Course: IT314 Software Engineering
Group: 21
Lab: 2

Renting System

Needs:

1. To provide an online solution to the user for lending any of his/her commodity or renting a commodity.
2. To see various details about the product like specifications, the current status of the product, renting price, duration of renting, etc.
3. To easily browse through products, filter and sort them according to parameters like price, location of user, etc.
4. To see reviews about the borrower and the lender for buying a product
5. Provide with Secure Payment Process
6. To have a reliable platform for lending by storing reviews from different lenders.
7. Borrowers should get a large variety of options for products and also be able to sort the items by their price, features, etc.
8. A tool through which customers or users can reserve available products online prior to their expected pick-up date or time
9. Users should be able to see various details of the borrower like name, contact details, address, etc.
10. To cancel and return the lent things by adhering to the return & cancellation policy.
11. Overall the system aims at providing the user with the convenience of renting commodities on an online platform
12. To implement a chat system where the lenders and renters can discuss.

Features:

1. The users can log in to their accounts.
2. The users can give as well as view the reviews for the product
3. The users can filter the products based on their price, color, age of the product, etc.
4. The user can choose the duration of the rent (can be less than the duration given by the lender) using a slider.
5. The borrower should be able to view the contact details of the lender for that particular product.
6. If the borrower exceeds the rental period, a fine should be levied on them.
7. Borrowers should get a reminder at the end of the renting period.
8. Borrowers should be able to cancel the rental with a nominal cancellation fee.
9. The lender should be able to see the requests from the borrower.
10. Users can add a product to his/her wishlist and can get a notification when the product becomes available for rent.
11. To implement a chat system where the lenders and renters can discuss.
12. A tool through which customers or users can reserve available products online prior to their expected pick-up date or time

Requirement Elicitation

Features which are removed:

1. To implement a chat system where the lenders and renters can discuss.
2. A tool through which customers or users can reserve available products online prior to their expected pick-up date or time

Functional Requirements:

❖ **For borrower:**

1. The system must allow the user to login into his account.
2. The system can show all the categories of the items.
3. The system must be able to sort & filter according to his/her needs.
4. The system should show photos/videos, and descriptions of the products like specifications, features, and appearance if available.
5. The system will allow users to contact the lender.
6. The system will have a secure payment gateway for the payment.
7. The system will have FAQs to resolve doubts.
8. The system will allow users to add products to the wish list.
9. The system will find the borrower based on the number of days exceeded.
10. Users should be able to view his/her history.
11. Users should get a reminder at the end of the renting period.
12. Users should be able to cancel the rental with a nominal cancellation fee.
13. Users should be able to check reviews and ratings of the product and product owner.
14. Users can know the location of the lander.
15. Users can add a product to his/her wishlist and can get a notification when the product becomes available for rent.
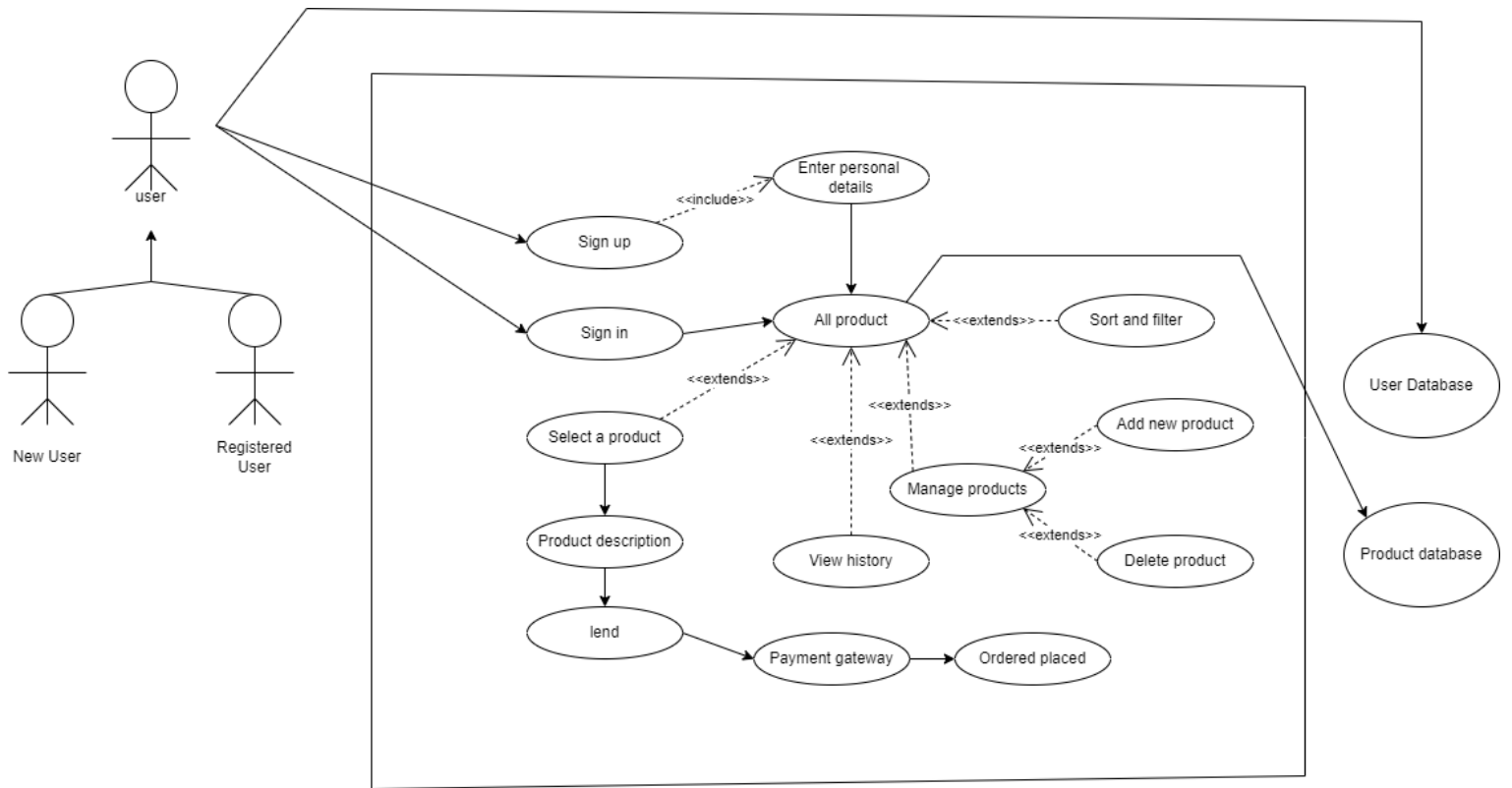
❖ **For Lender:**

1. Users should be able to see a list of their product(s) for rental and later on able to edit the details.
2. Users should be able to add/remove new products.
3. Users should be able to view the details of the borrower.
4. Users should be able to see the requests from the borrower.
5. Users should be able to manage the transactions.
6. Users should be able to see the statistics.

Non-Functional Requirements:

1. **Availability:** This system must always be accessible, twenty-four hours a day, seven days a week. Additionally, during the maintenance period, the website should be up within 5 to 6 hours to prevent any hassle for the users.
2. **Portability:** The software should be portable and usable on desktop as well as mobile devices.
3. **Reliability:** The system should be reliable for the users and they should feel safe in renting the products.
4. **Usability:** The system should have a user-friendly interface and enable the user to learn the same in simple easy steps.
5. **Security:** Only authorized employees of the firm can have admin access to the system and can manage the users. Users with login credentials only can use the lend and rent functionalities. The passwords of the users should be stored in an encrypted format and the database should have an overall integrity.
6. **Performance:** When processing user input, the system should operate quickly and be able to respond or offer feedback promptly.
7. **Error Handling:** The error margin should be as little as possible, and whenever one occurs, a helpful error message instructing the user on how to correct the issue should show. User input validation is crucial.

Use Case Diagram

user

New User

Registered User

Sign up

Enter personal details

<<include>>

Sign in

All product

<<extends>>

Sort and filter

Select a product

<<extends>>

Add new product

<<extends>>

Manage products

<<extends>>

Product description

<<extends>>

View history

<<extends>>

Delete product

lend

Payment gateway

Ordered placed

User Database

Product database

Process Model

We will be using an **incremental model** for our software application.

Reasons:
- Here requirements for software are known.
- We can develop different modules of the software and test them in parallel with development.
- We can prioritize requirements first so that the client gets important functionality first.
- Errors can be recognized more flexibly
- when the software team is semi-skilled.
- As there is no fixed amount of time for a particular iteration/module we can develop all the features properly with proper testing from our side
- The risk of failure is reduced because we are developing the software in smaller increments.

Our plan for the modules is as follows:

Module 1 -
    User Login
    Land/Borrow Products
    Search
Module 2 -
    Add to wishlist
    Sort and filter
    Product Review and Ratings
Module 3 -
    Reminder/Notification
    Track product
    Chat Feature