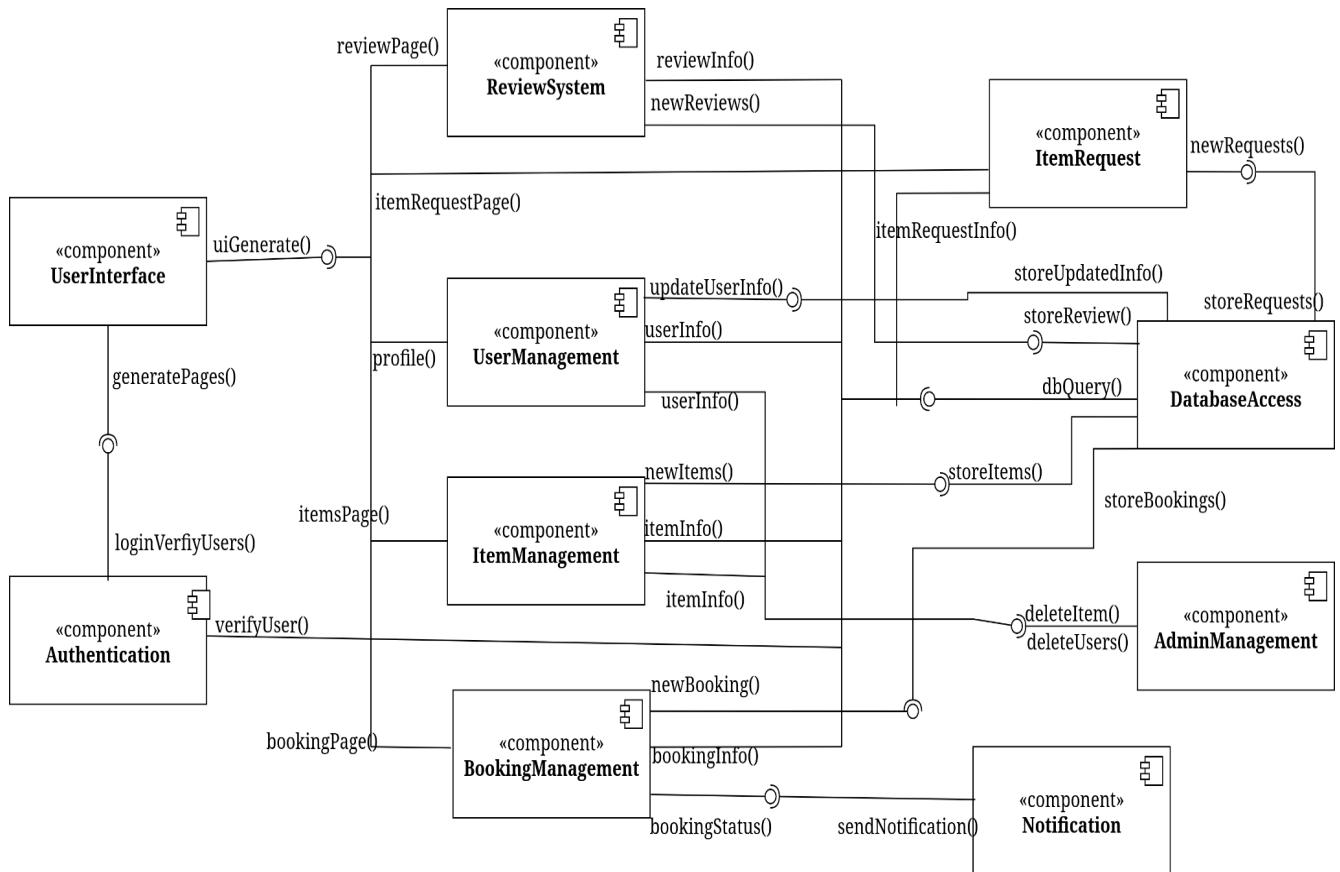


Sequence Diagram Of Item Owner



## 10. Component Diagram

The component diagram is a representation of our modules that we have created to handle each segment of the project. These UML diagrams of components represent the required and provide interface. These components can be reused for other other projects in the future if needed. Each component serves different purpose in our project.

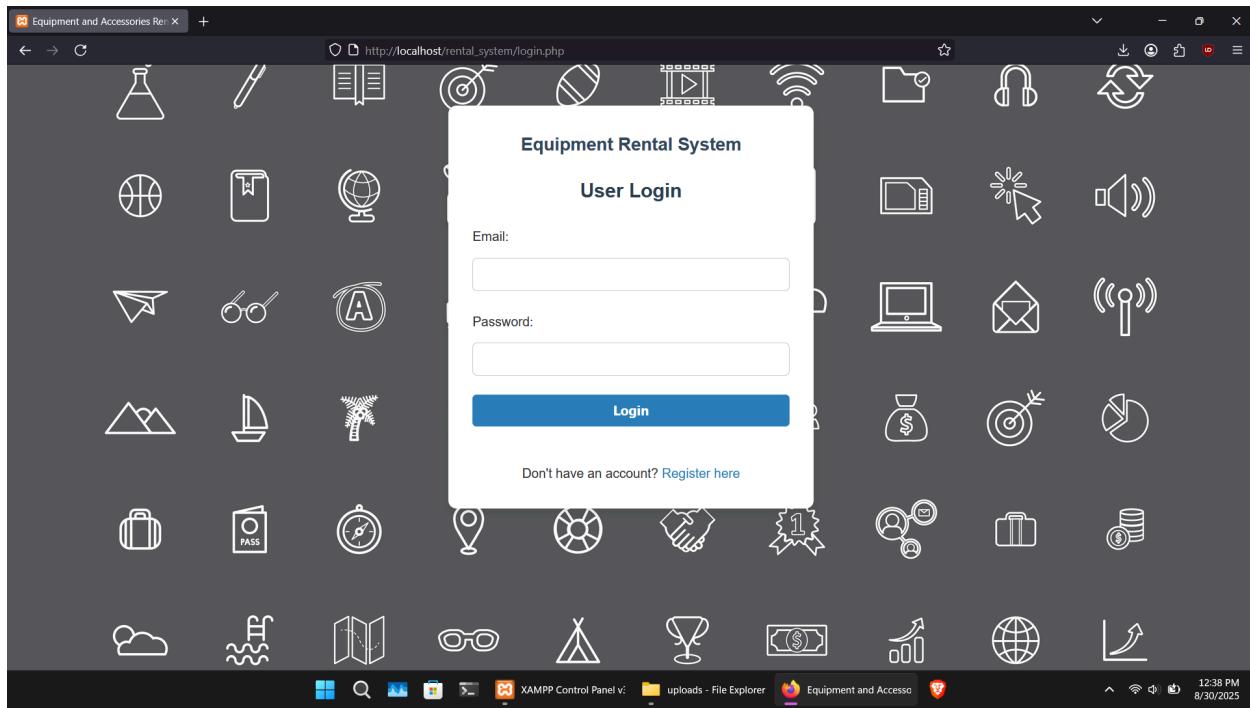


## 11. Limitations

This system does not include any online payment option, so transactions must be handled in person. The platform also depends on users to provide honest information about their items and availability, which may sometimes cause issues. Mobile app support is not yet properly added in this project.

# 12. Project Screenshots

## 12.1 Login Page



## 12.2 User (borrower/Item owner) Dashboard

A screenshot of a web browser showing the 'Dashboard' page of the 'Equipment and Accessories Rental System'. The dashboard has a dark blue header with the system name and a purple sidebar. The sidebar contains sections for 'NAVIGATION' (Dashboard, Search Items, My Items, My Bookings, Request Item, View Requests), 'ACCOUNT' (Notifications, Logout), and a 'Welcome back, Kayum!' message. The main content area has a white background. It features three cards: 'Search Items' (with a magnifying glass icon), 'My Items' (with a briefcase icon), and 'My Bookings' (with a calendar icon). Each card has a 'Browse Items', 'Manage Items', and 'View Bookings' button respectively. Below these is a 'Quick Actions' section with four items: 'Request Item' (plus sign icon), 'View Requests' (speech bubble icon), 'Notifications' (bell icon), and 'Add New Item' (camera icon). The browser's address bar shows 'http://localhost/rental\_system/index.php'. The taskbar at the bottom includes icons for XAMPP Control Panel, File Explorer, and the current tab.

## 12.3 Search Items

The screenshot shows the 'Search Items' page of the rental system. The left sidebar includes sections for 'Equipment and Accessories Rental System', 'NAVIGATION' (Dashboard, Search Items, My Items, My Bookings, Request Item, View Requests), 'ACCOUNT' (Notifications, Logout), and a user profile for 'Kayum'. The main content area has a search bar with placeholder 'Search by title or description' and a green 'Search Items' button. Below it, a heading 'Available Items' is followed by four item cards:

- Sony Alpha 7R V Full-frame Mirrorless Camera**  
Capture stunning detail with the Sony Alpha 7R V, featuring a 61MP full-frame sensor and advanced AI...  
by Kayum [View Details](#)
- Logitech G21 Studio Speakers**  
Enjoy Clear Sound for Audio and Music production  
by Kayum [View Details](#)
- Leg Press Machine**  
A press machine for your legs that you can use to test out if this gym equipment you need or not.  
by Redwan [View Details](#)
- Operating System Concepts - 10th edition**  
Operating Systems book for rent.  
by Redwan [View Details](#)

The bottom status bar shows the URL 'http://localhost/rental\_system/search.php', the browser's address bar, and the system tray with icons for XAMPP Control Panel v3, Manage Items - Equipment, and a battery icon.

## 12.4 Manage and List Own Items

The screenshot shows the 'Manage Items' page of the rental system. The left sidebar is identical to the previous screen. The main content area has a heading 'Manage Items' with a sub-instruction 'Add, edit, or remove your rental items' and a green '+ Add New Item' button. Below it, a heading 'My Items' is followed by two item cards:

- Sony Alpha 7R V Full-frame Mirrorless Camera**  
Capture stunning detail with the Sony Alpha 7R V, featuring a 61MP full-frame se...  
Available [View](#) [Edit](#) [Delete](#)
- Logitech G21 Studio Speakers**  
Enjoy Clear Sound for Audio and Music production  
Available [View](#) [Edit](#) [Delete](#)

The bottom status bar shows the URL 'http://localhost/rental\_system/manage\_items.php', the browser's address bar, and the system tray with icons for XAMPP Control Panel v3, Manage Items - Equipment, and a battery icon.

## 12.5 Request for Items

The screenshot shows a web browser window with the URL [http://localhost/rental\\_system/request\\_item.php](http://localhost/rental_system/request_item.php). The page title is "Request Item". On the left, there is a dark sidebar with the system's name and various navigation options like Dashboard, Search Items, My Items, My Bookings, Request Item (which is highlighted), View Requests, Notifications, and Logout. The main content area has a heading "Item Request Form". It contains fields for "Item Title \*" (with placeholder "Enter the name of the item you're looking for") and "Description \*" (with placeholder "Describe the item in detail:"). Below these, a note says "Be specific about the item you need (e.g., 'Canon EOS RS Camera')". A text area for "Provide as much detail as possible to help others find the right item for you" lists requirements: Brand/model, Specifications, Condition preferred, Rental duration, Any other requirements. At the bottom are "Submit Request" and "Cancel" buttons. The status bar at the bottom shows the date and time as 10:03 PM 8/30/2025.

## 12.6 View Items

The screenshot shows a web browser window with the URL [http://localhost/rental\\_system/item.php?id=6&redirect=search](http://localhost/rental_system/item.php?id=6&redirect=search). The page title is "Sony Alpha 7R V Full-frame Mirrorless Camera". The left sidebar is identical to the previous screenshot. The main content area has a blue header with the item name. Below it, a paragraph describes the camera: "Capture stunning detail with the Sony Alpha 7R V, featuring a 61MP full-frame sensor and advanced AI-based autofocus for unparalleled precision. Ideal for professional photography and videography, it delivers 8K 24p/4K 60p video and up to 8 stops of image stabilization. Rent this cutting-edge mirrorless camera for your next creative project!". To the right, there is a "Item Details" section with fields for Location (Aftabnagar, Dhaka), Cost (1000.00 Taka per day), Phone (017123934345), Owner (Kayum (kayum@gmail.com)), and Availability (Available). Below this is a "Book This Item Now" button. To the right of the details is a large image of the Sony Alpha 7R V camera, with a "View Additional Images" button below it.

## 12.7 Admin panel

The screenshot shows the Admin Dashboard for the Equipment and Accessories Rental System. The top navigation bar includes links for Dashboard, Search Items, My Items, My Bookings (selected), Request Item, View Requests, Notifications, and Logout. The main content area features four summary cards: Total Users (4), Total Items (4), Total Bookings (3), and Item Requests (0). Below these are two tables: 'All Users' and 'All Items'. The 'All Users' table lists five users: sadman, Redwan, Kayum, and admin. The 'All Items' table lists three items: Operating System Concepts - 10th edition, Legg Press Machine, and Logitech G21 Studio Speakers. The bottom status bar shows system icons and the date/time: 107 PM 8/30/2025.

## 12.8 Manage Bookings

The screenshot shows the Manage Bookings page. The left sidebar includes links for Dashboard, Search Items, My Items, My Bookings (selected), Request Item, View Requests, Notifications, and Logout. The main content area has tabs for 'My Bookings (Outgoing)' and 'My Items (Incoming)'. The 'My Items (Incoming)' tab is active, showing two incoming bookings: 'Operating System Concepts - 10th edition' (Borrower: Kayum, Status: Returned, Date: Aug 30, 2025) and 'Legg Press Machine' (Borrower: Kayum, Status: Approved, Date: Aug 30, 2025). A green button labeled 'Mark as Returned' is visible for the second booking. The top right corner shows the user profile of Redwan (User R).

## 12.9 Notification System

The screenshot shows a web application interface for a rental system. The left sidebar has a dark theme with purple highlights for certain sections. It includes sections for Equipment and Accessories Rental System, NAVIGATION (Dashboard, Search Items, My Items, My Bookings, Request Item, View Requests), ACCOUNT (Notifications, Logout), and a central Notifications section. The main content area is titled 'Notifications' and says 'Stay updated with your rental activities'. It shows 'Recent Notifications' with two entries:

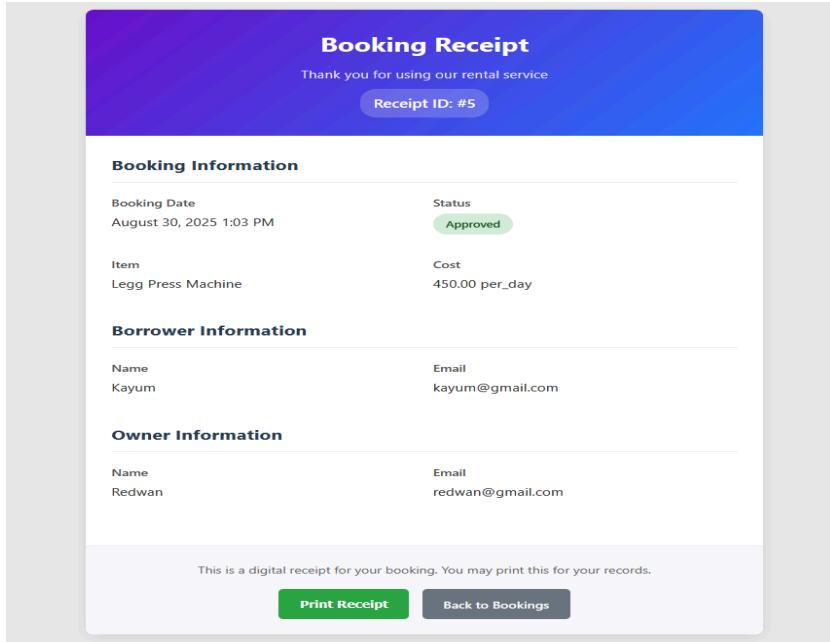
- SYSTEM NOTIFICATION**: Your booking for 'Operating System Concepts - 10th edition' has been marked as returned. (Aug 30, 2025 1:05 PM)
- SYSTEM NOTIFICATION**: Your item 'Sony Alpha 7R V Full-frame Mirrorless Camera' has been booked by Redwan. (Aug 30, 2025 1:05 PM)

## 12.10 Edit Item

The screenshot shows the 'Edit Item Details' page for an item. The left sidebar is identical to the previous screenshot, with 'My Items' highlighted. The main form is titled 'Edit Item Details' and contains the following fields:

- Title \***: Sony Alpha 7R V Full-frame Mirrorless Camera
- Description**: Capture stunning detail with the Sony Alpha 7R V, featuring a 61MP full-frame sensor and advanced AI-based autofocus for unparalleled precision. Ideal for professional photography and videography. It delivers 8K 2an/4K 6an video.
- Location \***: Aftabnagar, Dhaka
- Cost \***: 1000.00
- Cost Type \***: Per Day
- Phone Number \***: 017123934345
- Current Image**: A thumbnail image of a Sony Alpha 7R V camera.

## 12.11 Booking Receipt



## 13. Conclusion

This project was developed with the goal of creating a platform for sharing and renting items within a community. Through this system, users are able to register accounts, list items, search for available items, and rent items in a user-friendly way. The addition of features like notifications, reviews, and rental agreements makes the process more reliable and user-friendly.

Our project highlights how resource sharing can save costs and reduce waste. While our current version uses simple features and offline payments, it can be improved in the future, such as secure online payment and better analytics.

In the end, this project helped us apply the concepts of system analysis and design in a practical way. We went through requirement collection, stakeholder analysis, and the design of multiple diagrams to understand how the system should function. Building the prototype with web technologies also gave us valuable experience in connecting the theoretical design with real implementation.

## 14. Project Link

<https://github.com/kayumm/accessories-and-equipment-rental-system/>