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# Final Report

for

# Trintendo – Smart Food Delivery Platform

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Trintendo Development Team  
March 2025

# Introduction:

Ordering food online can often be frustrating due to delays, lack of tracking, poor restaurant communication, or limited payment options and high prices. Many existing platforms either have high delivery charges, inconsistent service, or a limited selection of restaurants, making it difficult for users to get their meals conveniently.

The **Food Delivery App** solves this problem by providing a seamless and efficient platform where users can browse restaurants, place orders, track deliveries in real time, and make secure payments. The app ensures a smooth experience by optimizing restaurant partnerships, delivery speed, and customer support.

The project is feasible as it utilizes proven technologies like GPS tracking, secure payment gateways, and an intuitive user interface. With the growing demand for online food delivery, this app offers a convenient solution for users looking for fast, reliable, and affordable food ordering services.

This solution is designed to scale, allowing future updates based on user feedback and evolving market needs. By focusing on core aspects such as order tracking, affordability, and restaurant variety, the app aims to enhance the overall food delivery experience.

## **Functional Requirements**

### **User Account Management**

- A customer shall be able to register and log in using an email and password.
- The system shall allow customers to update their profile information.
- A restaurant shall be able to register their business with valid documentation.

### **Order Processing**

- A customer shall be able to search for restaurants and food items.
- The system shall allow customers to add multiple items to their cart and modify them before checkout.
- A restaurant shall receive order notifications and have the ability to accept or decline orders.

### **Payment Handling**

- The system shall support payment via credit/debit cards, digital wallets, and cash on delivery.
- The system shall securely store payment details using encryption.
- The system shall generate and send a digital receipt to the customer after successful payment.

### **Real-Time Order Tracking**

- A customer shall be able to track their order status in real time.
- The system shall display an estimated preparation and delivery time for the order.
- A delivery rider shall be able to update the order status from pickup to deliver.

### **Restaurant Management**

- A restaurant owner shall be able to add, edit, and remove menu items.
- The system shall allow restaurants to mark menu items as available or out of stock.
- A restaurant shall be able to view and manage customer reviews.

## **Non-Functional Requirements**

### **Product Requirements**

- The system shall process orders within 2 seconds to ensure timely order handling.
- The system shall support up to 1000 simultaneous users to handle high user traffic.
- The system shall securely handle payment information to prevent unauthorized access or leaks.
- The system shall encrypt personal data to maintain privacy and security.

### **Organizational Requirements**

- The system shall comply with PCI-DSS payment security standards to ensure secure handling of payment data.
- The system shall back up data daily to prevent loss of critical information.

### **External Requirements**

- The system shall integrate with third-party payment gateways to offer various payment options.

# User Stories

## 1) Story Title: Edit Restaurant Profile

User Story:

*As a restaurant owner, I want to update my restaurant's profile information (name, address, contact details, cuisine type, operating hours, etc.) so that customers have accurate and up-to-date information about my establishment.*

Acceptance Criteria:

*And I know I am done when I can successfully update and save all relevant restaurant profile details with proper field validations.*

Type: Manage Data

Importance: High – Essential for accurate customer information.

## 2) Story ID: 22 | Story Title: Manage Menu Items

User Story:

*As a restaurant owner, I want to add, edit, or remove menu items so that my menu is current and attractive to customers.*

Acceptance Criteria:

*And I know I am done when I can create new menu items, update existing ones, and delete items—with changes immediately reflected in the customer app.*

Type: Manage Data

Importance: High – Core to keeping the menu up-to-date.

Estimate: 5 SP

## 3) Story ID: 23 | Story Title: Update Menu Item Availability

User Story:

*As a restaurant owner, I want to mark menu items as available or out-of-stock so that customers see only the items I can serve at any given time.*

Acceptance Criteria:

*And I know I am done when I can toggle the availability status for each menu item and the change is immediately visible to customers.*

Type: Manage Data

Importance: Medium – Prevents orders for unavailable items.

Estimate: 3 SP

## 4) Story ID: 3 | Story Title: View Restaurant Details

User Story:

*As a customer, I want to view restaurant details, including menu and ratings, so that I can make an informed decision.*

Acceptance Criteria:

*And I know I am done when I can see restaurant details, including menu, ratings, and reviews.*

Type: Report/View

Importance: High – Crucial for decision-making.

Estimate: 2 SP

## 5) Story ID: 2 | Story Title: Filter Restaurants by Cuisine

User Story:

*As a customer, I want to filter restaurants by cuisine so that I can easily find what I'm looking for.*

Acceptance Criteria:

*And I know I am done when I can apply a cuisine filter and see only relevant restaurants.*

Type: Search

Importance: High – Essential for efficient food discovery.

Estimate: 3 SP

#### 6) Story ID: 5 | Story Title: Add Multiple Items to Cart

User Story:

*As a customer, I want to add multiple items to my cart from a restaurant's menu so that I can place a complete order.*

Acceptance Criteria:

*And I know I am done when I can add multiple items to my cart and view them before checkout.*

Type: Workflow

Importance: High – Fundamental to order placement.

Estimate: 3 SP

#### 7) Story ID: 8 | Story Title: Review Cart Before Checkout

User Story:

*As a customer, I want to review my cart before confirming my order so that I can verify the items and prices.*

Acceptance Criteria:

*And I know I am done when I can view a summary of my order, including items and total price, before confirming checkout.*

Type: Workflow

Importance: High – Prevents ordering mistakes.

Estimate: 3 SP

#### 8) Story ID: 19 | Story Title: View Order History

User Story:

*As a customer, I want to view my order history so that I can easily reorder my favorite meals.*

Acceptance Criteria:

*And I know I am done when I can see a list of my past orders with details and a reorder option.*

Type: Report/View

Importance: Medium – Enhances user convenience.

Estimate: 3 SP

#### 9) Story ID: 25 | Story Title: Update Order Status

User Story:

*As a restaurant owner, I want to update the status of each order (e.g., received, preparing, ready, completed) so that customers are kept informed about their order progress in real time.*

Acceptance Criteria:

*And I know I am done when I can change the order status and see the updated status reflected on the customer's order tracking interface immediately.*

Type: Report/View

Importance: High – Ensures transparent and reliable order tracking.

Estimate: 4 SP

10) Story ID: 28 | Story Title: Add Customer Reviews

User Story:

As a customer, I want to submit reviews for the restaurant so that I can share my feedback and help others make informed decisions.

Acceptance Criteria:

And I know I am done when I can submit a review with a rating and comments, see a confirmation of submission, and provide feedback on my dining experience.

Type: Input/Create

Importance: Medium – Helps others make informed decisions and provides feedback to the restaurant.

Estimate: 3 SP

11) Story ID: 24 | Story Title: Receive and Manage Incoming Orders

User Story:

*As a restaurant owner, I want to receive notifications for new orders and manage them through a centralized dashboard so that I can process orders efficiently.*

Acceptance Criteria:

*And I know I am done when I can view incoming orders, accept or reject them, and initiate order processing with clear notifications on the dashboard.*

Type: Workflow

Importance: High – Critical for efficient order management.

Estimate: 6 SP

12) Story ID: 20 | Story Title: Analyze Sales and Order Performance

User Story:

As a restaurant owner, I want to view detailed analytics for my orders and sales so that I can monitor business performance and make informed decisions.

**Acceptance Criteria:**

And I know I am done when I can access a dashboard displaying key metrics such as total orders, revenue, popular items, and trends over daily, weekly, and monthly time frames.

**Type:** Report/View

**Importance:** High – Essential for monitoring business performance.

**Estimate:** 5 SP

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13) Story ID: 21 | Story Title: Multiple Payment Methods

User Story:

As a customer, I want to choose from multiple payment methods (credit/debit card, digital wallets, cash on delivery, etc.) so that I can pay conveniently.

**Acceptance Criteria:**

And I know I am done when I can select a payment method and complete my transaction successfully.

**Type:** Feature/Transaction

**Importance:** High – Improves customer payment flexibility.

**Estimate:** 4 SP

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**14) Story ID: 22 | Story Title: Update Delivery Status****User Story:**

As a rider, I want to update the status of my delivery (e.g., picked up, in transit, delivered) so that the customer and restaurant are informed of the delivery progress.

**Acceptance Criteria:**

And I know I am done when I can change the order status with a simple interface action.

**Type:** Feature/Action

**Importance:** Medium – Improves order tracking for customers and restaurants.

**Estimate:** 3 SP

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**15) Story ID: 23 | Story Title: Track Order in Real Time****User Story:**

As a customer, I want to track my order status in real time so that I know when my food will arrive.

**Acceptance Criteria:**

And I know I am done when I can see my order progress from preparation to delivery in real time.

**Type:** Feature/Tracking

**Importance:** High – Enhances customer experience with live updates.

**Estimate:** 4 SP

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**16) Story ID: 24 | Story Title: Accept or Decline Delivery Orders****User Story:**

As a rider, I want to view incoming delivery requests with all relevant details (pickup location, restaurant name, delivery address, estimated time, etc.) so that I can decide whether to accept or decline orders based on my current availability and route.

**Acceptance Criteria:**

And I know I am done when I can see a clear list of incoming delivery requests, review order details, and successfully tap an option to accept or decline an order, with confirmation notifications displayed.

**Type:** Feature/Action

**Importance:** Medium – Improves rider efficiency and decision-making.

**Estimate:** 3 SP



# Product Backlog

## User Stories:

### High Priority (Critical features for MVP)

Story ID	Title	User Story	Acceptance Criteria	Type
1	Filter Restaurants by Cuisine	As a customer, I want to filter restaurants by cuisine so that I can easily find what I'm looking for.	I can apply a cuisine filter and see only relevant restaurants.	Search
2	View Restaurant Details	As a customer, I want to view restaurant details, including menu and ratings, so that I can make an informed decision.	I can see restaurant details, including menu, ratings, and reviews.	Report/View
3	Add Multiple Items to Cart	As a customer, I want to add multiple items to my cart from a restaurant's menu so that I can place a complete order.	I can add multiple items to my cart and view them before checkout.	Workflow
4	Verify Order and Checkout	As a customer, I want to review my cart before confirming my order so that I can verify the items and prices.	I can view a summary of my order, including items and total price, before confirming checkout.	Workflow
5	Multiple Payment Methods	As a customer, I want to choose from multiple payment methods (credit/debit card, digital wallets, cash on delivery, etc.)	I can select a payment method and complete my transaction successfully.	Payment

Story ID	Title	User Story	Acceptance Criteria	Type
6	Track Order in Real Time	<p>so that I can pay conveniently.</p> <p>As a customer, I want to track my order status in real time so that I know when my food will arrive.</p>	I can see my order progress from preparation to delivery in real time.	Report/View
7	Edit Restaurant Profile	<p>As a restaurant owner, I want to update my restaurant's profile information (name, address, contact details, cuisine type, operating hours, etc.) so that customers have accurate and up-to-date information about my establishment.</p>	I can successfully update and save all relevant restaurant profile details with proper field validations.	Manage Data
8	Manage Menu Items	<p>As a restaurant owner, I want to add, edit, or remove menu items so that my menu is current and attractive to customers.</p>	I can create new menu items, update existing ones, and delete items—with changes immediately reflected in the customer app.	Manage Data
9	Receive and Manage Incoming Orders	<p>As a restaurant owner, I want to receive notifications for new orders and manage them through a centralized dashboard so that I can process orders efficiently.</p>	I can view incoming orders, accept or reject them, and initiate order processing with clear notifications on the dashboard.	Workflow
10	Update Order Status	<p>As a restaurant owner, I want to update the status of each order (e.g., received, preparing, ready, completed) so that customers are kept informed about their order progress in real time.</p>	I can change the order status and see the updated status reflected on the customer's order tracking interface immediately.	Report/View
11	Accept or Decline	<p>As a rider, I want to view incoming delivery requests with all relevant details</p>	I can see a clear list of incoming delivery requests, review order	Workflow

Story ID	Title	User Story	Acceptance Criteria	Type
	Delivery Orders	(pickup location, restaurant name, delivery address, estimated time, etc.) so that I can decide whether to accept or decline orders based on my current availability and route.	details, and successfully tap an option to accept or decline an order, with confirmation notifications displayed.	
12	Update Delivery Status	As a rider, I want to update the status of my delivery (e.g., picked up, in transit, delivered) so that the restaurant and customer are informed of the order progress in real time.	I can change the order status with a simple interface action, and the updated status is immediately reflected on both the restaurant's dashboard and the customer's order tracking screen, along with an automatic timestamp.	Workflow

### Medium Priority (Important but not critical for MVP)

Story ID	Title	User Story	Acceptance Criteria	Type
13	View Order History	As a customer, I want to view my order history so that I can easily reorder my favorite meals.	I can see a list of my past orders with details and a reorder option.	Report/View
14	Analyze Sales and Order Analytics	As a restaurant owner, I want to view detailed analytics for my orders and sales so that I can monitor business performance and make informed decisions.	I can access a dashboard displaying key metrics such as total orders, revenue, popular items, and trends over daily, weekly, and monthly time frames.	Report/View
15	Add Reviews	As a customer, I want to add reviews.	I can filter and add reviews by sending rating and send responses directly through the platform.	Report/View

Story ID	Title	User Story	Acceptance Criteria	Type
16	Update Menu Item Availability	As a restaurant owner, I want to mark menu items as available or out-of-stock so that customers see only the items I can serve at any given time.	I can toggle the availability status for each menu item and the change is immediately visible to customers.	Manage Data

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# Sprint 1:

1) Story Title: Edit Restaurant Profile

User Story:

*As a restaurant owner, I want to update my restaurant's profile information (name, address, contact details, cuisine type, operating hours, etc.) so that customers have accurate and up-to-date information about my establishment.*

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Importance: High – Essential for accurate customer information.

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Importance: High – Core to keeping the menu up-to-date.

Estimate: 5 SP

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Importance: Medium – Prevents orders for unavailable items.

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*As a customer, I want to view restaurant details, including menu and ratings, so that I can make an informed decision.*

Acceptance Criteria:

*And I know I am done when I can see restaurant details, including menu, ratings, and reviews.*

Type: Report/View

Importance: High – Crucial for decision-making.

Estimate: 2 SP

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User Story:

*As a customer, I want to filter restaurants by cuisine so that I can easily find what I'm looking for.*

Acceptance Criteria:

*And I know I am done when I can apply a cuisine filter and see only relevant restaurants.*

Type: Search

Importance: High – Essential for efficient food discovery.  
Estimate: 3 SP

## Sprint 2:

6) Story ID: 5 | Story Title: Add Multiple Items to Cart

User Story:

*As a customer, I want to add multiple items to my cart from a restaurant's menu so that I can place a complete order.*

Acceptance Criteria:

*And I know I am done when I can add multiple items to my cart and view them before checkout.*

Type: Workflow

Importance: High – Fundamental to order placement.

Estimate: 3 SP

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User Story:

*As a customer, I want to review my cart before confirming my order so that I can verify the items and prices.*

Acceptance Criteria:

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Type: Workflow

Importance: High – Prevents ordering mistakes.

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Type: Report/View

Importance: Medium – Enhances user convenience.

Estimate: 3 SP

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Importance: High – Ensures transparent and reliable order tracking.

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Importance: Medium – Helps others make informed decisions and provides feedback to the restaurant.

Estimate: 3 SP

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Acceptance Criteria:

*And I know I am done when I can view incoming orders, accept or reject them, and initiate order processing with clear notifications on the dashboard.*

Type: Workflow

Importance: High – Critical for efficient order management.

Estimate: 6 SP

# **Project Plan:**

## **Level 1: Project**

- Trintendo Smart Food Delivery Platform

## **Level 2: Deliverables**

1. Restaurant Management System
2. Customer Interface System
3. Payment System
4. Delivery Management System
5. Analytics & Reporting System

## **Level 3: Components**

### **1. Restaurant Management System**

- 1.1 Restaurant Profile Module
- 1.2 Menu Management Module
- 1.3 Order Management Module

### **2. Customer Interface System**

- 2.1 Restaurant Discovery Module
- 2.2 Ordering Process Module
- 2.3 Customer History & Feedback Module

### **3. Payment System**

- 3.1 Payment Processing Module
- 3.2 Security & Validation Module

### **4. Delivery Management System**

- 4.1 Rider Interface Module
- 4.2 Tracking System Module

### **5. Analytics & Reporting System**

- 5.1 Restaurant Analytics Module



- 5.2 System Analytics Module

## **Level 4: Activities (Work Packages)**

### **1.1 Restaurant Profile Module**

- 1.1.1 Restaurant Profile Setup Interface
- 1.1.2 Restaurant Profile Editing System
- 1.1.3 Restaurant Dashboard Development

### **1.2 Menu Management Module**

- 1.2.1 Menu CRUD Operations
- 1.2.2 Item Availability Management
- 1.2.3 Menu Display Integration

### **1.3 Order Management Module**

- 1.3.1 Order Notification System
- 1.3.2 Order Status Management
- 1.3.3 Order Processing Workflow

### **2.1 Restaurant Discovery Module**

- 2.1.1 Restaurant Listing Development
- 2.1.2 Search and Filter System
- 2.1.3 Restaurant Details View

### **2.2 Ordering Process Module**

- 2.2.1 Cart System Development
- 2.2.2 Checkout Process Implementation
- 2.2.3 Order Confirmation System

### **2.3 Customer History & Feedback Module**

- 2.3.1 Order History Tracking
- 2.3.2 Review & Rating System
- 2.3.3 Customer Profile Management

### **3.1 Payment Processing Module**

- 3.1.1 Payment Methods Integration
- 3.1.2 Transaction Processing
- 3.1.3 Payment Confirmation System

## **3.2 Security & Validation Module**

- 3.2.1 Secure Gateway Implementation
- 3.2.2 Transaction Verification System
- 3.2.3 Error Handling Development

## **4.1 Rider Interface Module**

- 4.1.1 Rider Dashboard Development
- 4.1.2 Order Assignment System
- 4.1.3 Delivery Status Management

## **4.2 Tracking System Module**

- 4.2.1 Real-time Location Tracking
- 4.2.2 Delivery Status Visualization
- 4.2.3 Notification System Integration

## **5.1 Restaurant Analytics Module**

- 5.1.1 Sales Dashboard Development
- 5.1.2 Order Performance Metrics
- 5.1.3 Trend Analysis Implementation

## **5.2 System Analytics Module**

- 5.2.1 Delivery Performance Tracking
- 5.2.2 Usage Statistics Implementation
- 5.2.3 Reporting System Development

# **Level 5: Tasks**

## **1.1.1 Restaurant Profile Setup Interface**

- Design profile input form
- Implement form validation
- Create database schema for profile
- Connect form to backend API

## **1.1.2 Restaurant Profile Editing System**

- Create edit interface
- Implement field validation
- Develop update API endpoints
- Add image upload functionality

### **1.2.1 Menu CRUD Operations**

- Design menu item form
- Develop item creation functionality
- Implement item editing system
- Create item deletion with confirmation

### **1.2.2 Item Availability Management**

- Create availability toggle UI
- Implement real-time status updates
- Develop inventory connection system
- Create customer-facing availability display

### **2.1.2 Search and Filter System**

- Design filter UI components
- Implement cuisine filtering
- Create search functionality
- Develop result sorting options

### **2.2.1 Cart System Development**

- Design cart interface
- Implement add-to-cart functionality
- Create quantity adjustment feature
- Develop cart persistence

### **3.1.1 Payment Methods Integration**

- Integrate credit/debit card processing
- Implement digital wallet support
- Develop cash-on-delivery option
- Create payment method selection UI

### **4.2.1 Real-time Location Tracking**

- Implement GPS integration for riders
- Create location update service
- Develop map visualization
- Optimize battery usage

### **5.1.1 Sales Dashboard Development**

- Design analytics interface

- Create data visualization components
- Implement date range selection
- Develop export functionality

# Architecture Diagrams

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The system is divided into the following subsystems:

Subsystem	Description
Client (React App)	Single-Page Application: renders UI, handles routing, form validation, invokes APIs.
API Layer (Express.js)	Exposes endpoints for authentication, orders, restaurants, payments, notifications.
Business Logic	Implements domain rules (order scheduling, cart management, loyalty points) as JS modules.
Data Access (Mongoose)	Defines MongoDB schemas/models and CRUD operations.
Authentication	Manages JWT issuance/validation, role-based access (customer vs. admin).
Payment service	Encapsulates integration with payment gateway SDKs (Stripe)

## 2. Architecture Styles

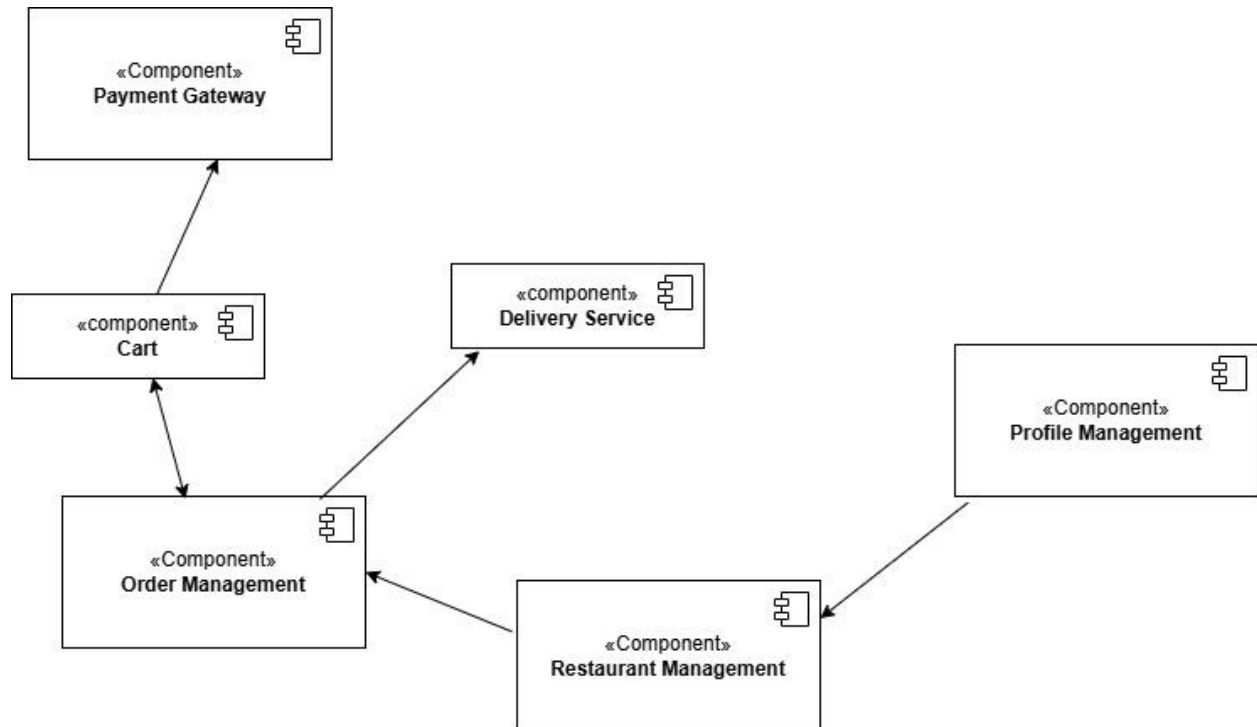
### 1. Layered Architecture

- Clear separation:
  - **Presentation Layer** (React)
  - **Service/API Layer** (Express controllers + business modules)
  - **Data Layer** (Mongoose models + MongoDB)

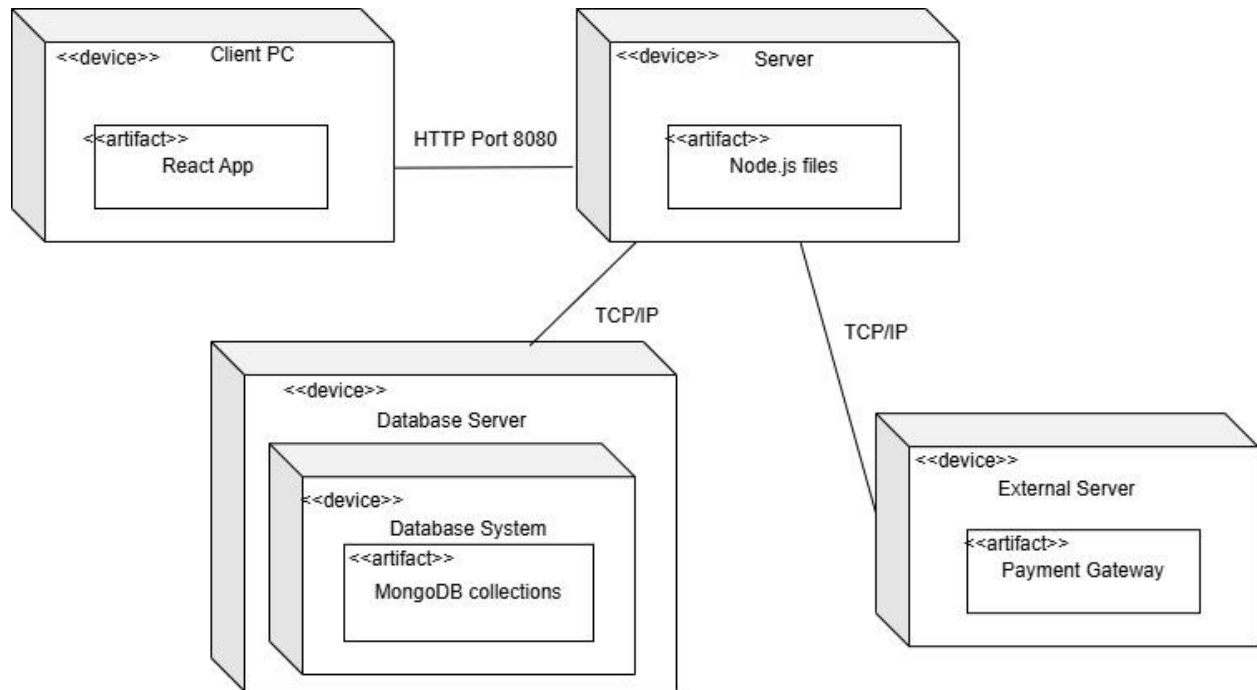
### 2. MVC-inspired

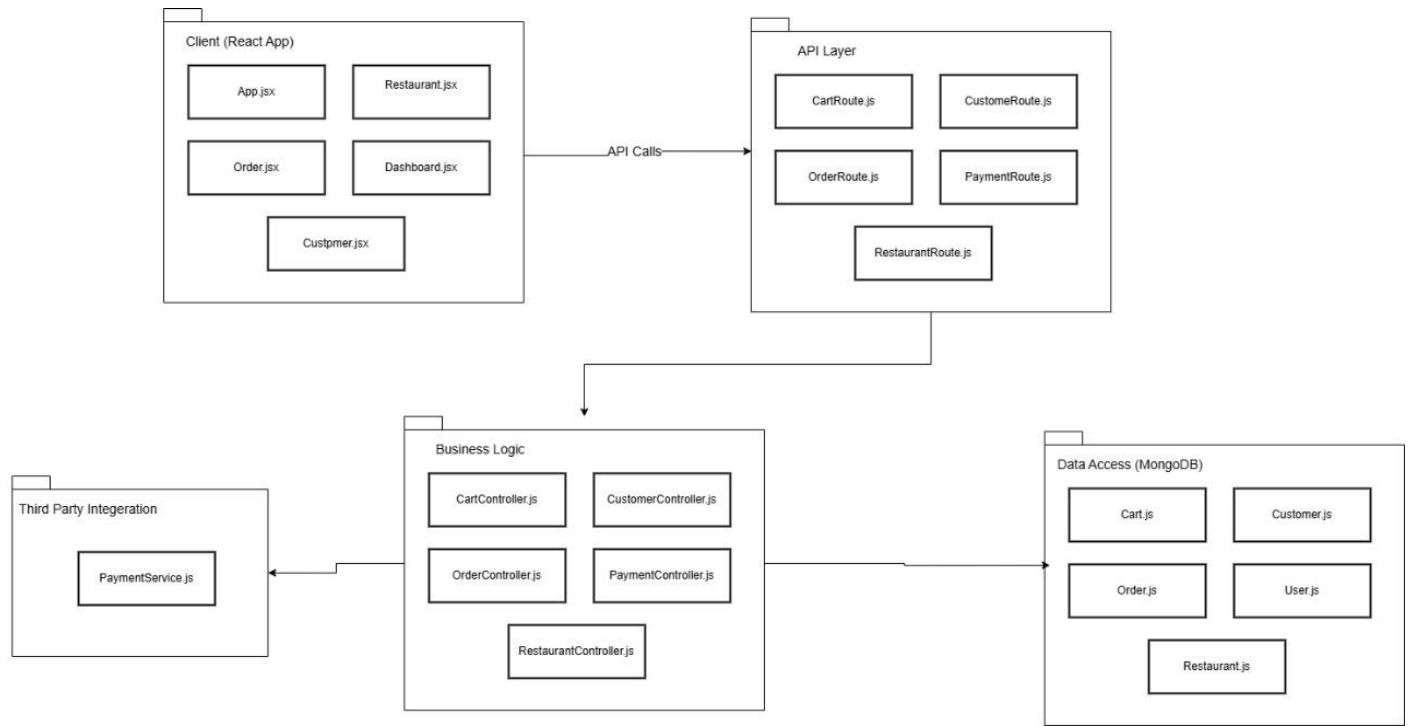
- Controllers (Express routes) → Services (business logic) → Models (Mongoose schemas).

## Component Diagram:



## Deployment Diagram







## Design:

### Sprint 3:

12) Story ID: 20 | Story Title: Analyze Sales and Order Performance

User Story:

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**Acceptance Criteria:**

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**Type:** Report/View

**Importance:** High – Essential for monitoring business performance.

**Estimate:** 5 SP

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**Type:** Feature/Transaction

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User Story:

As a customer, I want to track my order status in real time so that I know when my food will arrive.

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And I know I am done when I can see my order progress from preparation to delivery in real time.

**Type:** Feature/Tracking

**Importance:** High – Enhances customer experience with live updates.

**Estimate:** 4 SP

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**16) Story ID: 24 | Story Title: Accept or Decline Delivery Orders**

**User Story:**

As a rider, I want to view incoming delivery requests with all relevant details (pickup location, restaurant name, delivery address, estimated time, etc.) so that I can decide whether to accept or decline orders based on my current availability and route.

**Acceptance Criteria:**

And I know I am done when I can see a clear list of incoming delivery requests, review order details, and successfully tap an option to accept or decline an order, with confirmation notifications displayed.

**Type:** Feature/Action

**Importance:** Medium – Improves rider efficiency and decision-making.

**Estimate:** 3 SP

## Actual Implementation:

**Trintendo**

CustomerRestaurant OwnerRiderLoginRegister

### Welcome Back!

Sign in to continue your food journey

>

Discover Local Restaurants

Find the best food in your area

>

Fast Delivery

Hot food delivered to your door

>

Exclusive Deals

Special offers just for you

### Customer Login

Enter your credentials to access your account

Email

name@example.com

Password

Forgot password?

Sign In

Don't have an account? [Create an account](#)

## Join Our Community

Create an account to start ordering delicious food



### Easy Ordering

Order with just a few clicks



### Save Favorites

Keep track of your favorite restaurants




### Order History

Easily reorder your favorite meals

## Create Account

Fill in your details to join our food community

 Full Name

 Email Address

 Password

Password must be at least 6 characters long

 Confirm Password

Create Account

Already have an account? [Sign in](#)



Back to Orders

Order Details

DELIVERED


ORDER ID  
680c8d5405bb210f1a151bf6

DATE PLACED  
April 26, 2025 at 12:37 PM

RESTAURANT

 **Farhan's Restaurant**  
none  
11111111111

DELIVERY ADDRESS

 none  
islamabad, islamabad 44100

PAYMENT METHOD

 Cash

Add Review

Your Review

April 26, 2025 at 12:37 PM




Order Summary


Subtotal \$3.00

Delivery Fee \$2.99

Tax \$0.24

**Total \$6.23**

 **Estimated Delivery Time**  
30-45 minutes

 **Order Delivered**  
April 26, 2025 at 12:47 PM

Order Items

 **Biryani**  
1 x \$2.00 \$2.00

 **Chicken Tikka**  
1 x \$1.00 \$1.00

## Dashboard

Welcome back, Mehboob

[Add New Restaurant](#)

Total Restaurants

1



Active Orders

2



Total Sales

\$4.00



## My Restaurants

**Mehboob's Kitchen**

Desi

none

[Edit Details](#)[Manage Menu](#)

## Restaurant Orders Dashboard

**Order #483FC0**

Customer: Shayan

Total: \$2.00

Status: **pending**[Accept](#)[Reject](#)

Items:

- Biryani x 1 - \$2.00

**Order #483F3D**

Customer: Shayan

Total: \$2.00

Status: **pending**[Accept](#)[Reject](#)

Items:

- Biryani x 1 - \$2.00

Rider Dashboard

Go Online

Go Offline

Current Status

Available

Available Delivery Requests

Order ID: 680ba11ce0e614a5a732e945  
Restaurant: RO1  
Customer: Shayan  
Delivery Address: none, islamabad, islamabad 44100

Accept

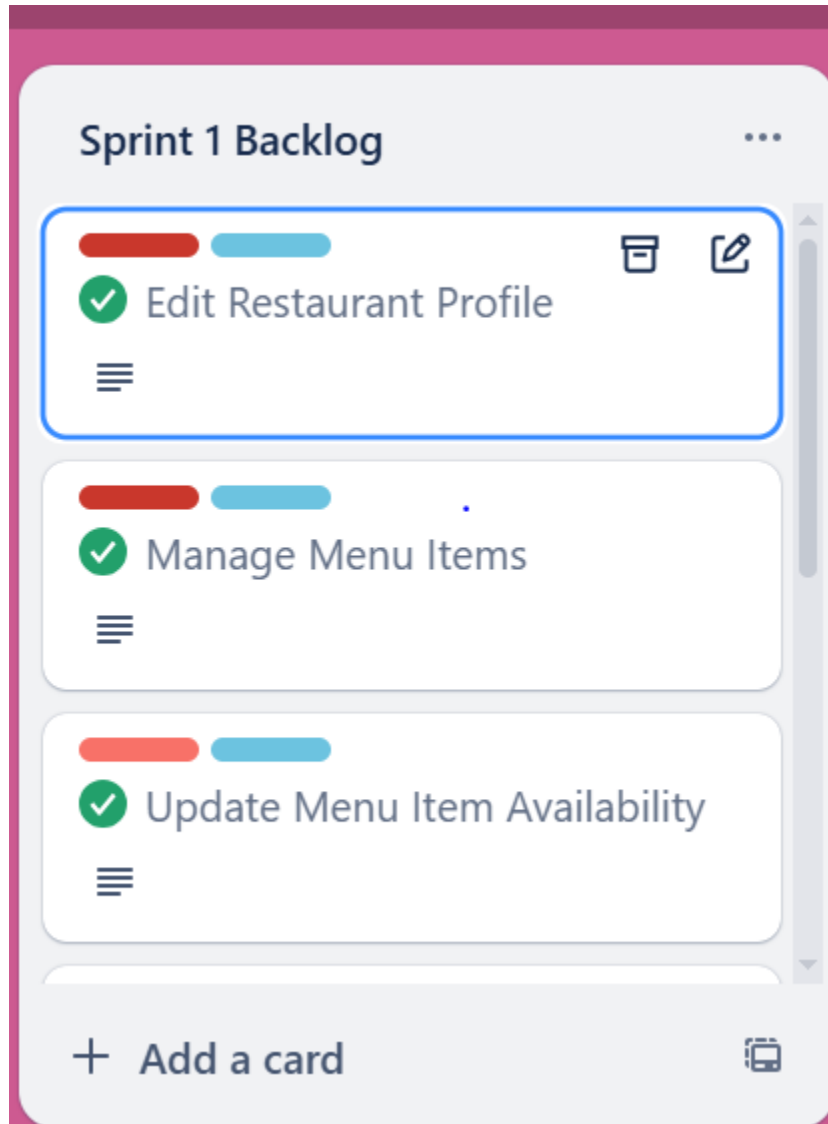
Decline

Order ID: 680c8f7751503b6a8468c6f3  
Restaurant: Mehboob's Restaurant  
Customer: Shayan  
Delivery Address: none, islamabad, islamabad 44100

Accept

Decline

## Trello Board:





## Sprint 2 Backlog



Update Order Status



Receive and Manage Incoming  
Orders



View Sales and Order Analytics



+ Add a card



Done



✓ Update Order Status

🕒 Mar 20 - Mar 21 ☰

☰ 100% 📅 Mar 21



✓ Manage Customer Reviews

🕒 Mar 21 - Mar 23 ☰

☰ 100% 📅 Mar 23



✓ Receive and Manage Incoming  
Orders

🕒 Mar 21 - Mar 23 ☰

☰ 100% 📅 Mar 23

+ Add a card



## Test Cases WhiteBox:

File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Line #s
All files	63.39	65.99	57.69	63.72	
Backend	0	0	0	0	
server.js	0	0	0	0	14-46
Backend/controllers	68.03	65.63	55.55	68.42	
auth.controller.js	0	0	0	0	5-89
cart.controller.js	86.76	88.46	87.5	87.69	11-15,48,67,84,112,131,148
customer.controller.js	100	100	100	100	
order.controller.js	63.76	59.01	40	63.7	166-206,212-234,299-300,306-355
payment.controller.js	70.27	50	66.66	72.22	27-68,86,107-108
restaurants.controller.js	97.59	91.66	80	100	156,158,161
rider.controller.js	50.64	44	40	50.64	211-240,246-264,270-285,291-300,305-368,373-395
Backend/middleware	70.96	80	66.66	70.96	
auth.middleware.js	100	100	100	100	
customer.middleware.js	100	100	100	100	
verifyToken.middleware.js	0	0	0	0	3-19
Backend/models	100	100	100	100	
cart.js	100	100	100	100	
customer.js	100	100	100	100	
order.js	100	100	100	100	
restaurant.js	100	100	100	100	
rider.js	100	100	100	100	
user.js	100	100	100	100	
Backend/routes	0	100	100	0	
auth.route.js	0	100	100	0	5-9
cart.route.js	0	100	100	0	5-14
customer.route.js	0	100	100	0	10-18
payment.route.js	0	100	100	0	5-11
restaurants.route.js	0	100	100	0	14-26
rider.route.js	0	100	100	0	16-31
Jest: "global" coverage threshold for functions (60%) not met: 57.69%					
Test Suites: 17 passed, 17 total					
Tests: 4 skipped, 252 passed, 256 total					
Snapshots: 0 total					
Time: 28.555 s					
Ran all test suites.					

### # Test Coverage Documentation

#### ## What is Covered Well

- \*Authentication\*: User registration, login, and authorization workflows
- \*Restaurant Operations\*: CRUD operations for restaurants, menus, and items
- \*Order Processing\*: Full order lifecycle from creation to completion
- \*Payment Processing\*: Core payment functionalities excluding third-party webhook handling
- \*Customer Interactions\*: Account management, preferences, and order history
- \*Rider Operations\*: Assignment, tracking, and delivery confirmation

## ## What is Not Covered and Why

- **\*Webhook Handlers\***: Third-party payment webhook handlers (Stripe/PayPal) as they require external requests to test properly
- **\*Email Services\***: External email delivery services that depend on third-party APIs
- **\*Static File Serving\***: Simple Express static file middleware has minimal logic to test
- **\*Error Handling Middleware\***: Some generic error handlers with minimal logic
- **\*Database Connection Code\***: MongoDB connection code as it's infrastructure code rather than business logic
- **\*External API Integrations\***: Code that relies on external services requires mocking, which is handled separately

# BlackBox Testing:

## Equivalence Class Partitioning (ECP) Test Cases

Test Case ID	User Story	Test Steps	Input	Expected Output	Pass/Fail
TC01	Register User	Enter valid Email address	abc@example.com	User Registered	Pass
TC02	Register User	Enter invalid email address	abcd	Error: Invalid email	Pass
TC03	Register User	Password not equals confirm Password	Password: abcd Confirm Password: cdef	Error: Password don't Match	Pass
TC04	Add to Cart	Add valid menu item to cart	Chicken Burger	Item added successfully	Pass
TC05	Add to Cart	Add unavailable item to cart	Golden Pizza	Error: Item unavailable	Pass
TC06	Place Order	Use invalid payment method	Expired Card	Error: Payment failed	Pass
TC07	Filter Restaurants	Select cuisine filter	Italian	Only Italian restaurants listed	Pass
TC08	Filter Restaurants	Select invalid cuisine	Martian Food	No restaurants found	Pass
TC09	View Order History	View past orders	Click "Order History"	Past orders displayed	Pass
TC10	View Receipt	Check receipt after order	Completed Order	Receipt available	Pass

### Boundary Value Analysis (BVA) Test Cases

Test Case ID	User Story	Test Steps	Input	Expected Output	Pass/Fail
TC11	Checkout	Cart With 0 items	0 items	Error: No items selected	Pass
TC12	Add to Cart	Add 1 item (minimum)	1 item	Item added	Pass
TC13	Add to Cart	Add maximum allowed items (20)	20 items	Items added	Pass
TC14	Register	Name minimum length	abcd	Registered	Pass
TC15	Register	Name with 0 characters		Error: Name too short	Pass
TC16	Register User	Password of length less than 6	aaa	Error: Password Too Short	Pass
TC17	Register User	Password of length minimum 6	Abcdef	Registered user	Pass

## Team Roles & Sprints

Member	Sprint 1	Sprint 2	Sprint 3	FOCUS
Bilal	2 Stories	2 Stories	1 Story	Core Features & Analytics
Rana Bilal	2 Stories	2 Stories	2 Stories	Customer Side + Payment/Tracking
Mehboob	1 Story	2 Stories	2 Stories	Backend Management + Delivery Flow

# Lessons Learned:

The Trintendo project team identified several valuable lessons learned throughout their development cycle. An Agile Mindset proved fundamental to their success, as adaptability and teamwork allowed the team to navigate challenges and pivot when necessary. Effective Communication emerged as another critical factor, with frequent updates preventing misunderstandings and delays that could have derailed progress. The team also recognized the Testing Importance, noting that early testing saved significant time and ensured quality throughout the product development lifecycle rather than discovering issues late in the process. Finally, Continuous Improvement became a guiding principle, as the team successfully applied software engineering concepts in real projects, constantly refining their processes and methodologies. Together, these lessons formed the foundation of the team's approach, enabling them to deliver a robust product that met both technical requirements and business objectives.