



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

**Summer 2025**

**Section: 06**

**Group No: 05**

### **Usage Scenario**

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

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## **Project Overview**

The Accessories and Equipment Rental System is a web platform designed to facilitate sharing and rental of various items within a community. It connects item owners with borrowers, promoting resource-sharing, side income and sustainability. The system is built to manage listings, bookings/renting etc. Moreover, secure user account management is also implemented in a user-friendly manner.

## **1. Account Management**

### **1.1 Create Account**

Users must provide the following details to create an account:

- Full Name
- Mobile Number
- Email Address
- Password
- Location

### **1.2 User Perspective**

Account creation is required for users to list items or book/request items from others. All necessary fields are validated during registration to ensure data integrity.

- Users must have a valid email address to create an account that will be used to login.
- Duplicate email ids are not allowed in the Database.

### **1.3 Admin Perspective**

Admins can manage all user accounts, including viewing profiles and handling account-related issues. The 'Manage User Accounts' use case allows the admin to oversee all user activity, including posts of users and remove inappropriate rental posts.

## **1.4 Verification**

New accounts are verified via a confirmation email to validate the user's email address before full access is granted.

## **1.5 Update Account**

A user can update their profile information, such as their name, email, mobile number, or location, from their account settings.

## **1.6 Password Recovery**

Via Email:

A password reset link is sent to the user's registered email address, allowing them to create a new password.

Currently we are mainly focusing on email recovery, as it is a cost effective and easy way to implement password and account recovery. We can send links directly to get account access. Moreover, we save mobile otp verification sms cost.

## **1.7 Login**

Users can securely log in using their registered email and password.

- E-mail 2 step verification can be implemented, where the user gets a security code when needed to login.

# **2. Item Listing & Search**

## **2.1 Manage and List Own Item**

Users can list their own items for rent. This includes providing a detailed description, setting the rental price, and specifying the item's availability.

## **2.2 Search Items**

Users can search for items by name, category, or location. The search results will display item details, including photos, descriptions, and user ratings. This process includes the 'View Item Details' use case.

## **3. Booking and Rental**

### **3.1 Book / Request Item**

A user can select an item they wish to rent, specify the desired rental duration, and submit a booking request to the item owner. The item owner then needs to approve the request for rental.

### **3.2 Cancel Booking**

A user has the option to cancel a booking request. The system will handle the notifications. The request sent to the item owner will automatically be deleted. So, the item owner won't have to worry about cancelled requests.

### **3.3 Return Items**

After the rental period, the user will be guided through the process of returning the item to the owner. The owner then can mark the item as returned. As a result, the item will be set to available again, and can be navigated through the search feature.

## **4. Payment**

The system will initially not integrate any payment system. It will be managed by renter and borrower when they meet (cash on delivery). In the future, integrating a secure online payment gateway is possible. When a booking request is accepted by the owner, the borrower will pay the owner their desired amount.

## 5. Rental Agreement / Confirmation

A digital rental agreement is generated for each successful booking. This document includes:

- Booking ID
- Item details
- Rental period (start and end dates)
- Total price

## 6. Notifications

The system has a well built notification system that allows the user to get notifications for,

- Booking requests
- Booking approvals/rejections
- Return reminders
- Account alerts
- etc.

## 7. Database

### Admin Database

There is no separate admin database in our system. There is an enum which keeps track of the “admin” or “user”.

**User Database** Each user's profile is stored in a separate database, containing:

- Personal profile details (name, password, email etc.)
- List of all the items the user put up for rent

Moreover, we have few other databases such as Notification databases for each user to store notifications. Also contains a Bookings database.

## **8. Additional Features**

### **8.1 Rating / Review**

- Users can leave written feedback on rental experience and product quality on the product post page.
- Admins moderate reviews to prevent abuse.

### **8.2 Responsive UI**

The website will be fully responsive, ensuring it is usable on all devices.

## **9. Administrative Management**

### **9.1 User and System Management**

Admins have control over system-wide settings. They can also manage user accounts and take action on 'inappropriate items' reported by users.

### **9.2 Item/Listing Management**

Admins can manage all listed items, including the ability to edit, unpublish, or remove listings if they violate terms of service.

### **9.3 Reporting and Analytics**

Admin dashboard shows rental statistics, popular categories, and user activity.