A
Project Report On

E-MART
The Virtual Existence for Local Stores

By

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B.Tech.(CE) Semester - VI
Subject : **System Design Practice (CE-621)**

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CERTIFICATE

This is to certify that the Practical / Term work carried out in the subject of **System Design Project** and recorded in this report is bonafide work of
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Abstract

E-Mart web application is intended to provide complete solutions for vendors as well as customers through a single gateway using the internet as the sole medium. It will enable vendors to set up online shops , customers to browse through the shop and purchase them online without having to visit the shop physically. The administration module will enable a system administrator to approve and reject requests for new shops and maintain various lists of shop category

This document is meant to discuss the features of E-Mart, so as to serve as a guide to the developers on one hand and a software validation document for the prospective client on the other.

1.INTRODUCTION

1.1 Project Details : Brief Specifications

E-Mart is aimed towards the vendors who want to reach out to the maximum cross-section of customers and common people who can be potential customers. This project envisages bridging the gap between the seller, the retailer and the customer. E-Mart should be user-friendly, 'quick to learn' and reliable software for the above purpose. E-Mart is intended to be a stand-alone product and should not depend on the availability of other software. It should run on any web browser.

1.2 Technology Used

Back End: Python (Django Rest Framework)

Front End: React-Redux

Database: SQlite3

2. SOFTWARE REQUIREMENT SPECIFICATIONS

2.1 Functional Requirements

R.1 Login and Registration for Application
- R.1.1 Registration for Application
  - Description: This function creates an account.
  - Input: User Details
  - Output: Appropriate Response
  - Exception: Error Message
- R.1.2 Login for Application
  - Description: Logging In
  - Input: User Details
  - Output: Appropriate Response
  - Exception: Error Message

R.2 Manage Profile
- Description: User can Manage Profile
- R.2.1 Add Profile Details
  - Input: User Information
  - Output: Success Message
- R.2.2 Update Profile
  - Input: Update Design for T-Shirt
  - Output: Success Message
- R.2.3 View Profile
  - Input: User Selection
  - Output: Success Message

R.3 Manage Shops
- Description: Vendors can mange shops and Customers can get product list
- R.3.1 Add Product
  - Input: Product Information
  - Output: Success Message
- R.3.2 Update Product Details
  - Input: Update Details for Product
  - Output: Success Message
- R.3.3 Delete Product
  - Input: User Selection
  - Output: Success Message

R.3.4 Show Products
Input: User Selection
Output: Products List

R.4 Manage Orders:
Description: Customer Can Manage Cart and Orders
R.4.1 Add Product to Cart
Input: User Selection
Output: Cart Details Updation
R.4.2 Remove Product from Cart
Input: User Selection
Output: Cart Details Updation
R.4.3 Place Order
Input: User Selection
Output: Redirect to Address selection
R.4.4 Order Payment
Description: Redirect to 3rd party payment gateway
Input: User Selection
Output: Success Message, Order details and Cart details Updation

R.5 Manage Reviews:
Description: Customer Can Add Reviews to placed products
R.5.1 Add Product Review
Input: Review Description
Output: Review List Updation
R.5.2 Remove Product Review
Input: User Selection
Output: Review List Updation
R.5.3 Show Product Review
Input: User Selection
Output: Review list of selected products

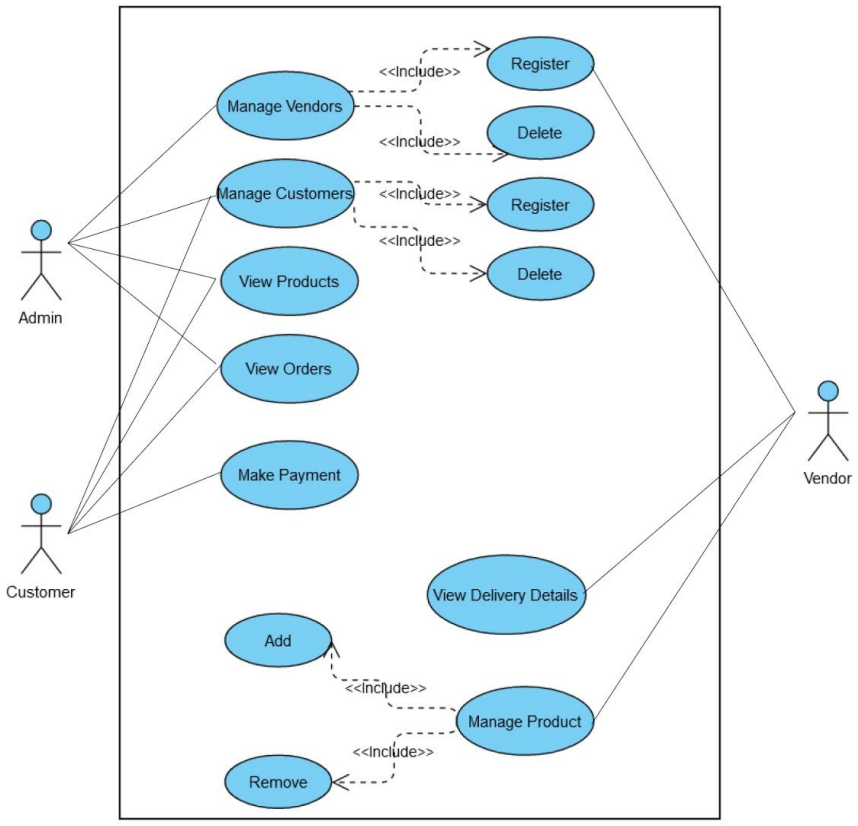
2.2 Non-Functional Requirements

1. **Flexibility:**
   The system should be developed in such a way that it is easily customized. If new functions are required, there will be little effort required to update the system to support new transactions.

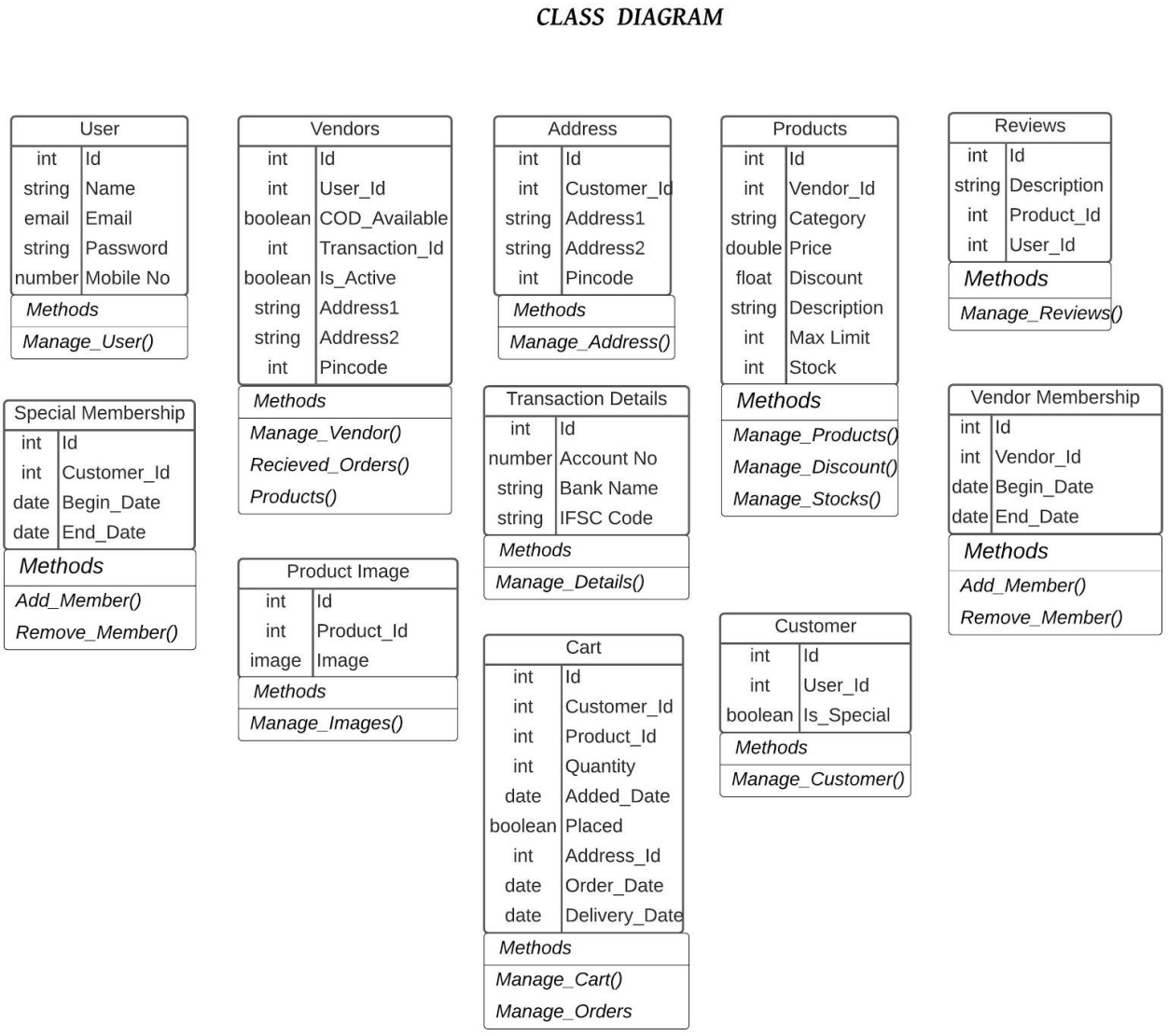
2. **Reliability:**
   As the system provides the right tools for discussion, it must be made sure that the system is reliable in its operations and for securing the sensitive details.

3.DESIGN

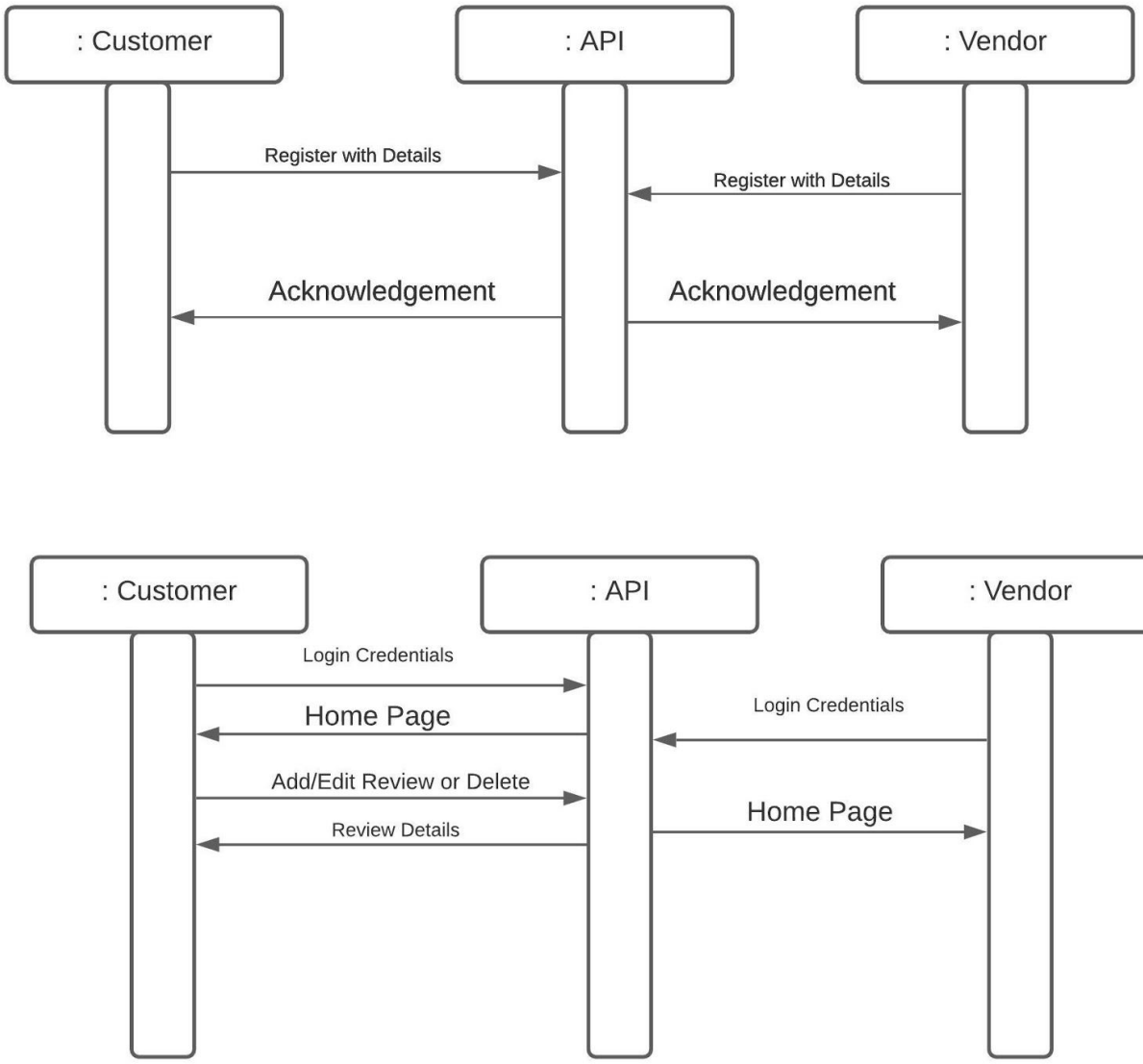
3.1 Use Case Diagram

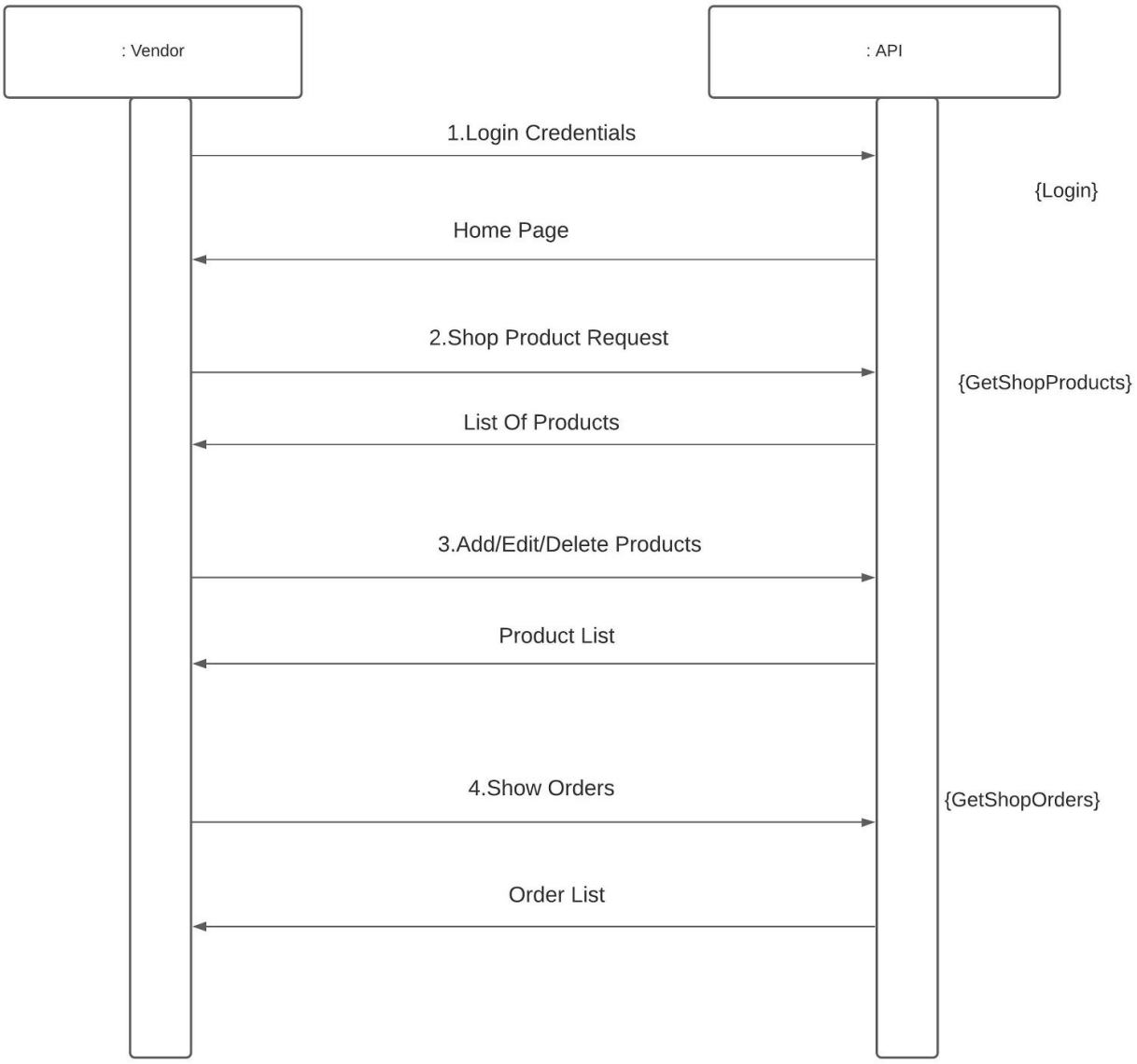


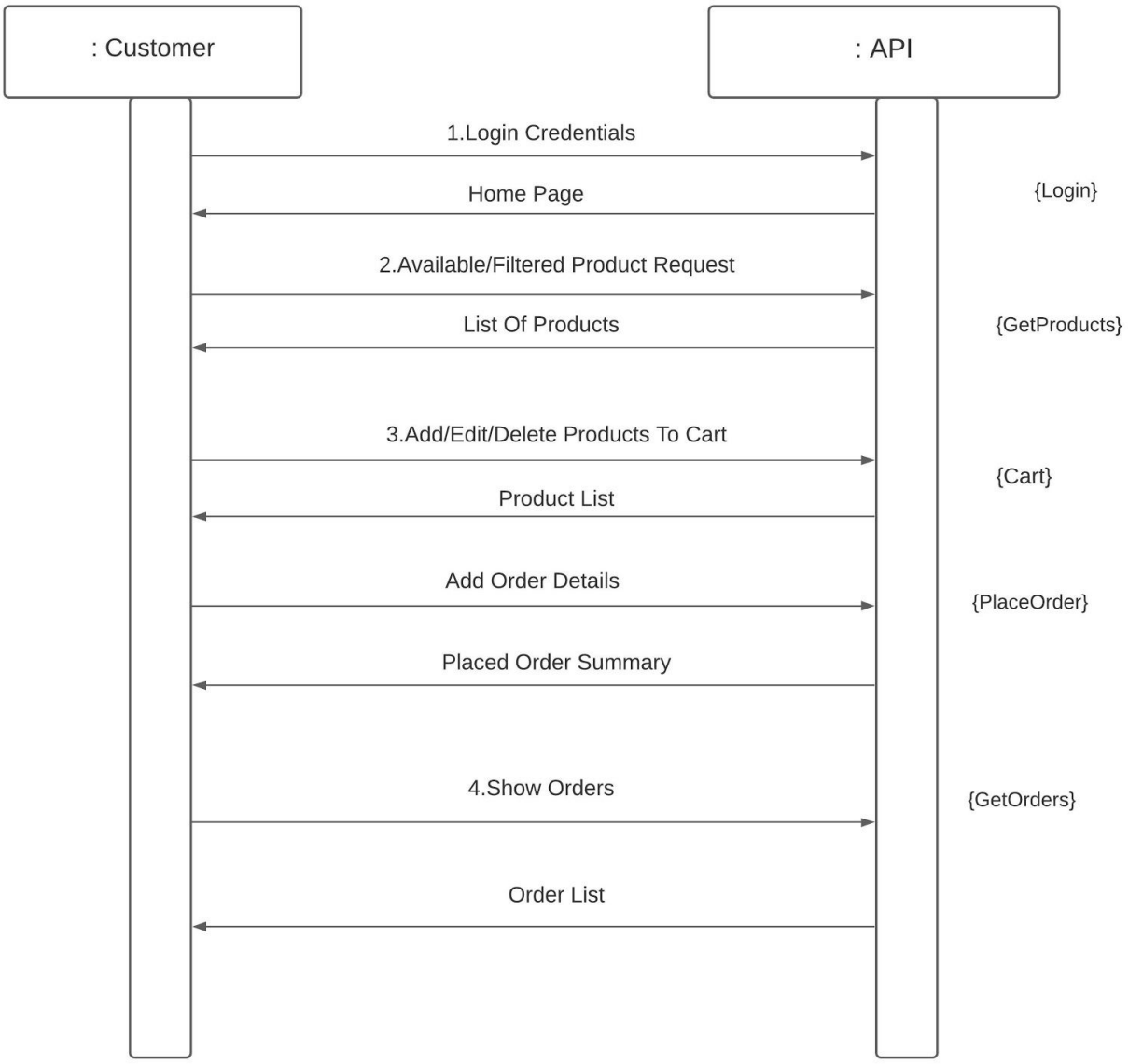
3.2 Class Diagram



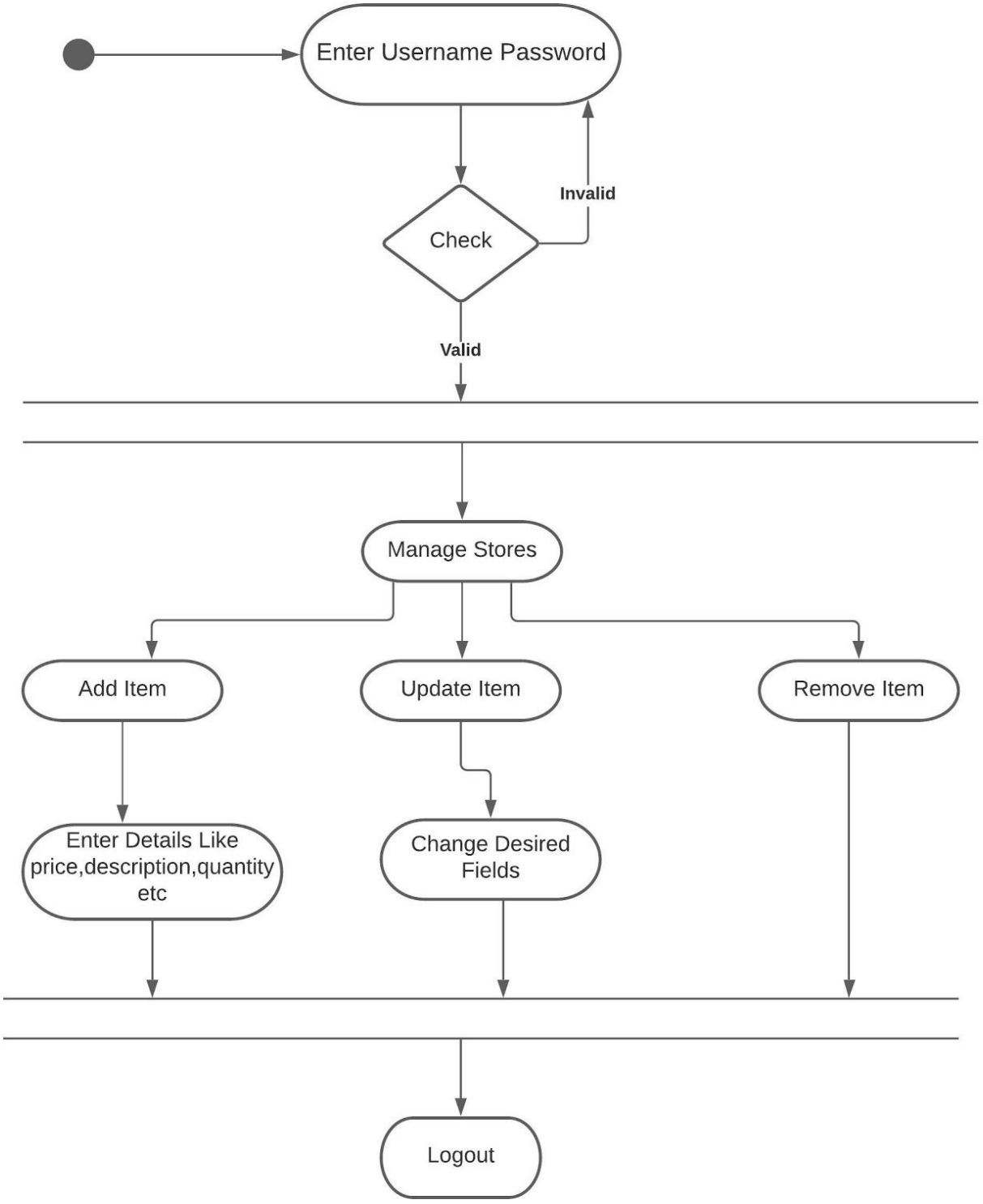
3.3 Sequence Diagram

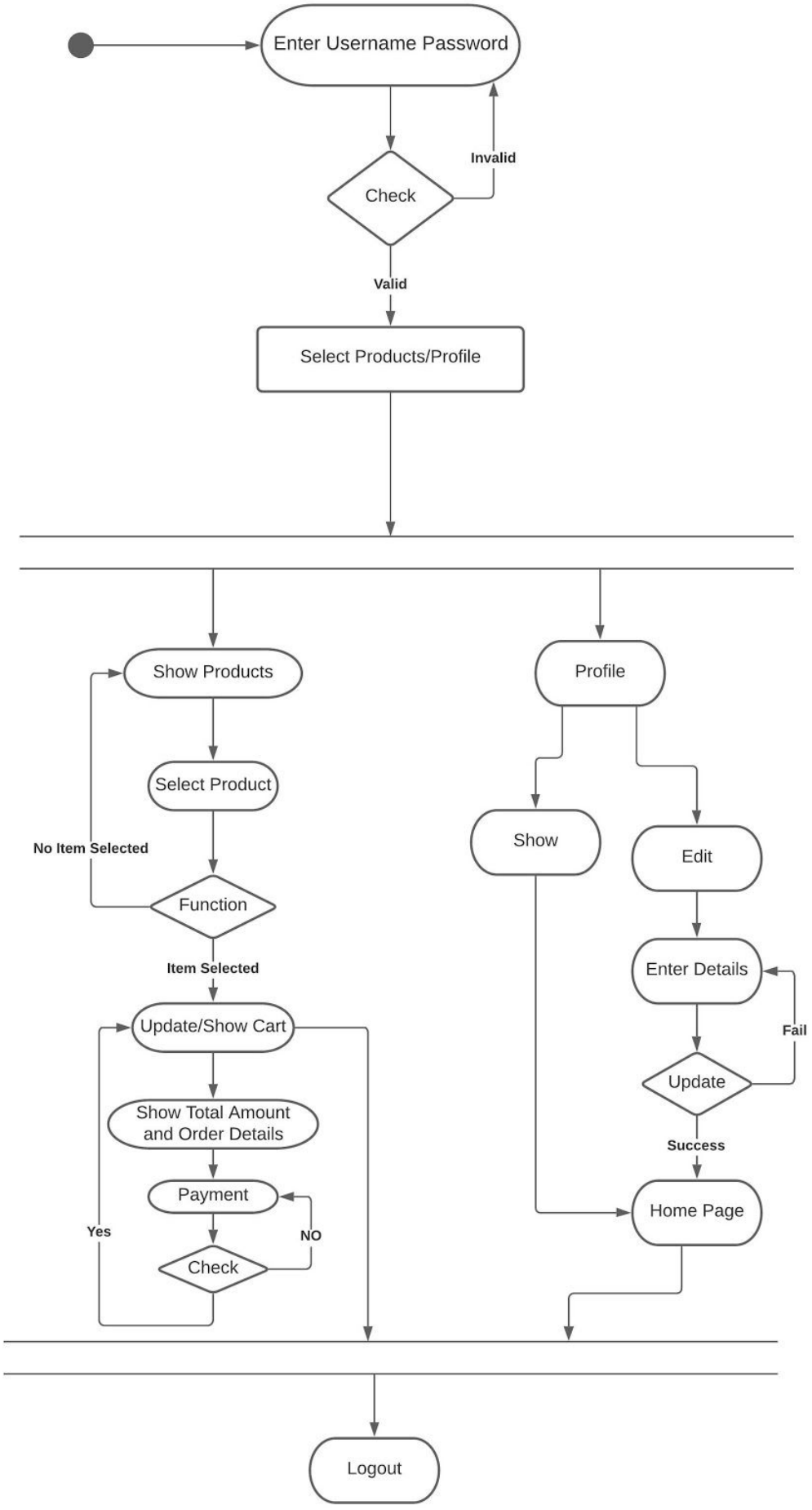



: Vendor
: API
1.Login Credentials
{Login}
Home Page
2.Shop Product Request
{GetShopProducts}
List Of Products
3.Add/Edit/Delete Products
Product List
4.Show Orders
{GetShopOrders}
Order List

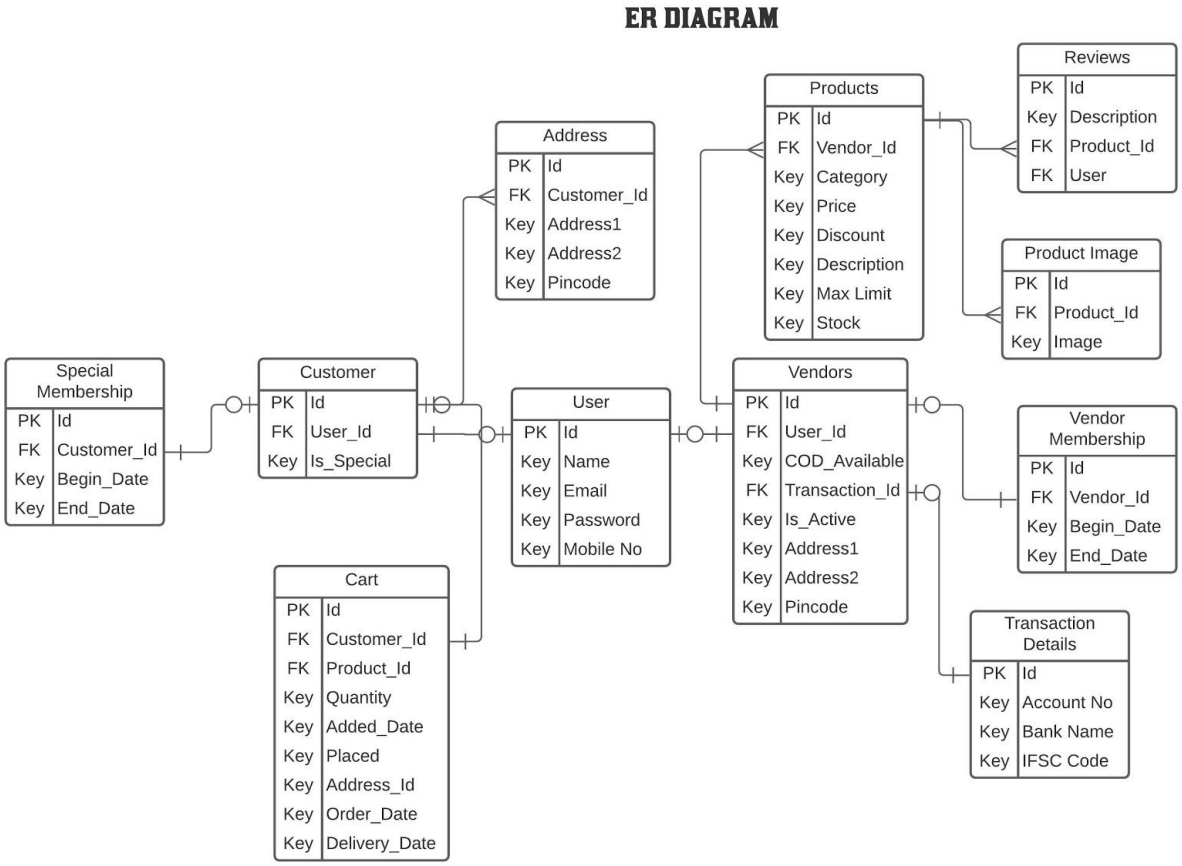

: Customer
: API
1.Login Credentials
Home Page
{Login}
2.Available/Filtered Product Request
List Of Products
{GetProducts}
3.Add/Edit/Delete Products To Cart
{Cart}
Product List
Add Order Details
{PlaceOrder}
Placed Order Summary
4.Show Orders
{GetOrders}
Order List

3.4 Activity Diagram




Enter Username Password
Invalid
Check
Valid
Select Products/Profile
Show Products
Select Product
No Item Selected
Function
Item Selected
Update/Show Cart
Show Total Amount and Order Details
Payment
Yes
NO
Check
Profile
Show
Edit
Enter Details
Fail
Update
Success
Home Page
Logout

3.6 ER Diagram



3.7 Data Dictionary

USER						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	Id	Integer	Yes	Yes	PK	
2	First Name	Varchar2	Yes	No		
3	Last Name	Varchar2	Yes	No		
4	Email	Email	Yes	No		
5	Password	Password	Yes			

VENDOR						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	User_id	Interger	Yes	Yes	FK	User
2	Shop_name	Varchar2	Yes	No		
3	Address	Varchar2	Yes	No		
4	Pincode	Number	Yes	No		
5	Code_available	Boolean	Yes	No		
6	Transaction_id	Varchar2	Yes	Yes		

CUSTOMER						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	User_id	Interger	Yes	Yes	FK	User

ADDRESS						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	User_id	Interger	Yes	Yes	FK	User
2	Address_title	Varchar2	Yes	No		
3	Address	Varchar2	Yes	No		
4	Pincode	Number	Yes	No		

PRODUCTS						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	Vendor_id	Interger	Yes	No	FK	Vendor
2	Title	Varchar2	Yes	No		
3	Catagory	Varchar2	Yes	No		
4	Amount	Interger	Yes	No		
5	Quantity	Interger	Yes	No		
6	Details	Varchar2	Yes	No		

PRODUCT_IMAGE						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	Product_id	Interger	Yes	No	FK	Product
2	Image	Image	Yes	No		

CART_DETAILS						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	Product_id	Interger	Yes	No	FK	Product
2	Customer	Interger	Yes	No	FK	Customer
3	Quantity	Integer	Yes	No		
4	Added_date	Date-Time	Yes	No		
5	Placed	Boolean	Yes	No		
6	Address_id	Integer	Yes	No	FK	Address
7	Order_date	Date-Time	Yes	No		
8	Delivery_date	Date-Time	Yes	No		

REVIEW						
Sr. No.	Field Name	Data type	Required	Unique	PK/FK	Reference
1	User_id	Interger	Yes	No	FK	User
2	Product_id	Interger	Yes	No	FK	Product
3	Description	Varchar2	Yes	No		

4.IMPLEMENTATION DETAILS

4.1 Implementation Environment

Visual Studio Code in Windows 10

4.2 Description of Modules

1. **Register Module:**

   This module is used to create the account on a website. All fields contain some types of validations. Then the user can login to our website using his/her credentials.

2. **Login Activity :**

   This module takes users credentials and then verifies it with registered users, If users have entered incorrect credentials then alert with “Incorrect credentials. Try Again letter”, otherwise the user will be redirected to the home page with a welcome message.

3. **Shops Module:**

   This module takes vendor details and opens a store virtually and allows the user to manage the store online by adding products to the store and offering discounts.

4. **Orders Module**

   This module helps customers to manage their carts and orders and allows vendors to keep track of deliveries and store orders.

5. **Reviews Module**

   This module allows customers to give feedback about the products that they have bought.Customers can also view reviews for a product filled in by customers that have bought it earlier.

4.3 Function Prototype

- User Login:

```
def signin_view(request)
def user_update_view(request)
def signout(request)
def AddressViewSet(request)
def ChangePasswordViewSet(request)
```

- User Register:

```
def vendor_registration_view(request)
def customer_registration_view(request)
```

- Manage Shops:

```
def get_all_products(request)
def get_all_products_by_catagory(request)
def get_all_products_by_vendor(request)
def ProductViewSet(request)
def ProductImageViewSet(request)
def getProductImage(request)
```

- Manage Orders:

```
def CartDetailsViewSet(request)
def Charge(request)
def OrdersViewSet(request)
```

- Manage Review:

```
def ReviewViewSet(request)
```

5.TESTING

In this system we have used Black Box testing. The main focus of black box testing is on the validation of your functional requirements.

Here are the generic steps followed to carry out any type of Black Box Testing.
✓ Initially, the requirements and specifications of the system are examined.
✓ Tester chooses valid inputs (positive test scenario) to check whether SUT processes them correctly. Also, some invalid inputs (negative test scenario) are chosen to verify that the SUT is able to detect them.
✓ Tester determines expected outputs for all those inputs.
✓ Software tester constructs test cases with the selected inputs.
✓ The test cases are executed.
✓ Software tester compares the actual outputs with the expected outputs.
✓ Defects if any are fixed and re-tested.

Different Test Cases:

For Login:

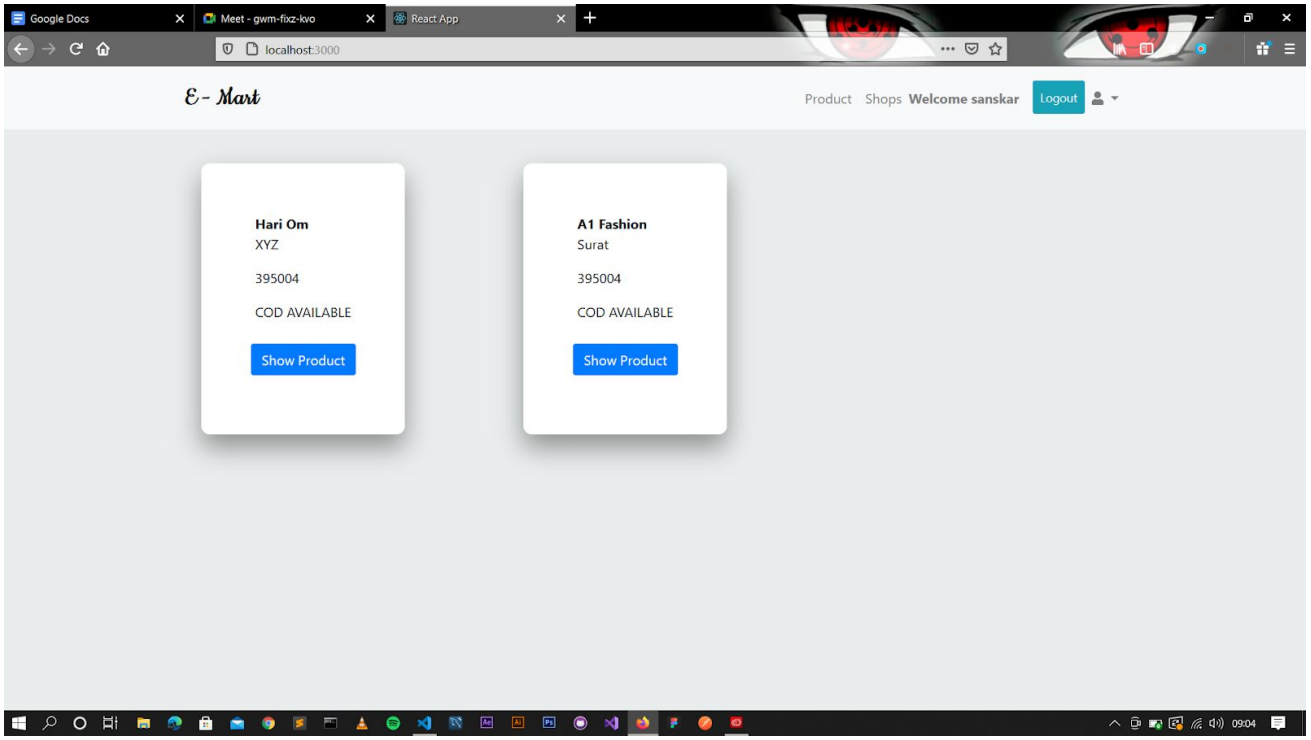
If a user enters the correct username and password then the system shows the home page of the application. If a user enters incorrect details then the system will show the message “Something is wrong, check username or password”.

For Registration:

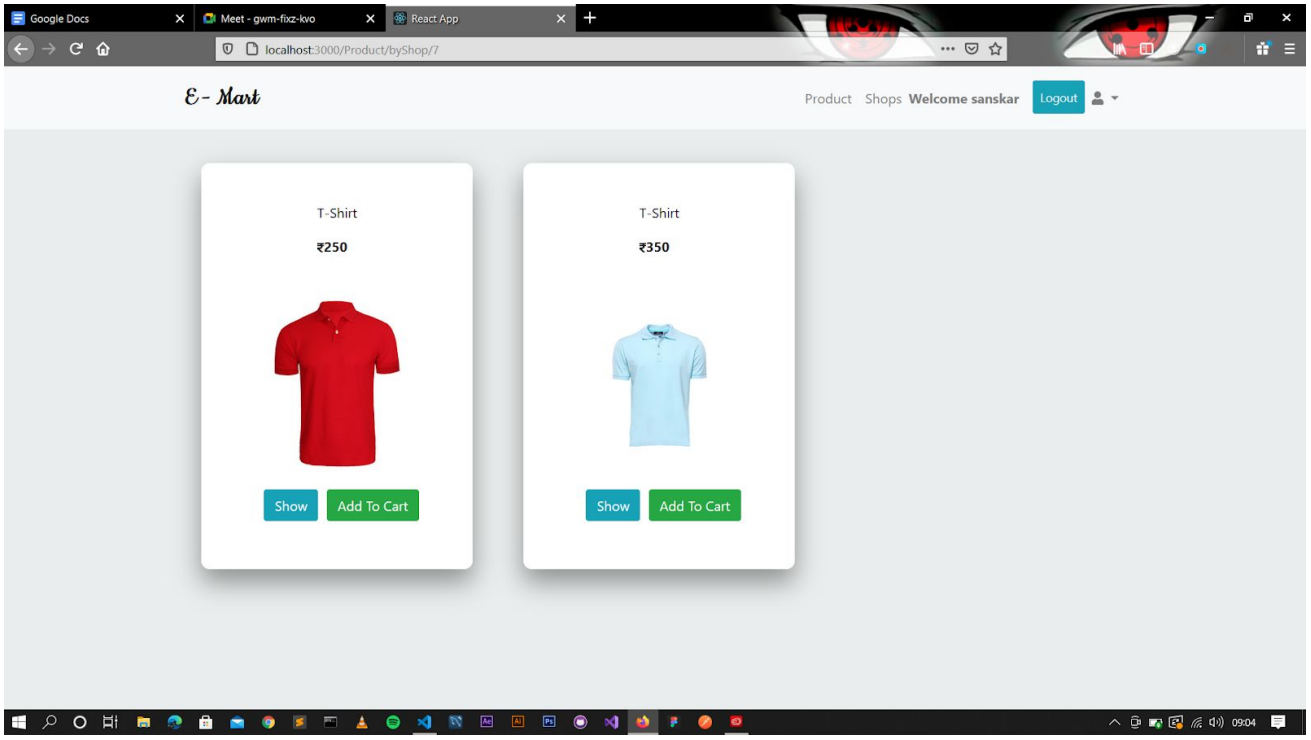
If a user enters an incorrect confirmation password then the system will show “Password does not match” message. And if a user enters correct data than he will be redirected to user details page.

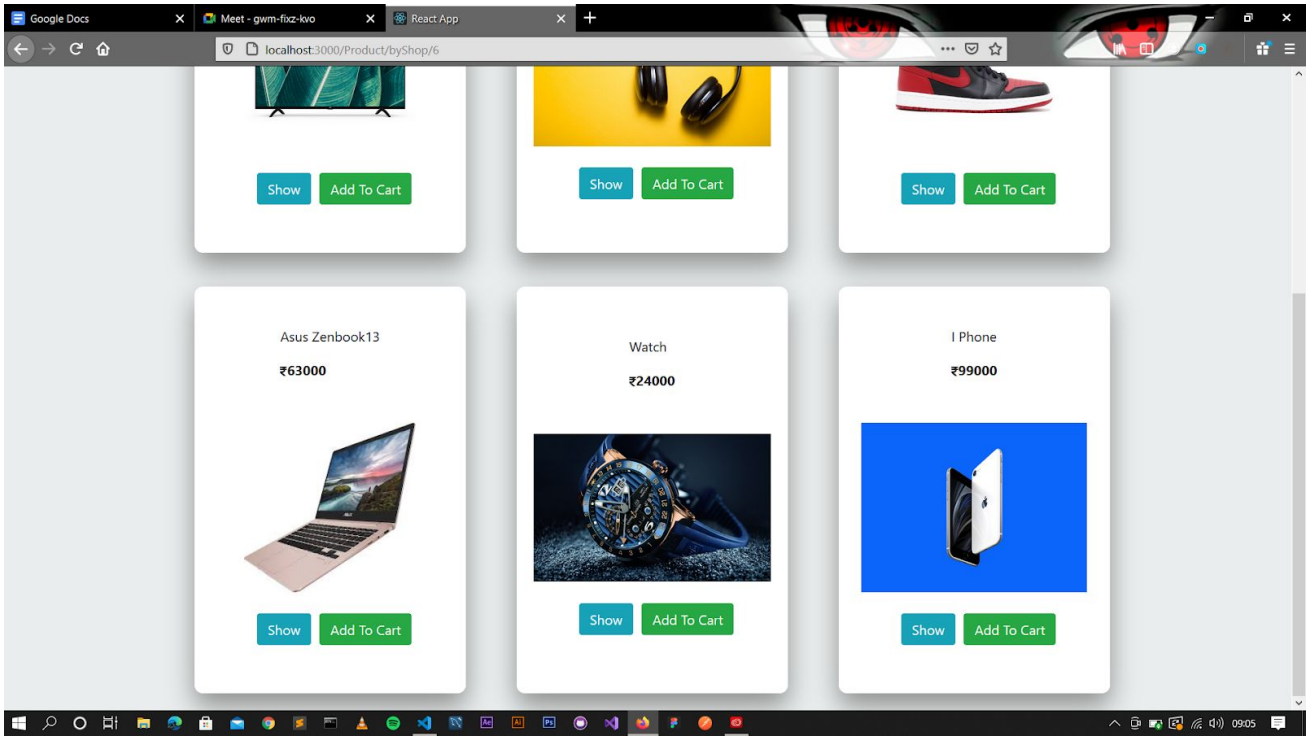
6.SCREEN-SHOTS

Customers View:

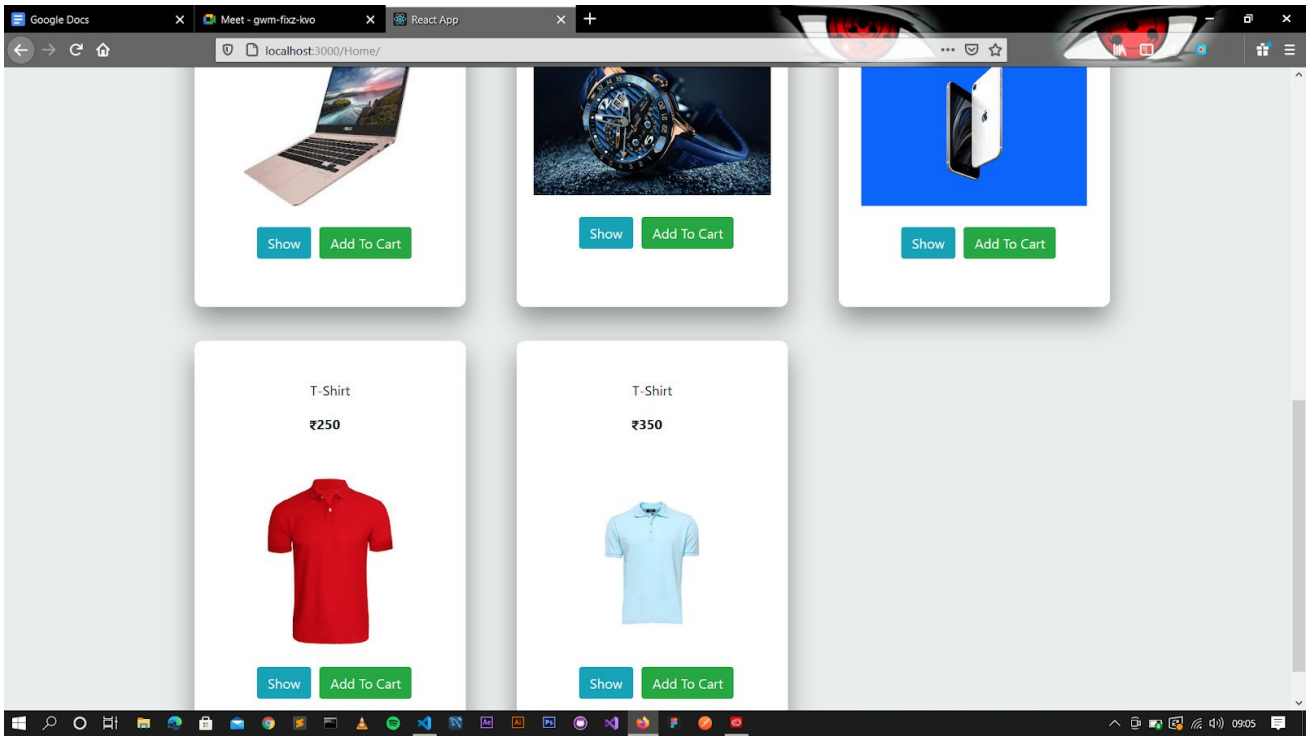


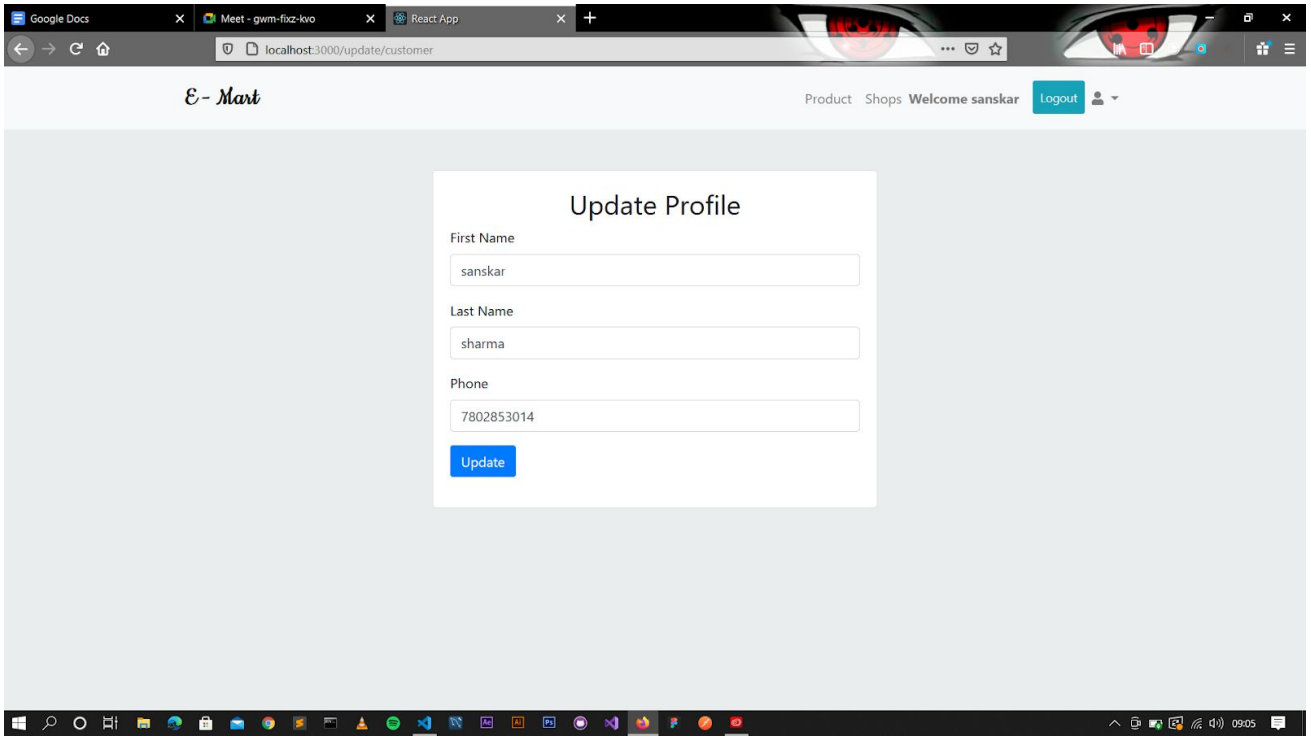
Shop View:

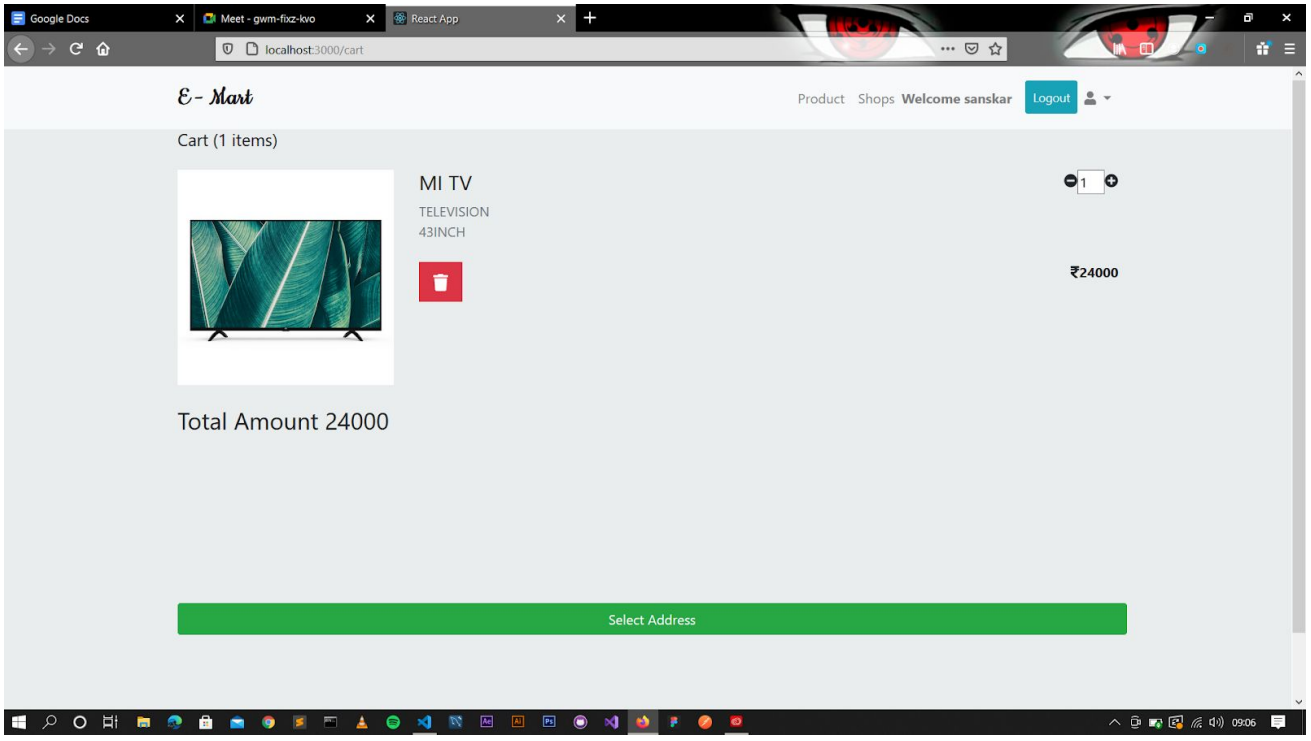

Google Docs
Meet - gwm-fixz-kvo
React App
localhost:3000/Product/byShop/7
E- Mart
Product
Shops
Welcome sanskar
Logout
T-Shirt
₹250
Show
Add To Cart
T-Shirt
₹350
Show
Add To Cart

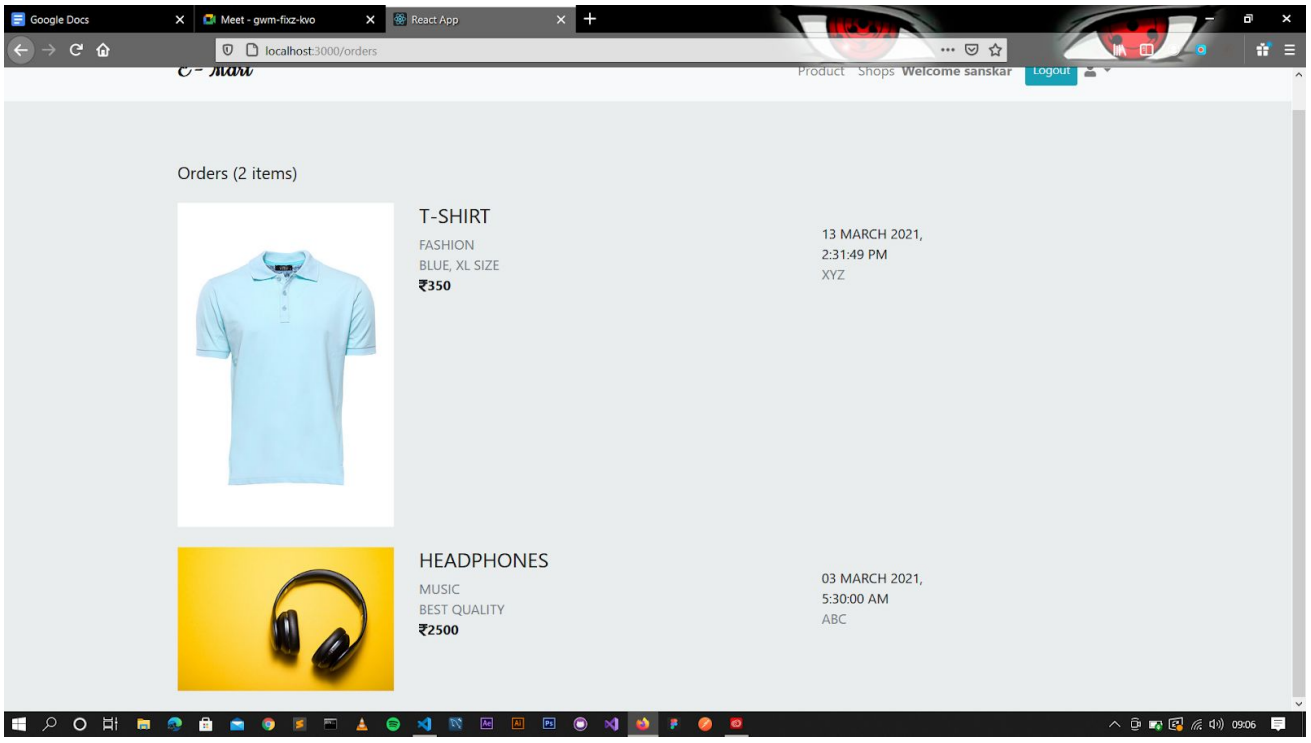

Google Docs
Meet - gwm-fixz-kvo
React App
localhost:3000/Product/byShop/6
Show
Add To Cart
Show
Add To Cart
Show
Add To Cart
Asus Zenbook13
₹63000
Show
Add To Cart
Watch
₹24000
Show
Add To Cart
I Phone
₹99000
Show
Add To Cart

All Products:

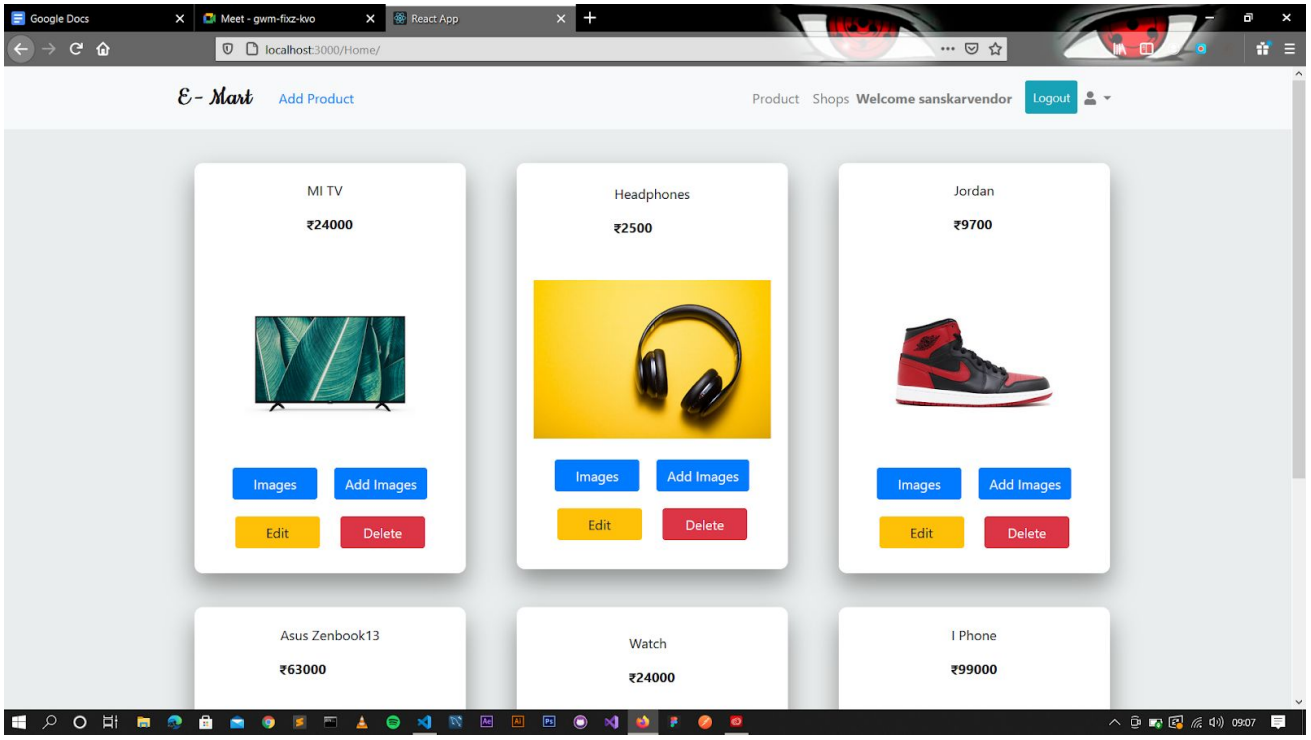


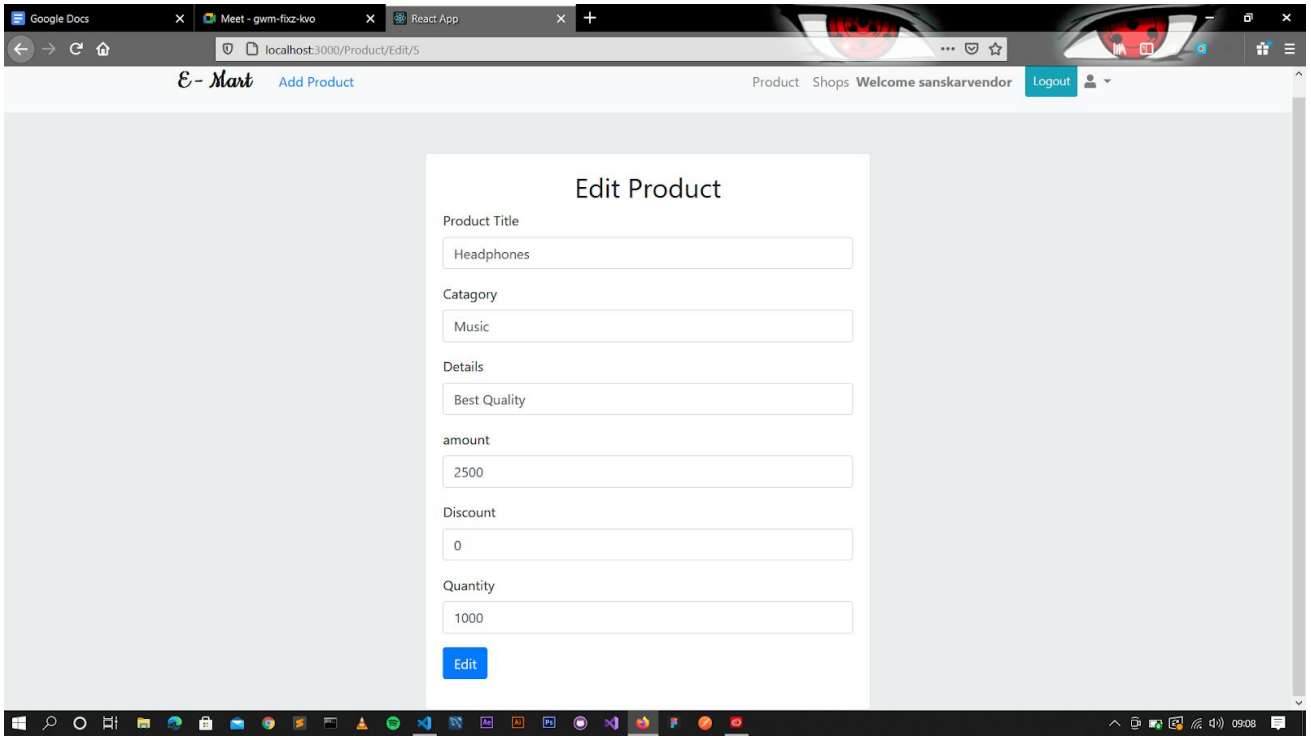


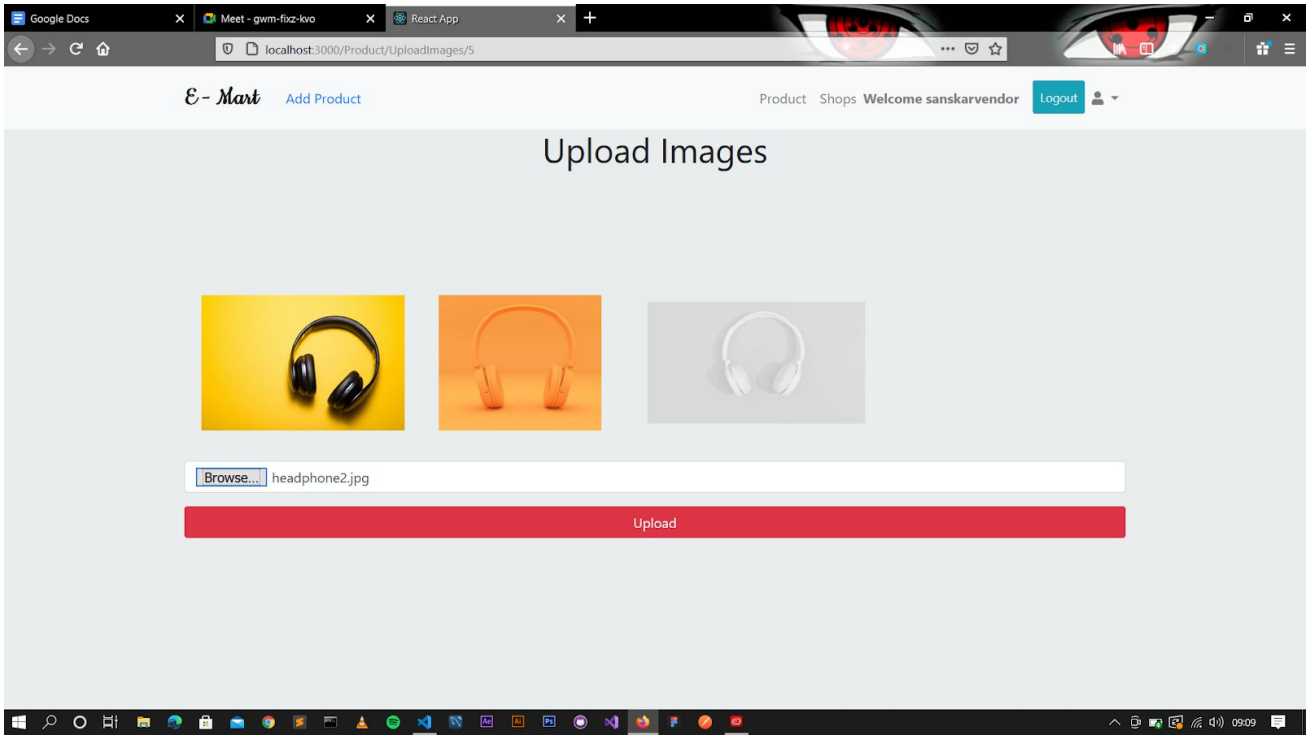

Google Docs
Meet - gwm-fixz-kvo
React App
localhost:3000/cart
E- Mart
Product
Shops
Welcome sanskar
Logout
Cart (1 items)
MI TV
TELEVISION
43INCH
1
₹24000
Total Amount 24000
Select Address

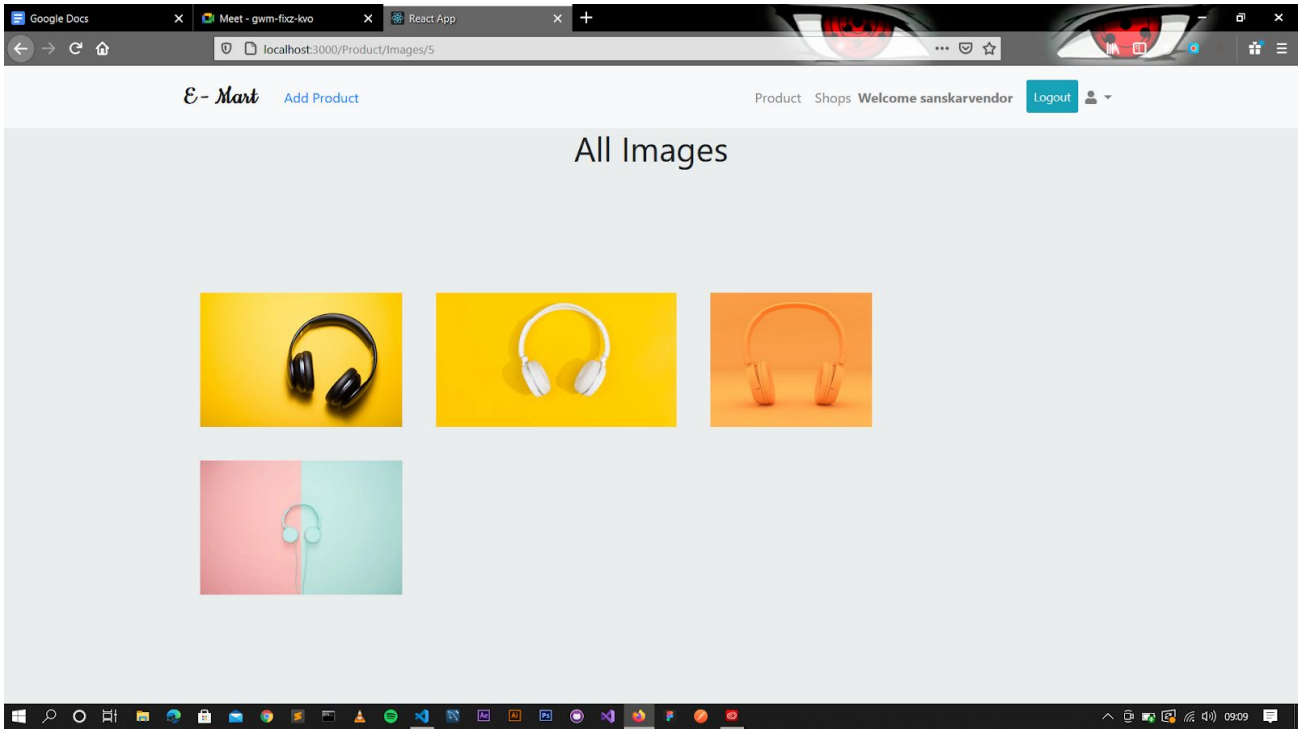

Google Docs
Meet - gwm-fixz-kvo
React App
localhost:3000/orders
Product
Shops
Welcome sanskar
Logout
Orders (2 items)
T-SHIRT
FASHION
BLUE, XL SIZE
₹350
13 MARCH 2021,
2:31:49 PM
XYZ
HEADPHONES
MUSIC
BEST QUALITY
₹2500
03 MARCH 2021,
5:30:00 AM
ABC

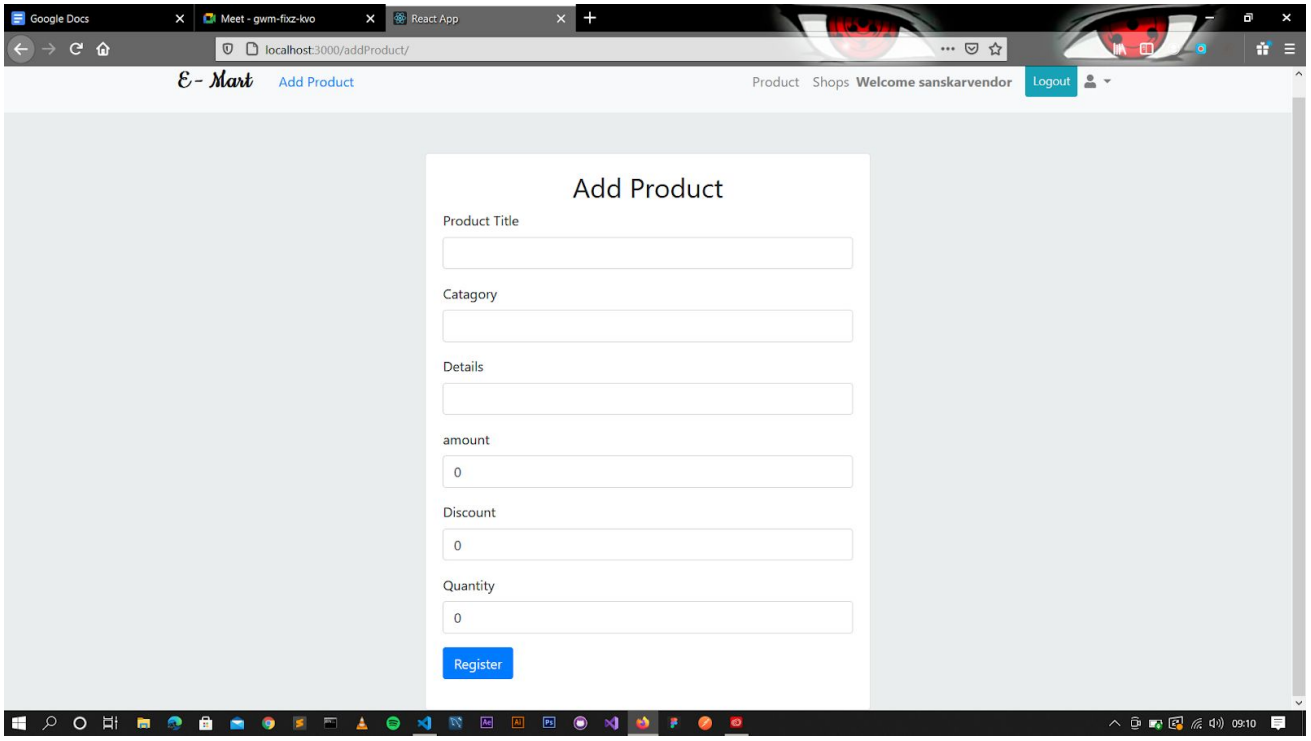
Vendors View:






Google Docs
Meet - gwm-fixz-kvo
React App
localhost:3000/Product/UploadImages/5
E-Mart
Add Product
Product
Shops
Welcome sanskarvendor
Logout
Upload Images
Browse...
headphone2.jpg
Upload


Google Docs
Meet - gwm-fixz-kvo
React App
localhost:3000/Product/Images/5
E- Mart
Add Product
Product
Shops
Welcome sanskarvendor
Logout
All Images


Google Docs
Meet - gwm-fixz-kvo
React App
localhost:3000/addProduct/
E- Mart
Add Product
Product
Shops
Welcome sanskarvendor
Logout
Add Product
Product Title
Catagory
Details
amount
0
Discount
0
Quantity
0
Register

7.CONCLUSION

Hereby, we conclude that the functionalities implemented in E-Mart System was performed by understanding all the modules according to requirements which are as given below:

- User Registration
- Login
- Product Addition and Deletion by Vendors.
- Orders Placement to customer selected address.
- Add Products to the temporary Cart.
- View Previous Orders.
- Give Review to the placed products.

After implementation of coding, comprehensive testing was performed and the results were provided in the report.

8.LIMITATIONS AND FUTURE EXTENSIONS

8.1 Limitations

1. **Competition:** It has a small presence in terms of cities covered hence, it is getting a huge competition from other startups like Grofers, PepperTap, Nature's Basket, ZopNow, Aaram Shop, Mera Grocer, etc.
2. **Bigger Players:** Bigger players in terms of financial backing and presence are also entering this lucrative industry. Players like Amazon, Flipkart and Google have also entered this industry. This may prove fatal for smaller players like Big Basket to compete with them.
3. **Smaller Players:** Many other localized shops have picked up on this trend and have started home delivery service to nearby customers thereby killing groups of target customers across regions and cities.
4. **Customer Retention:** It is very difficult to retain customers. They would tend to move with the service provider that offers the most discounts

8.2 Future Extensions

1. Data-driven ads.

   Ads on the basis of cookies.

2. Recommendations, Discounts on basis of Machine Learning.

   Analysed recommendations and prices for boosting sales.

3. Benchmarking products as System assured.

   System approved products to attract customers.

4. Government collaboration.