INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT, AKURDI, PUNE

"Tiffin Trail WebApp"

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Submitted By:

Group No: 29

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Project Guide

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Centre Coordinator

ABSTRACT

Tiffin Trail is an innovative web application designed to simplify and enhance the process of ordering and managing daily meals. The platform connects customers with local tiffin service providers, offering a convenient, customizable, and reliable solution for everyday food needs. It enables users to browse menus, place orders, manage subscriptions, and make secure payments online, ensuring a smooth and hassle-free dining experience. The application leverages React.js for a dynamic and responsive front-end, and Spring Boot for a robust backend API. Security is implemented using Spring Security for authentication and authorization, while online transactions are securely processed through Razor pay integration.

Tiffin Trail is a scalable and user-friendly platform aimed at bridging the gap between customers seeking homemade meals and tiffin service providers wanting to expand their reach. The project addresses challenges such as order management, subscription tracking, and payment processing through an integrated, technology-driven approach. Built with React for the front-end and Spring Boot for the backend, Tiffin Trail ensures reliability, performance, and a delightful user experience for both customers and vendors.

ACKNOWLEDGEMENT

I take this opportunity to express my heartfelt gratitude to the Almighty for His blessings, which enabled us to complete our project, *Tiffin Trail*, successfully. I would like to extend my sincere thanks to our esteemed guide, **Mr. Harsal Waghchaure,** for his constant support, valuable guidance, and encouragement throughout the development of this project. His expert advice at every stage was instrumental in shaping the outcome. I am also grateful to our respected Centre Coordinator, **Mr. Prashant Deshpande,** for providing us with the necessary resources and a conducive environment for learning and development. I wish to thank all the faculty members of the institute for their continuous support, mentorship, and motivation during this journey. A special thanks to my project partner, for his collaboration, dedication, and teamwork throughout the development process. Finally, I would like to express my deep appreciation to my friends and family, whose unwavering support and encouragement helped me complete this project with confidence.

Abhimanyu Digamber Karche (25024122005)

Raman Shrihari Ghule (250241220154)

Table of Content

1. INTRODUCTION

Tiffin Trail is a comprehensive web application designed to bridge the gap between customers and tiffin service providers by digitizing the traditional lunch box system. The platform allows users to explore various meal options, subscribe to tiffin services, customize meal plans, and securely process online payments — all through a seamless digital experience. It is ideal for working professionals, students, and households looking for consistent and home-style meals.

Built using React.js for the front end and Spring Boot for the backend, the application provides a responsive, user-friendly interface and a scalable backend architecture. Spring Security ensures authentication and authorization, while Razor pay integration enables smooth online payments.

Tiffin Trail ensures convenience, transparency, and efficiency in meal delivery services while empowering vendors to manage menus, subscriptions, and delivery operations effectively.

1.1 Purpose

The purpose of the Tiffin Trail system is to provide an online platform that streamlines the process of ordering, delivering, and managing daily meal services. It aims to eliminate manual processes and provide real-time tracking, flexibility in subscriptions, and digital payment solutions to both users and service providers.

1.2 Scope

Tiffin Trail is a full-stack web application developed using **React.js** for the frontend and **Spring Boot** for the backend. It includes features such as:

- User authentication and authorization with JWT.
- Seller profile management.
- Menu creation and management.
- Order placement and tracking.
- Secure payments through Razorpay.
- Role-based access for Admin, Seller, and Customer.

1.3 Definitions, Acronyms, and Abbreviations

- **JWT**: JSON Web Token
- **API**: Application Programming Interface
- **UI**: User Interface

1.4 References

- Spring Boot Documentation
- React.js Documentation
- Razorpay API Documentation
- MySQL Database Documentation

1.5. Overall Description

1.5.1 Product Perspective

Tiffin Trail follows a **client-server architecture**. The frontend (React.js) communicates with the backend (Spring Boot) via RESTful APIs. The backend interacts with the MySQL database for data storage and retrieval. Razorpay integration enables payment processing.

1.5.2 Product Functions

- User Registration/Login (JWT-based authentication)
- Seller profile creation and management
- Menu creation, update, and deletion
- Order placement and status tracking
- Payment processing
- Role-based dashboards for Admin, Seller, and Customer

1.5.3 User Classes and Characteristics

- **Admin:** Manages users, approves sellers, monitors orders.
- **Seller:** Creates and manages tiffins, views orders, updates delivery status.
- **Customer:** Browses menus, places orders, customizes meal plans, makes payments.

1.5.4 Operating Environment

- **Frontend:** React.js – 18.2.0, HTML5, CSS3, JavaScript – ES6
- **Backend:** Spring Boot – 5.3.3, Spring Security – 6.5.1, JWT, Hibernate/JPA – 3.1
- **Database:** MySQL - 8.0.33
- **Server:** Apache Tomcat (embedded in Spring Boot) – 10.1.40
- **Payment Gateway:** Razorpay – 1.4.8

2.Software Requirement Specification

2.1 Software and Hardware Requirements

Server Side:

- HDD: 500 GB or above
- Processor: Intel core i5 or above
- RAM: 4GB or above
- Database: MySQL

Client Side (minimum requirement):

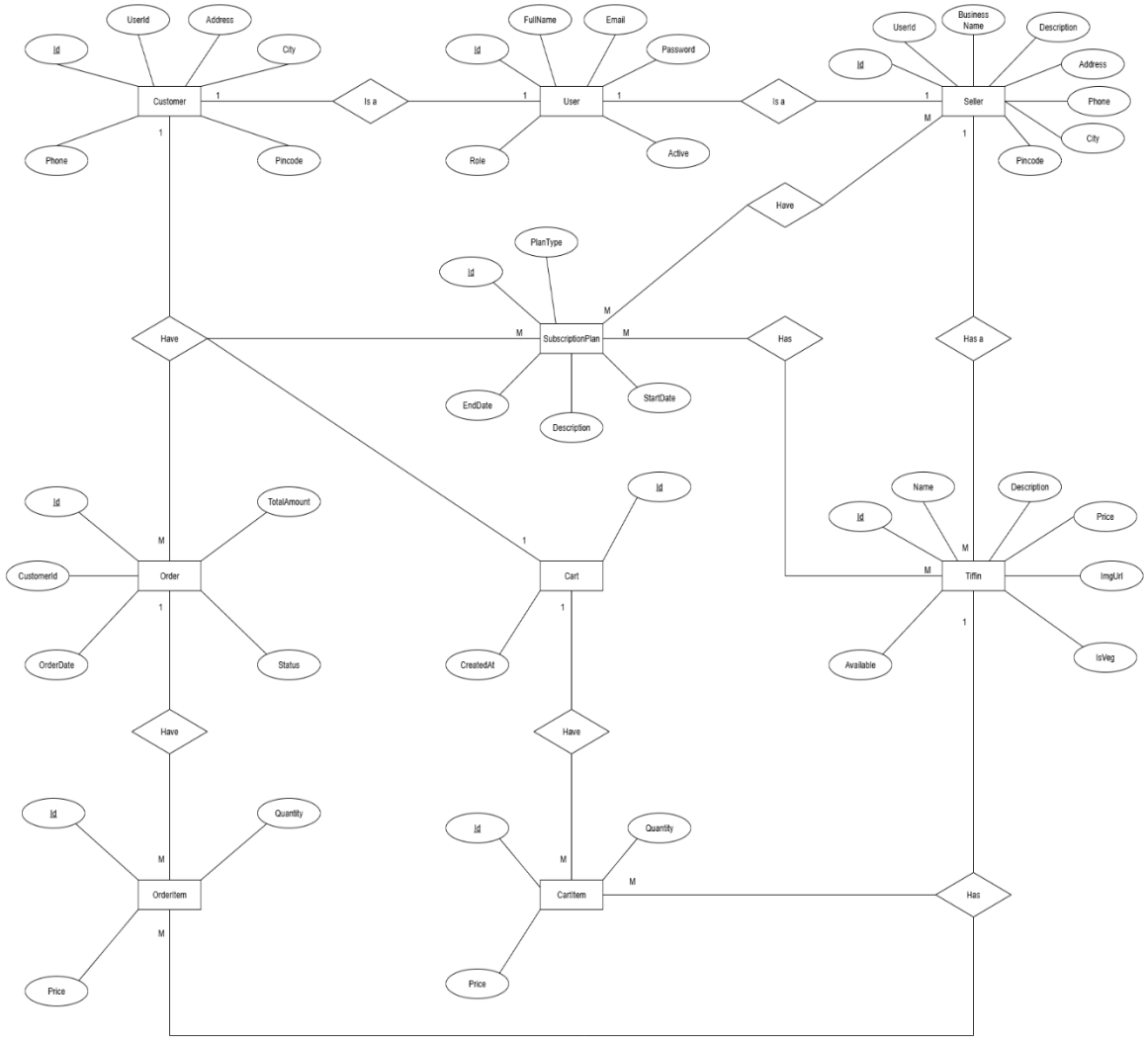
- Processor: Intel Dual Core
- HDD: Minimum 80GB Disk Space
- RAM: Minimum 2GB
- OS: Windows 7, Linux

Technology platform used for project

- HTML – 5, Bootstrap – 5.3.3
- JavaScript – ES6
- ReactJS – 18.2.0
- Spring Boot REST API – 3.4.5
- Hibernate – 6.4.4. Final
- JPA – Jakarta Persistence 3.1
- MySQL – 8.0.33
- GITHUB – Cloud Repository (Latest)

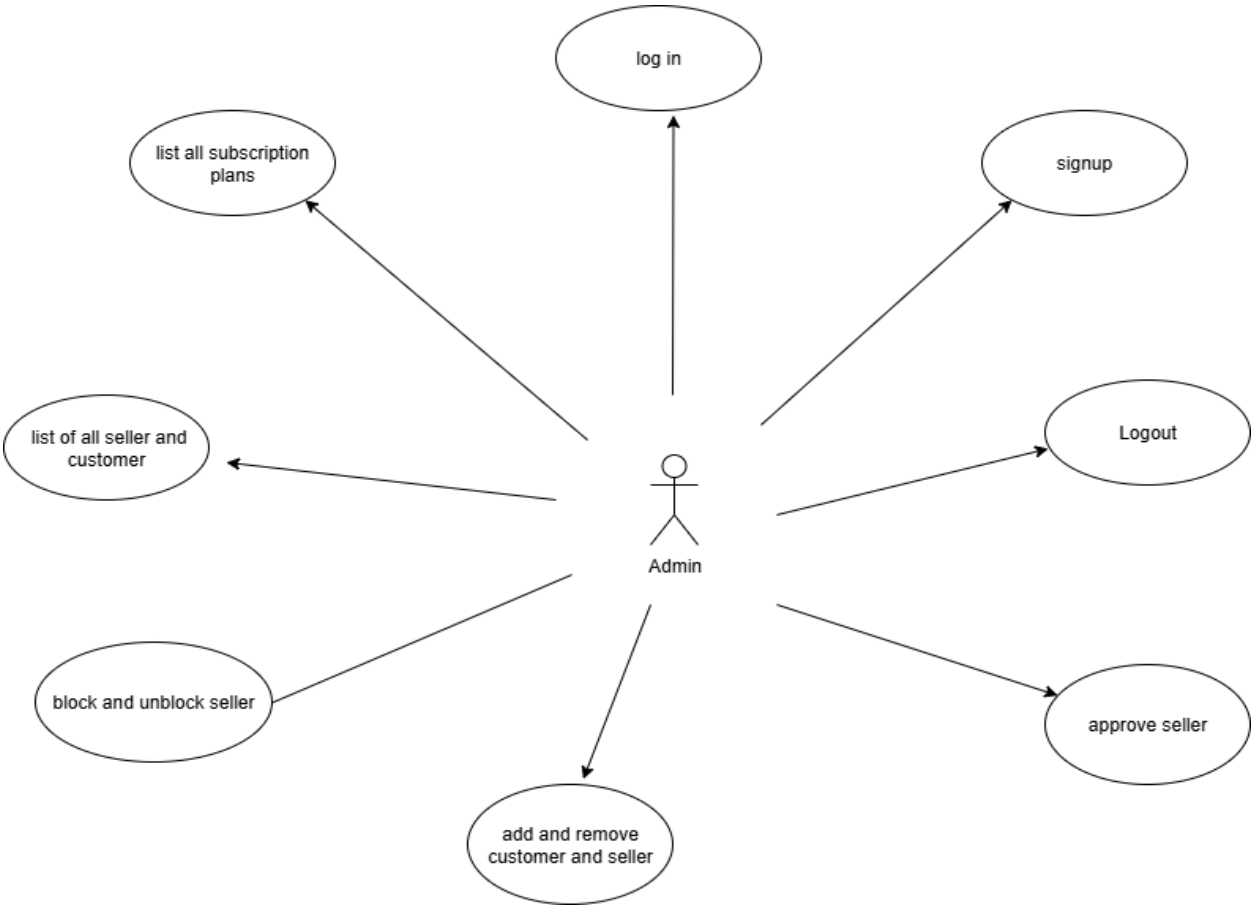
3. DIAGRAMS

3. 1 Entity Relationship Diagram:

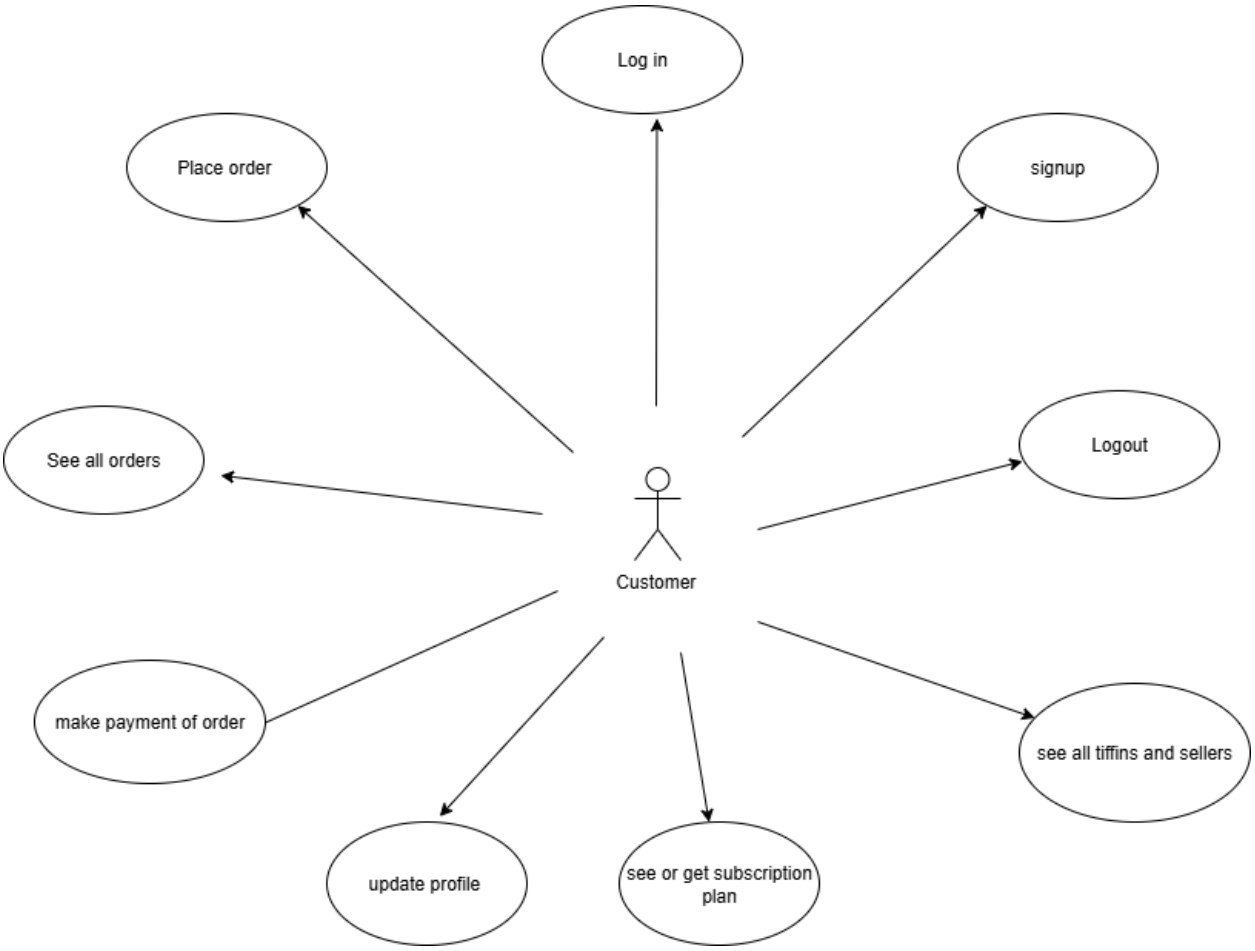


3.2 USE CASE DIAGRAM

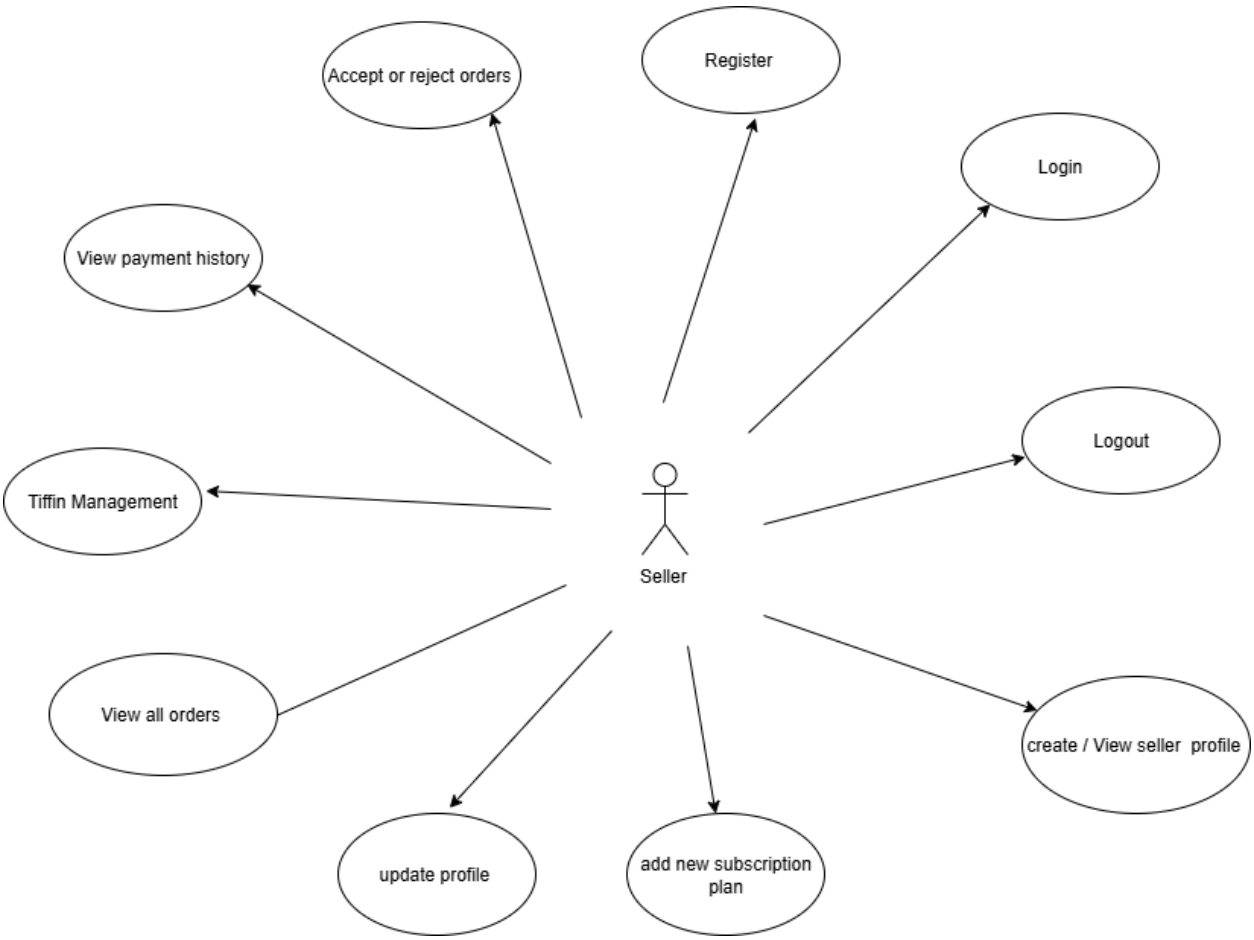
3.2.1 Use Case Diagrams Admin Activity:



3.2.2 Use Case Diagrams Customer Activity:

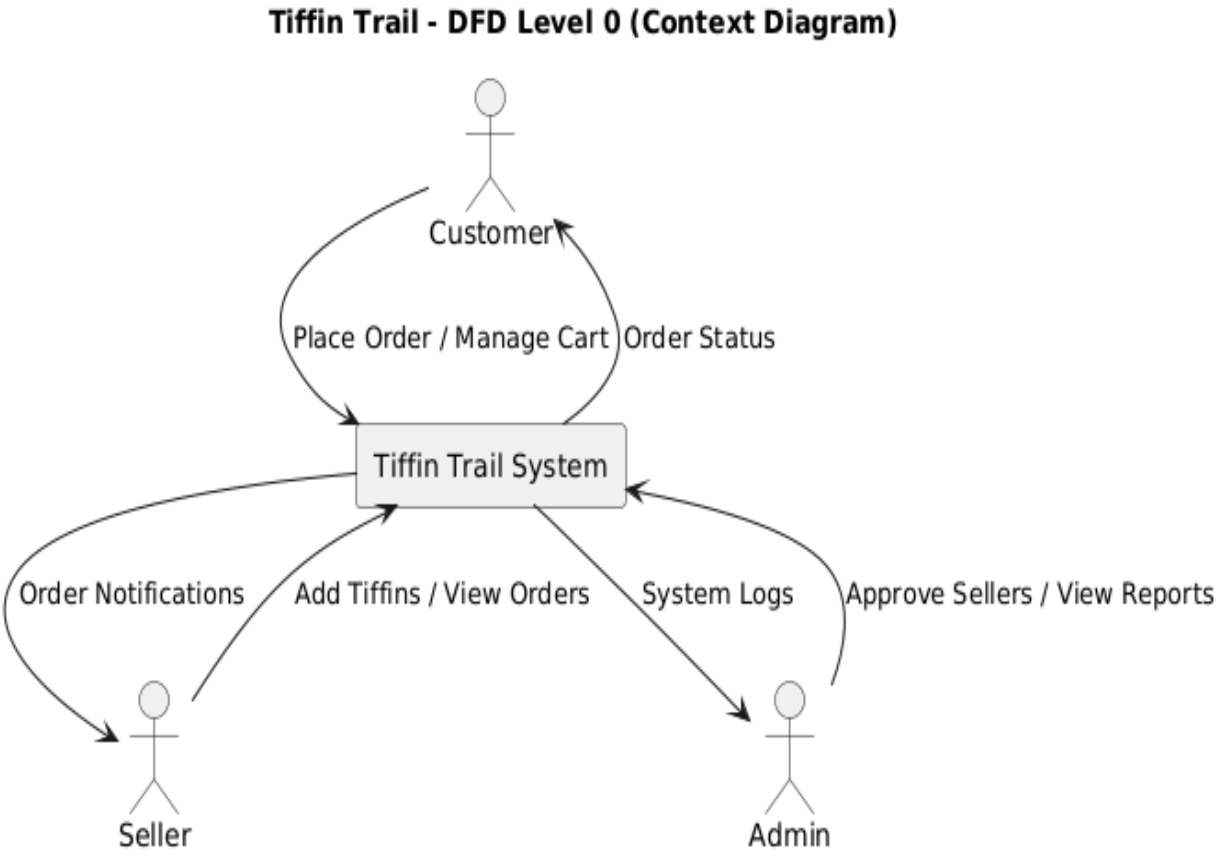


3.2.3 Use Case Diagrams Seller Activity:

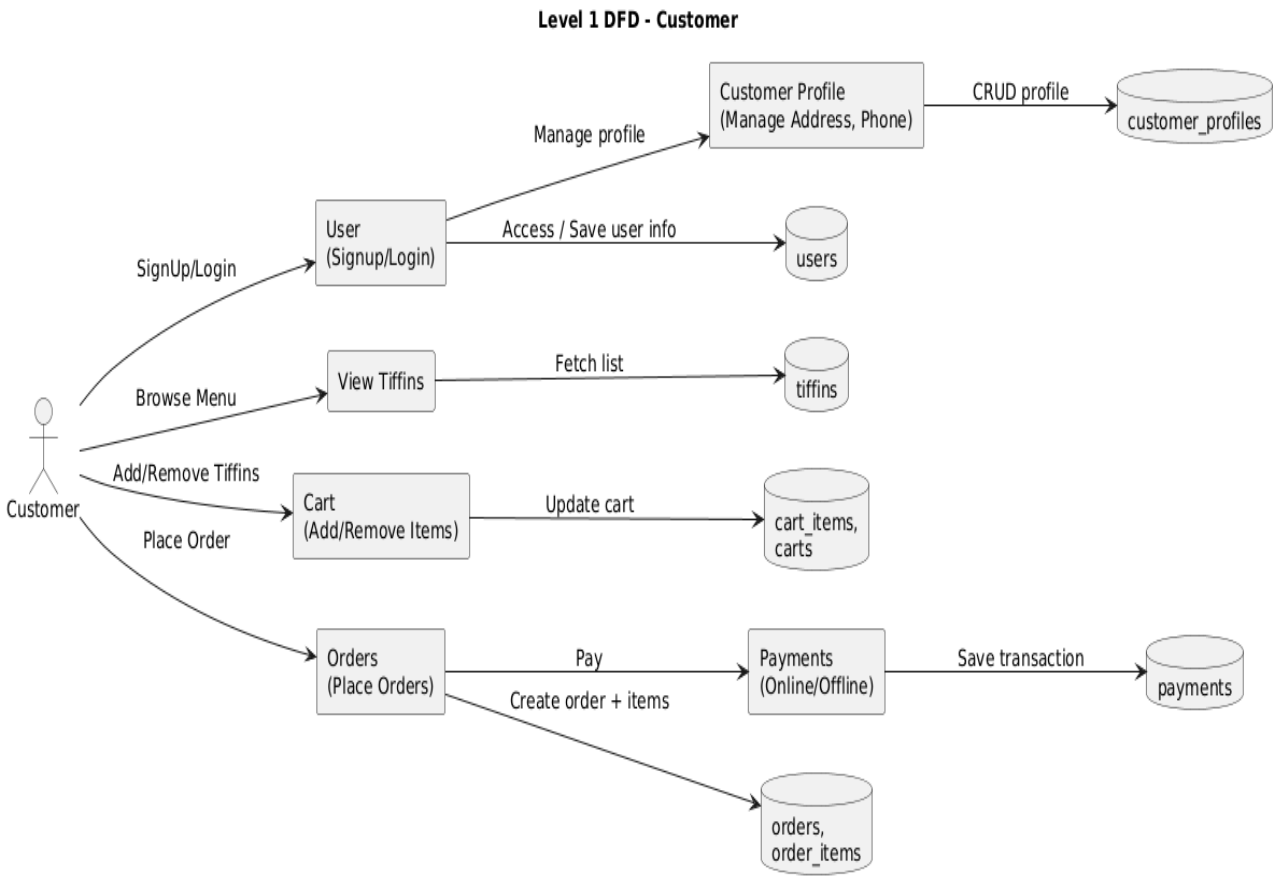


3.3 DATA FLOW DIAGRAM

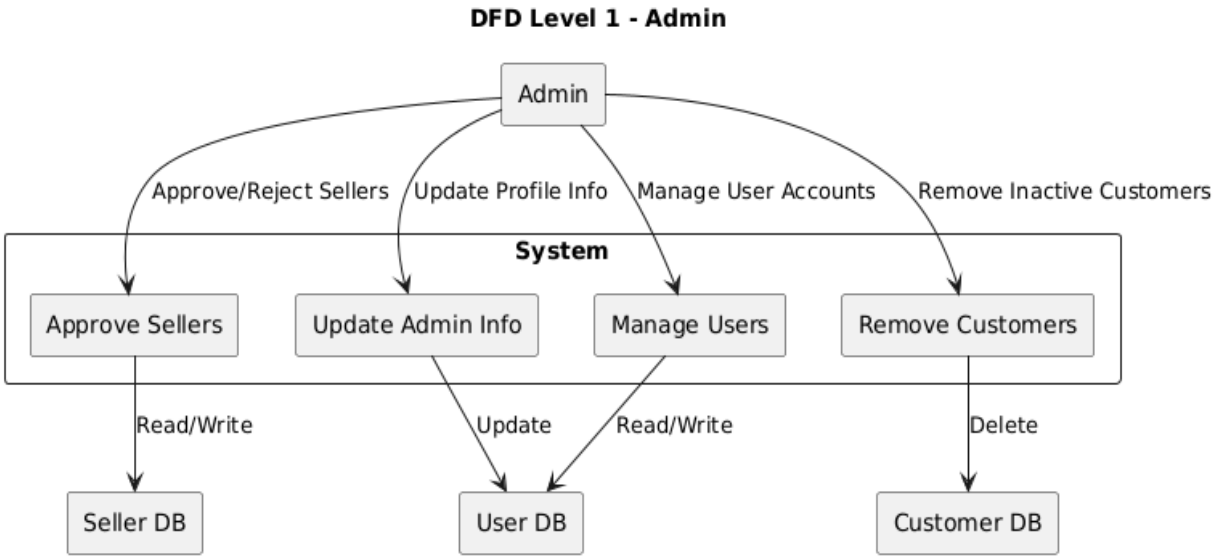
3.3.1 DFD Level 0:



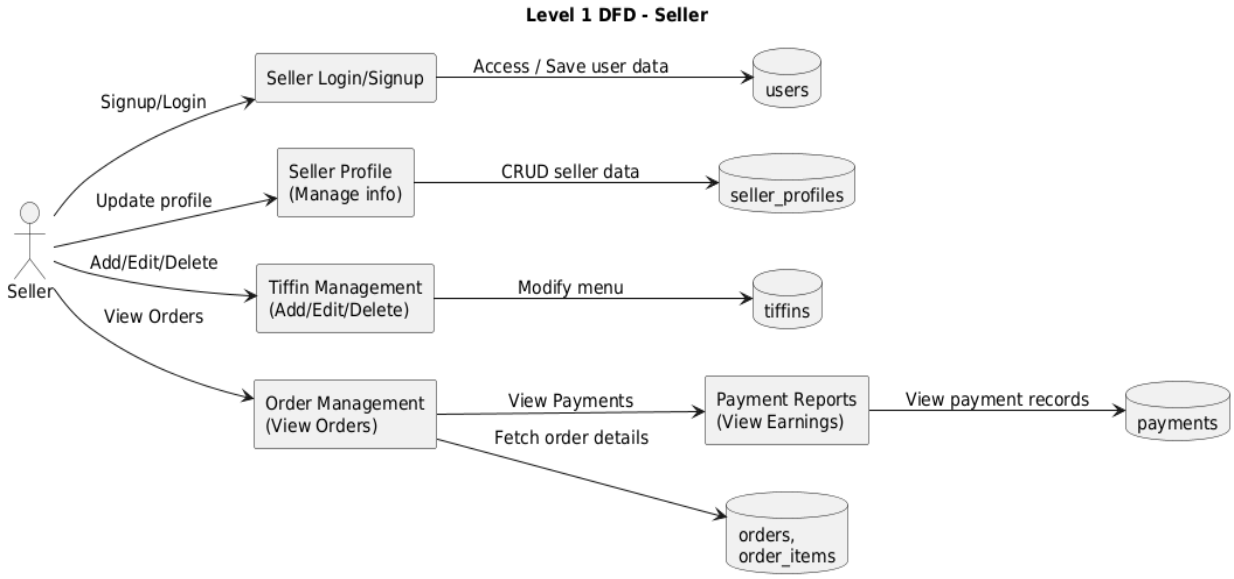
DFD level 1:


Level 1 DFD - Customer
Customer Profile
(Manage Address, Phone)
CRUD profile
customer_profiles
Manage profile
User
(Signup/Login)
Access / Save user info
users
SignUp/Login
Browse Menu
View Tiffins
Fetch list
tiffins
Customer
Add/Remove Tiffins
Cart
(Add/Remove Items)
Update cart
cart_items,
carts
Place Order
Orders
(Place Orders)
Pay
Payments
(Online/Offline)
Save transaction
payments
Create order + items
orders,
order_items

Level 1 DFD – Admin:

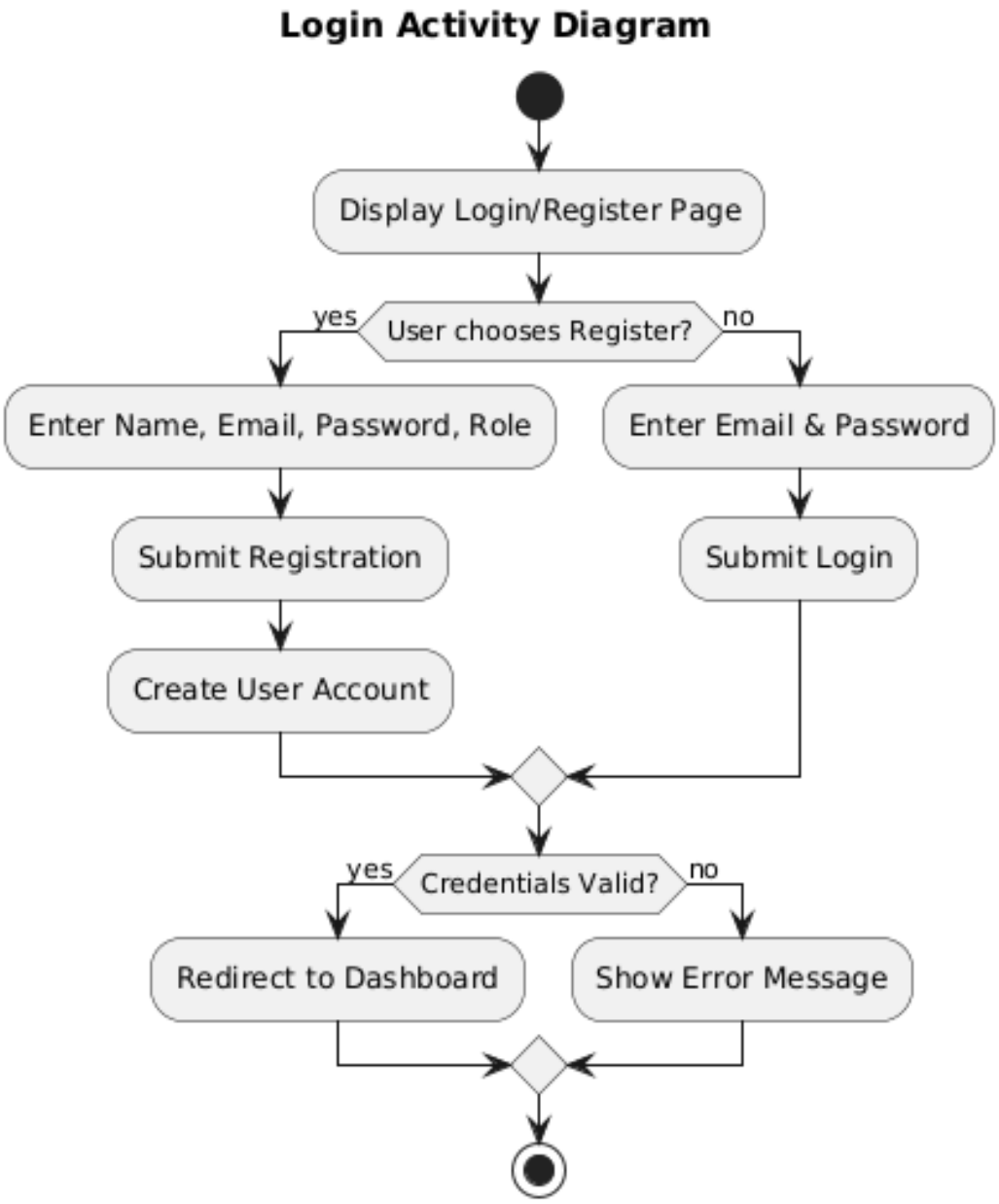


Level 1 DFD – Seller:

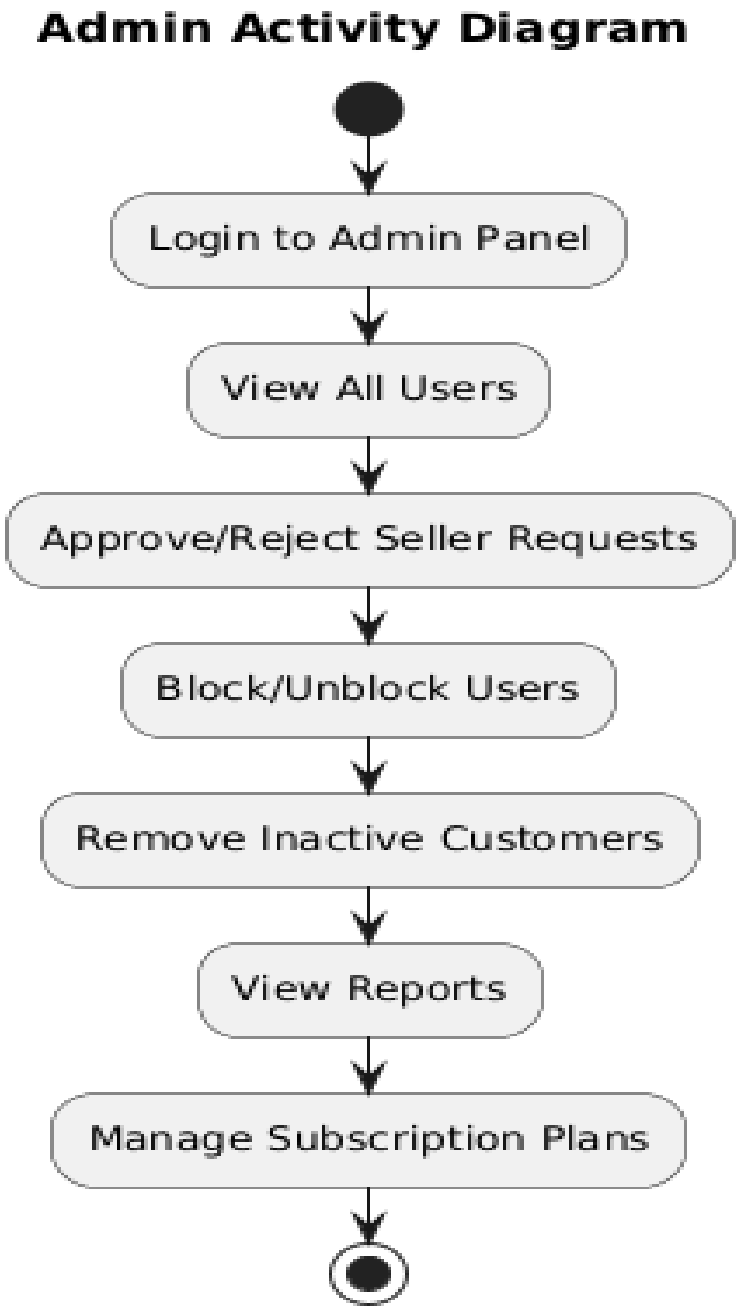


3.4 ACTIVITY DIAGRAM

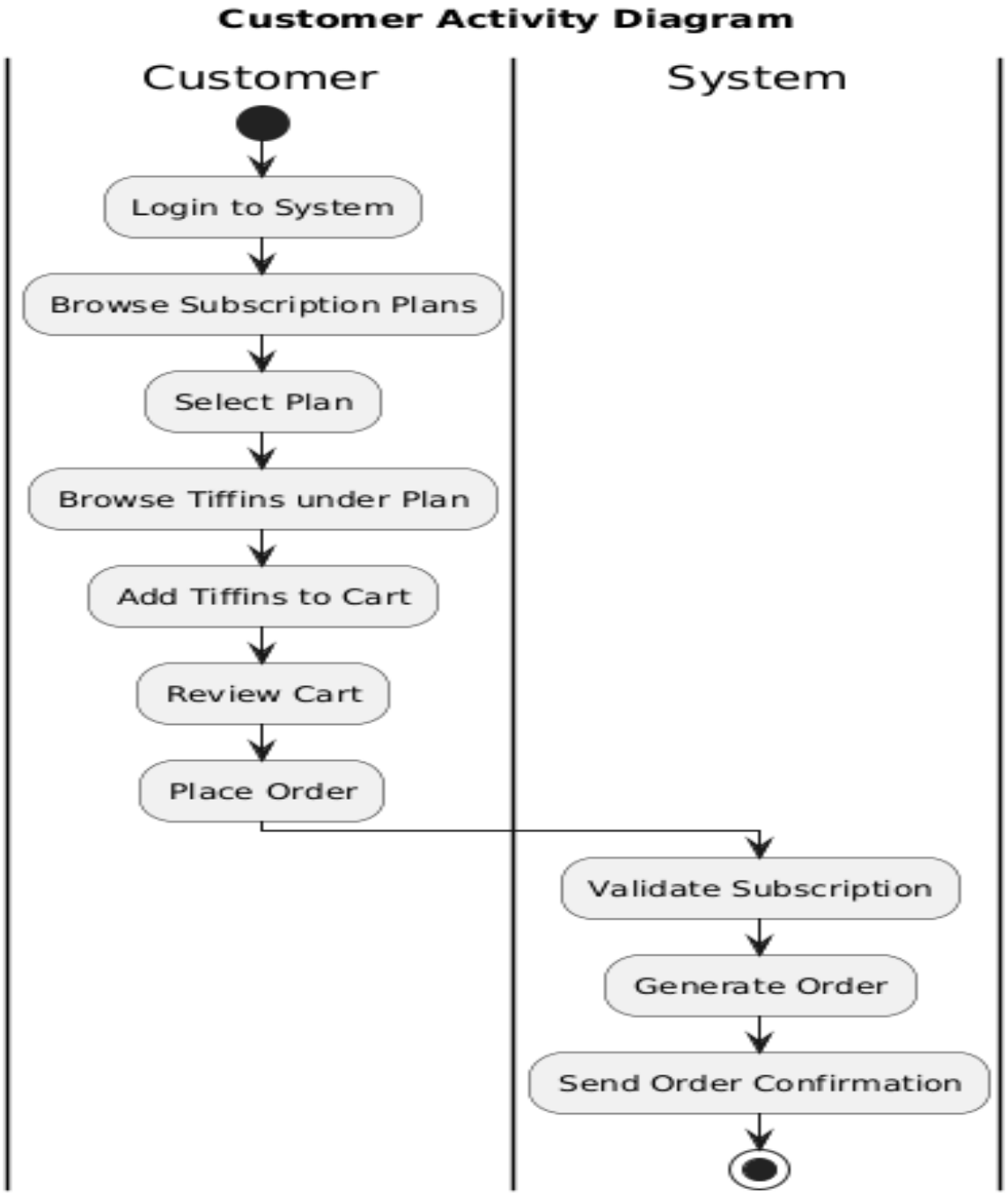
3.4.1. Login Activity Diagram:



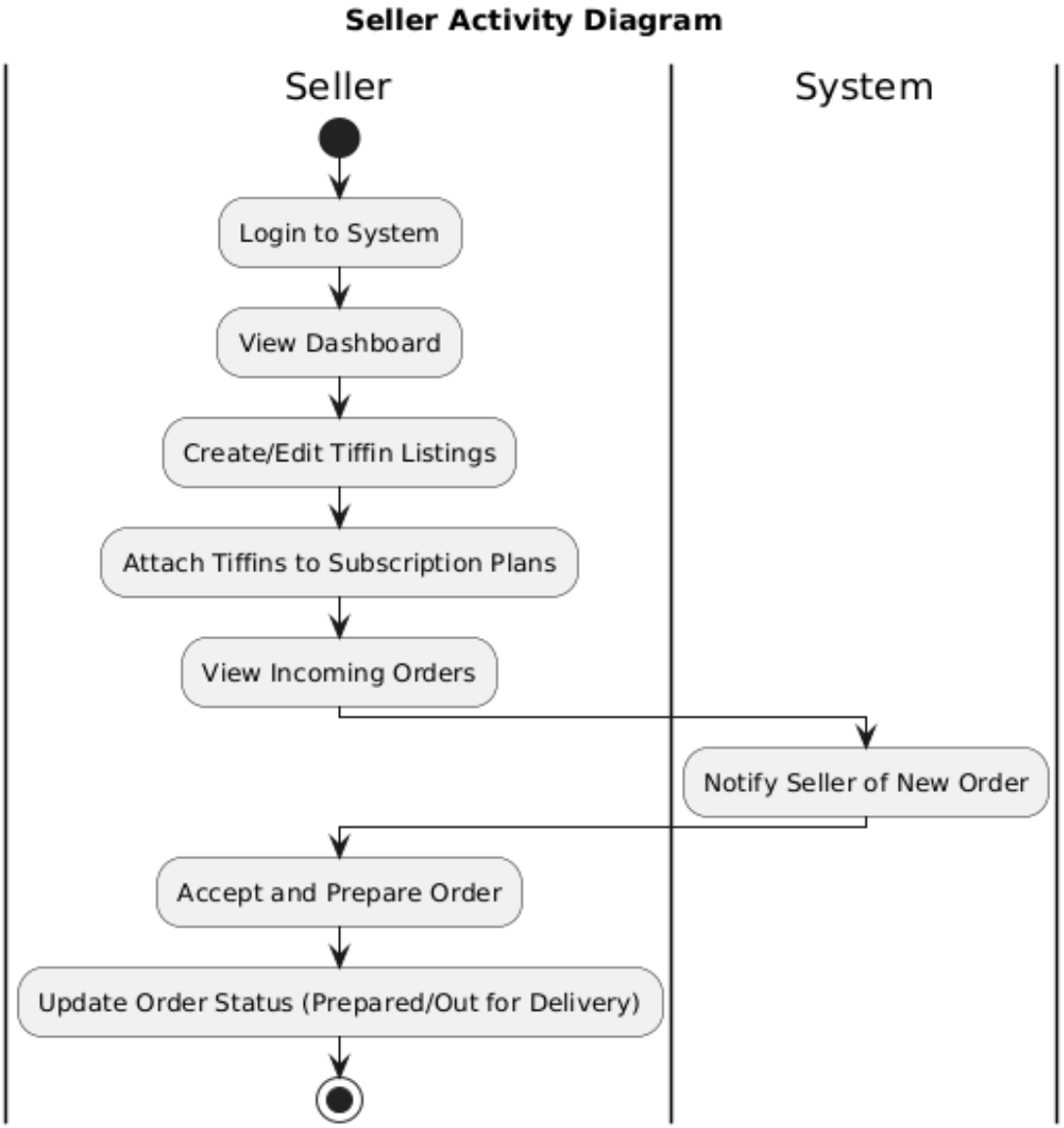
3.4.2. Admin Activity Diagram:



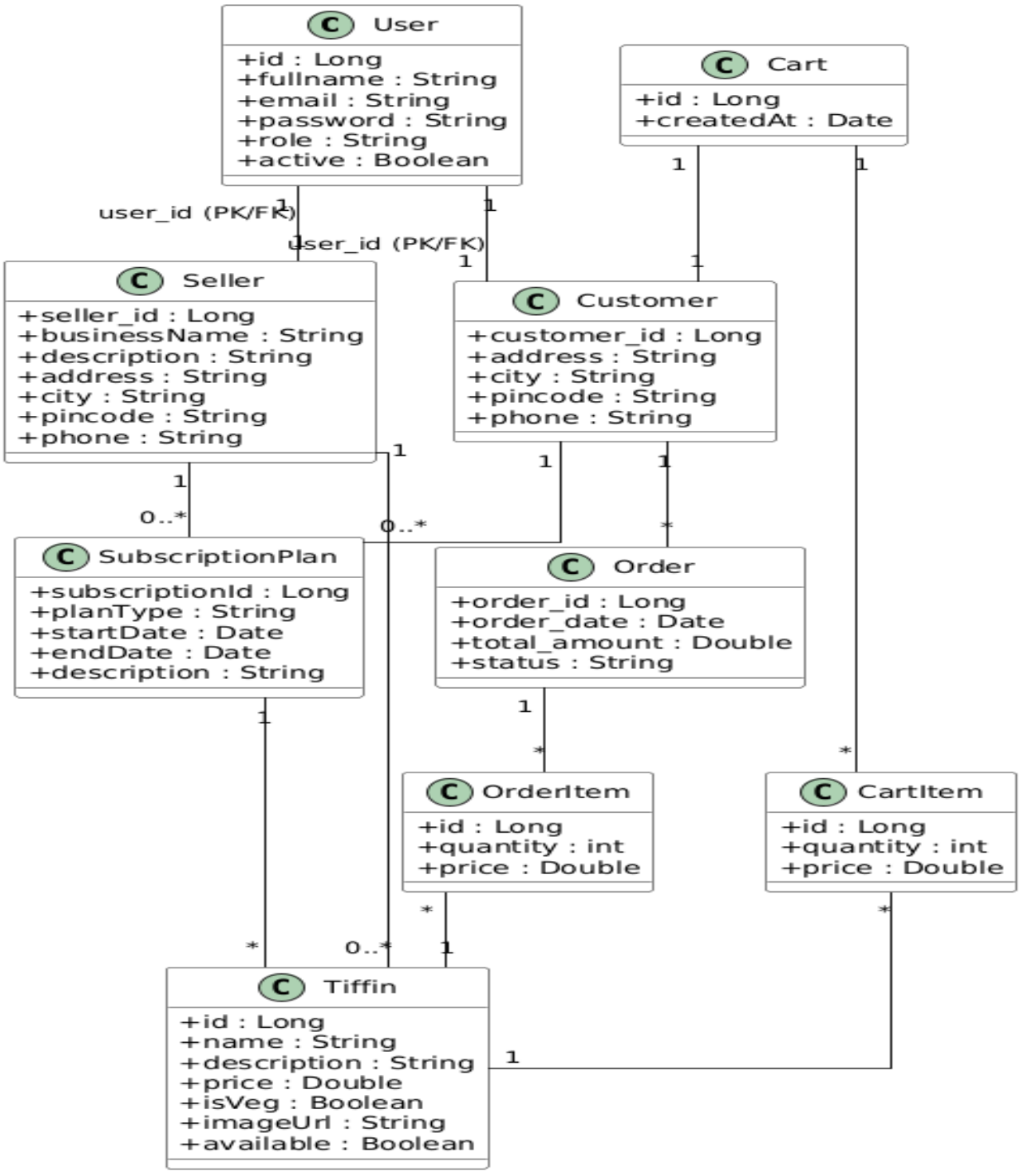
3.4.3. Customer Activity Diagram:



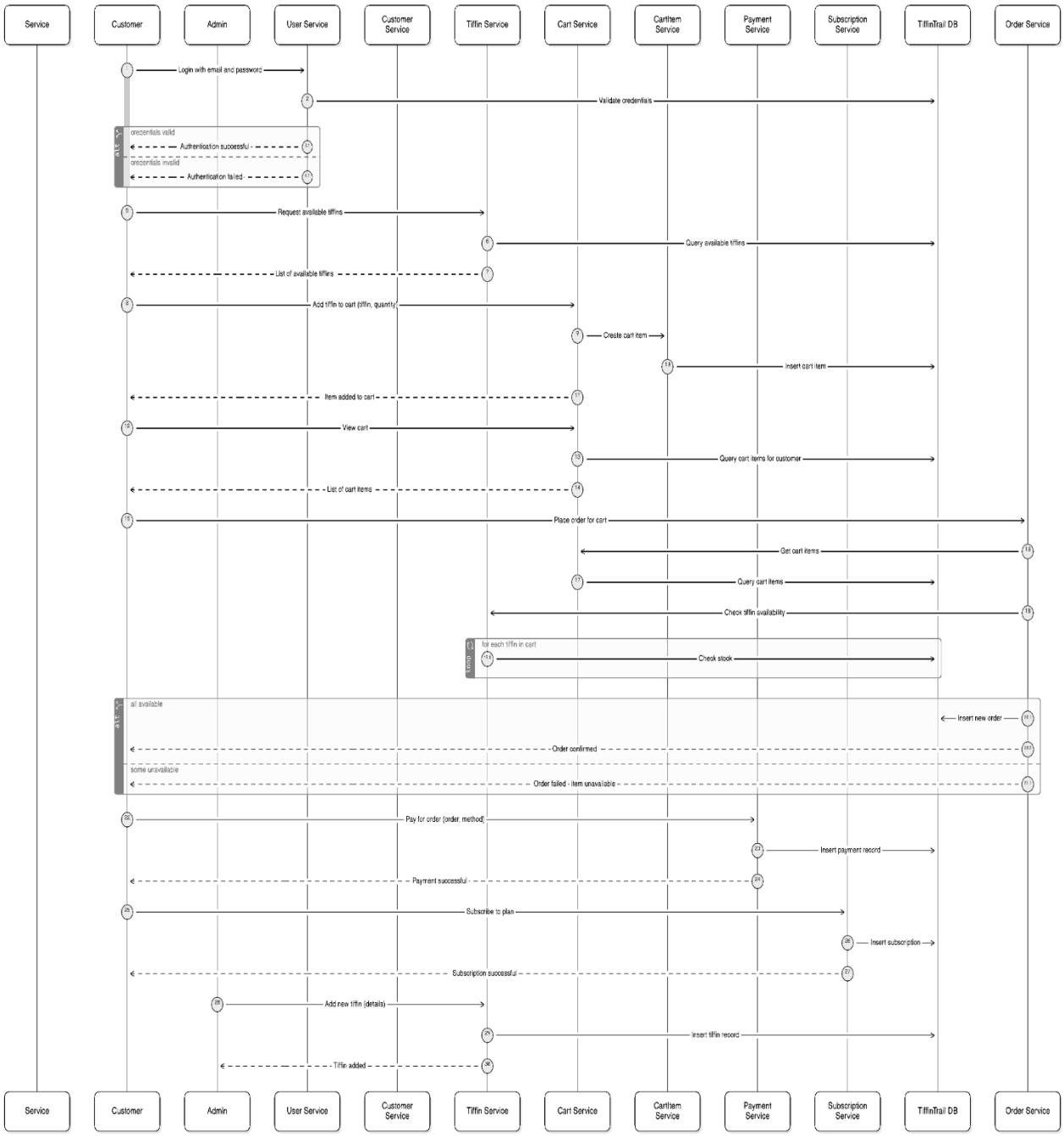
3.4.4. seller Activity Diagram:



3.5 CLASS DIAGRAM

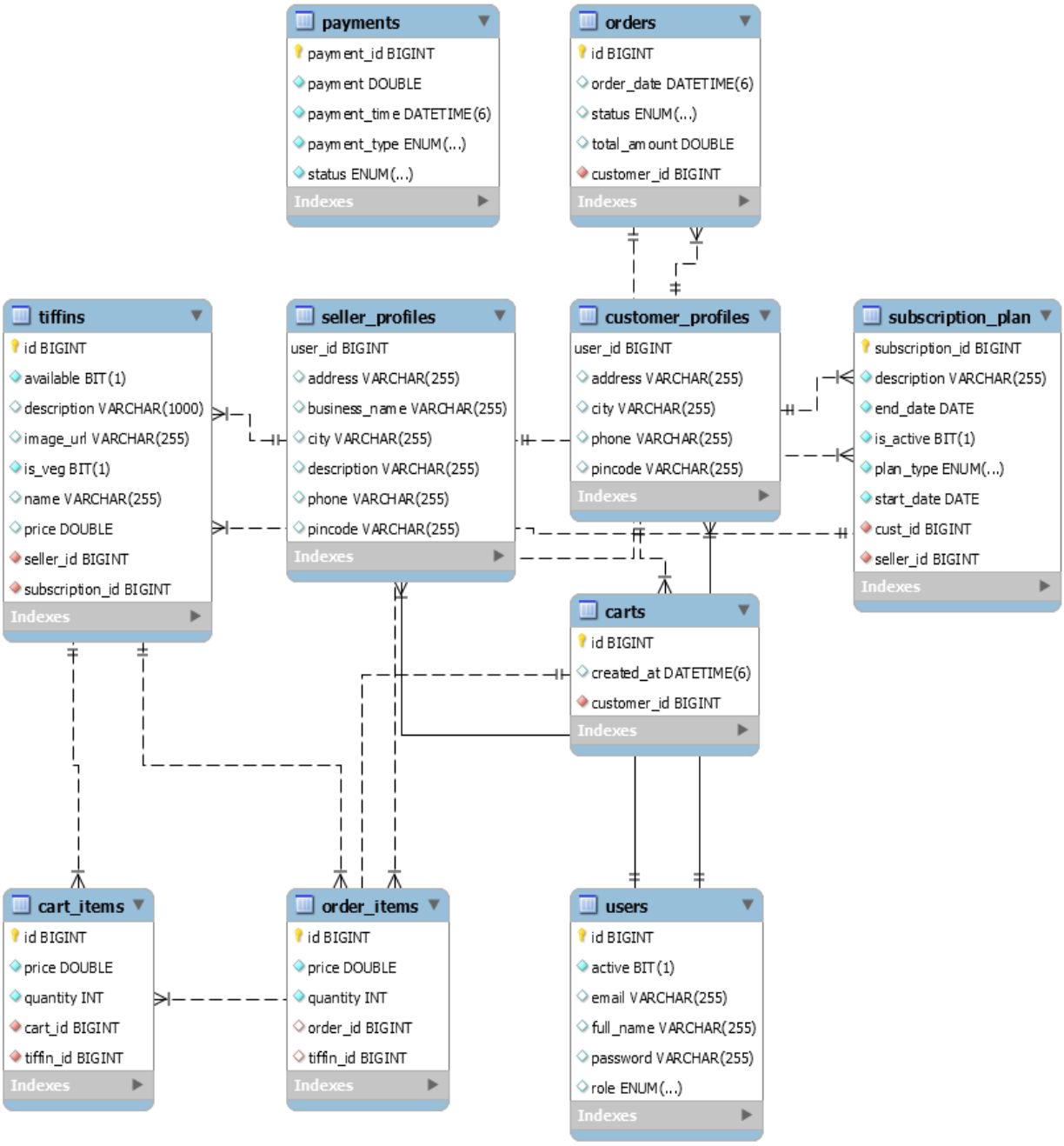


3.6 SEQUENCE DIAGRAM



4.DATABASE DESIGN

4.1 Design:



4.2Tables:

The following table structures depict the database design:

```
mysql> desc users;
+-----------+-----------------------------------+------+-----+---------+----------------+
| Field     | Type                              | Null | Key | Default | Extra          |
+-----------+-----------------------------------+------+-----+---------+----------------+
| id        | bigint                            | NO   | PRI | NULL    | auto_increment |
| active    | bit(1)                            | NO   |     | NULL    |                |
| email     | varchar(255)                      | YES  | UNI | NULL    |                |
| full_name | varchar(255)                      | YES  |     | NULL    |                |
| password  | varchar(255)                      | YES  |     | NULL    |                |
| role      | enum('ADMIN','CUSTOMER','SELLER') | YES  |     | NULL    |                |
+-----------+-----------------------------------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

Table 1: users

```
mysql> desc customer_profiles;
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| user_id | bigint       | NO   | PRI | NULL    |       |
| address | varchar(255) | YES  |     | NULL    |       |
| city    | varchar(255) | YES  |     | NULL    |       |
| phone   | varchar(255) | YES  |     | NULL    |       |
| pincode | varchar(255) | YES  |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

Table 2: customer_profiles

```
mysql> desc orders;
+--------------+-----------------------------------------------------+------+-----+---------+----------------+
| Field        | Type                                                | Null | Key | Default | Extra          |
+--------------+-----------------------------------------------------+------+-----+---------+----------------+
| id           | bigint                                              | NO   | PRI | NULL    | auto_increment |
| order_date   | datetime(6)                                         | YES  |     | NULL    |                |
| status       | enum('CANCELLED','DELIVERED','PLACED','PROCESSING') | YES  |     | NULL    |                |
| total_amount | double                                              | YES  |     | NULL    |                |
| customer_id  | bigint                                              | NO   | MUL | NULL    |                |
+--------------+-----------------------------------------------------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```

Table 3: orders

```
mysql> desc tiffins;
+-----------------+---------------+------+-----+---------+----------------+
| Field           | Type          | Null | Key | Default | Extra          |
+-----------------+---------------+------+-----+---------+----------------+
| id              | bigint        | NO   | PRI | NULL    | auto_increment |
| available       | bit(1)        | NO   |     | NULL    |                |
| description     | varchar(1000) | YES  |     | NULL    |                |
| image_url       | varchar(255)  | YES  |     | NULL    |                |
| is_veg          | bit(1)        | NO   |     | NULL    |                |
| name            | varchar(255)  | YES  |     | NULL    |                |
| price           | double        | YES  |     | NULL    |                |
| seller_id       | bigint        | NO   | MUL | NULL    |                |
| subscription_id | bigint        | NO   | MUL | NULL    |                |
+-----------------+---------------+------+-----+---------+----------------+
9 rows in set (0.00 sec)
```

Table 4: tiffins

```
5 rows in set (0.00 sec)

mysql> desc order_items;
+-----------+--------+------+-----+---------+----------------+
| Field     | Type   | Null | Key | Default | Extra          |
+-----------+--------+------+-----+---------+----------------+
| id        | bigint | NO   | PRI | NULL    | auto_increment |
| price     | double | NO   |     | NULL    |                |
| quantity  | int    | NO   |     | NULL    |                |
| order_id  | bigint | YES  | MUL | NULL    |                |
| tiffin_id | bigint | YES  | MUL | NULL    |                |
+-----------+--------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```

Table 5: order_items

```
mysql> desc seller_profiles;
+---------------+--------------+------+-----+---------+-------+
| Field         | Type         | Null | Key | Default | Extra |
+---------------+--------------+------+-----+---------+-------+
| user_id       | bigint       | NO   | PRI | NULL    |       |
| address       | varchar(255) | YES  |     | NULL    |       |
| business_name | varchar(255) | YES  |     | NULL    |       |
| city          | varchar(255) | YES  |     | NULL    |       |
| description   | varchar(255) | YES  |     | NULL    |       |
| phone         | varchar(255) | YES  |     | NULL    |       |
| pincode       | varchar(255) | YES  |     | NULL    |       |
+---------------+--------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

Table 6: seller_profile

```
mysql> desc subscription_plan;
+-----------------+--------------------------+------+-----+---------+----------------+
| Field           | Type                     | Null | Key | Default | Extra          |
+-----------------+--------------------------+------+-----+---------+----------------+
| subscription_id | bigint                   | NO   | PRI | NULL    | auto_increment |
| description     | varchar(255)             | NO   |     | NULL    |                |
| end_date        | date                     | NO   |     | NULL    |                |
| is_active       | bit(1)                   | NO   |     | NULL    |                |
| plan_type       | enum('MONTHLY','WEEKLY') | NO   |     | NULL    |                |
| start_date      | date                     | NO   |     | NULL    |                |
| cust_id         | bigint                   | NO   | MUL | NULL    |                |
| seller_id       | bigint                   | NO   | MUL | NULL    |                |
+-----------------+--------------------------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

Table 7: subscription_plan

```
mysql> desc carts;
+-------------+-------------+------+-----+---------+----------------+
| Field       | Type        | Null | Key | Default | Extra          |
+-------------+-------------+------+-----+---------+----------------+
| id          | bigint      | NO   | PRI | NULL    | auto_increment |
| created_at  | datetime(6) | YES  |     | NULL    |                |
| customer_id | bigint      | NO   | UNI | NULL    |                |
+-------------+-------------+------+-----+---------+----------------+
3 rows in set (0.01 sec)
```

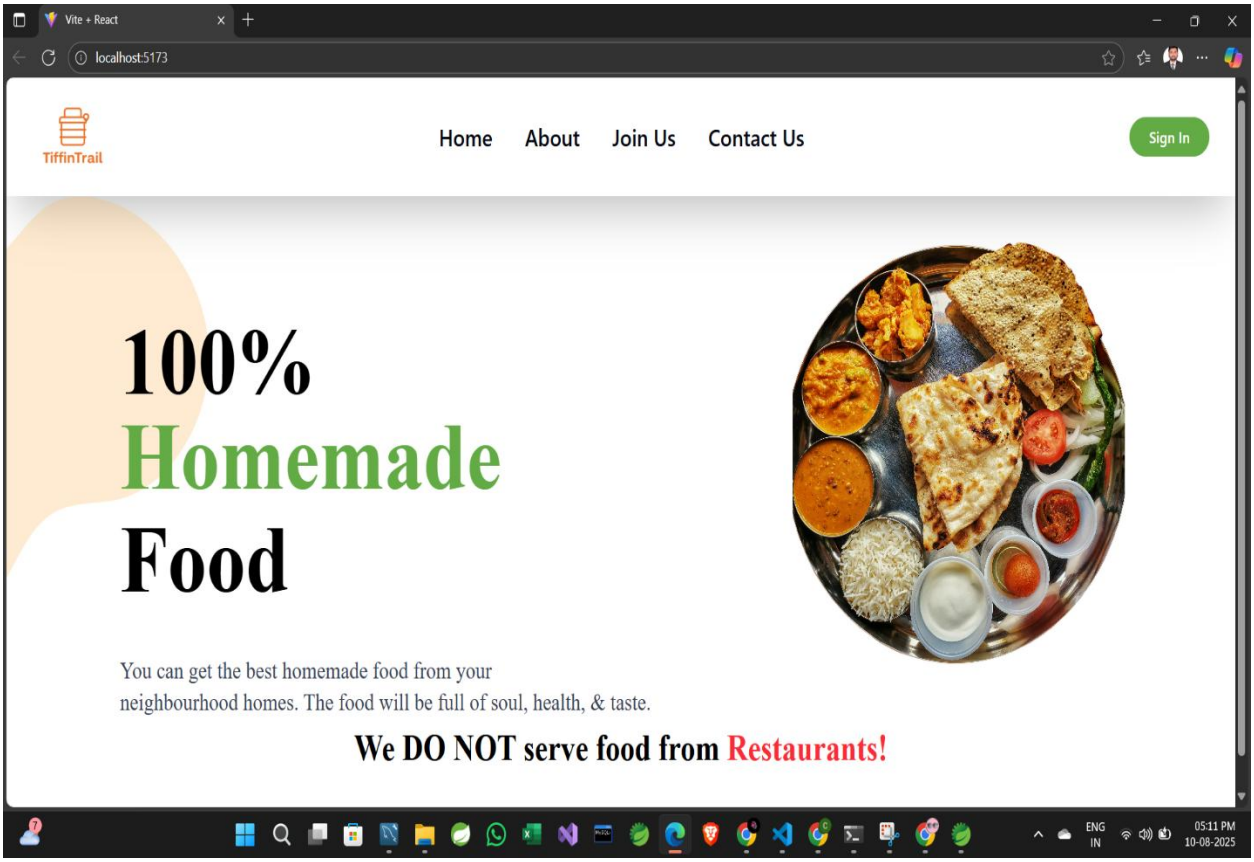
Table 8: carts

```
mysql> desc  cart_items;
+-----------+--------+------+-----+---------+----------------+
| Field     | Type   | Null | Key | Default | Extra          |
+-----------+--------+------+-----+---------+----------------+
| id        | bigint | NO   | PRI | NULL    | auto_increment |
| price     | double | NO   |     | NULL    |                |
| quantity  | int    | NO   |     | NULL    |                |
| cart_id   | bigint | NO   | MUL | NULL    |                |
| tiffin_id | bigint | NO   | MUL | NULL    |                |
+-----------+--------+------+-----+---------+----------------+
5 rows in set (0.01 sec)
```

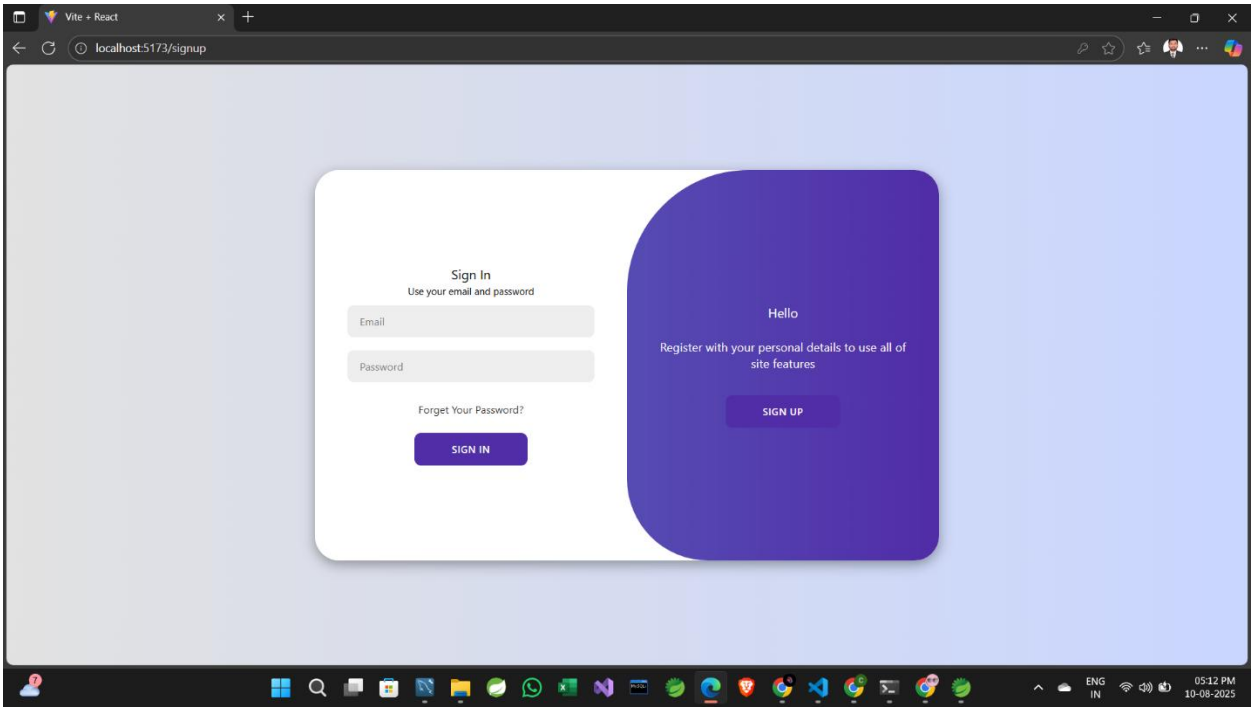
Table 9: cart_items

5. SNAPSHOTS

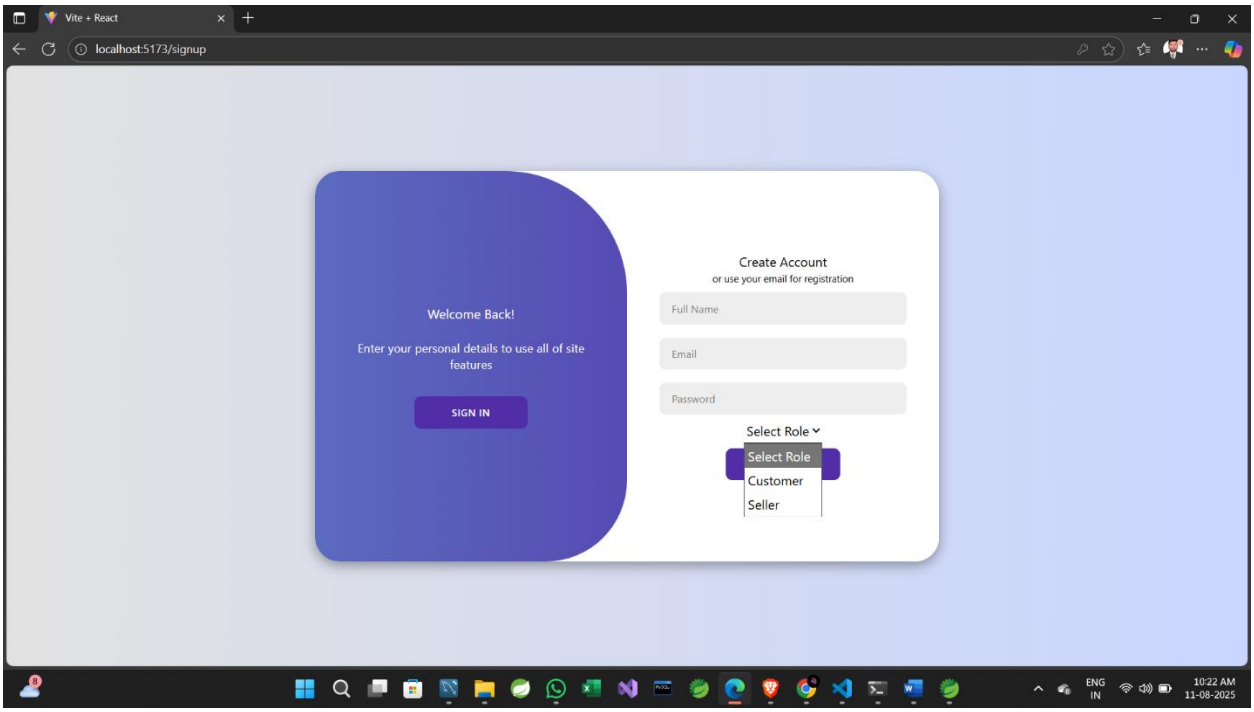
Home Page:



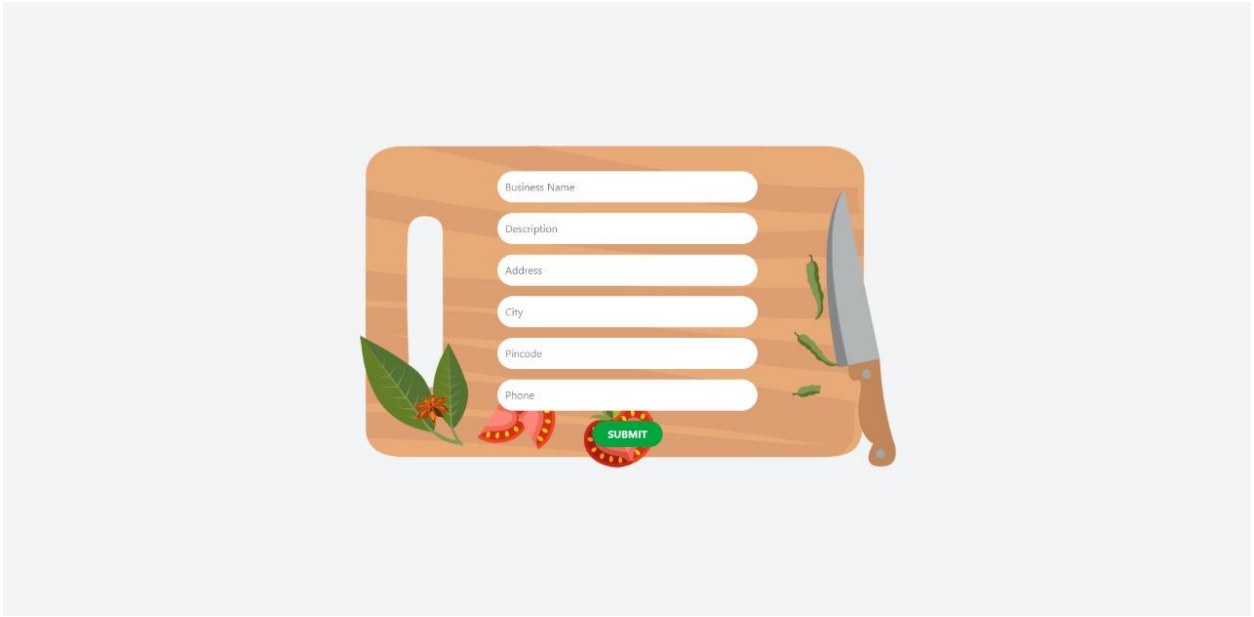
Sign in :



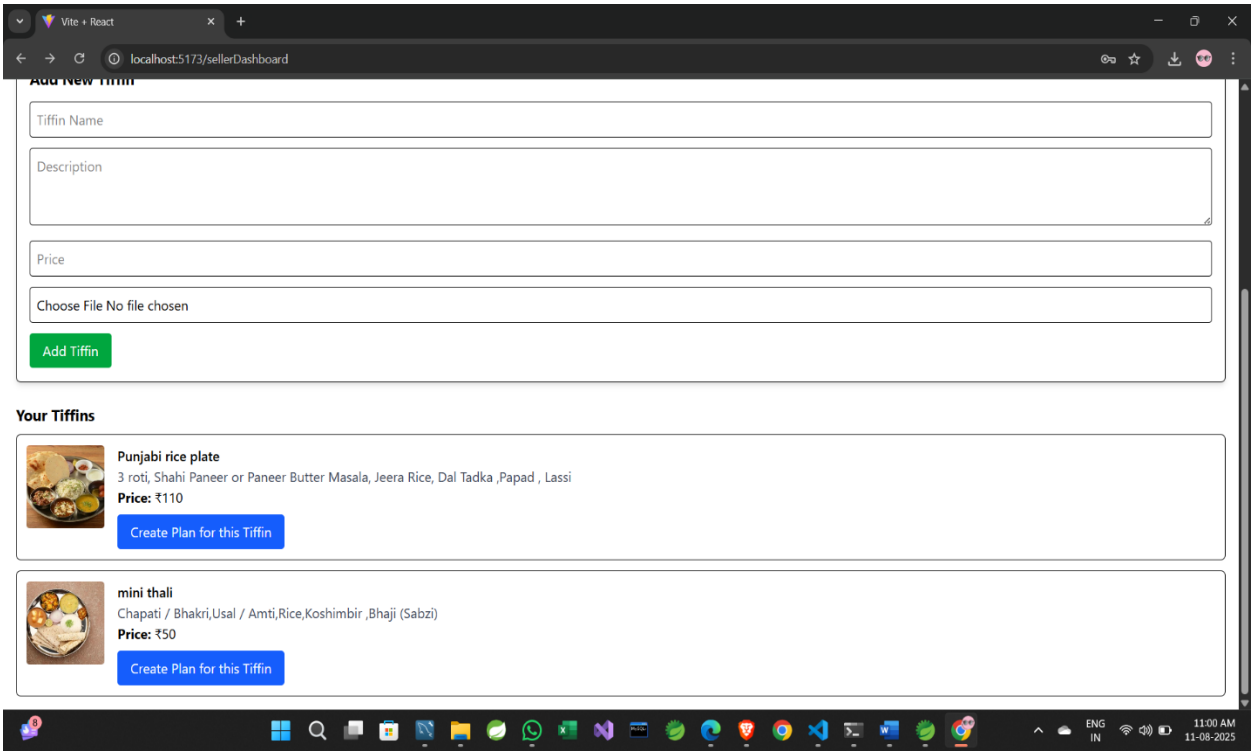
Sign up :



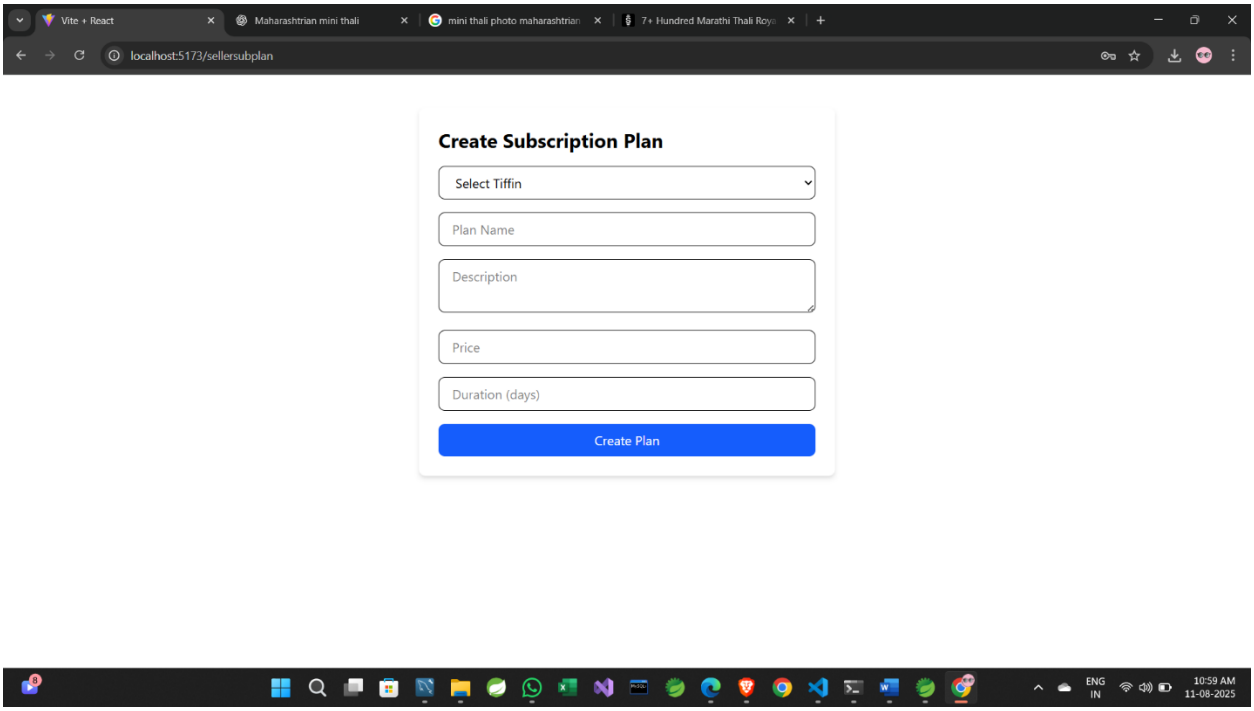
Register new seller:



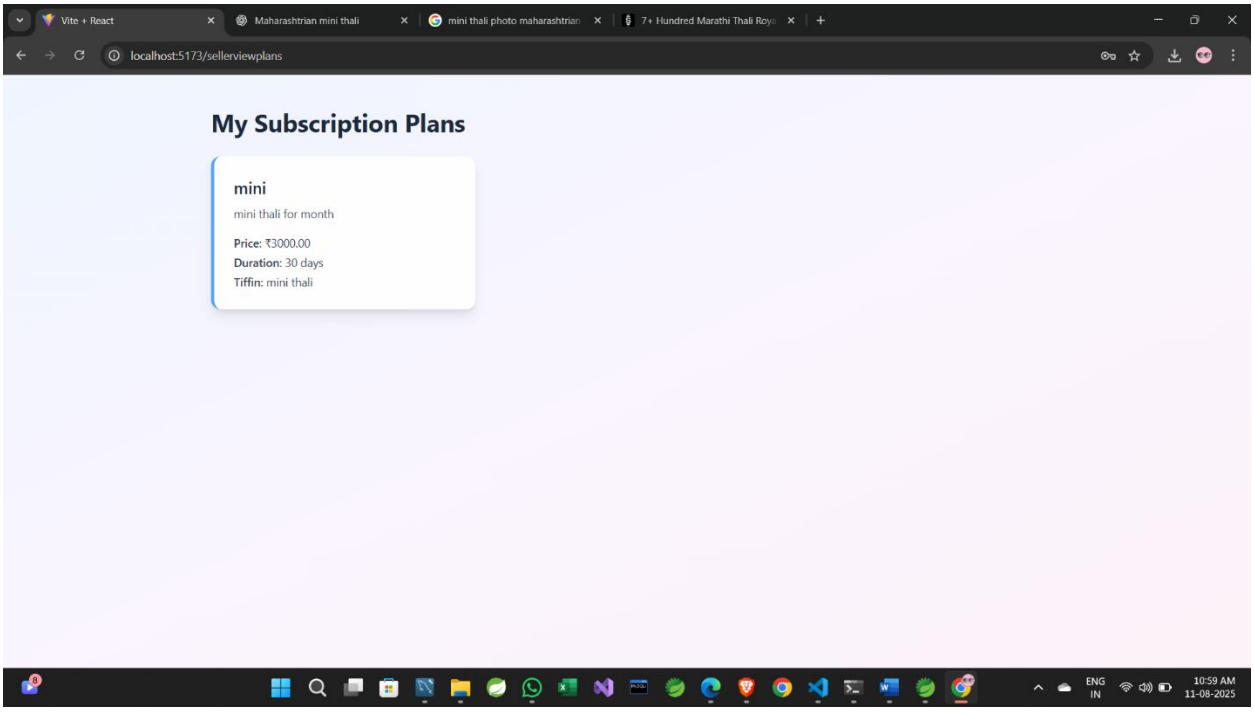
Seller page:



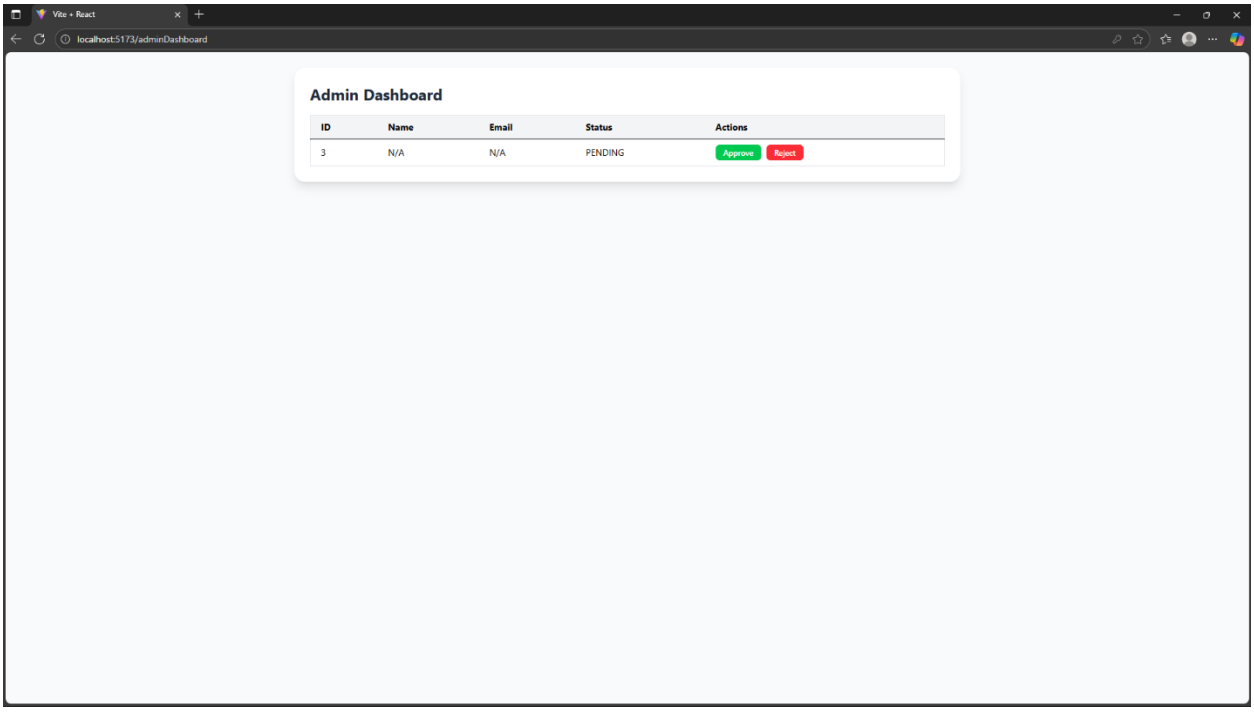
Seller creates subscription plan:

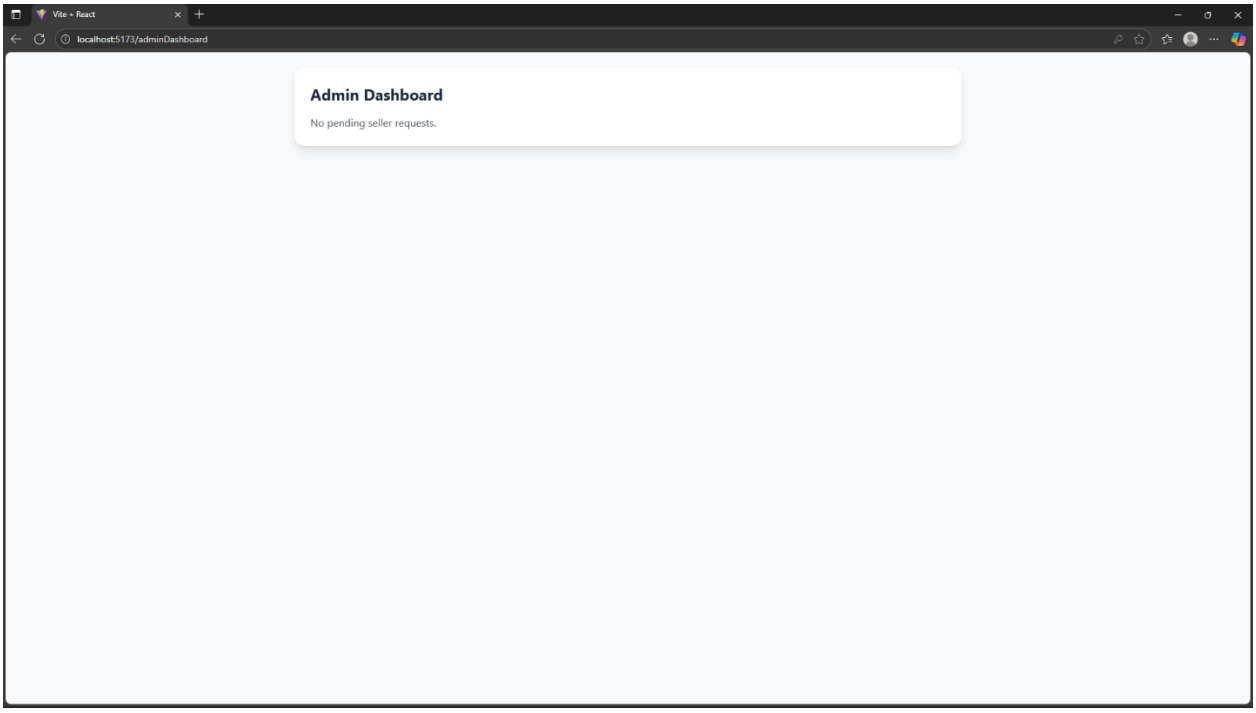


View created plans:

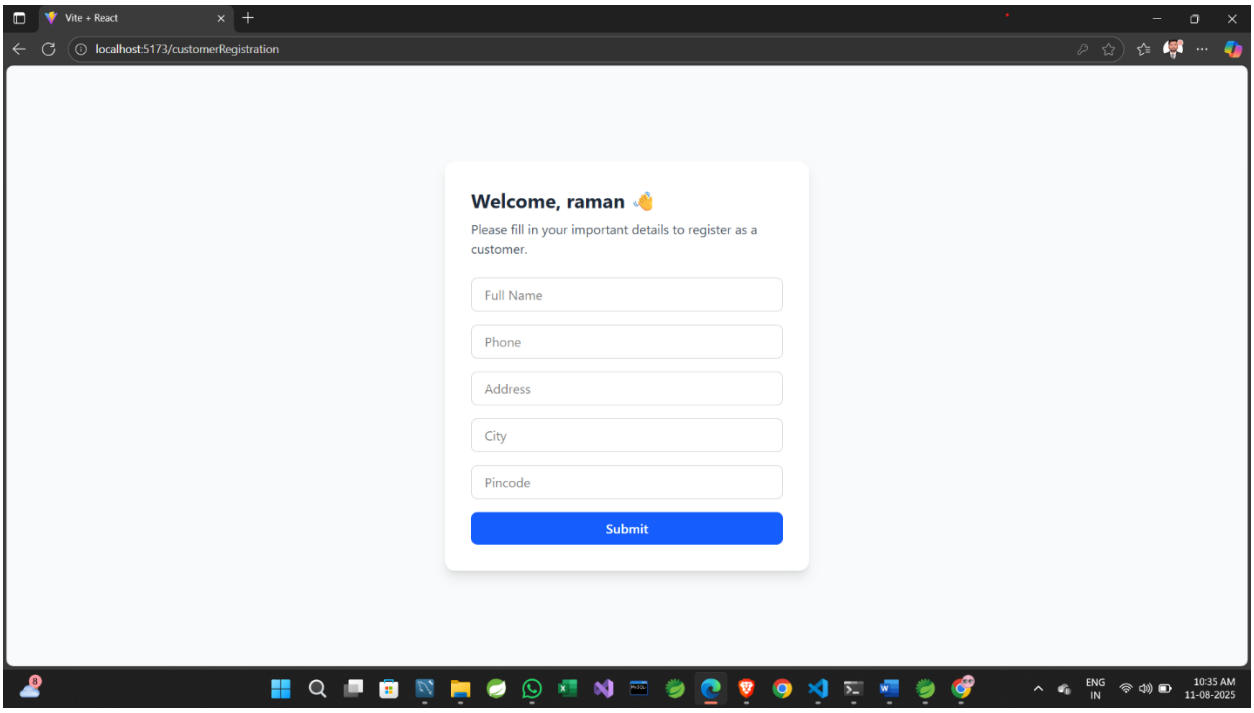


Admin Dashboard:

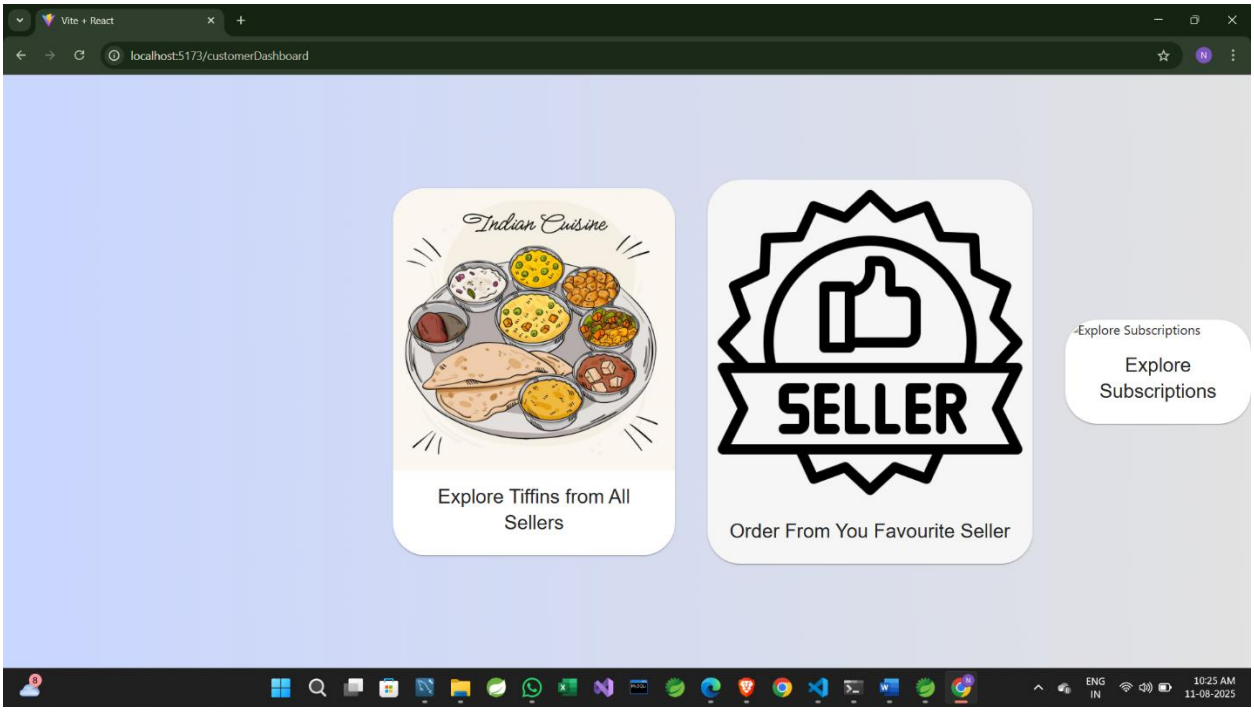




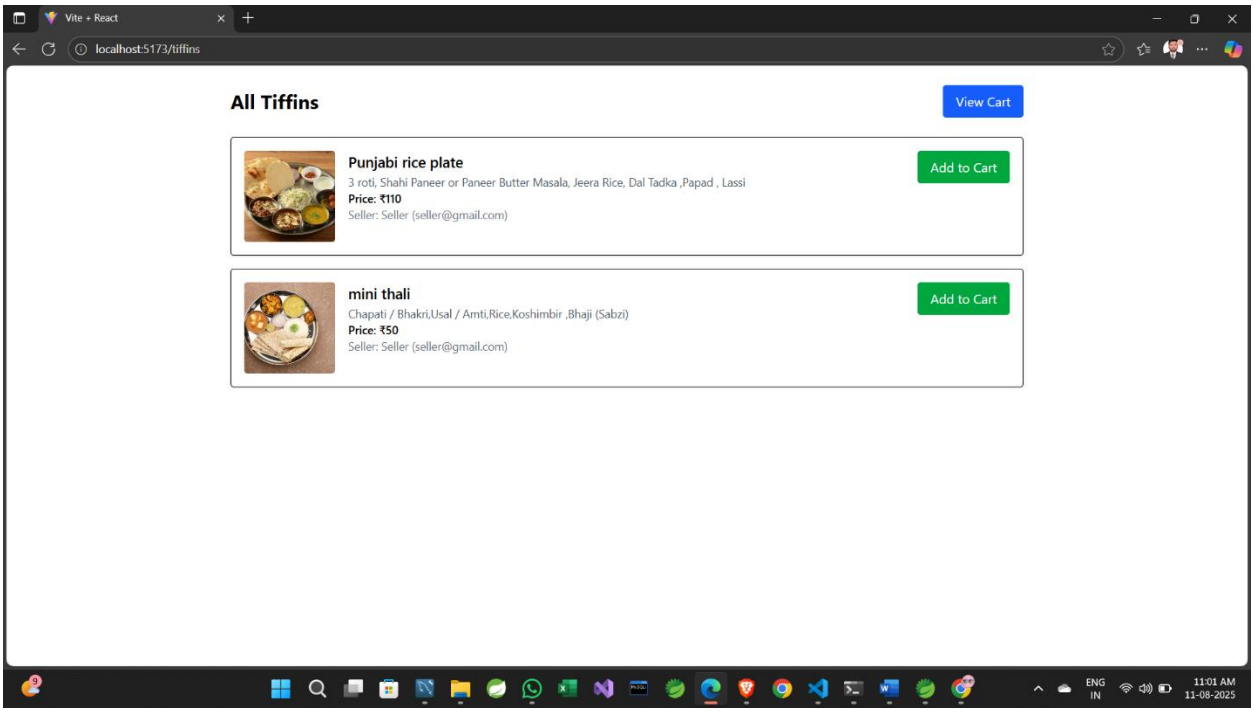
Customer Register:



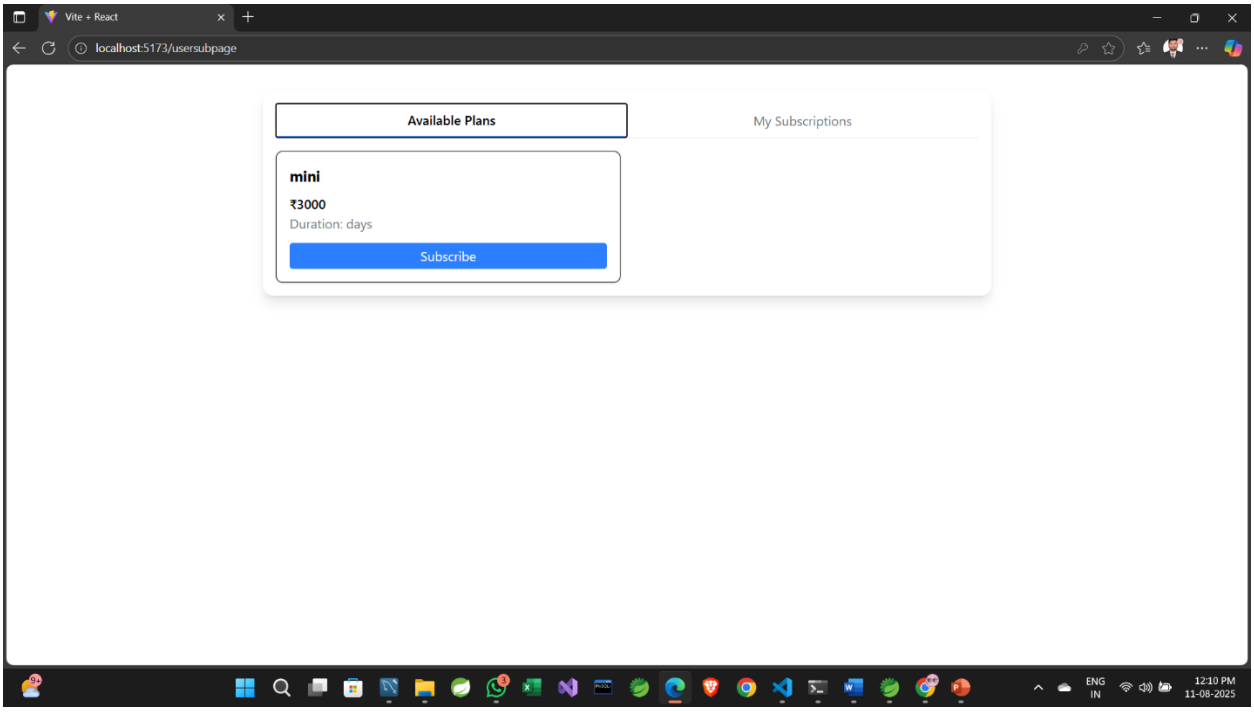
Customer dashboard:



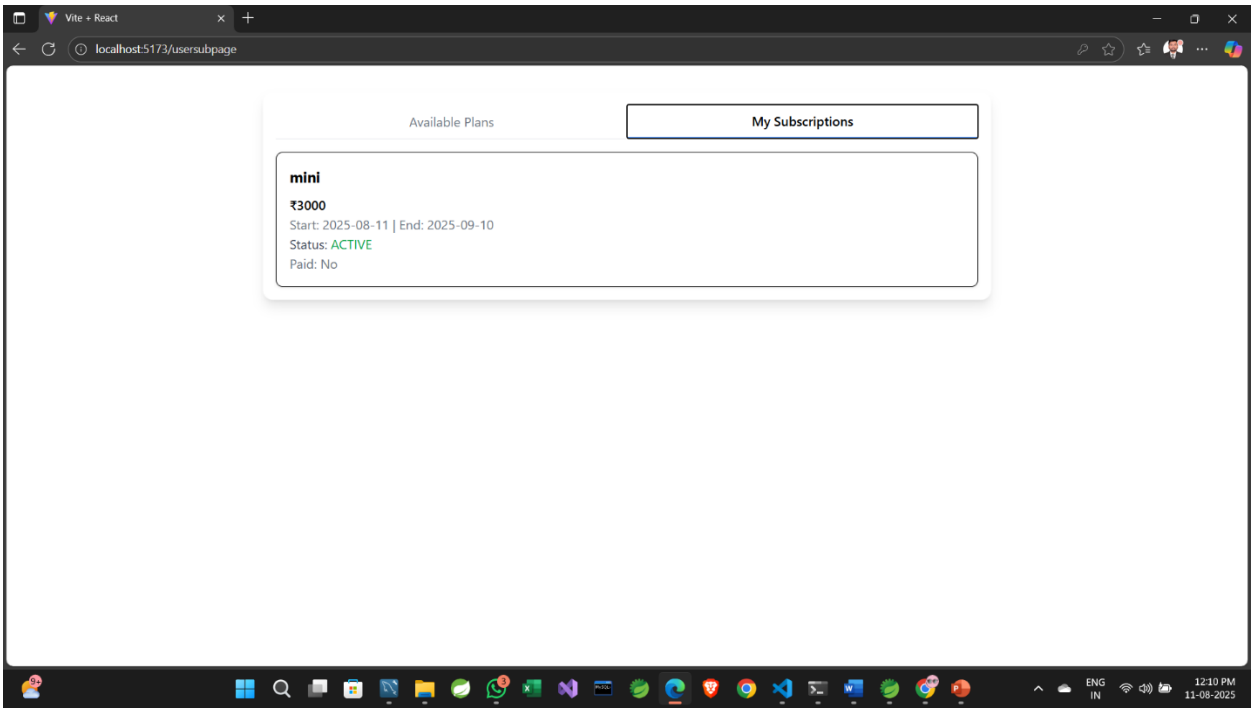
Customer Views All tiffin:



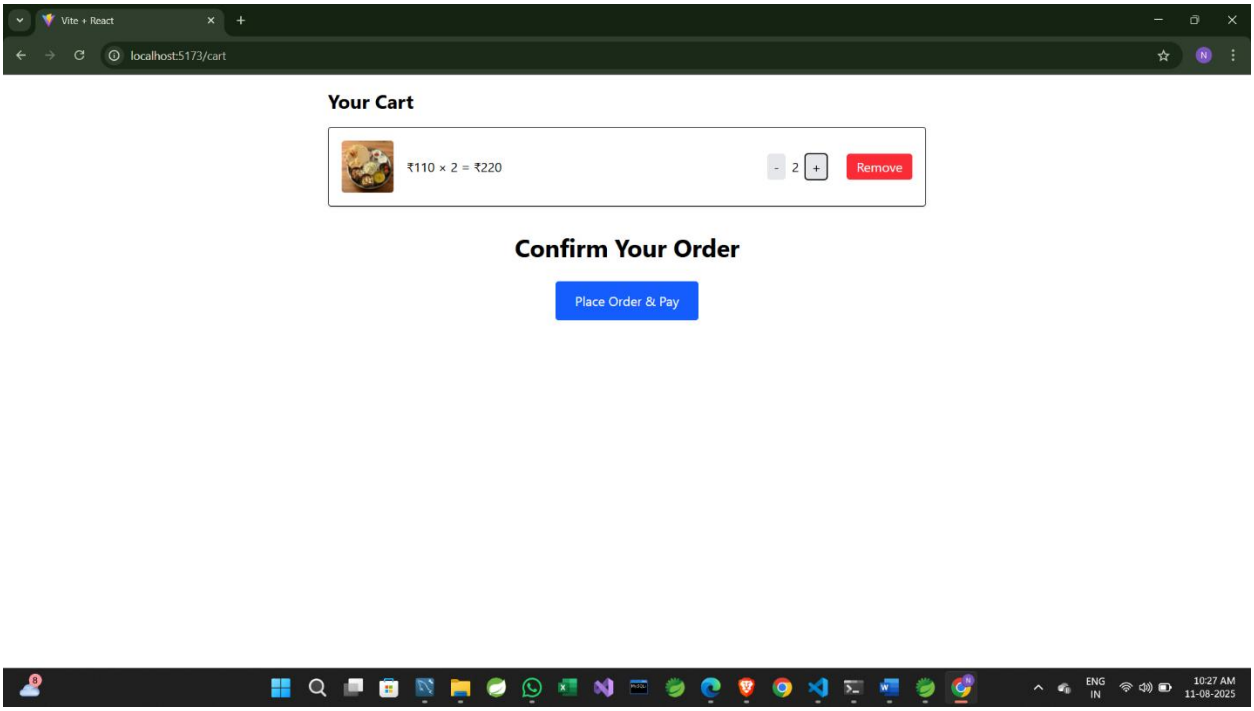
Customer views plans:



Customer subscription plans:



Cart:



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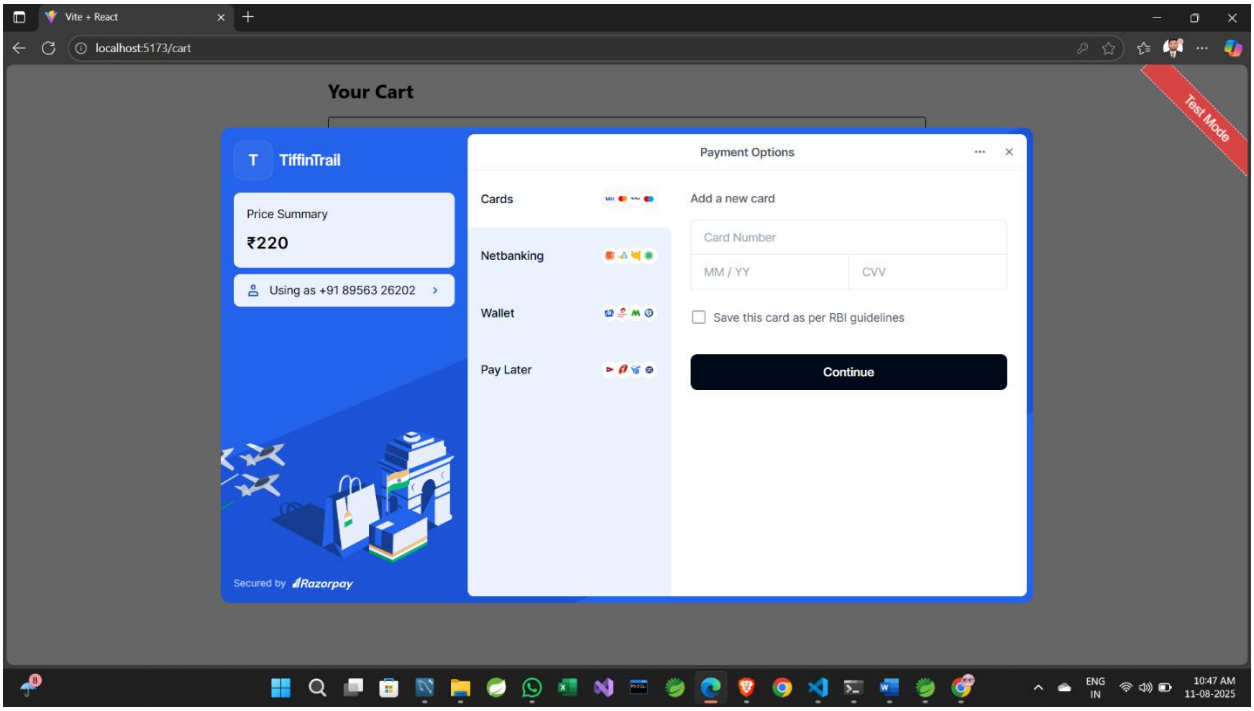

6.CONCLUSION

Conclusion:

The **Tiffin Trail** System successfully streamlines the process of connecting tiffin service providers with customers through a modern, user-friendly platform. By integrating Spring Boot for the backend, React for the frontend, and MySQL for data management, the system ensures efficient order handling, secure user authentication, real-time menu updates, and smooth communication between sellers and customers. This project not only enhances operational efficiency for tiffin providers but also improves convenience and reliability for customers seeking healthy, timely meals. Overall, it offers a scalable and maintainable solution that can be expanded with additional features such as delivery tracking, digital payments, and AI-driven recommendations in the future.

FUTURE SCOPE

Future scope

- Mobile application for Android and iOS.
- AI-based personalized meal recommendations.
- Delivery tracking in real-time.
- Multi-language support.

7.REFERENCES

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