INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT, AKURDI, PUNE

College Consignment Hub

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Submitted By:
Group No: 11

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ABSTRACT

The "College Consignment Hub" aims to simplify the buying and selling process within college communities by leveraging technology to create an efficient and user-friendly platform. In the traditional marketplace, students often face challenges such as limited access to affordable items, time constraints, and the inconvenience of physically searching for goods. The proposed system allows students to list, browse, and purchase items from the comfort and security of their own space, providing a modern solution to these common issues.

In a dynamic and fast-paced academic environment, the need for a convenient and reliable platform for exchanging goods is evident. Students may struggle to find the time to sell their used items or purchase what they need due to busy schedules, limited transportation options, or the lack of a centralized marketplace. The College Consignment Hub addresses these challenges by offering a digital solution that saves time, reduces hassle, and enhances the overall experience of trading goods within the college community.

By enabling students to participate in the consignment process online, this system encourages sustainability through the reuse of goods and fosters a stronger sense of community among students. The platform also aims to ensure secure transactions, protect user data, and provide a seamless user experience, making it easier for students to connect and exchange items efficiently.

ACKNOWLEDGEMENT

I take this occasion to thank God, almighty for blessing us with his grace and taking our endeavor to successful culmination. I extend my sincere and heartfelt thanks to our esteemed guide, Mrs. Megha Mane for providing me with the right guidance and advice at the crucial juncture sand for showing me the right way. I extend my sincere thanks to our respected Centre Co-Ordinator Mr. Rohit Puranik, for allowing us to use the facilities available. I would like to thank the other faculty members also, at this occasion. Last but not the least, I would like to thank my friends for the support and encouragement they have given me during the course of our work.

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1. Introduction

College Consignment Hub

In today's interconnected college environments, where sustainability and resourcefulness are more important than ever, the College Consignment Hub emerges as a transformative solution for students and faculty alike. As students continuously seek affordable resources and ways to contribute to their community, traditional methods of exchanging goods have become inefficient and outdated. Our innovative web-based application addresses this gap, bringing the concept of a consignment hub into the digital era.

The College Consignment Hub redefines how a college community manages the exchange of goods, promoting sustainability, convenience, and a sense of belonging. By leveraging cutting-edge technology, we've crafted a platform that not only enhances the efficiency of transactions but also fosters a stronger community among students, faculty, and staff. This system is more than just a marketplace; it's a vibrant ecosystem that promotes reuse, sharing, and charitable giving within the college.

1.1 Purpose

This document outlines the features, functionalities, and architecture of the College Consignment Hub. Our goal is to provide a clear understanding of how this web application, built using Spring Boot for the backend and React for the frontend, streamlines the process of buying, selling, donating, and rating items within the college community.

1.2 Scope

The College Consignment Hub encompasses a comprehensive range of features aimed at making the exchange of goods seamless and transparent. It covers everything from user registration, item listing, and purchase management to donation processing, watchlist creation, and rating systems. By digitizing these processes, we create a more accessible, efficient, and community-driven environment for all users.

1.3 Objectives of the College Consignment Hub

Our project is guided by several key objectives, each designed to enhance the overall user experience and promote sustainability:

1. **Facilitate Easy Exchange**: Provide a user-friendly platform for students to buy, sell, and donate items within their college.
2. **Promote Sustainability**: Encourage the reuse of items, reducing waste and promoting eco-friendly practices within the college community.
3. **Enhance User Experience**: Offer intuitive navigation, real-time item availability, and secure transaction processes to ensure a smooth user experience.
4. **Community Building**: Foster a sense of community through shared resources, donations, and peer-to-peer interactions.
5. **Ensure Security and Trust**: Implement robust authentication, encryption, and rating systems to protect users and maintain trust within the platform.
6. **Simplify Management**: Provide tools for easy management of items, transactions, and user interactions for both users and administrators (if applicable).
7. **Support Charitable Causes**: Facilitate item donations to students in need or to charitable organizations within the college, reinforcing the value of giving back.
8. **Scalable and Adaptable**: Build a system that can grow with the college's needs and adapt to future technological advancements.

2. Software Requirements Specification (SRS)

1. Introduction

1.1 Product Scope

The College Consignment Hub is a web application designed to facilitate the buying, selling, donating, and reviewing of items within a college community. This document provides a detailed Software Requirements Specification (SRS) for the project, outlining the system's functional and non-functional requirements, along with its data models and relationships.

1.2 Scope

The College Consignment Hub will serve as a digital platform where students can list items for sale, manage their carts, donate items, rate items, and keep track of items of interest through a watchlist. The system will support user management, item management, and categorization, ensuring a seamless user experience for the college community.

2. Overall Description

2.1 Product Perspective

The College Consignment Hub is designed as a standalone web application. It will integrate with a relational database through JPA/Hibernate for ORM. The system will use Java and Hibernate to manage data persistence, and Lombok to reduce boilerplate code in entity classes.

2.2 Product Functions

- **User Management**: Registration, login, and profile management for students.
- **Item Management**: Adding, updating, deleting, and listing items for sale.
- **Cart Management**: Adding items to a cart and managing the cart.
- **Donation System**: Donating items and tracking donations.
- **Rating System**: Providing ratings and comments on items.
- **Watchlist Management**: Tracking items of interest.

2.3 User Classes and characteristics

- **Students**: Primary users who can list items, manage their carts, donate items, rate items, and manage their watchlists.

2.4 User Environment

- **Frontend**: html,css,JavaScript and react
- **Backend**: springboot restapi and springboot security

- **Database**: Relational database
- **Operating System**: windows 10,11
- **ID's**:STS and VS code
- **Tools used**: Git ,Postman and Swagger
- **Hardware Requirement**: Processor-i5 HardDisk-1TB Memory-minimum 8GB RAM

3. Functional Requirements

3.1 User Management

- **Registration**: Students must be able to register with their name, username, email, password, and address.
- **Login**: Students must be able to log in using their username and password.
- **Profile Management**: Students can view and update their profile information.

3.2 Item Management

- **Add Item**: Students can list new items for sale, providing details such as title, description, price, image, and duration.
- **Update Item**: Students can update details of their listed items.
- **Delete Item**: Students can remove items from their listings.
- **List Items**: Users can view items listed for sale, with filtering options based on categories.

3.3 Cart Management

- **Add to Cart**: Students can add items to their cart.
- **View Cart**: Students can view items in their cart.
- **Remove from Cart**: Students can remove items from their cart.
- **Checkout**: (Optional) Students can proceed with purchasing items in their cart.

3.4 Donation System

- **Donate Item**: Students can donate items, specifying the donation date.
- **Track Donations**: Students can view items they have donated.

3.5 Rating System

- **Rate Item**: Students can rate items they have interacted with, providing a rating value and a comment.
- **View Ratings**: Users can view ratings and comments on items.

3.6 Watchlist Management

- **Add to Watchlist**: Students can add items to their watchlist.
- **View Watchlist**: Students can view items in their watchlist.
- **Remove from Watchlist**: Students can remove items from their watchlist.

4. Non-Functional Requirements

4.1 Performance Requirements

- The system should handle concurrent user access efficiently, with a response time of under 2 seconds for most user interactions.

4.2 Security Requirements

- User passwords must be stored securely using encryption.
- Sensitive user data, such as email addresses, must be protected against unauthorized access.
- Proper validation should be implemented to prevent SQL injection and other security vulnerabilities.

4.3 Usability Requirements

- The user interface should be intuitive and user-friendly.
- The application should provide clear feedback for user actions (e.g., item added to cart, rating submitted).

4.4 Reliability Requirements

- The system should be available 24/7 with minimal downtime.
- Data should be backed up regularly to prevent loss.

4.5 Scalability Requirements

- The application should be designed to handle growth in the number of users and items.

5. Use Cases

5.1 User Registration

- **Actors**: Student
- **Description**: A new student registers by providing required information.
- **Preconditions**: User has access to the registration page.
- **Postconditions**: A new student account is created.

5.2 Listing an Item

- **Actors**: Student
- **Description**: A student lists a new item for sale.
- **Preconditions**: User is logged in.
- **Postconditions**: The item is added to the database and is visible to other users.

5.3 Adding an Item to Cart

- **Actors**: Student
- **Description**: A student adds an item to their cart.
- **Preconditions**: User is logged in and the item exists.
- **Postconditions**: The item is added to the student's cart.

5.4 Donating an Item

- **Actors**: Student
- **Description**: A student donates an item.
- **Preconditions**: User is logged in and the item exists.
- **Postconditions**: The item is marked as donated in the system.

5.5 Rating an Item

- **Actors**: Student
- **Description**: A student rates an item and provides a comment.
- **Preconditions**: User is logged in and the item exists.
- **Postconditions**: The rating and comment are saved and associated with the item.

3. Database Design

3.1 Student Table

```
mysql> desc student;
+--------------+--------------+------+-----+---------+----------------+
| Field        | Type         | Null | Key | Default | Extra          |
+--------------+--------------+------+-----+---------+----------------+
| student_id   | bigint       | NO   | PRI | NULL    | auto_increment |
| address      | varchar(255) | NO   |     | NULL    |                |
| email        | varchar(255) | YES  | UNI | NULL    |                |
| password     | varchar(255) | YES  |     | NULL    |                |
| student_name | varchar(255) | NO   |     | NULL    |                |
| username     | varchar(255) | NO   |     | NULL    |                |
+--------------+--------------+------+-----+---------+----------------+
6 rows in set (0.08 sec)
```

3.2 Item Table

```
mysql> desc item;
+---------------+--------------+------+-----+---------+----------------+
| Field         | Type         | Null | Key | Default | Extra          |
+---------------+--------------+------+-----+---------+----------------+
| item_id       | bigint       | NO   | PRI | NULL    | auto_increment |
| item_duration | varchar(255) | NO   |     | NULL    |                |
| description   | varchar(255) | NO   |     | NULL    |                |
| image         | longblob     | YES  |     | NULL    |                |
| price         | double       | NO   |     | NULL    |                |
| status        | varchar(255) | NO   |     | NULL    |                |
| title         | varchar(255) | NO   |     | NULL    |                |
| cart_id       | bigint       | NO   | MUL | NULL    |                |
| category_id   | bigint       | NO   | MUL | NULL    |                |
| seller_id     | bigint       | NO   | MUL | NULL    |                |
| watchlist_id  | bigint       | YES  | MUL | NULL    |                |
+---------------+--------------+------+-----+---------+----------------+
11 rows in set (0.00 sec)
```

3.3 Watchlist Table

```
mysql> desc watchlist;
+--------------+--------+------+-----+---------+----------------+
| Field        | Type   | Null | Key | Default | Extra          |
+--------------+--------+------+-----+---------+----------------+
| watchlist_id | bigint | NO   | PRI | NULL    | auto_increment |
| date_added   | date   | NO   |     | NULL    |                |
| buyer_id     | bigint | YES  | MUL | NULL    |                |
+--------------+--------+------+-----+---------+----------------+
3 rows in set (0.00 sec)
```

3.4 Donate_Item Table

```
mysql> desc donate_item;
+---------------+--------+------+-----+---------+----------------+
| Field         | Type   | Null | Key | Default | Extra          |
+---------------+--------+------+-----+---------+----------------+
| donate_id     | bigint | NO   | PRI | NULL    | auto_increment |
| donation_date | date   | NO   |     | NULL    |                |
| item_id       | bigint | YES  | MUL | NULL    |                |
| donor_id      | bigint | NO   | MUL | NULL    |                |
+---------------+--------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

3.5 Cart Table

```
mysql> desc cart;
+-----------+--------+------+-----+---------+----------------+
| Field     | Type   | Null | Key | Default | Extra          |
+-----------+--------+------+-----+---------+----------------+
| cart_id   | bigint | NO   | PRI | NULL    | auto_increment |
| seller_id | bigint | YES  | MUL | NULL    |                |
+-----------+--------+------+-----+---------+----------------+
2 rows in set (0.00 sec)

mysql>
```

3.6 Category Table

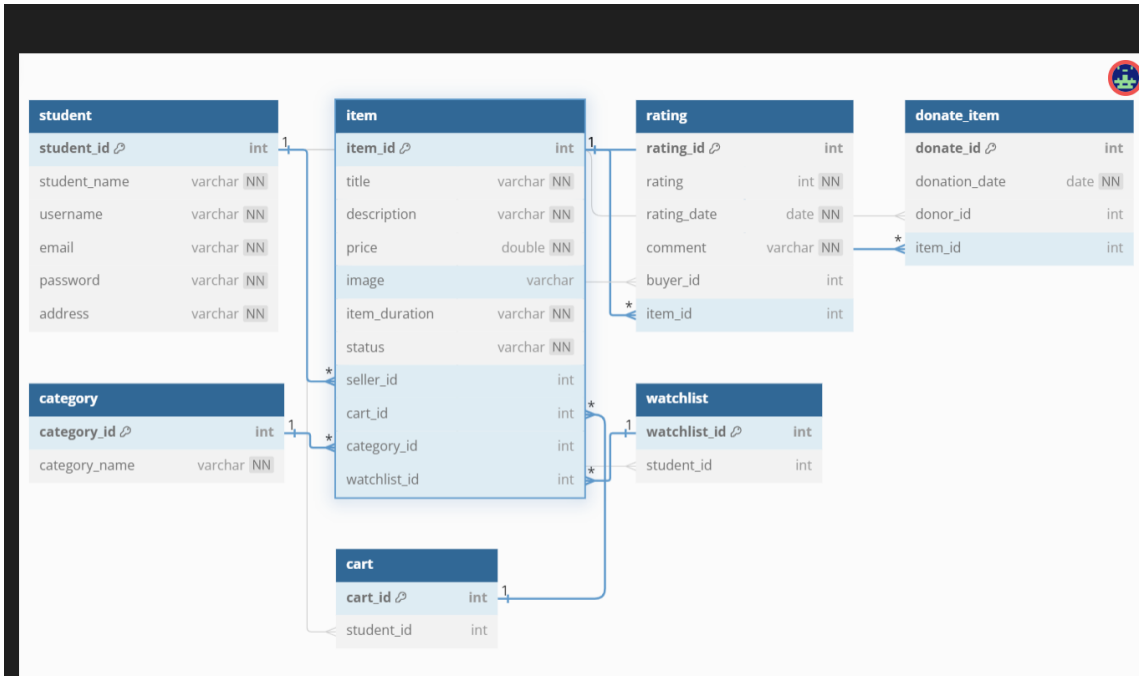
```
mysql> desc category;
+---------------+--------------+------+-----+---------+----------------+
| Field         | Type         | Null | Key | Default | Extra          |
+---------------+--------------+------+-----+---------+----------------+
| category_id   | bigint       | NO   | PRI | NULL    | auto_increment |
| category_name | varchar(255) | NO   |     | NULL    |                |
+---------------+--------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)
```

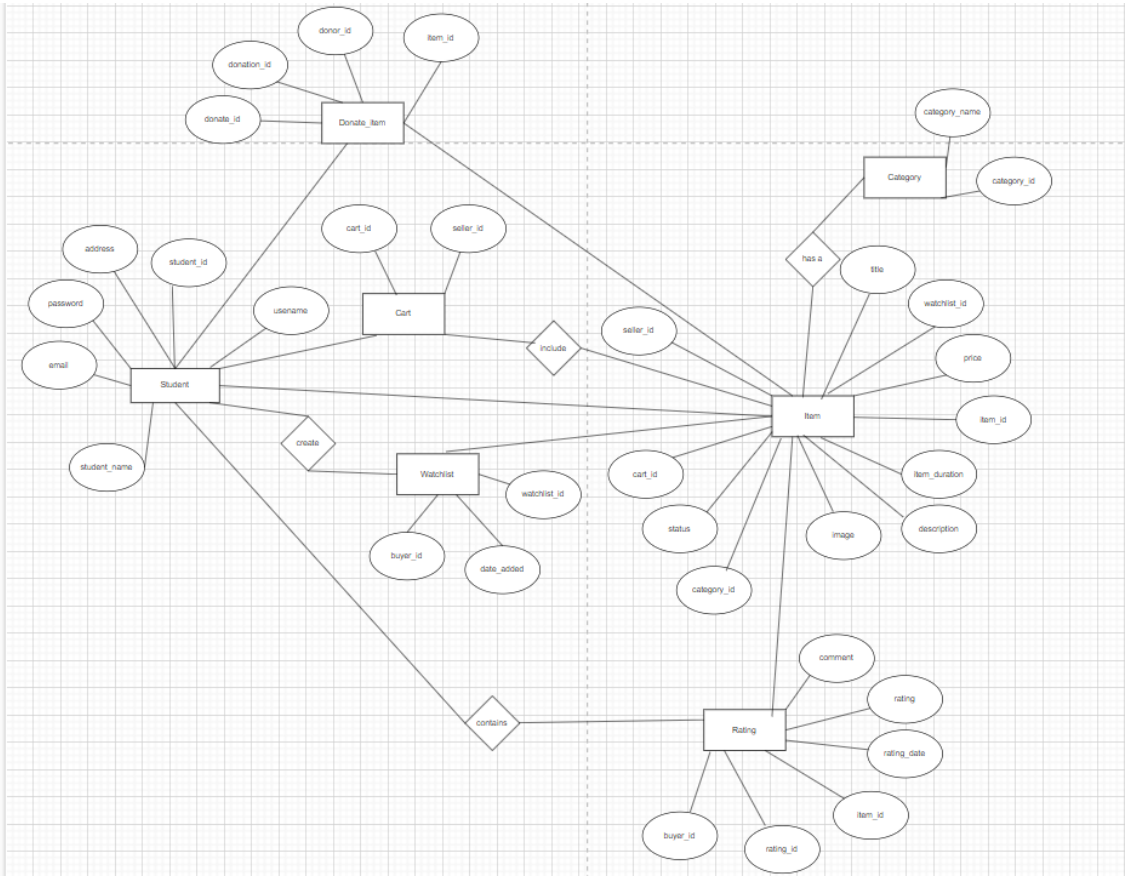
3.7 Rating Table

```
mysql> desc rating;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| rating_id   | bigint       | NO   | PRI | NULL    | auto_increment |
| comment     | varchar(255) | NO   |     | NULL    |                |
| rating      | int          | NO   |     | NULL    |                |
| rating_date | date         | NO   |     | NULL    |                |
| item_id     | bigint       | YES  | MUL | NULL    |                |
| buyer_id    | bigint       | YES  | MUL | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

4. Diagram

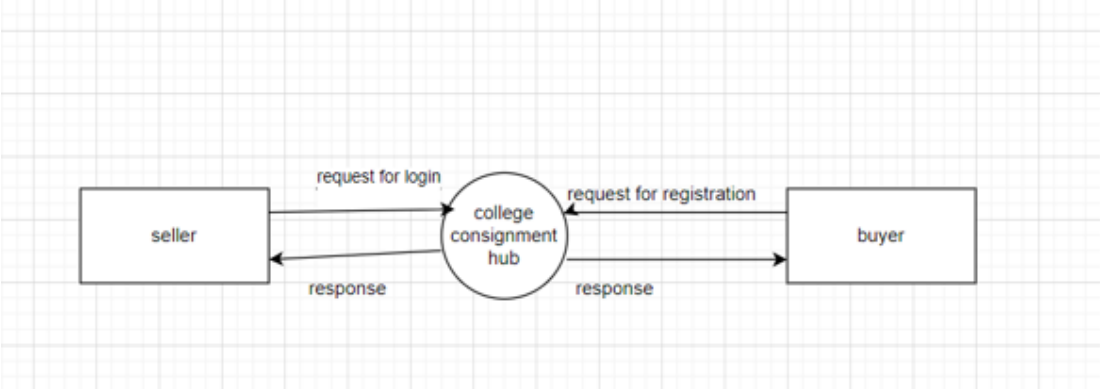
4.1 Entity Relationship Diagram




donor_id
item_id
donation_id
donate_id
Donate_item
category_name
Category
category_id
cart_id
seller_id
address
student_id
has a
title
password
username
Cart
watchlist_id
seller_id
include
email
price
Student
Item
item_id
create
student_name
Watchlist
cart_id
item_duration
watchlist_id
status
image
description
buyer_id
date_added
category_id
comment
rating
contains
Rating
rating_date
item_id
buyer_id
rating_id

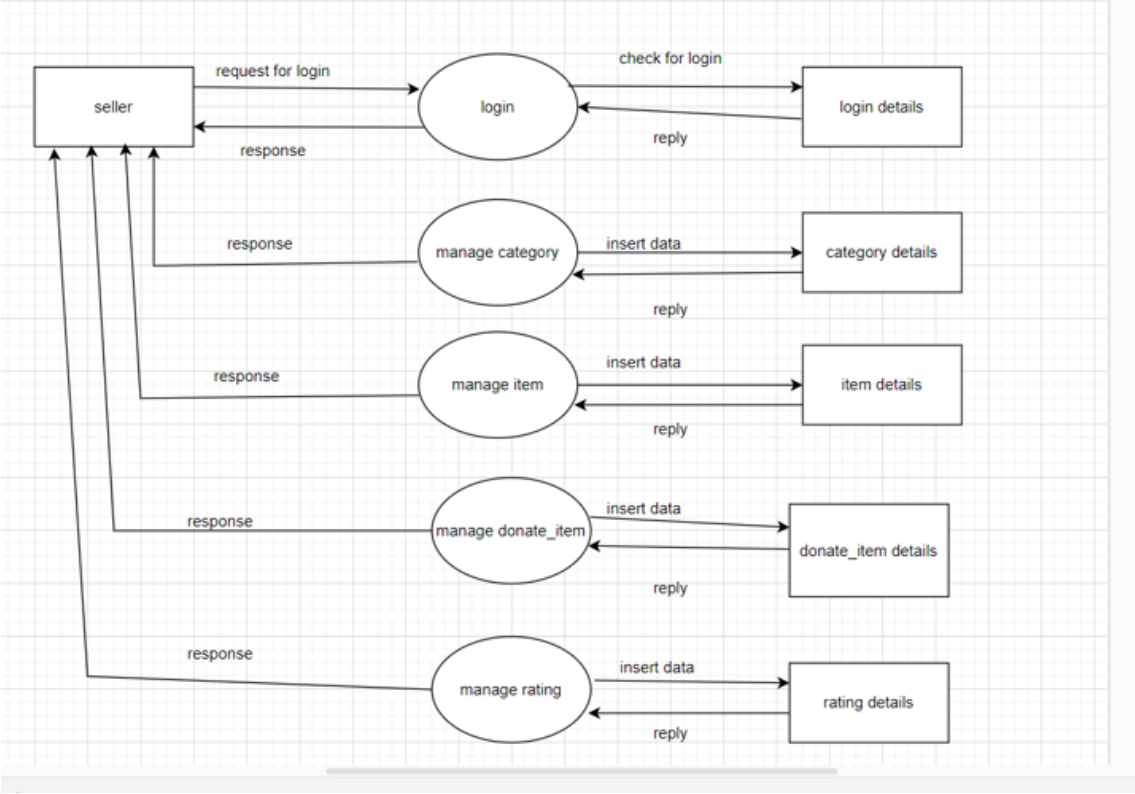
4.2 Data Flow Diagram

Level 0:

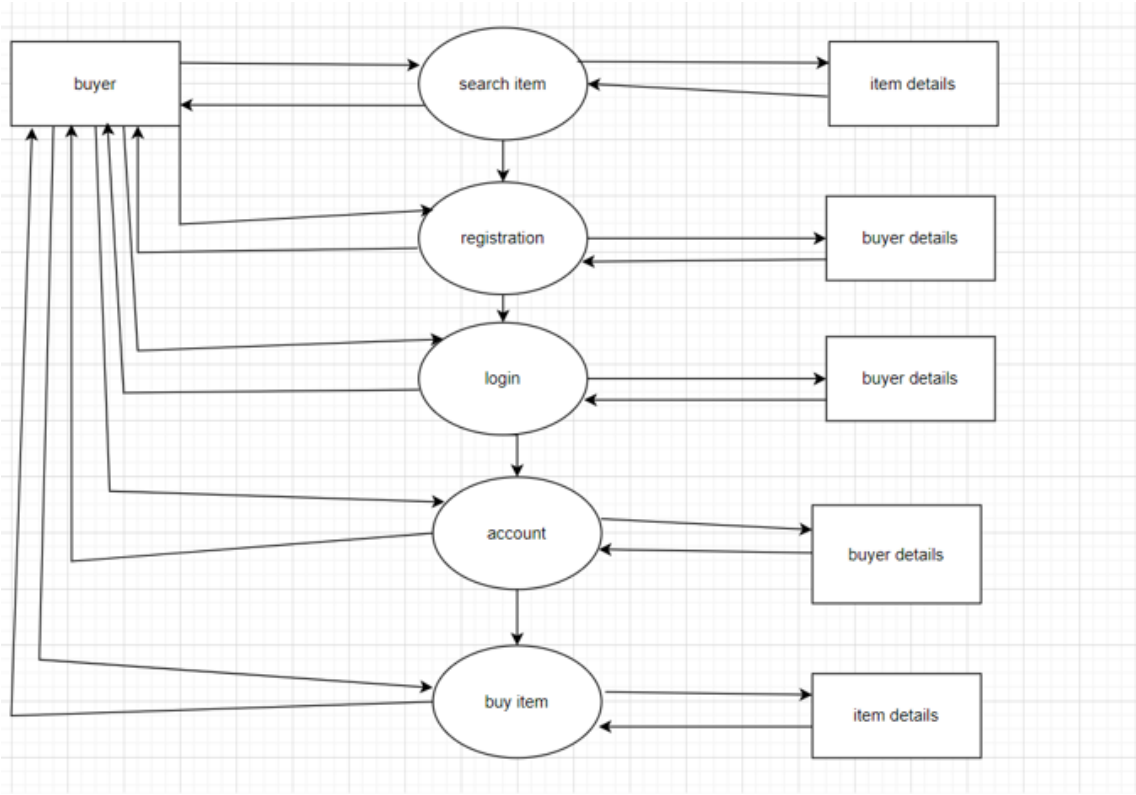


Level 1:

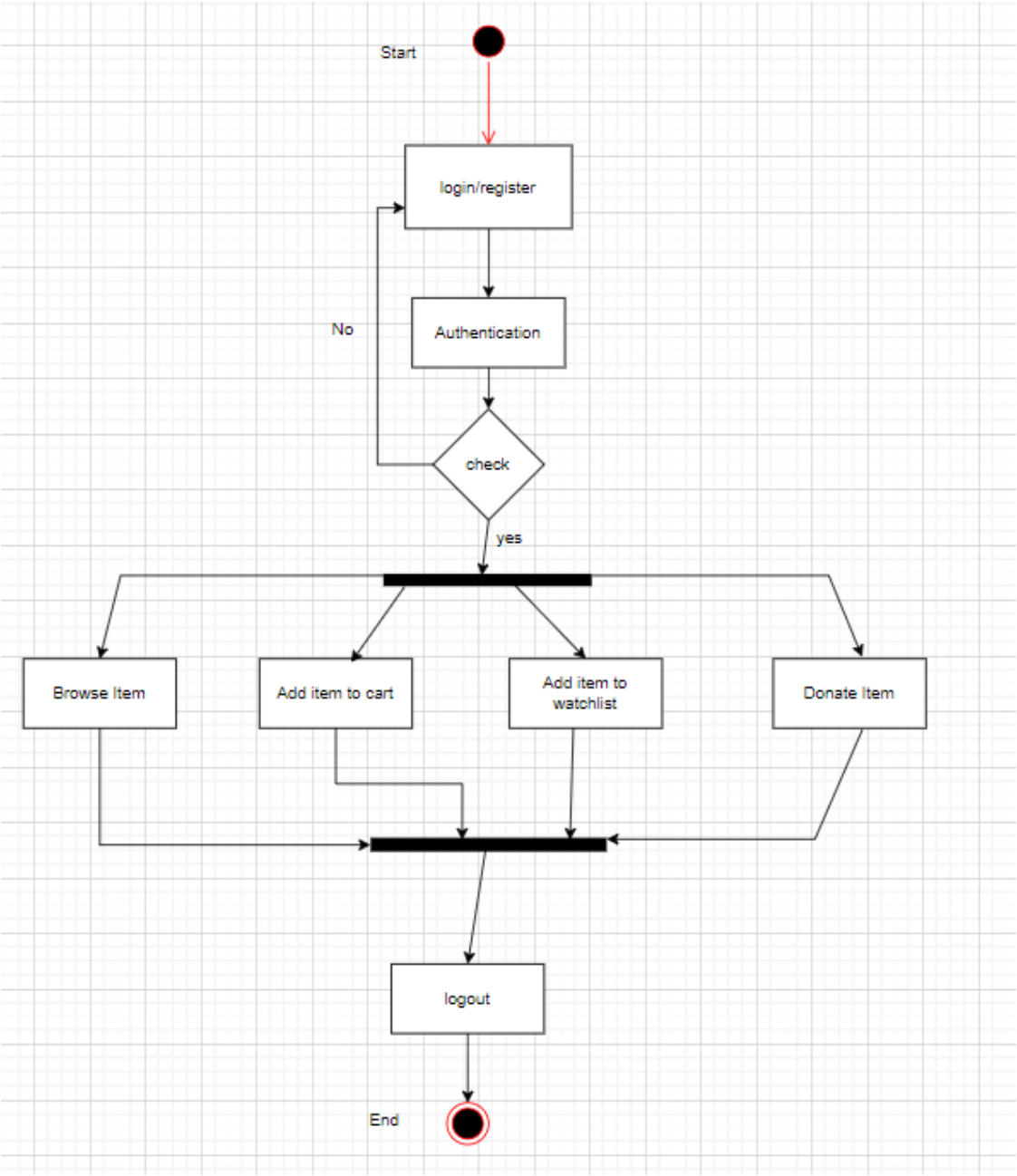
Seller side DFD



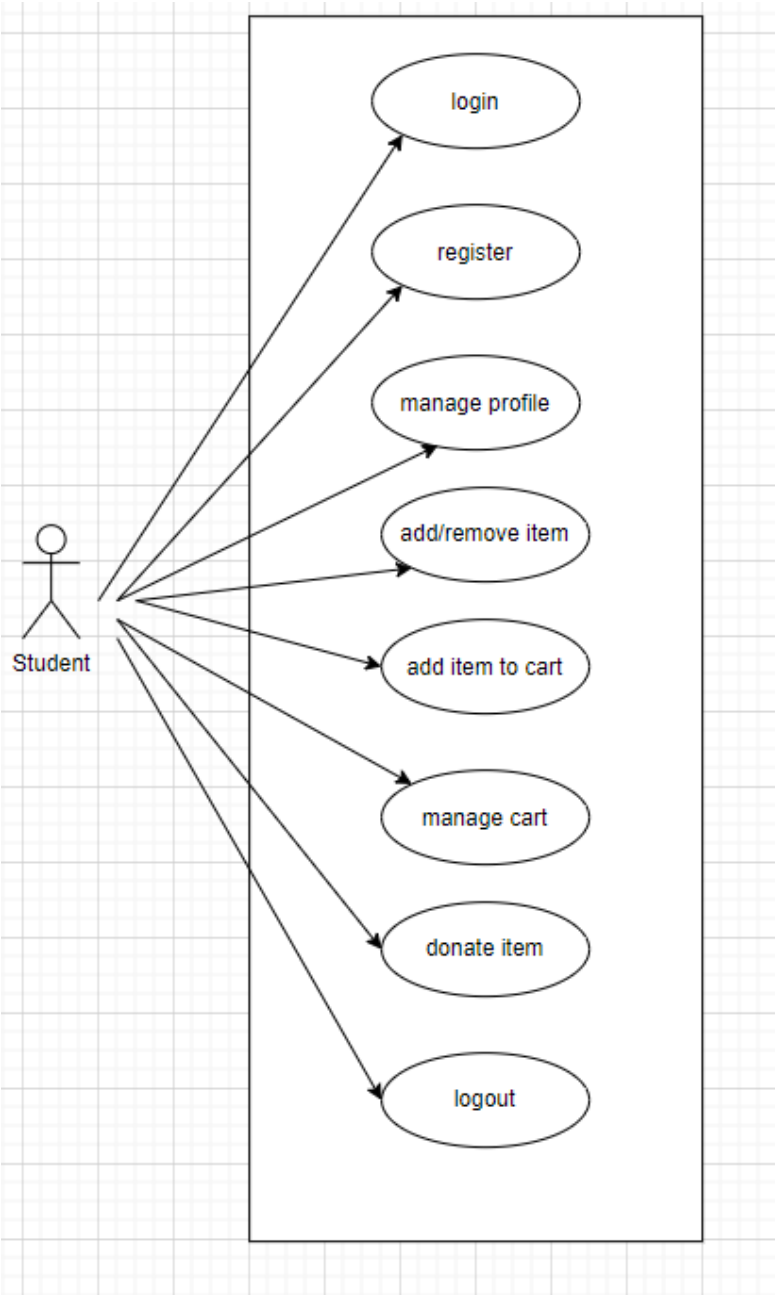
Buyer side DFD



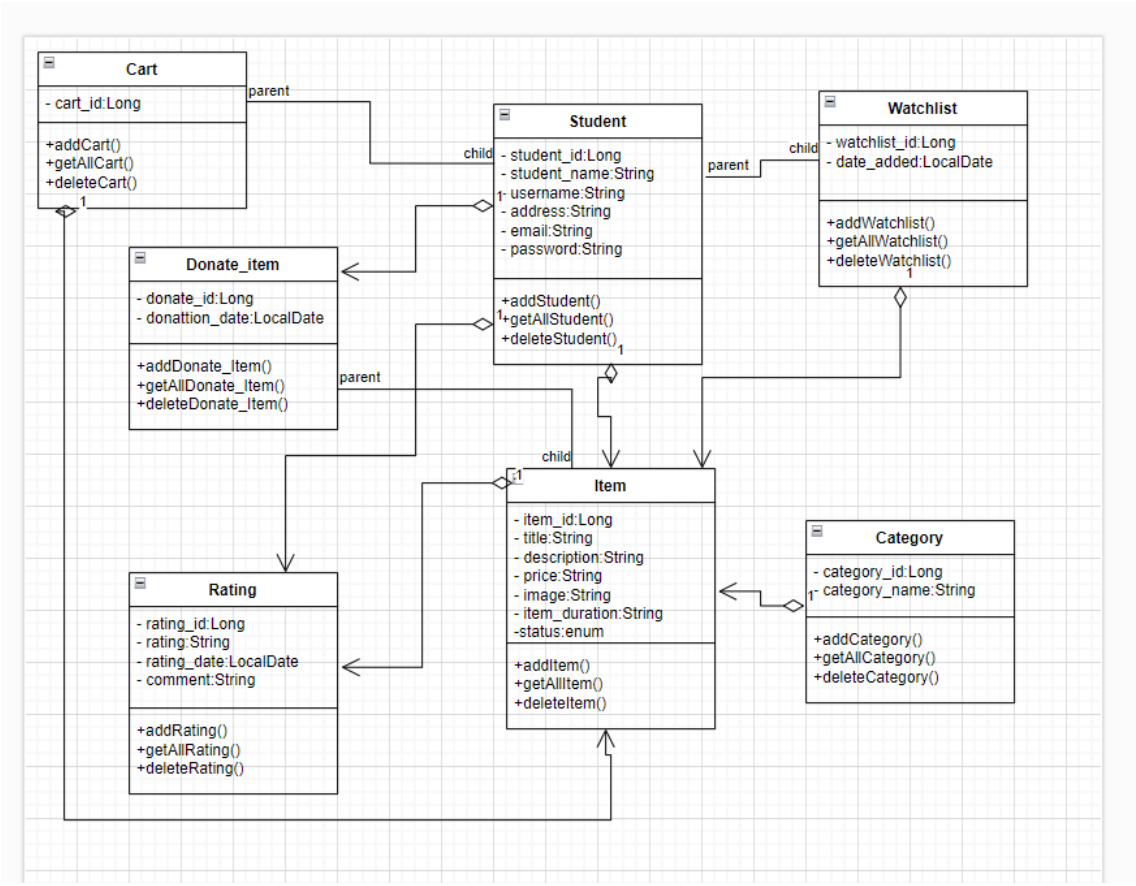
4.3 Student Activity Diagram



4.4 Use Case Diagram

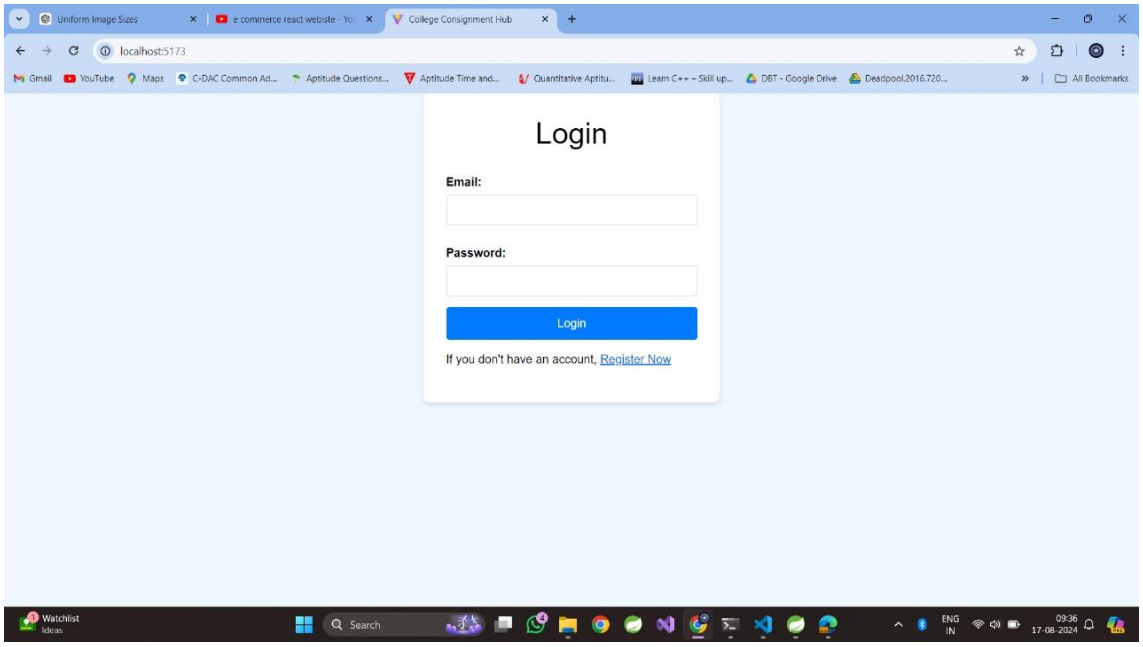


4.5 Class Diagram

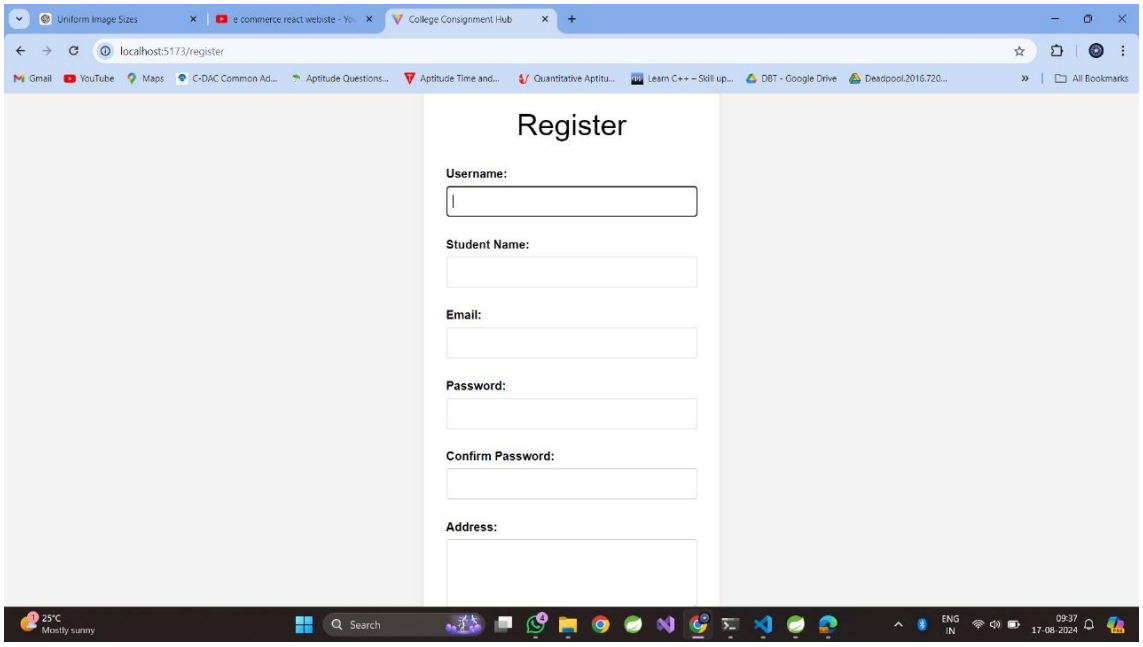


5.Snapshots

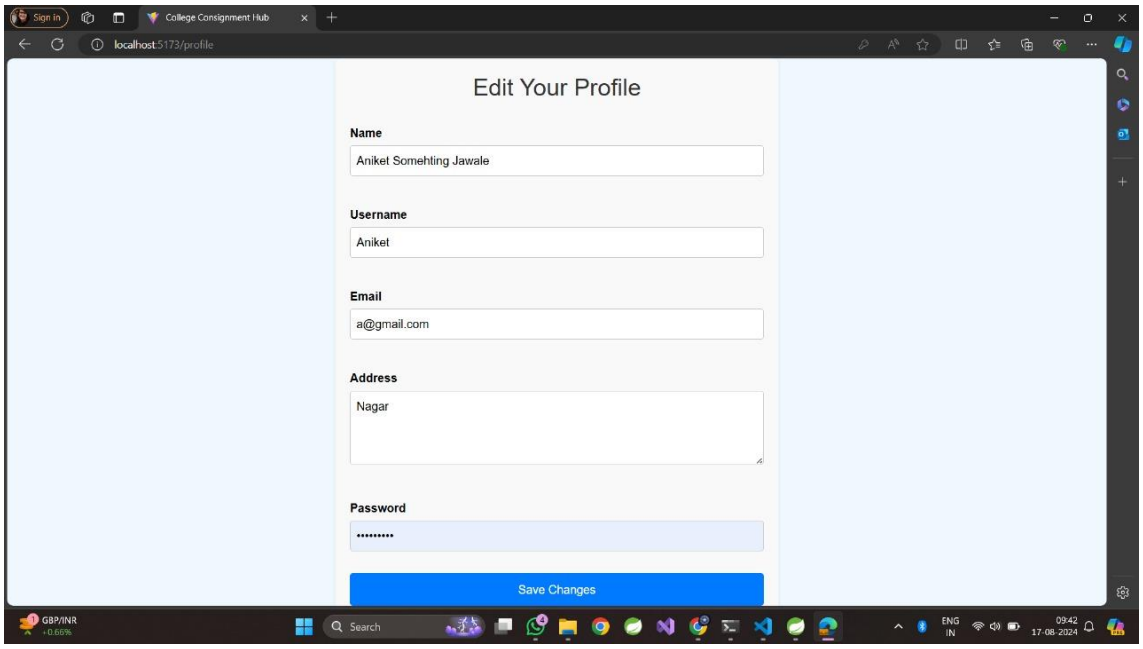
Login:



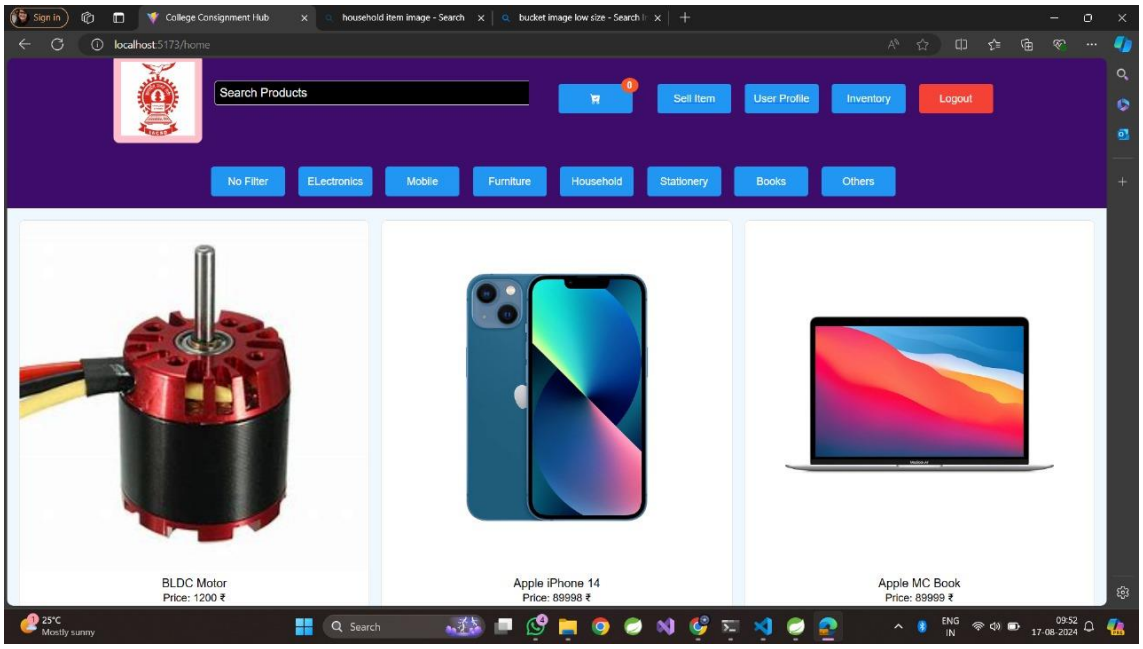
Register:


Uniform Image Sizes
e commerce react website - Yo
College Consignment Hub
localhost:5173/register
Gmail
YouTube
Maps
C-DAC Common Ad...
Aptitude Questions...
Aptitude Time and...
Quantitative Aptitu...
Learn C++ – Skill up...
DBT - Google Drive
Deadpool.2016.720...
All Bookmarks
Register
Username:
Student Name:
Email:
Password:
Confirm Password:
Address:
25°C
Mostly sunny
Search
ENG
IN
09:37
17-08-2024

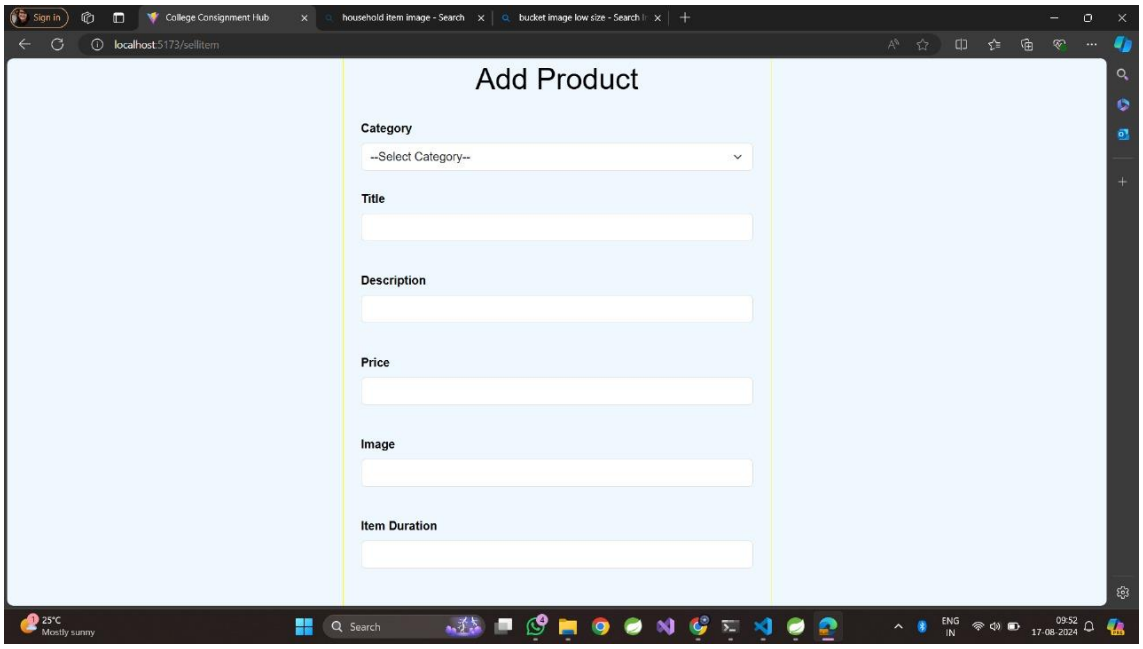
Edit profile:



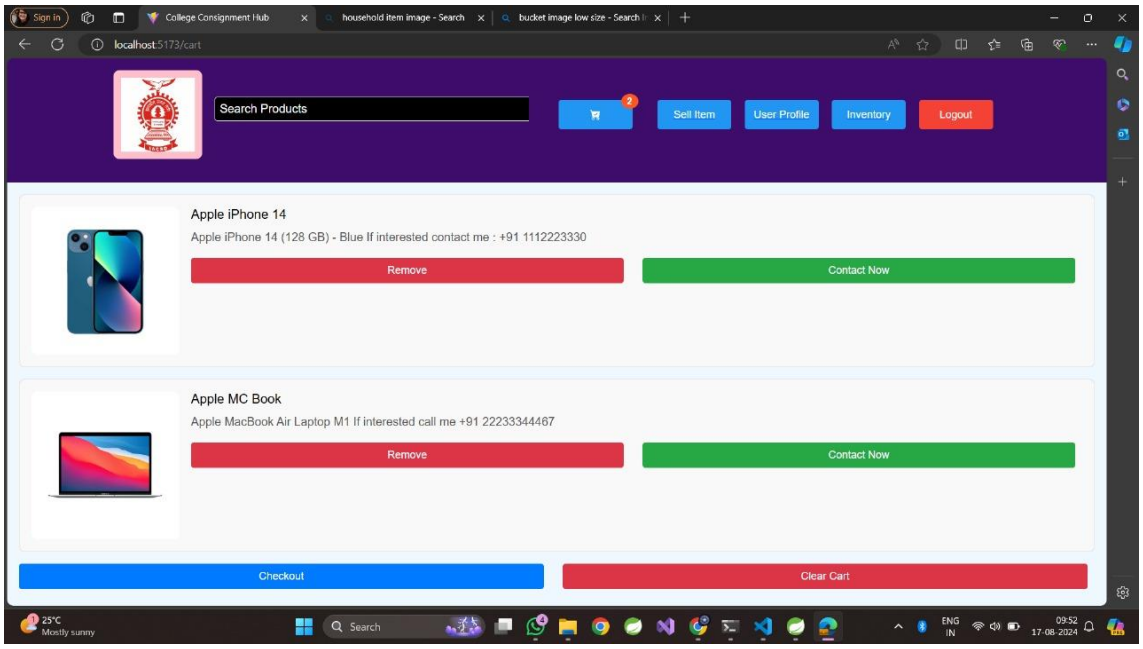
Student Dashboards:



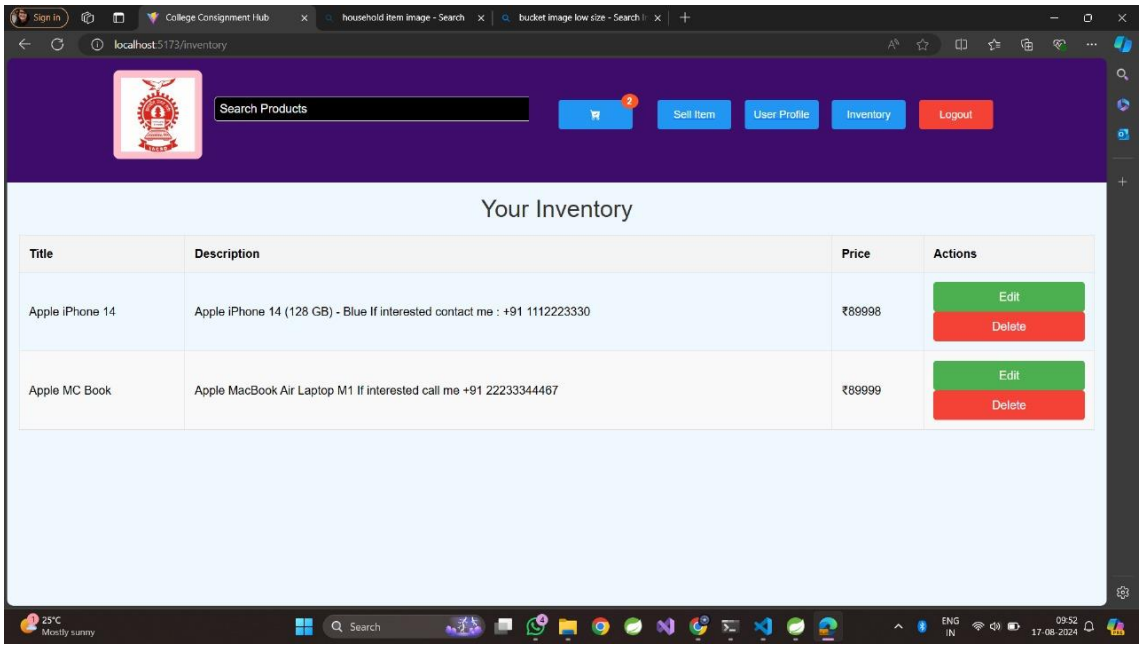
Add Item:


Sign in
College Consignment Hub
household item image - Search
bucket image low size - Search
localhost:5173/sellitem
Add Product
Category
--Select Category--
Title
Description
Price
Image
Item Duration
25°C
Mostly sunny
Search
ENG
IN
09:52
17-08-2024

Add To Cart


College Consignment Hub
household item image - Search
bucket image low size - Search
localhost:5173/cart
Search Products
2
Sell Item
User Profile
Inventory
Logout
Apple iPhone 14
Apple iPhone 14 (128 GB) - Blue If interested contact me : +91 1112223330
Remove
Contact Now
Apple MC Book
Apple MacBook Air Laptop M1 If interested call me +91 22233344467
Remove
Contact Now
Checkout
Clear Cart
25°C
Mostly sunny
Search
ENG
IN
09:52
17-08-2024

Watchlist:


College Consignment Hub
household item image - Search
bucket image low size - Search
localhost:5173/inventory
Search Products
2
Sell Item
User Profile
Inventory
Logout
Your Inventory
Title
Description
Price
Actions
Apple iPhone 14
Apple iPhone 14 (128 GB) - Blue If interested contact me : +91 1112223330
₹89998
Edit
Delete
Apple MC Book
Apple MacBook Air Laptop M1 If interested call me +91 22233344467
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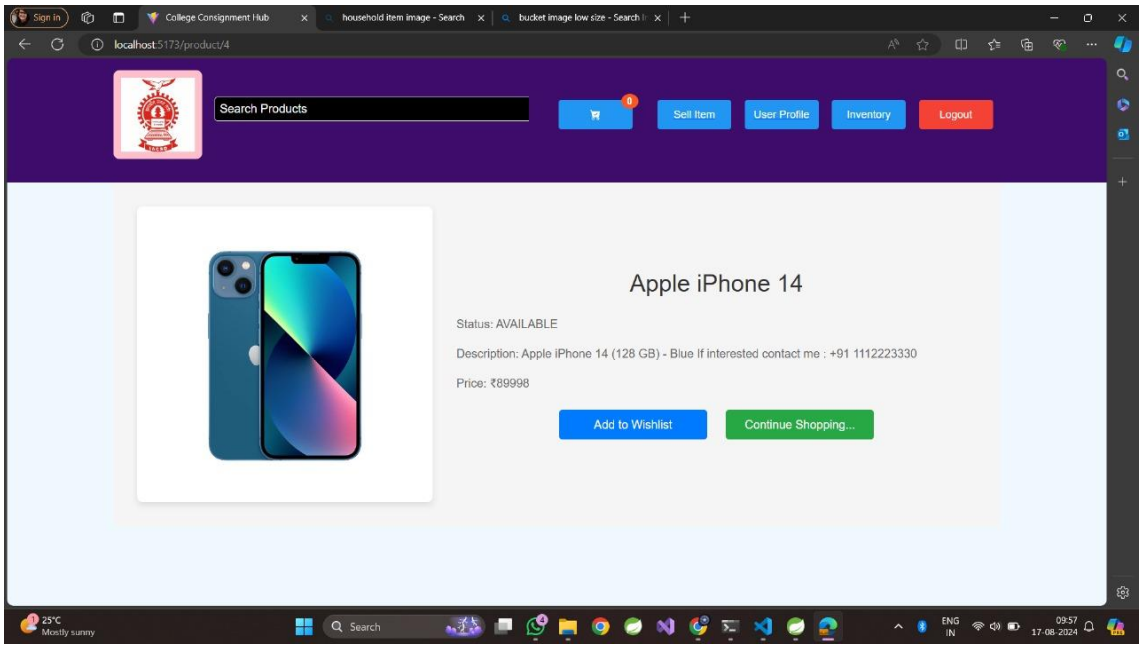
Delete
25°C
Mostly sunny
Search
ENG
IN
09:52
17-08-2024

View Item:


College Consignment Hub
localhost:5173/product/4
Search Products
Sell Item
User Profile
Inventory
Logout
Apple iPhone 14
Status: AVAILABLE
Description: Apple iPhone 14 (128 GB) - Blue If interested contact me : +91 1112223330
Price: ₹89998
Add to Wishlist
Continue Shopping...

6.Future Scope

The College Consignment Hub has vast potential for growth and enhancement, with several avenues for future development. One key area of expansion is the creation of a dedicated mobile application, allowing users to conveniently access the platform from their smartphones, enhancing usability and engagement. The integration of artificial intelligence could further personalize the user experience, offering tailored recommendations based on individual preferences and behaviors. As security remains a top priority, the incorporation of advanced technologies like blockchain for transaction verification and multi-factor authentication would strengthen data protection and user trust.Additionally, expanding the platform's capabilities through integration with other campus systems, such as student services and financial aid offices, could streamline processes like textbook exchanges and provide additional value to users.

7.Conclusion

The College Consignment Hub is a transformative platform designed to address the unique needs of college communities, fostering a sustainable, secure, and user-friendly environment for the exchange of goods. By leveraging modern web technologies like Spring Boot and React, the system provides an intuitive interface and reliable back-end support, enabling students, faculty, and staff to easily buy, sell, donate, and manage items within their campus. This platform not only promotes the reuse and recycling of items but also strengthens the sense of community within the college. The successful implementation of the College Consignment Hub marks a significant step forward in creating a sustainable and resource-efficient campus environment.

8.References

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3. Williams, K. (2021). *Building Community through Campus Initiatives: The Impact of Shared Resources.* College Student Affairs Journal, 39(2), 56-67.