TIFFIN SHIFFIN

A PROJECT REPORT
BY

TEAM NO. 07

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SUBMITTED TO

SCHOOL OF COMPUTER SCIENCE ENGINEERING AND TECHNOLOGY, BENNETT UNIVERSITY

GREATER NOIDA, 201310, UTTAR PRADESH, INDIA

April 2025

DECLARATION

We hereby declare that the work which is being presented in the report entitled “Tiffin Shiffin”, is an authentic record of our own work carried out during the period from JAN, 2025 to April, 2025 at School of Computer Science and Engineering and Technology, Bennett University Greater Noida.

The matters and the results presented in this report has not been submitted by us for the award of any other degree elsewhere.

Signature of Candidate

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ACKNOWLEDGEMENT

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Signature of Candidate

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LIST OF ABBREVIATIONS

Abbreviation	Explanation of the Abbreviation
CSS	Cascading Style Sheets
UI	User Interface
JS	JavaScript

ABSTRACT

Tiffin Shiffin is a clever meal delivery service, that works on a subscription basis. This meal delivery system was designed to address the need for cheap, hygienic food, which is often in demand by students, young professionals, and busy city dwellers. As our lives get busier, it's more and more difficult to find good food that's healthy and doesn't break the bank. Tiffin Shiffin solves this issue by providing a great service that connects the service provider to the customer in a quick and efficient manner.

The service runs with a versatile registration strategy, giving clients choices for every day, every week, or every month meal plans that suit their preferences and special dining requirements. Unlike the typical dining apps that focus on single-meal servings from cafes and diners, Tiffin Shiffin concentrates on dependability, convenience, and nutrition — making it practical for those hunting for steady supplies, rather than dining out.

The system's essential elements are an easy-to-use interface for customers to view plans, order subscriptions, monitor delivery, and handle payments. On the backend, a powerful dashboard allows tiffin vendors to handle orders, routes, and customer feedback in an efficient manner. The platform also accommodates features such as customizable meal options (veg/non-veg, etc.), delivery time slots, pausing subscriptions, and real-time alerts. For convenience, integrated payment gateways facilitate seamless online payments and invoice management.

Technically, the project is developed with the latest web development frameworks. Backend services provide data security, real-time syncing, and optimized performance. The system architecture allows scalability to handle increasing user bases and regional growth.

Tiffin Shiffin not only brings the conventional dabbawalla model up to date but also enables local food vendors by providing them with a digital platform to access more customers. In the long run, the aim is to develop Tiffin Shiffin into a complete ecosystem that encourages healthy consumption, facilitates small-scale food enterprises, and supports sustainable urban lifestyles.

This project is quintessence itself in resolving world problems via technology — giving regular meals that are healthy, convenient, and reasonably priced, all with a mouse click away.

1. INTRODUCTION

In today's fast-paced world, the demand for convenient and healthy meal options is growing rapidly. With busy professionals, students, and elderly individuals seeking alternatives to daily cooking, **tiffin services** have become a popular choice. The rise of **digital food platforms**, increasing health consciousness, and the growth of **home-based food businesses** are reshaping this industry. However, challenges like inconsistent meal quality, limited customization, and delivery inefficiencies persist.

Tiffin Shiffin is designed to address these gaps by offering a seamless, tech-driven tiffin management system. It connects customers with reliable tiffin providers, ensuring **affordable, nutritious, and timely meal deliveries**. By leveraging digital solutions, **Tiffin Shiffin** aims to revolutionize the traditional tiffin service model, making home-cooked meals more accessible and efficient.

1.1. Problem Statement

Busy individuals struggle with **meal management**, facing challenges in accessing **affordable, home-cooked food** due to time constraints. Traditional tiffin services often lack **reliable delivery, quality consistency, and customization options**, while home cooks and small vendors have limited digital presence to expand their reach. **Tiffin Shiffin** addresses these issues by providing an **efficient and technology-driven home-cooked tiffin delivery system**, ensuring seamless order management, timely delivery, and a structured platform for home chefs.

2. BACKGROUND RESEARCH

The growing adoption of **online meal ordering and delivery services** has transformed the food industry, enabling consumers to access food with convenience and speed. Research suggests that changing consumer behaviour, driven by technological advancements, has created opportunities for various enterprises, from small startups to multinational corporations (Mange et al., 2020). The rise of **on-demand food delivery platforms** has significantly impacted how people manage their meals, particularly those with **busy schedules, such as students and working professionals**.

A study on **Tiffin-India App** (Rewatkar et al., 2020) highlights the increasing preference for **healthy meal options** over fast food. Despite the availability of numerous online food delivery platforms, few cater specifically to **nutritious, home-cooked meals**. This research points out that students and professionals often resort to **junk food** due to a lack of accessible healthy alternatives. The proposed Tiffin-India App aimed to address this gap by providing a **customizable meal delivery system** for individuals with specific dietary requirements. The findings from this study underscore the **need for a specialized platform** like **Tiffin Shiffin**, which connects consumers with home-based cooks offering **affordable, healthy tiffin services**.

Additionally, the **Dabbawala system in Mumbai** (Percot, 2005) is an exemplary model of **efficient tiffin delivery**, showcasing a highly organized yet low-tech approach to meal distribution. This system effectively caters to the dietary needs of thousands of office workers while maintaining **reliability and punctuality**. However, the traditional Dabbawala system operates manually and lacks **digital integration**, limiting its scalability beyond specific geographic regions. The success of this model demonstrates the feasibility of a **structured tiffin delivery network**, but **modern technology can further enhance efficiency** by allowing real-time order tracking, customization, and vendor management.

Moreover, research conducted by **Mange et al. (2020)** explores the **advantages of digital tiffin delivery platforms** in overcoming the inefficiencies of traditional mess services. By implementing **user authentication, order tracking, and vendor-side controls**, such platforms improve **order management and customer satisfaction**. The study highlights how **small-scale homemade food businesses** can benefit from an **online presence**, expanding their reach beyond

local neighbourhoods. This aligns with **Tiffin Shiffin's** mission to empower **home chefs** by providing them with a **dedicated platform** to manage orders efficiently.

2.1. Proposed System

This project aims to develop **Tiffin Shiffin**, an online **home-cooked tiffin delivery system** designed to bridge the gap between busy individuals seeking **nutritious meals** and home chefs looking to expand their reach. Unlike traditional food delivery services, Tiffin Shiffin focuses on **homemade food options, personalized meal plans, and direct connections with home-based vendors**.

The proposed system will leverage **technology-driven solutions** such as **mobile applications and web platforms** to facilitate **seamless order placement, vendor-customer communication, and reliable delivery tracking**. This initiative will improve **meal accessibility**, promote **healthy eating habits**, and provide **economic opportunities** for home chefs.

By integrating **modern digital payment systems, user authentication, and vendor management tools**, Tiffin Shiffin will ensure a **secure, efficient, and user-friendly experience**. The vision is to create an ecosystem where **homemade food is as accessible and convenient as restaurant meals**, thereby **enhancing the overall dining experience** for customers while **supporting local food entrepreneurs**.

2.2. Goals and Objectives

Achieving these goals will ensure that **Tiffin Shiffin** stands out as a **reliable and efficient platform** for home-cooked meal delivery. By integrating **technology-driven solutions**, the system will **provide convenience for users and empower small-scale home chefs** by giving them a structured platform to reach a wider audience. This approach will **enhance meal accessibility, promote healthier eating habits, and support local businesses**, making homemade food a viable alternative to restaurant meals.

Table 1: Goal and Objectives

#	Goal or Objective
1	Develop an **extensible system** that allows for future updates and additional features such as dietary tracking and subscription models.
2	Ensure the system is **easy to support**, providing **comprehensive documentation, configuration guides, and an administrator's manual**.
3	Create an **intuitive user experience**, minimizing the need for training and ensuring **seamless navigation** for both customers and vendors.
4	Build a **functional prototype** demonstrating the user interface and core features by a defined milestone, enabling **early feedback and iterations**.
5	Promote **collaboration and innovation**, making the development process engaging and rewarding for the project team.

3. PROJECT PLANNING

This section helps with the planning phase of TIFFIN SHIFFIN project, whose goal is to deliver affordable, nutritious, home-cooked and tasty meals to individuals leaving alone such as students, working professional, elderly citizens or anyone who crave for home-cooked foods. The sections below give the details about the chosen project lifecycle, setups, stakeholders, resources required and all the assumptions.

3.1. Project Lifecycle

The project "THIFFIN SHIFFIN" focused to use Agile method, which means the team worked in a short duration of two-month cycle to build the website step by step. We followed a plan called SCRUM, where the team members meet regularly to plan work, share progress, review their work and improve for the next cycle. The process helped the team quickly develop features using tools like **React**, **TypeScript**, Node js, Supabase and **Tailwind CSS**.

3.2. Project Setup

Example:

Table 2: Sample 2

#	Decision Description
1	Frontend was developed using **Vite + React + TypeScript**, styled with **Tailwind CSS** and **shadcn/ui** components.
2	Codebase followed best practices from the official React and TypeScript style guides
3	Backend was worked on with node js+typescript and Supabase(Firebase)
4	Git will be used for version control; GitHub for repository hosting and project management

3.3. Stakeholders

Table 3: Sample 3

Stakeholder	Role
End Users (students, professionals)	The Primary users of the platform who will place meal orders
Chefs/Home-cooks	Providers of the home-cooked meals listed on the platform
Delivery Partners	Responsible for delivery
Project Team	Developers and testers building the application
Mentor (DR. Gulshan Shrivastava}	Guides technical and strategic aspects of the project

3.4. Project Resources

Table 4: Sample 4

Resource	Resource Description	Quantity
Development Team	Team of developers using Vite, React, and TypeScript	1 team
Database	Backend services for authentication, hosting	2
Figma	UI/UX design and prototyping	1
Tailwind CSS + shadcn/ui	Used for consistent, responsive UI components	Full suite

3.5. Assumptions

Example:

Table 5: Sample 4

#	Assumption
A1	The capstone team and mentors will be able to meet face to face once a week.
A2	Team members will be consistently work on the project and will update progress on GitHub.
A3	The core features like meal listing, ordering, and delivery tracking will be ready.
A4	Team will have sufficient time to complete a working model to present by end-semester
A5	UI components from shadcn/ui will cover major design
A6	Will able to replicate a working prototype
A7	The current prototype can be made into fully functional application in future

4. PROJECT TRACKING

4.1. Tracking

Online version control, task management, and collaboration technologies were used to track the TiffinShiffin project. This made it possible to coordinate easily and track developments continuously over the course of the development lifecycle. The tools and how they were used in the project are compiled in the table below.

Table 6: Sample 6

Information	Description	Link
Code Storage	The source code was maintained using **Git**, hosted on **GitHub**, which enabled collaboration and version tracking	AyushAU27/tiffin-shiffin-production
Project Documents and Assignments	All related documents (mockups, UI iterations, reports, etc.) were stored and organized in github.	AyushAU27/tiffin-shiffin-production

4.2. Communication Plan

The team kept in regular contact with stakeholders both internally and externally to guarantee efficient cooperation and timely updates throughout the project lifespan. The channels and communication schedule are described in full in the tables below.

Table 7: Regularly Scheduled Meetings

Meeting Type	Frequency/Schedule	Who Attends
Conference Call/Skype	Weekly	Project team
Team Meeting	Weekly	Project team
Short Meeting	Weekly in class	Project team
Sprint Planning Meeting	Start of each sprint	Project team and mentor
Sprint Retrospective Meeting	End of each sprint	Project team
Sprint Review Meeting	End of each sprint	Project team, ***mentor, and sponsor***

Table 8: Information To Be Shared Within Our Group

Who?	What Information?	When?	How?
Project team	Task assignments & General scrum information	Weekly	Team meetings, listing in Project Specification.

Table 9: Information To Be Provided To Other Groups

Who?	What Information?	When?	How?
mentor	Final deliverables	At completion of project	Project specification doc., code, Power Point presentation
mentor	Weekly report	Weekly	Email and Trac site access
mentor	Project baselines ***(optional)***	At the end of each sprint	Onsite customer demo, access to repository

Table 10: Information Needed from Other Groups

Who?	What Information?	When?	How?
mentor	Requirement changes	Start of each sprint	Meeting with mentor.

4.3. Deliverables

The following are the major deliverables produced as part of the TiffinShiffin project, which encompass all stages of the development process—from initial planning and design to implementation, testing, and deployment. Each item listed below played a critical role in ensuring the project met its functional and user-centered design goals.

Table 11: Deliverables

#	Deliverable
1	Project Report
2	Codebase of the product
3	Working Prototype
4	UI Mockup
5	Future Improvement and Scope
6	Final report (final PowerPoint presentation, 12-minute video, and final sprint)

5. SYSTEM ANALYSIS AND DESIGN

This section describes in detail about the design part of the system.

5.1. Overall Description

The motive of this project is to create an efficient and scalable platform that bridges the gap between professionals, students, and bachelors who might be in dire need of reasonably priced, home-cooked meals with homemakers who prepare savoury meals just as per the convenience of their consumers. Users are open to the choice of ordering in bulk or individually, browse different tiffin plans, read reviews and testimonials, and download the program for their mobile device.

The platform employs a user-centred design methodology to ensure simplicity and easy accessibility for the user so that they don't have to navigate through any complications whatsoever. There are several areas to help the user navigate the site, including meal planning, testimonials, and app download prompts. The vast tech stack of this project that broadly includes Vite, typescript, react, studio cn, tailwind CSS ensure smooth and seamless functioning of every functionality that the product intends to incorporate.

5.2. Users and Roles

The system regulates multiple user roles to facilitate the interaction between food providers and consumers while maintaining administrative control and application efficiency. The roles are as follows:

Table 12:

User	Description
Consumer	These users are the primary recipients of the tiffin services. They can register and log in to the platform, browse available meal plans, place bulk or single orders, leave feedback, and download the mobile version of the app for easier access. They also receive notifications and updates regarding their orders.
Service Providers (Homemaker etc.)	They can sign up to offer their home-cooked meal services. They can list meal plans, update availability, respond to inquiries, and view order history. Their role focuses on managing the food supply side of the

	system.
Administrator	The admin has access to the backend panel where they monitor platform activity, approve/reject homemaker listings, manage disputes, handle support requests, and ensure smooth operations. They can also access analytics dashboards for user behavior and system performance.

USER	ROLE:
Frontend And UI	Ayush Upadhyay E23CSEU1146, Anarghya Singh 1164
Backend And Database	Ayush Upadhyay 1146, Riti Dubey 1148
API Integration and Backend Support	Riti Dubey 1148, Tanistha Keshri 1165
Deployment and Database Integration	Anarghya Singh 1164, Tanistha Keshri 1165

5.3. Design diagrams/Architecture/ UML diagrams/ Flow Charts/ E-R diagrams

Product Backlog Items

In the Tiffin Shiffin project, the primary goal is to deliver fresh, home-cooked meals to users such as students, working professionals, and health-conscious individuals. To ensure a user-friendly and efficient service, all functionalities and requirements have been translated into user stories. These stories help in better understanding the expectations of different types of users and in defining clear, value-driven features that can be developed and delivered during sprints.

Below are the user stories, written in the format:

As a <user type> I want <action> so that <goal>

 As a student, I want to subscribe to a daily tiffin service so that I can have regular home-style meals without worrying about cooking.

 As a working professional, I want to pre-order my lunch or dinner so that my food arrives on time during busy work hours.

 As a new user, I want to view various tiffin plans and prices so that I can choose a plan that suits my needs and budget.

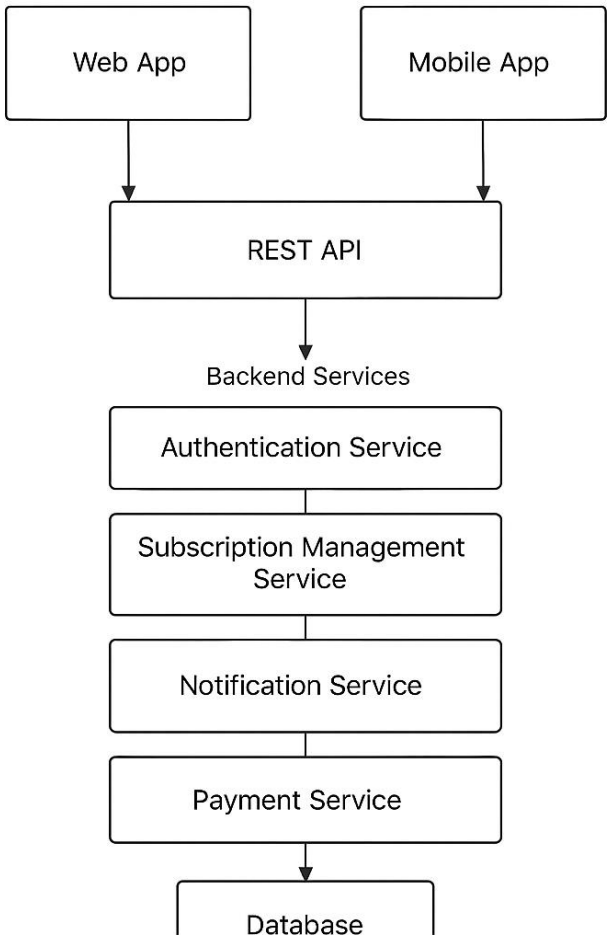
 As a regular customer, I want to pause my tiffin service for certain days so that I don't waste food when I'm unavailable.

 As **a user**, I want to track my tiffin delivery in real time so that I can be prepared when it arrives.

 As a health-conscious person, I want to see the nutritional value of each meal so that I can maintain a healthy diet.

 As a vegetarian, I want to filter meal options based on my dietary preferences so that I get only vegetarian food.

5.3.1. Architecture Diagram



5.3.2. Use Case Diagram

The following use case diagram (Figure 1) represents the primary interactions between different actors (User, Kitchen Panel, and Delivery Partner) and the functionalities offered within the **Tiffin Shiffin** system.

🎭 **Actors in the Use Case Diagram:**

- **User**: The end customer using the Tiffin Shiffin website to order and manage their meals.
- **Kitchen Panel**: The backend panel used by kitchen staff to manage meal preparation and packaging.
- **Delivery Partner**: The individual responsible for picking up and delivering meals.

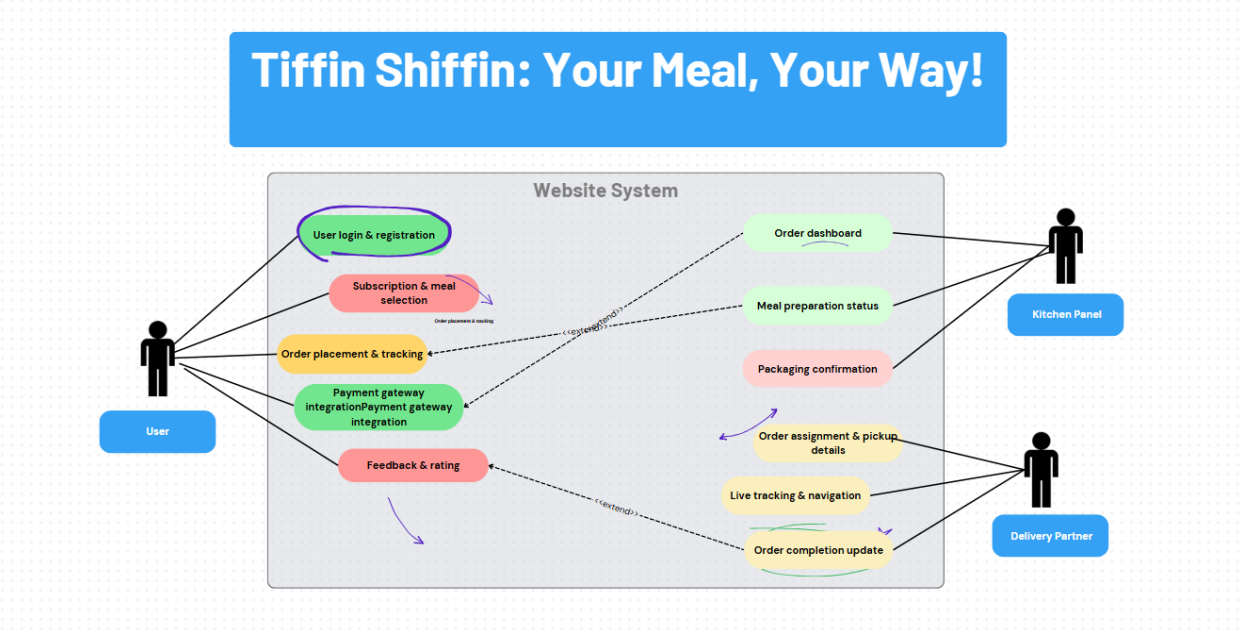


Figure 1: Sample use-case diagram

Use Cases in the Website System:

User Side:

1. **User Login & Registration** – Allows new users to sign up and existing users to log into the platform.
2. **Subscription & Meal Selection** – Enables users to choose a meal plan or subscription based on their preferences.
3. **Order Placement & Tracking** – Lets users place an order and monitor its status until delivery.
4. **Payment Gateway Integration** – Facilitates secure online payments through integrated gateways.
5. **Feedback & Rating** – Users can rate their experience and provide feedback after receiving the meal.

   Kitchen Panel Side:
6. **Order Dashboard** – Displays incoming orders for the kitchen staff.
7. **Meal Preparation Status** – Lets the kitchen update the status of each meal being prepared.
8. **Packaging Confirmation** – Confirms that meals are packed and ready for dispatch.

   Delivery Partner Side:
9. **Order Assignment & Pickup Details** – Delivery partners receive assigned orders and pickup information.
10. **Live Tracking & Navigation** – Helps partners navigate to delivery addresses and update live tracking.
11. **Order Completion Update** – Confirms successful delivery of the order.

The following class diagram represents the structural design of the *Tiffin Shiffin* system. It outlines the major classes involved in the project, such as User, Meal Plan, Order, Payment, Feedback, Kitchen, and Delivery Partner. Each class includes its relevant attributes and methods to define responsibilities and functionalities within the system. The diagram also showcases the relationships among these classes, ensuring a clear understanding of how different components of the system interact with each other to fulfill the overall goal of meal subscription, preparation, and delivery management. This blueprint serves as the foundation for the system's backend architecture.

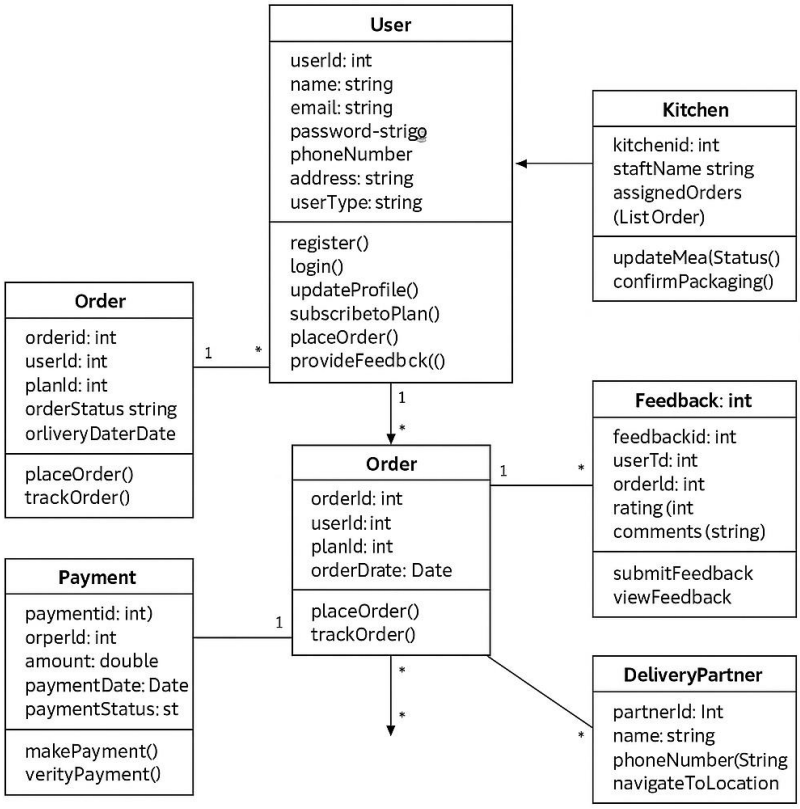
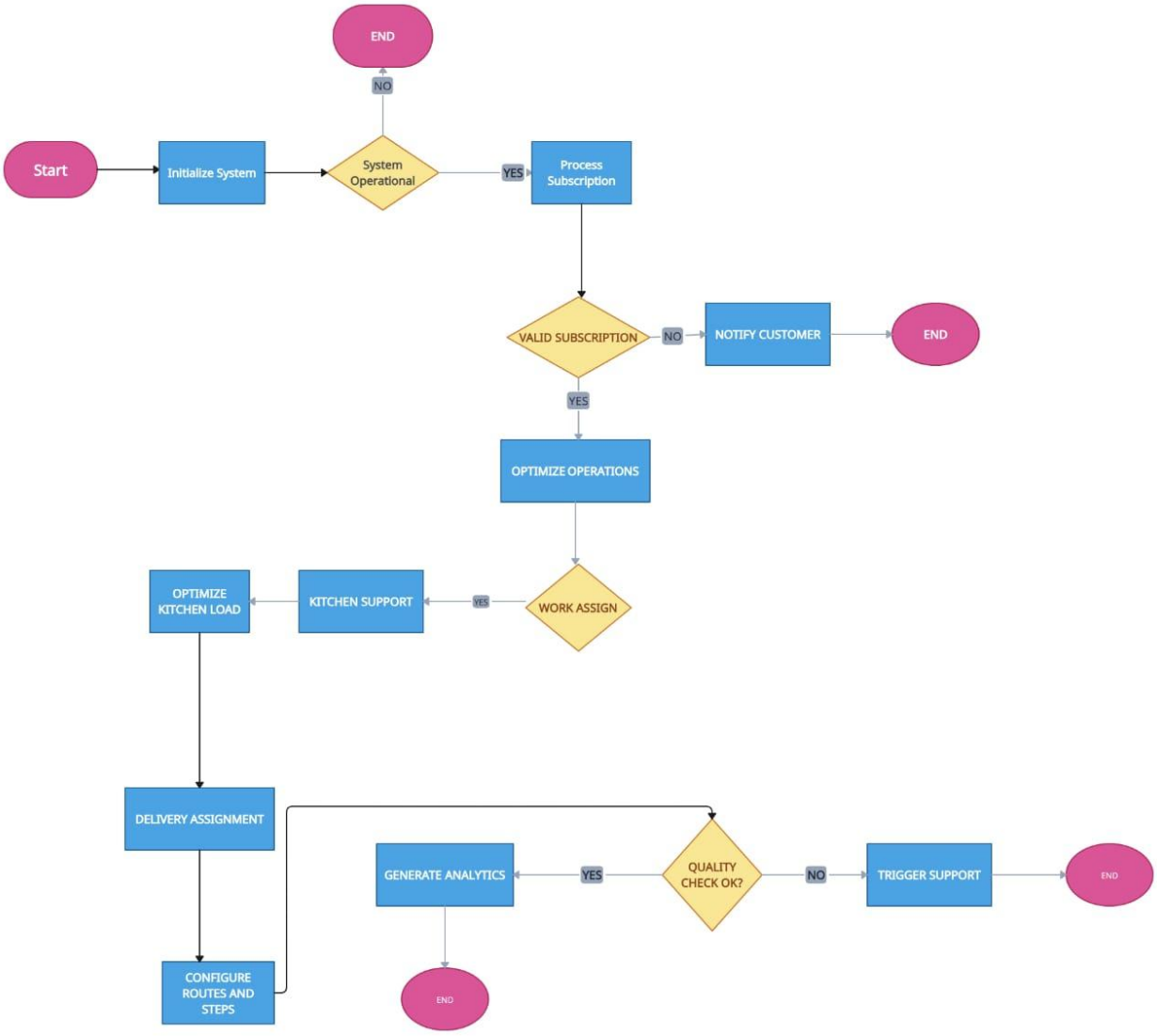


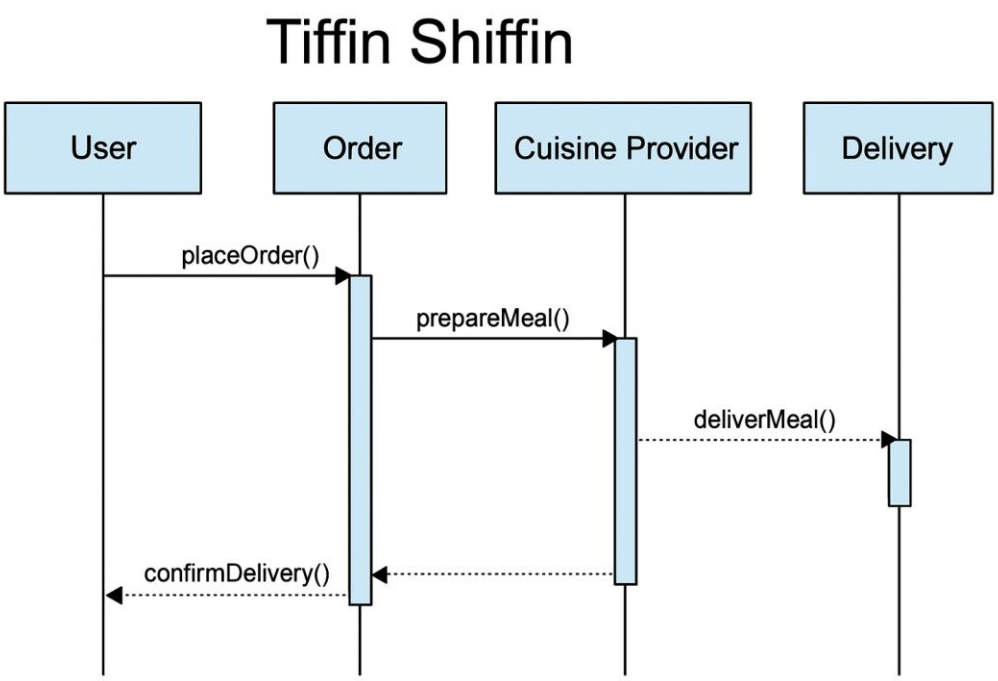
Figure 2: sample 2

5.3.3. Activity Diagrams

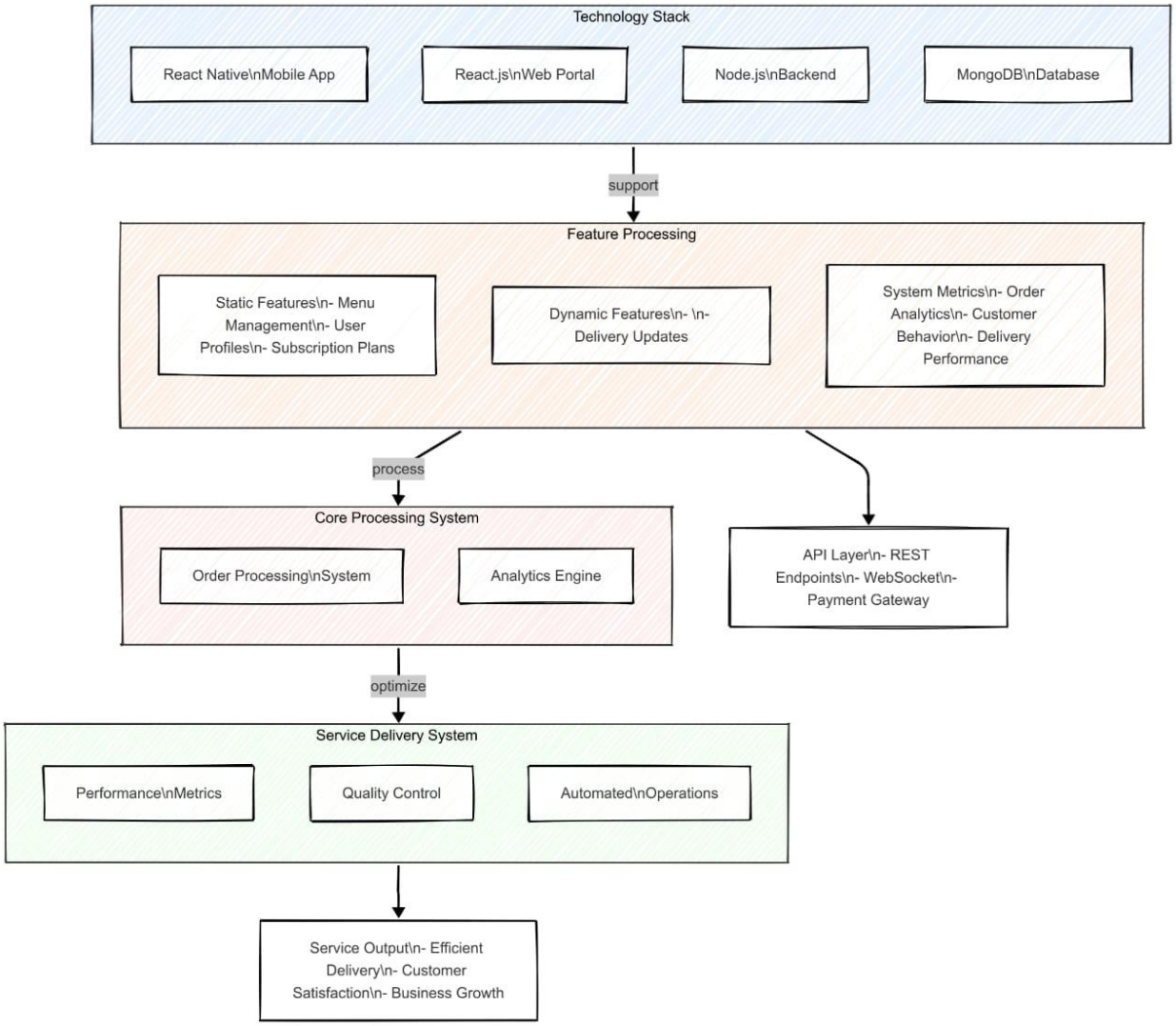


5.3.4. Sequence Diagram

The following sequence diagram illustrates the core functionality of the **Tiffin Shiffin** system—specifically, the order processing workflow. It captures the interaction between the User, Server, Kitchen Panel, and Delivery Partner as the system handles meal subscription, order placement, packaging, and delivery updates. This diagram helps visualize how data and control flow across various components of the system to ensure a seamless user experience.


Tiffin Shiffin
User
Order
Cuisine Provider
Delivery
placeOrder()
prepareMeal()
deliverMeal()
confirmDelivery()

5.3.5. Data Architecture



6. USER INTERFACE

6.1. UI Description

We are developing a food delivery subscription-based platform named Tiffin Shiffin. The main emphasis of the project is to deliver a smooth and user-friendly experience for users subscribing to daily or weekly tiffin services. The UI of this project is developed using latest web development technologies to achieve speed, responsiveness, and maintainability.

This project is developed with:

Vite: A fast and optimized build tool that offers an efficient development experience.

TypeScript: Applied to ensure type safety and improved code maintainability.

React: Main library for developing interactive user interfaces.

shadcn/Ui: Applied for uniform and accessible UI components throughout the application.

Tailwind CSS: Allows for fast and responsive UI design with utility-first CSS classes.

The application UI features:

A homepage that displays service offerings, pricing plans, and subscription options.

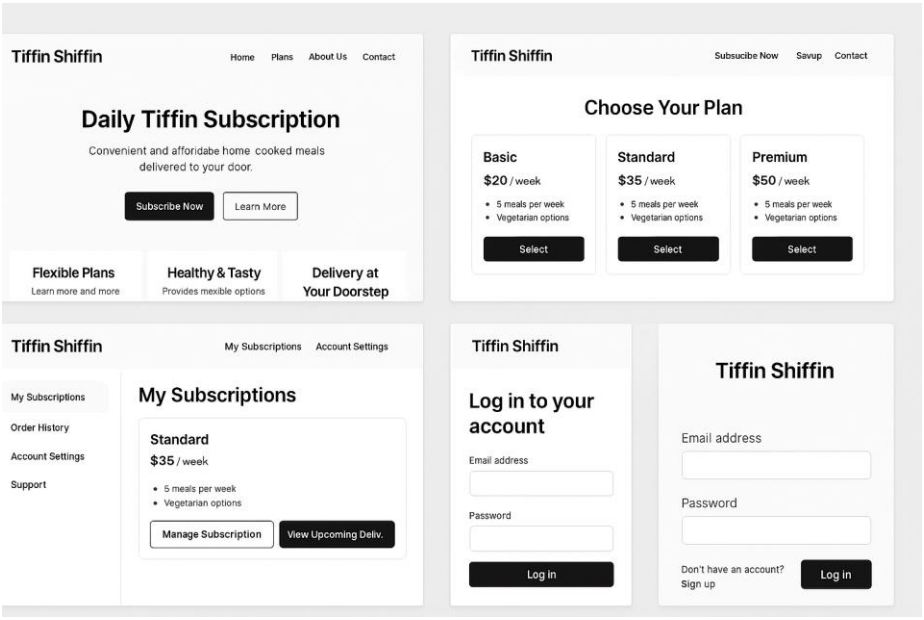
A subscription dashboard where users can manage their meal plans, monitor orders, and change delivery preferences.

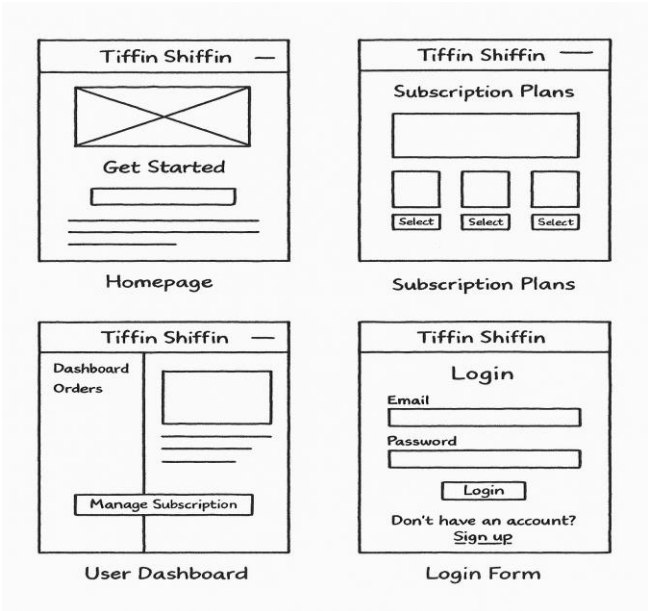
An optional vendor interface for tracking menu updates and orders.

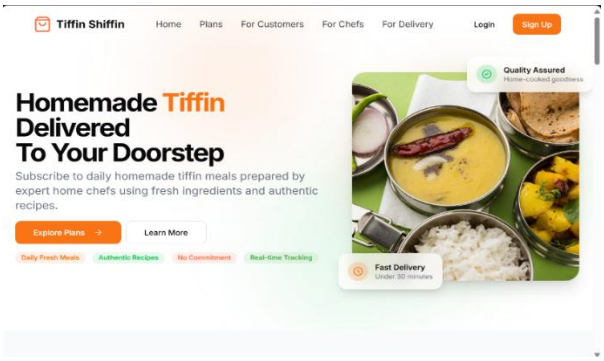
A responsive design with desktop and mobile view optimizations.

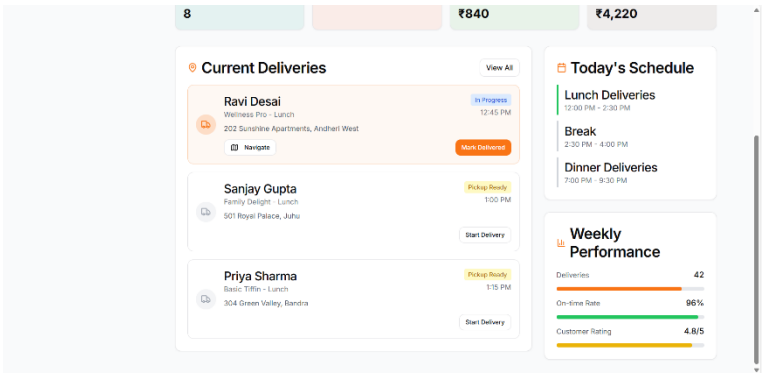
Through the use of up-to-date frontend technology and component libraries, Tiffin Shiffin provides a lean, user-friendly, and high-performing user interface, compliant with modern web standards.

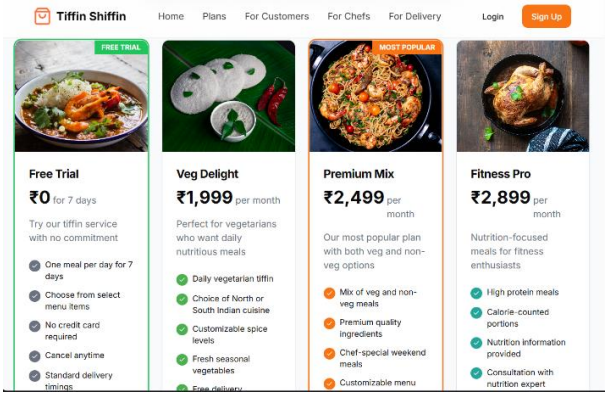
6.2. UI Mockup

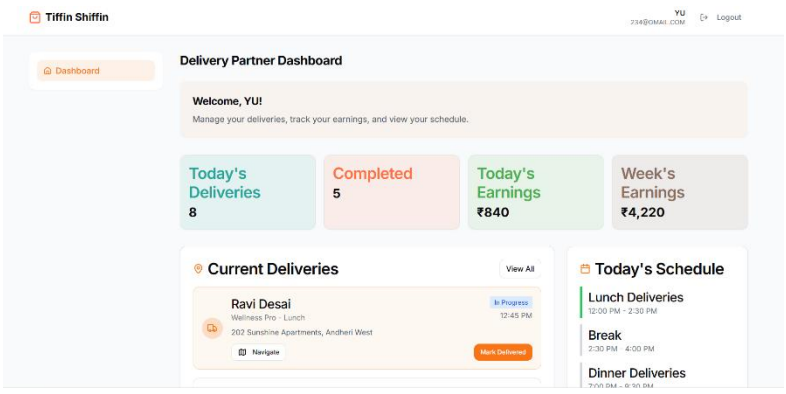





Tiffin Shiffin
Home
Plans
For Customers
For Chefs
For Delivery
Login
Sign Up
Homemade Tiffin Delivered To Your Doorstep
Subscribe to daily homemade tiffin meals prepared by expert home chefs using fresh ingredients and authentic recipes.
Explore Plans
Learn More
Daily Fresh Meals
Authentic Recipes
No Commitment
Real-time Tracking
Quality Assured
Home-cooked goodness
Fast Delivery
Under 30 minutes


8
₹840
₹4,220
Current Deliveries
View All
Ravi Desai
Wellness Pro · Lunch
202 Sunshine Apartments, Andheri West
In Progress
12:45 PM
Navigate
Mark Delivered
Sanjay Gupta
Family Delight · Lunch
501 Royal Palace, Juhu
Pickup Ready
1:00 PM
Start Delivery
Priya Sharma
Basic Tiffin · Lunch
304 Green Valley, Bandra
Pickup Ready
1:15 PM
Start Delivery
Today's Schedule
Lunch Deliveries
12:00 PM - 2:30 PM
Break
2:30 PM - 4:00 PM
Dinner Deliveries
7:00 PM - 9:30 PM
Weekly Performance
Deliveries
42
On-time Rate
96%
Customer Rating
4.8/5


Tiffin Shiffin
Home
Plans
For Customers
For Chefs
For Delivery
Login
Sign Up
FREE TRIAL
Free Trial
₹0 for 7 days
Try our tiffin service with no commitment
One meal per day for 7 days
Choose from select menu items
No credit card required
Cancel anytime
Standard delivery timings
Veg Delight
₹1,999 per month
Perfect for vegetarians who want daily nutritious meals
Daily vegetarian tiffin
Choice of North or South Indian cuisine
Customizable spice levels
Fresh seasonal vegetables
MOST POPULAR
Premium Mix
₹2,499 per month
Our most popular plan with both veg and non-veg options
Mix of veg and non-veg meals
Premium quality ingredients
Chef-special weekend meals
Customizable menu
Fitness Pro
₹2,899 per month
Nutrition-focused meals for fitness enthusiasts
High protein meals
Calorie-counted portions
Nutrition information provided
Consultation with nutrition expert


Tiffin Shiffin
YU
Logout
Dashboard
Delivery Partner Dashboard
Welcome, YU!
Manage your deliveries, track your earnings, and view your schedule.
Today's Deliveries
8
Completed
5
Today's Earnings
₹840
Week's Earnings
₹4,220
Current Deliveries
View All
Ravi Desai
Wellness Pro · Lunch
202 Sunshine Apartments, Andheri West
In Progress
12:45 PM
Navigate
Mark Delivered
Today's Schedule
Lunch Deliveries
12:00 PM - 2:30 PM
Break
2:30 PM - 4:00 PM
Dinner Deliveries

7. ALGORITHMS/PSEUDO CODE OF CORE FUNCTIONALITY

Algorithm: Comprehensive Tiffin Service Management System

Input: User requests, Kitchen capacity, Delivery zones, Payment data, Menu data

Output: Optimized deliveries, Payment status, Customer feedback, System analytics

```
# System Constants
MaxKitchenCapacity = K
DeliveryTimeWindow = W
ServiceZones = Z
SubscriptionTypes = [Daily, Weekly, Monthly, Yearly]
PaymentGatewayTimeout = 30  # seconds
RefundWindow = 72  # hours
MenuRotationPeriod = 7  # days
RatingScale = 5

# Main System Controller
def MainServiceController():
    while SystemOperational:
        active_subscriptions = ProcessSubscriptions()
        kitchen_schedule = OptimizeKitchenLoad()
        delivery_routes = OptimizeDeliveryRoutes()
        menu_status = ManageMenu()
        payment_status = HandlePayments()
```

```
        feedback_data = ProcessFeedback()

        UpdateSystemMetrics({
            'subscriptions': active_subscriptions,
            'kitchen': kitchen_schedule,
            'delivery': delivery_routes,
            'menu': menu_status,
            'payments': payment_status,
            'feedback': feedback_data
        })

# Subscription Management
def ProcessSubscriptions():
    active_subscriptions = GetActiveSubscriptionsFromDatabase()
    daily_order_matrix = GenerateOrderMatrix()

    for subscription in active_subscriptions:
        if NeedsRenewal(subscription):
            if ProcessPayment(subscription):
                RenewSubscription(subscription)
            else:
                NotifyCustomerPaymentFailure(subscription)
```

```
        if HasPendingCancellation(subscription):
            ProcessCancellation(subscription)

# Kitchen and Delivery Optimization
def OptimizeOperations():
    # Kitchen Optimization
    kitchen_load = GetCurrentKitchenLoad()
    for time_slot in operational_hours:
        orders = GetOrdersForTimeSlot(time_slot)
        if orders.count <= MaxKitchenCapacity:
            AssignToKitchen(orders, time_slot)
        else:
            OptimizeKitchenLoad(orders)

    # Delivery Route Optimization
    for zone in ServiceZones:
        deliveries = GetZoneDeliveries(zone)
        optimized_routes = OptimizeDeliveryRoute(deliveries)
        AssignDeliveryPartners(optimized_routes)

# Menu and Inventory Management
def ManageMenu():
    current_menu = GetCurrentMenu()
```

```
    inventory = CheckInventoryLevels()

    for day in range(MenuRotationPeriod):
        daily_menu = {
            'regular_items': GetBaseMenu(),
            'special_items': GetSpecialItems(day)
        }

        for item in daily_menu:
            if ValidateInventory(item):
                price = CalculatePrice(item)
                UpdateMenuItems(item, price)
            else:
                HandleInventoryShortage(item)

# Payment Processing System
def HandlePayments():
    # New Subscriptions
    for new_subscription in pending_subscriptions:
        payment_status = ProcessPayment(new_subscription)
        if payment_status.success:
            ActivateSubscription(new_subscription)
            GenerateInvoice(new_subscription)
```

```
    # Renewals
    for renewal in pending_renewals:
        if ProcessRecurringPayment(renewal):
            UpdateSubscriptionStatus(renewal)
        else:
            HandleFailedRenewal(renewal)

    # Refunds
    for refund in pending_refunds:
        if ValidateRefundEligibility(refund):
            ProcessRefund(refund)
            UpdateRefundStatus(refund)

# Quality Control and Feedback System
def MonitorServiceQuality():
    # Real-time Monitoring
    for active_delivery in current_deliveries:
        quality_metrics = {
            'food_temp': CheckTemperature(),
            'packaging': VerifyPackaging(),
            'delivery_time': TrackDeliveryTime(),
            'order_accuracy': VerifyOrderContents()
```

```
        }

        if not MeetsQualityStandards(quality_metrics):
            TriggerQualityAlert()
            InitiateCorrectiveAction()

    # Feedback Processing
    for completed_delivery in today_deliveries:
        CollectFeedback(completed_delivery)
        UpdateVendorRatings()
        ProcessCustomerComments()

        if HasNegativeFeedback():
            TriggerCustomerSupport()

# Analytics and Reporting
def GenerateAnalytics():
    daily_metrics = {
        'total_orders': CountDailyOrders(),
        'revenue': CalculateDailyRevenue(),
        'customer_satisfaction': AggregateRatings(),
        'delivery_performance': AssessDeliveryMetrics(),
        'kitchen_efficiency': MeasureKitchenPerformance()
```

```
    }

    UpdateDashboard(daily_metrics)
    GenerateReports(daily_metrics)
    DetectAnomalies(daily_metrics)

# Error Handling and Recovery
def HandleSystemErrors():
    try:
        MonitorSystemHealth()
        LogErrorEvents()
        InitiateFailoverProcedures()
    except Exception as e:
        NotifySystemAdministrator(e)
        ImplementRecoveryProcedures()

return SystemStatus
```

8. PROJECT CLOSURE

The Tiffin Shiffin project represents the achievement of creating a subscription-based tiffin delivery platform, filling the gap between users looking for home-type meals and vendors providing reliable food services. Developed with the contemporary front-end stack of Vite, React, TypeScript, Tailwind CSS, and shadcn-ui, and backend stack of node-js and typescript, the application provides a simple, friendly interface that facilitates necessary capabilities such as meal plan choosing, subscription management, and user authentication.

Throughout the project, modular design, performance optimization, and UI/UX consistency were focused on to deliver a scalable and maintainable solution. The application architecture was responsiveness-oriented, with accessibility across a range of device types and screen sizes.

8.1. Goals / Vision

Our goal was to create a subscription based online tiffin service application which could help in providing home cooked food to the required. Our goal remains intact till the end submission but we altered our ways to approach the problem and find its solution. We were able to make minimum viable product in the given limited amount of time. We designed a web-based application for our product Tiffin Shiffin and tried to incorporate real time features and solutions as much as possible. Our Vision was straightforward from day 1 that we were trying to develop a prototype for our product Tiffin Shiffin and the product has lots of potential for the future as there are many more things to be incorporated. Our goal for this semester was to develop a basic subscription-based tiffin delivery platform that allowed users to browse meal options, select a plan, and manage their subscriptions online. The focus was initially on establishing core functionality such as a homepage, login system, and plan selection. Through the course of the project, these goals evolved. The vision shifted toward building a more robust, scalable, and visually refined web application. The primary aim became delivering an intuitive and responsive user interface that could support not just basic subscription handling, but also lay the foundation for future features such as order tracking, vendor dashboards, and payment integration. And we tried to achieve the most of it that we thought for this semester.

8.2. Delivered Solution

Our goal was to create a subscription based online tiffin service application which could help in providing home cooked food to the required and allows users to browse meal options, select a plan, and manage their subscriptions online. Fortunately, we were able to do it and we incorporated all those features to make a viable prototype for the same. We created the software dependencies for our product and provided it a platform to flourish. Our deployed solution is mainly a complete web application that allows users to subscribe to tiffin meal plans for daily or weekly consumption easily. The application has a modern, responsive UI designed using React, TypeScript, Tailwind CSS, and shadcn-ui and a working backend on node js and supabase.

The solution has modules for user logon, plan choice, subscription management, and a simple dashboard for subscription tracking. The UI elements are reusable and modular, and the project is structured to be scalable and manageable for additional improvements such as payment processing integration, vendor management, and live tracking.

The solution is well-suited for further development and is available for real-world deployment and iterative development.

8.3. Remaining Work

While the current version of *Tiffin Shiffin* establishes a solid foundation, several features remain to be implemented to make the platform production-ready. Future work would include more robust system with capacity of handling users and an ai based model for streamlining the subscription-based process. In technological field including real time image scan food detection with user feedback system and live customer support are some of the future implementations to be done. Multiple new subscription plans including versatile menus and easy interface system development is the main goal. Converting the features of the application to real time live system is the final task.

All this was for the technical aspect now the most important part of the process the hardware and the real human resources interaction part. To make the project come live if we continue it in future catering the home cooks and delivery partners will be the task and developing a storage facility or a tiffin collection centre will be one of the major tasks to do. As said only if we think of continuing it in future. Though in technical aspect a fully functional application with advanced features will be the goal for our project. These improvements would significantly broaden the platform's capabilities and make it more robust, user-friendly, and scalable for real-world deployment.

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