PROJECT REPORT

1. INTRODUCTION

Introducing CraveKart, the cutting-edge digital platform poised to revolutionize the way you order food online. With CraveKart, your food ordering experience will reach unparalleled levels of convenience and efficiency.

Our user-friendly web app empowers foodies to effortlessly explore, discover, and order dishes tailored to their unique tastes. Whether you're a seasoned food enthusiast or an occasional diner, finding the perfect meals has never been more straightforward.

Imagine having comprehensive details about each dish at your fingertips. From dish descriptions and customer reviews to pricing and available promotions, you'll have all the information you need to make well-informed choices. No more second-guessing or uncertainty – CraveKart ensures that every aspect of your online food ordering journey is crystal clear.

The ordering process is a breeze. Just provide your name, delivery address, and preferred payment method, along with your desired dishes. Once you place your order, you'll receive an instant confirmation. No more waiting in long queues or dealing with complicated ordering processes – CraveKart streamlines it, making it quick and hassle-free

1.2 PROJECT OVERVIEW

The purpose of the OrderOnTheGo project is to build a user-friendly, full-stack online food ordering platform that connects customers with local restaurants. The goal is to streamline the process of discovering restaurants, placing food orders, and managing them efficiently. It aims to provide seamless experiences for customers, restaurant owners, and administrators, ensuring quick access to food, better order tracking, and efficient restaurant management.

FEATURES:

1. **Comprehensive Product Catalog:** CraveKart boasts an extensive catalog of food items from various restaurants, offering a diverse range of items and options for shoppers. You can effortlessly explore and discover various products, complete with detailed descriptions, customer reviews, pricing, and available discounts, to find the perfect food for your hunger.

2. **Order Details Page**: Upon clicking the "Place Order" button, you will be directed to an order details page. Here, you can provide relevant information such as your shipping address, preferred payment method, and any specific product requirements.

3. **Secure and Efficient Checkout Process:** CraveKart guarantees a secure and efficient checkout process. Your personal information will be handled with the utmost security, and we strive to make the purchasing process as swift and trouble-free as possible.

4. **Order Confirmation and Details:** After successfully placing an order, you will receive a confirmation notification. Subsequently, you will be directed to an order details page, where you can review all pertinent information about your order, including shipping details, payment method, and any specific product requests you specified.

   In addition to these user-centric features, CraveKart provides a robust restaurant

dashboard, offering restaurants an array of functionalities to efficiently manage their products and sales. With the restaurant dashboard, restaurants can add and oversee multiple product listings, view order history, monitor customer activity, and access order details for all purchases.

CraveKart is designed to elevate your online food ordering experience by providing seamless and user-friendly way to discover your desired foods. With our efficient checkout process, comprehensive product catalog, and robust restaurant dashboard, we ensure a convenient and enjoyable online shopping experience for both shoppers and restaurants alike.

2. IDEATION PHASE

2.1 PROBLEM STATEMENT

Customer Problem Statement:

Many customers today face frustration when ordering food online due to slow interfaces, confusing menus, lack of real-time updates, and limited restaurant options. They often struggle to find nearby restaurants that suit their taste, apply discounts easily, or complete an order without unnecessary steps. Customers expect a smooth, fast, and intuitive experience that allows them to explore food options, customize their orders, and receive accurate order updates. A platform that eliminates these pain points and makes the entire food ordering journey enjoyable and efficient is highly needed.

Example:

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	A hungry student or working person looking for	Find and order food from nearby restaurants easily	Many apps are confusing and slow, with too	They lack intuitive design and real-time updates	Frustrated, impatient, and likely to abandon the order

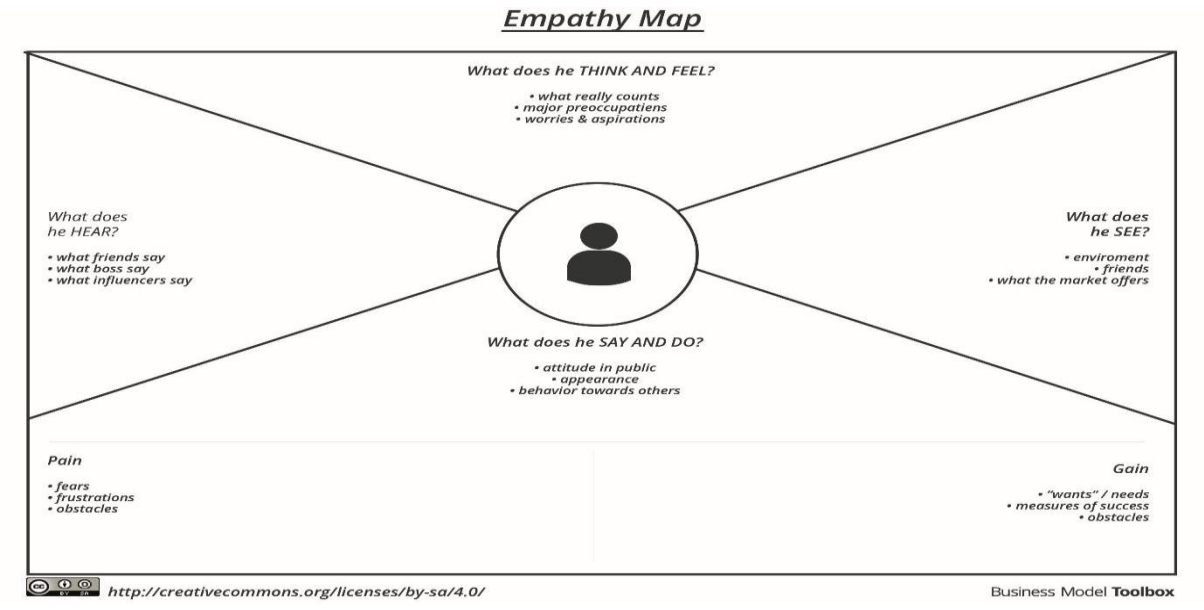
	a quick meal		many steps		
PS-2	A user who regularly orders food online	Explore restaurant options, check offers, and place an order smoothly	Offers aren't visible clearly and restaurant info is outdated	The platform doesn't prioritize clarity and updated data	Disappointed and less likely to return to the platform

2.2 Empathy Map Canvas

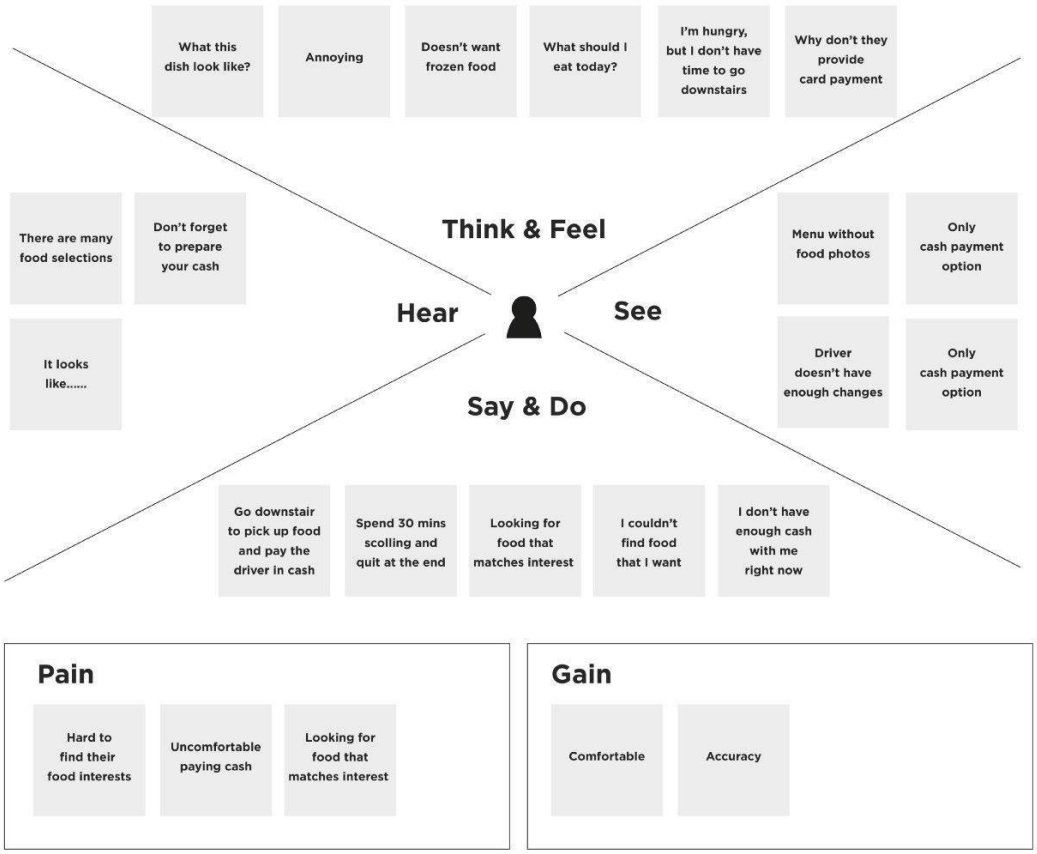
An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.

It is a useful tool to helps teams better understand their users.
Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.

Example:

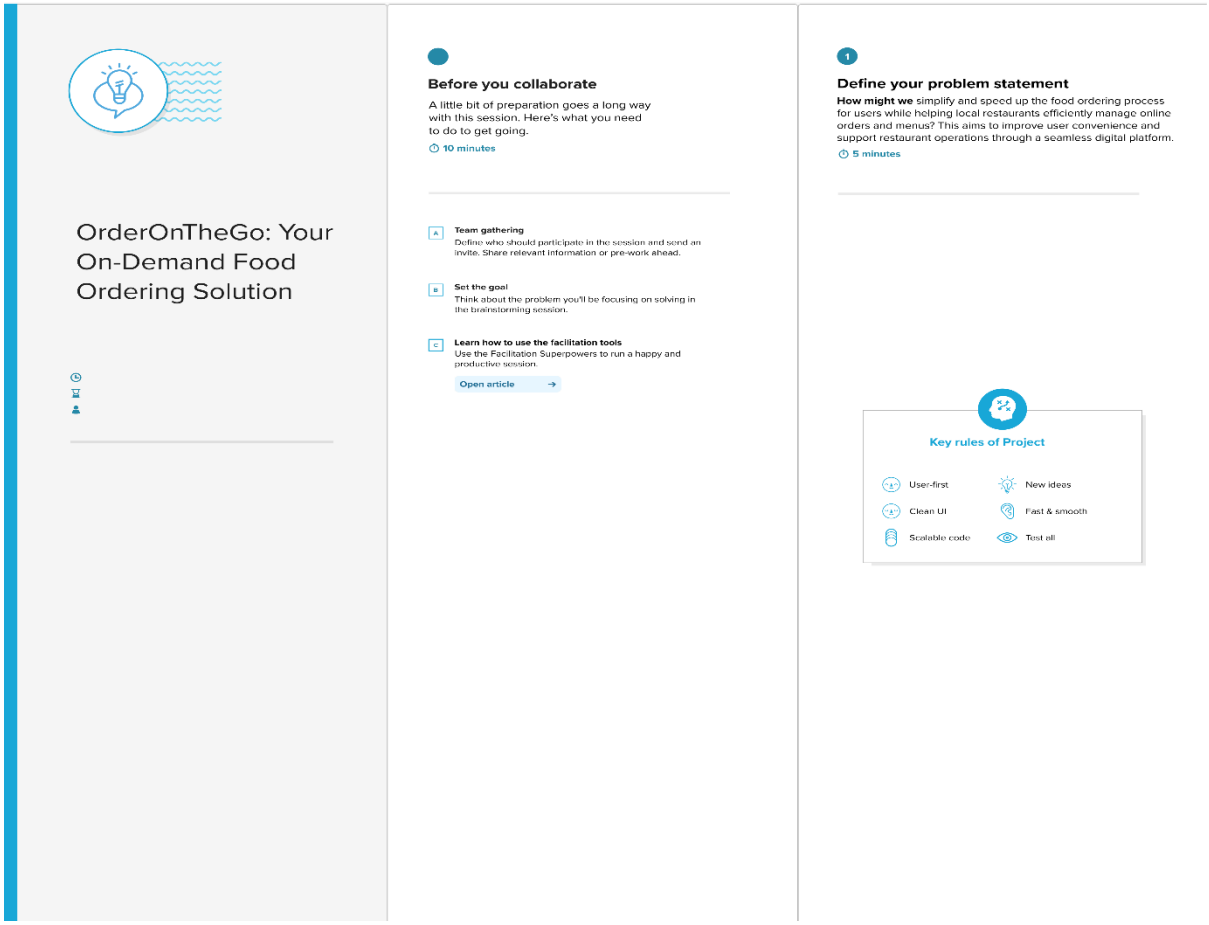


Example: Food Ordering & Delivery Application

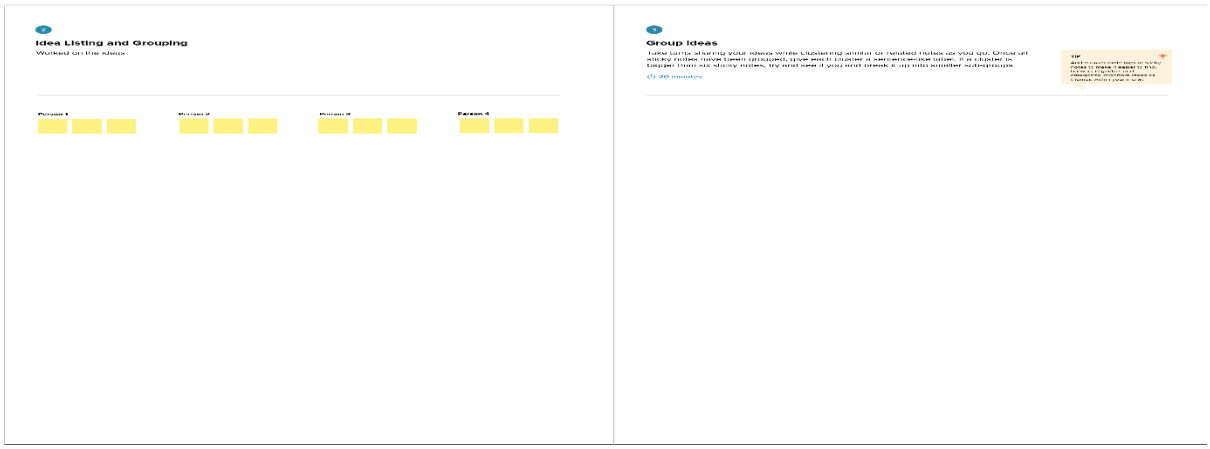


2.3 Brainstorming

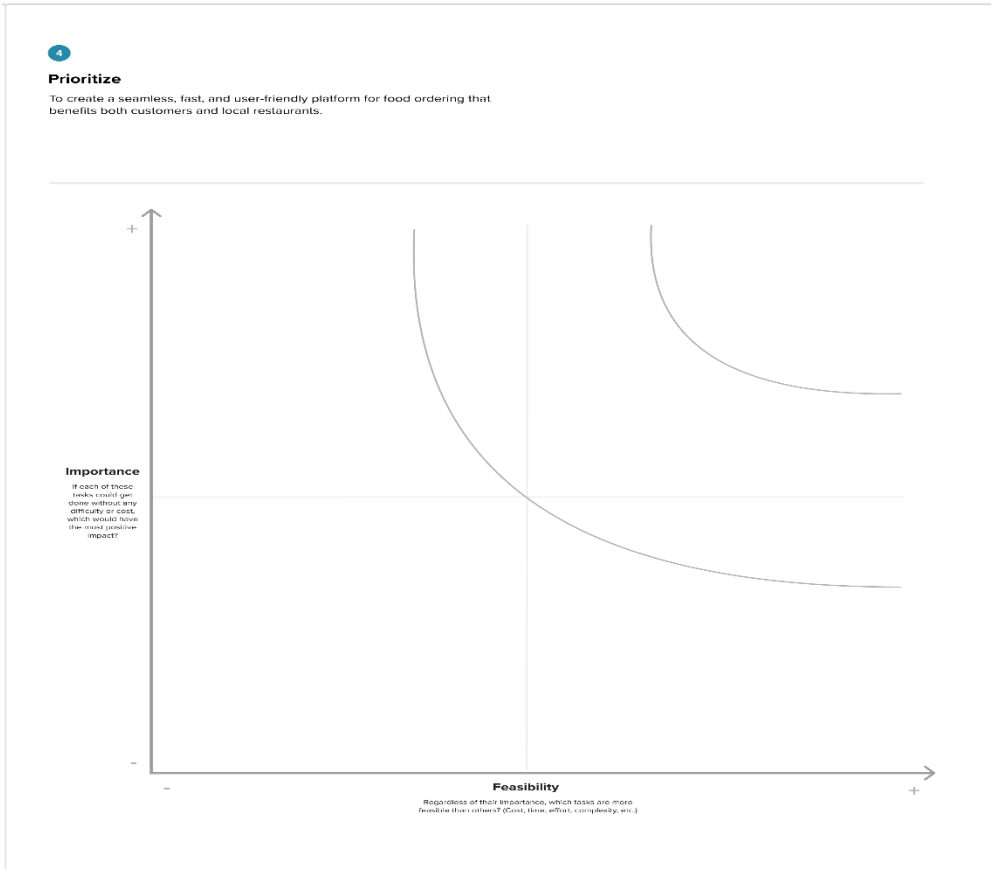
Step-1: Team Gathering, Collaboration and Select the Problem Statement



Step-2: Brainstorm, Idea Listing and Grouping



Step-3: Idea Prioritization



3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

3.2 Solution Requirement

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Restaurant Browsing & Ordering	View all restaurants View popular restaurants View individual restaurant menu Add to cart Place order
FR-4	Cart & Order Management	View/edit cart Remove item Place order View order history
FR-5	Admin & Restaurant Dashboard	View/manage restaurants View/manage orders Approve restaurant signups
FR-6	User Profile Management	View user profile Update profile info View past orders

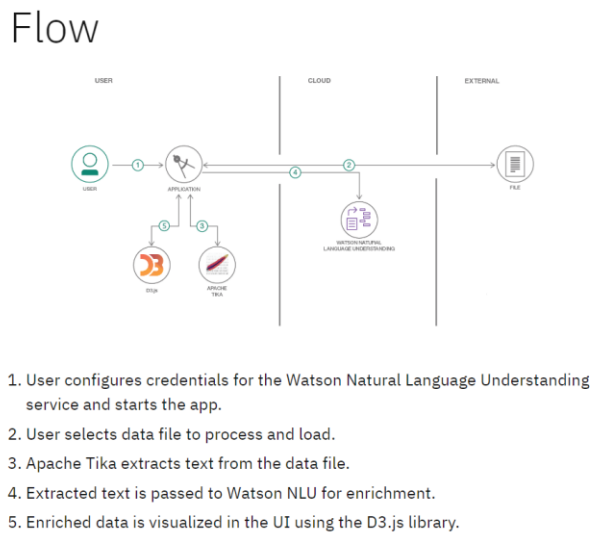
Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The app should have a clean and intuitive UI (React + TailwindCSS), accessible by all user types.

NFR-2	**Security**	User passwords are hashed (bcrypt), and JWT tokens are used for secure login and route protection.
NFR-3	**Reliability**	MongoDB Atlas + Express.js ensures reliable data storage and consistent backend responses.
NFR-4	**Performance**	Optimized API calls and efficient state updates ensure fast interactions, even with large menus.
NFR-5	**Availability**	Hosted on cloud platforms to maintain 24/7 availability (can deploy to Render/Netlify).
NFR-6	**Scalability**	Easily scalable with additional restaurant or user data due to use of NoSQL (MongoDB).

3.3 Data Flow Diagram



1. User configures credentials for the Watson Natural Language Understanding service and starts the app.
2. User selects data file to process and load.
3. Apache Tika extracts text from the data file.
4. Extracted text is passed to Watson NLU for enrichment.
5. Enriched data is visualized in the UI using the D3.js library.

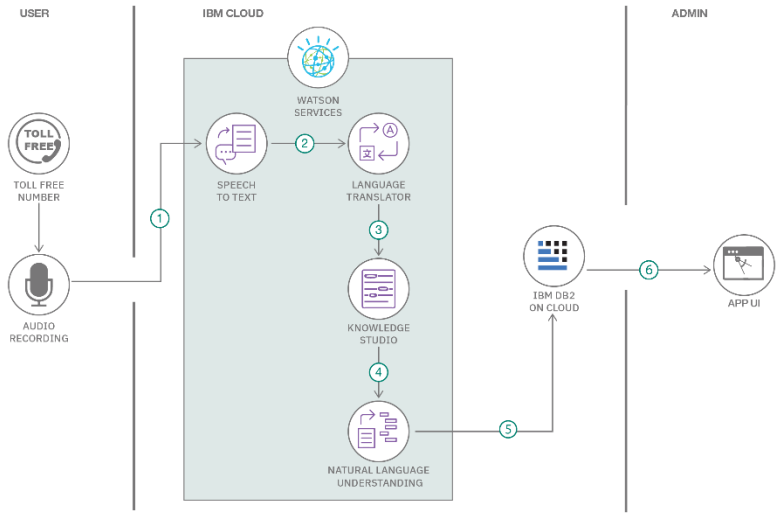
3.4 Technology Stack

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/



S.No	Component	Description	Technology
1.	User Interface	Web UI for user interaction	HTML, CSS, React.js, Tailwind CSS.
2.	Application Logic-1	Customer-side logic (e.g., menu browsing, cart, orders)	JavaScript (React.js), Axios
3.	Application Logic-2	Backend logic for authentication and food operations	Node.js, Express.js
4.	Application Logic-3	Admin & Restaurant logic (approvals, menu control, etc.)	Node.js, Express.js
5.	Database	Stores all app data	MongoDB (Mongoose ODM)
6.	Cloud Database	Hosted on cloud	MongoDB
7.	File Storage	Image hosting (restaurant images, product images)	Cloudinary (or local for dev)
8.	External API-1	Weather or geo-location API (optional for extensions)	Not used currently / OpenWeather API
9.	External API-2	Payment gateway (for future use)	*Razorpay / Stripe* (future integration)
10.	Machine Learning Model	Not implemented in CraveKart Foods	N/A

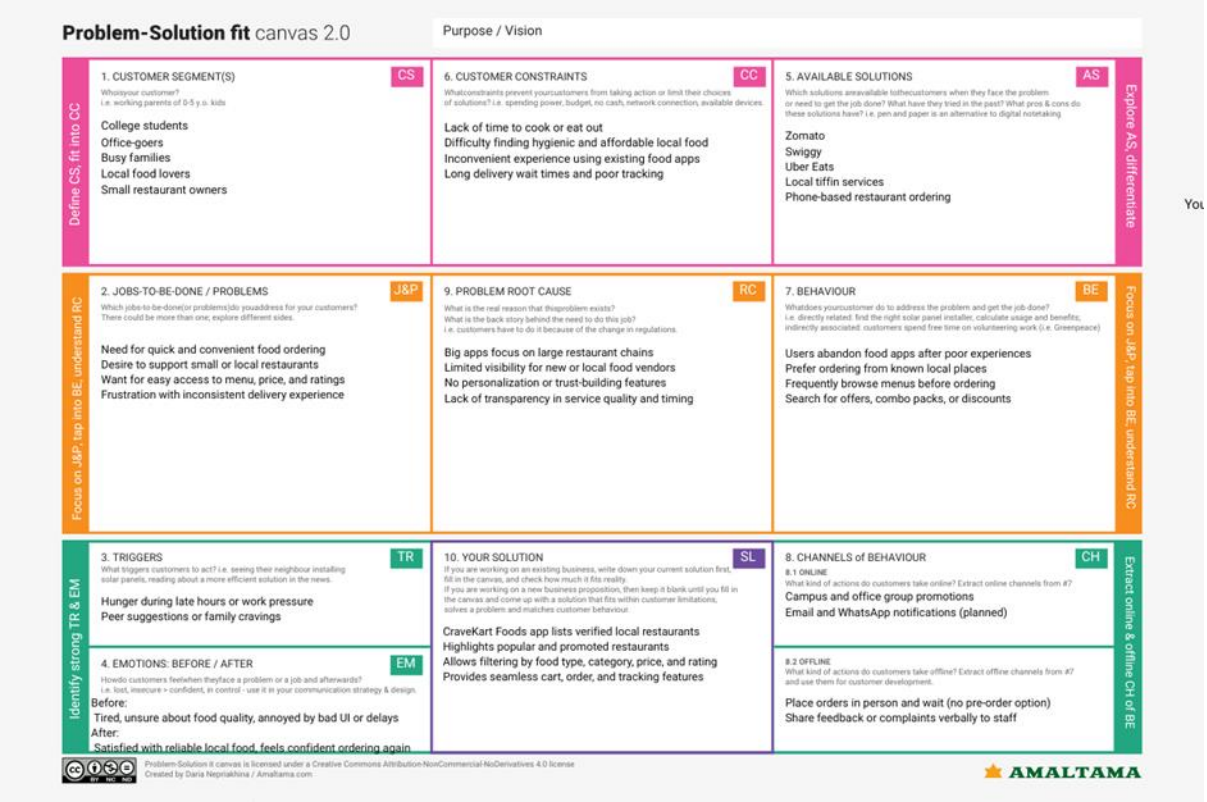
11.	Infrastructure (Server / Cloud)	Server deployment	**Render / Railway (for hosting)** or **Vercel (frontend)**

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks used in client & server	React.js, Express.js, MongoDB, Node.js
2.	Security Implementations	JWT auth, bcrypt hashing, CORS, rate limits.	bcrypt, JWT, CORS
3.	Scalable Architecture	Separation of client/server, RESTful APIs, MongoDB Atlas for scaling	MERN Stack with REST APIs
4.	Availability	Deployed on cloud platforms with high uptime (Vercel/Render/Railway)	Cloud hosting + MongoDB Atlas
5.	Performance	React-based UI with lazy loading, API pagination, CDN usage (Vercel/CDN)	React, Axios, MongoDB Indexes

4. PROJECT DESIGN

4.1 Problem Solution Fit



4.2 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Difficulty in discovering nearby restaurants, managing food orders online, and lack of a unified platform for users to browse, order, and track food delivery efficiently.
2.	Idea / Solution description	CraveKart Foods is a web-based food ordering platform that connects customers with local restaurants. It allows users to register, log in, browse restaurants and menus, add items to cart, place orders, and track them—all through a user-friendly interface.
3.	Novelty / Uniqueness	CraveKart Foods focuses on simplicity and real-time functionality. Unlike many apps, it uses optimized APIs for restaurant listings, live cart updates, and smooth UI flow.
4.	Social Impact / Customer Satisfaction	It helps local restaurants reach more customers online and provides users with a convenient, time-saving food

		ordering experience. It also promotes hygienic food access through verified listings.
5.	Business Model (Revenue Model)	Revenue can be generated via commission from restaurant partners, delivery charges, subscription plans for premium users, and advertisement slots on the platform.
6.	Scalability of the Solution	The solution is built using modular and scalable backend architecture (Node.js + MongoDB) and a flexible frontend (React). It can be expanded to support mobile apps, multiple cities, and vendor dashboards in future.

4.3 Solution Architecture

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.

Provide specifications according to which the solution is defined, managed, and delivered.

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register using email and password	2	High	
Sprint-1		USN-2	As a user, I receive a confirmation email after registration	1	High	
Sprint-1		USN-4	As a user, I can register using Gmail	2	Medium	
Sprint-1	Login	USN-5	As a user, I can log in with email and password	1	High	
Sprint-2	Browse Restaurants	USN-6	As a user, I can browse restaurants by category	2	High	
Sprint-2	View Menu Items	USN-7	As a user, I can view food items with ratings and prices	2	High	
Sprint-2	Cart	USN-8	As a user, I can add/remove food items to/from cart	3	High	
Sprint-2	Order Placement	USN-9	As a user, I can place an order and download invoice	3	High	
Sprint-3	Restaurant Dashboard	USN-10	As a restaurant, I can add/edit/delete menu items	3	High	
Sprint-3	Restaurant Order Management	USN-11	As a restaurant, I can view incoming orders	3	Medium	
Sprint-3	Admin Dashboard	USN-12	As an admin, I can monitor users and restaurants	2	Medium	
Sprint-3	Admin Actions	USN-13	As an admin, I can remove a user or restaurant	2	Low	
Sprint-4	Styling & Animations	USN-14	As a user, I see smooth UI with animations	2	Medium	
Sprint-4	Testing & Bug Fixes	USN-15	As a tester, I can test and log bugs	3	High	
Sprint-4	Deployment	USN-16	As a developer, I can deploy the project online	3	High	
Sprint-4	Documentation	USN-17	As a developer, I can prepare ReadMe and docs	2	Medium	

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	6	5 Days	16 Jun 2025	20 Jun 2025	6	
Sprint-2	10	5 Days	18 Jun 2025	22 Jun 2025	10	
Sprint-3	10	5 Days	20 Jun 2025	24 Jun 2025	10	
Sprint-4	10	5 Days	24 Jun 2025	29 Jun 2025	10	

Velocity:

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \text{sprint duration} / \text{velocity}$$

$$= 36 / 4$$

$$=9$$

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

Project Overview:

Project Name: OrderOnTheGo: Your On-Demand Food Ordering Solution

Project Description: A full-stack web application enabling users to discover restaurants, browse menus, place food orders, and download bills. The platform supports three user roles: Customer, Restaurant, and Admin.

Project Version: 1.0.0

Testing Period: 22-06-2025 to 27-06-2025

Testing Scope:

Features to be Tested:

- User registration/login (Customer, Restaurant, Admin)
- Browse restaurants by category
- View food items with prices, ratings, and discounts
- Cart management and order placement
- Invoice generation and download
- Restaurant panel for managing food items and orders
- Admin panel for monitoring users and restaurants

User Stories/Requirements:

- As a customer, I want to browse food items and place an order.
- As a restaurant, I want to manage food menus and view orders.
- As an admin, I want to view all users and restaurant activity.

Testing Environment:

- **URL/Location:** http://localhost:3000

Test Cases:

Test Case ID	**Test Scenario**	**Test Steps**	**Expected Result**	**Actual Result**	**Pass/Fail**
TC-001	Customer Login	Step 1: Navigate to login page Step 2: Enter valid credentials Step 3: Click login	Redirect to customer dashboard	Works as expected	Pass
TC-002	Browse Restaurants	Step 1: Login as customer Step 2: Click on a category	Display restauran	Works as expected	Pass

		Step 3: View restaurants	t list by category		
TC-003	Add to Cart and Order	Step 1: View food items Step 2: Add items to cart Step 3: Place order	Order placed and invoice generated	Order confirmed and bill downloaded	Pass
TC-004	Restaurant Adds Food Item	Step 1: Login as restaurant Step 2: Go to manage food Step 3: Add new item	Food item added to restaurant menu	Food item visible in customer panel	Pass
TC-005	Admin View Users	Step 1: Login as admin Step 2: Click on users tab	Display user list	User list shown correctly	Pass

Bug Tracking:

Bug ID	**Bug Description**	**Steps to reproduce**	**Severity**	**Status**	**Additional feedback**
BG-001	Food image was not loading in menu	Step 1: Go to restaurant menu Step 2: Check food item image	Medium	closed	Issue resolved – image uploads and displays correctly now
BG-002	Invoice file name is unreadable	Step 1: Place order Step 2: Download invoice	Low	Open	Needs clear filename format e.g. "Order_1234.pdf"

Sign-off:

Tester Name: K Abhinaya

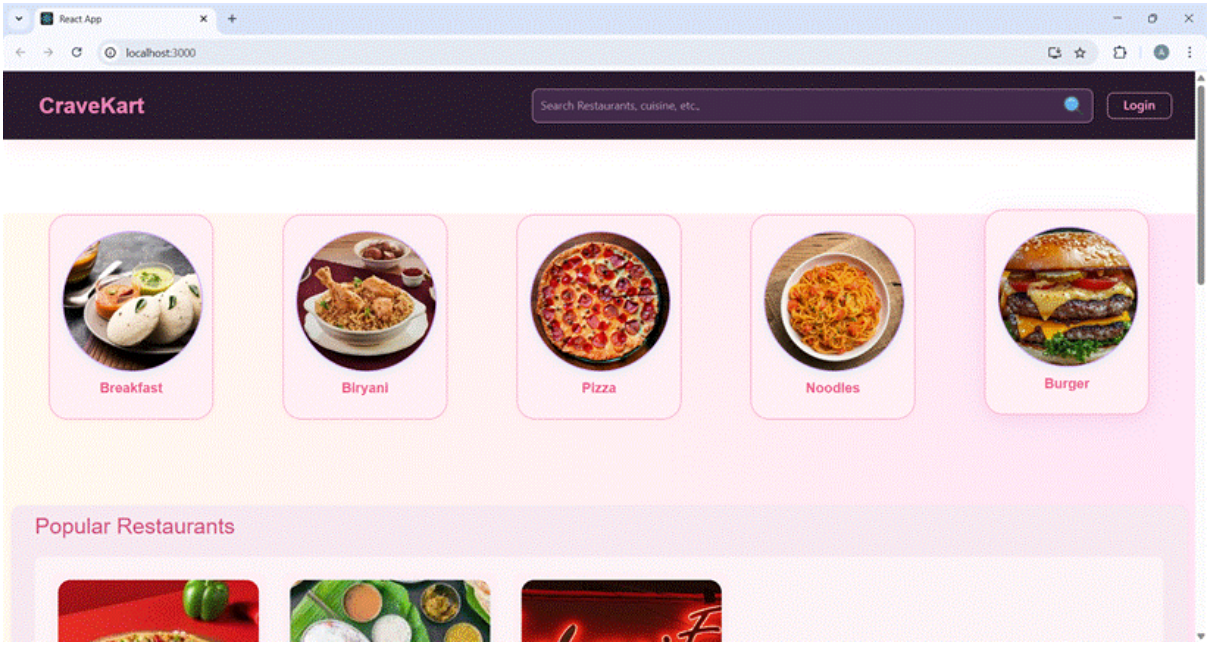
Date: 27-06-2025

Signature: Abhinaya

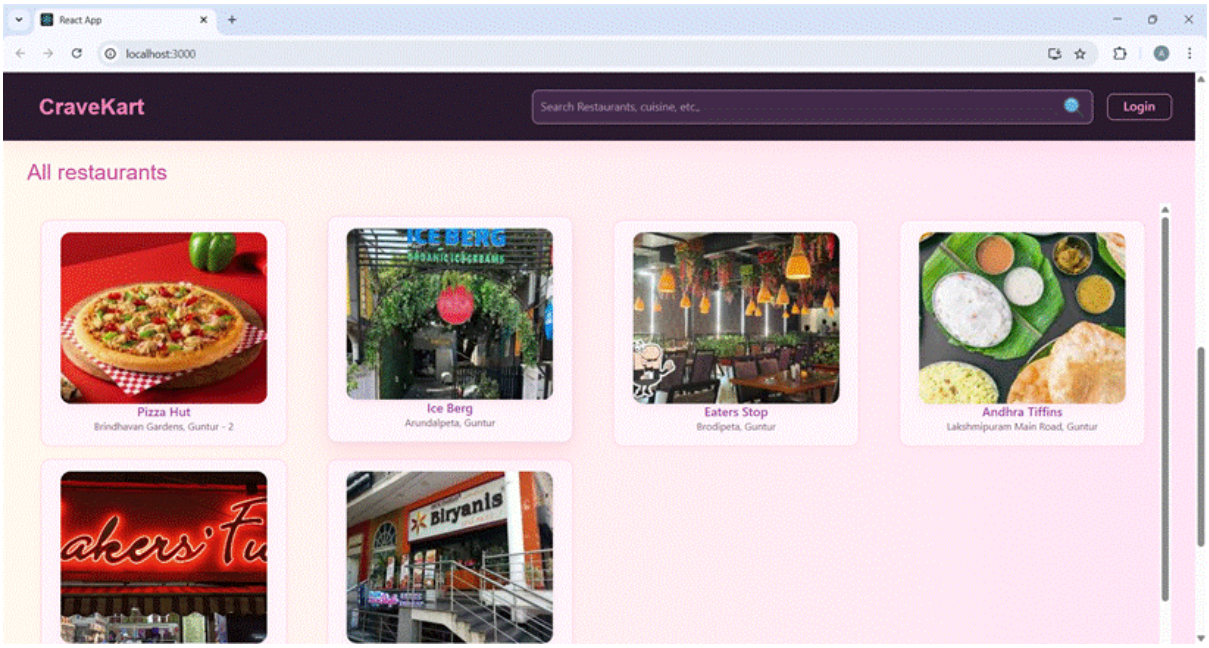
7. RESULTS

7.1 Output Screenshots

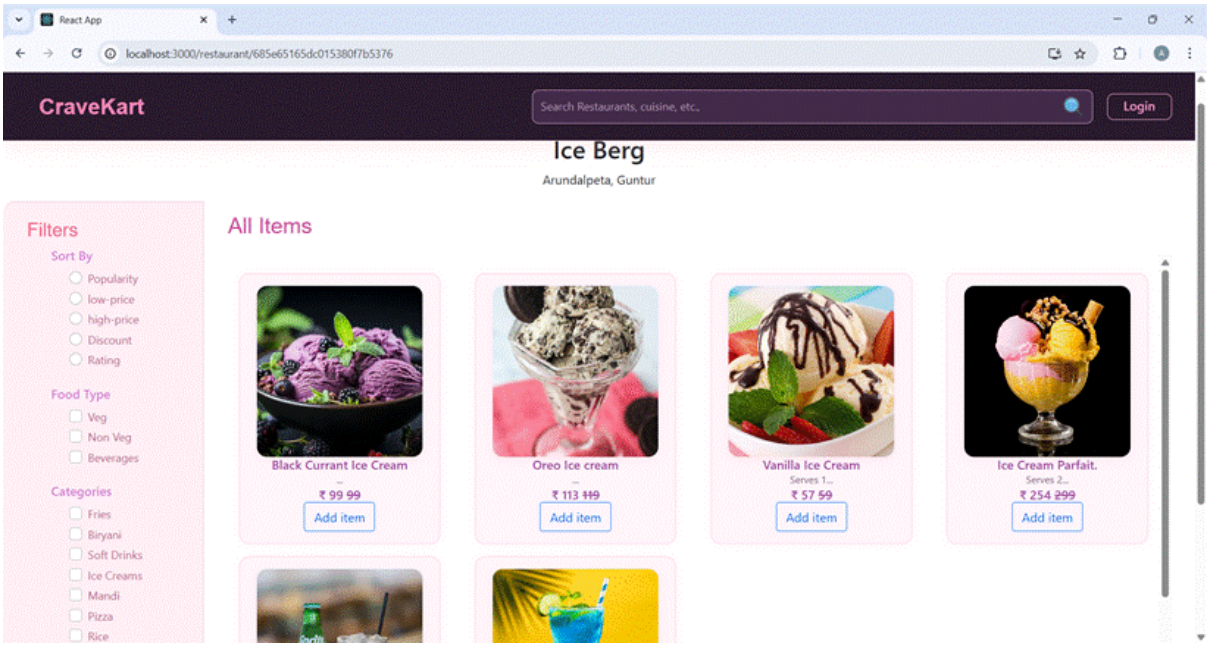
- **Landing page**



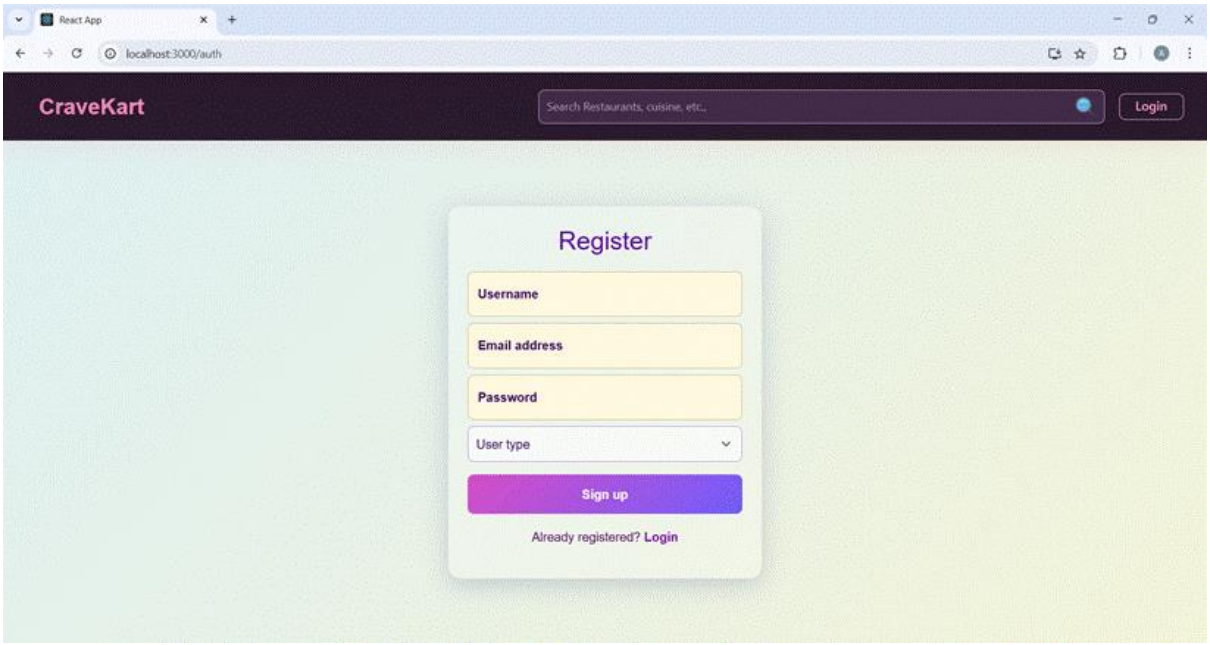
· **Restaurants**



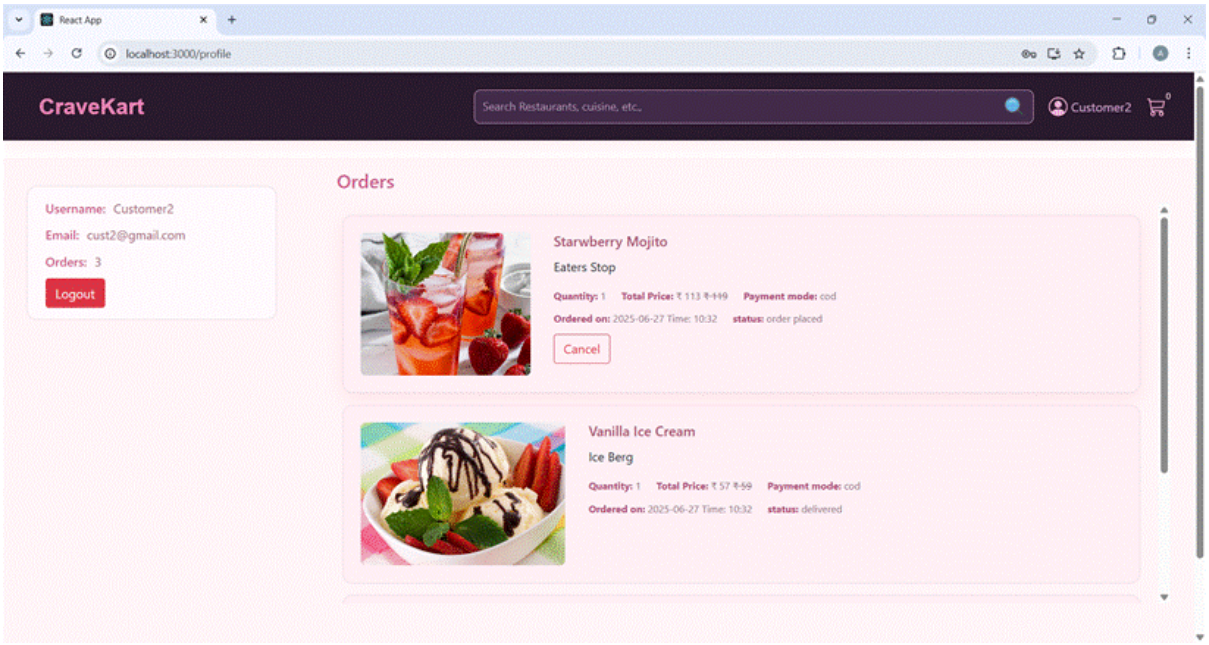
· **Restaurant Menu**



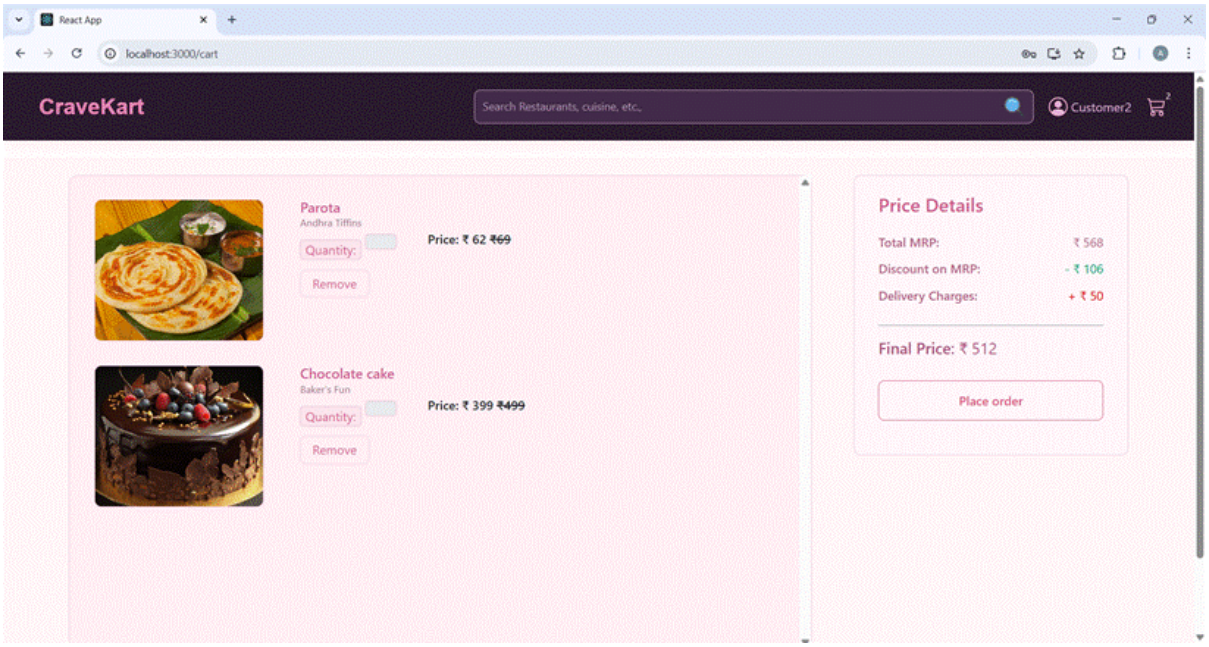
· **Authentication**



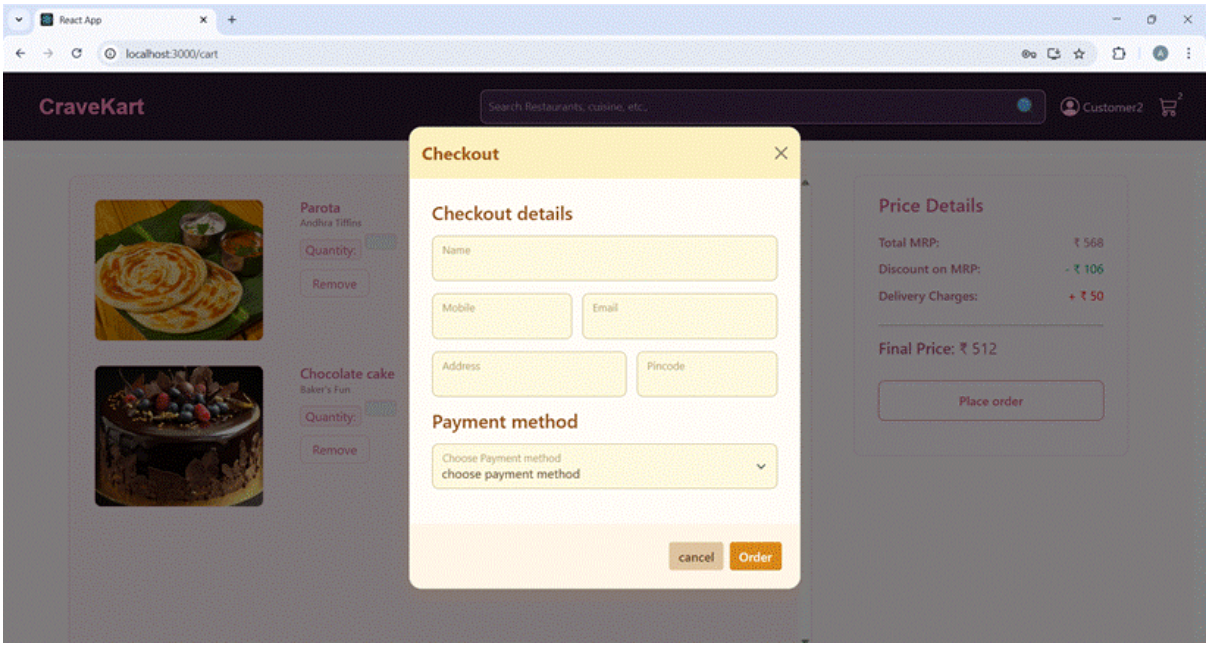
· **User Profile**



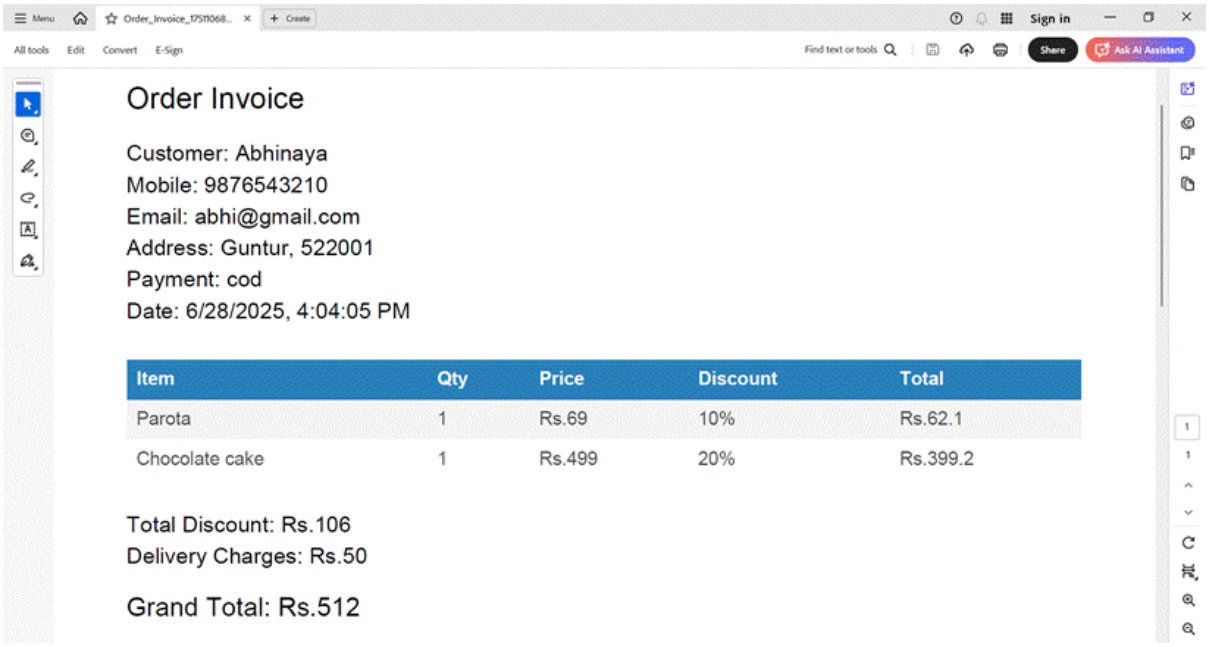
· **Cart**



· **Checkout details**



- **Invoice Download**



Order Invoice

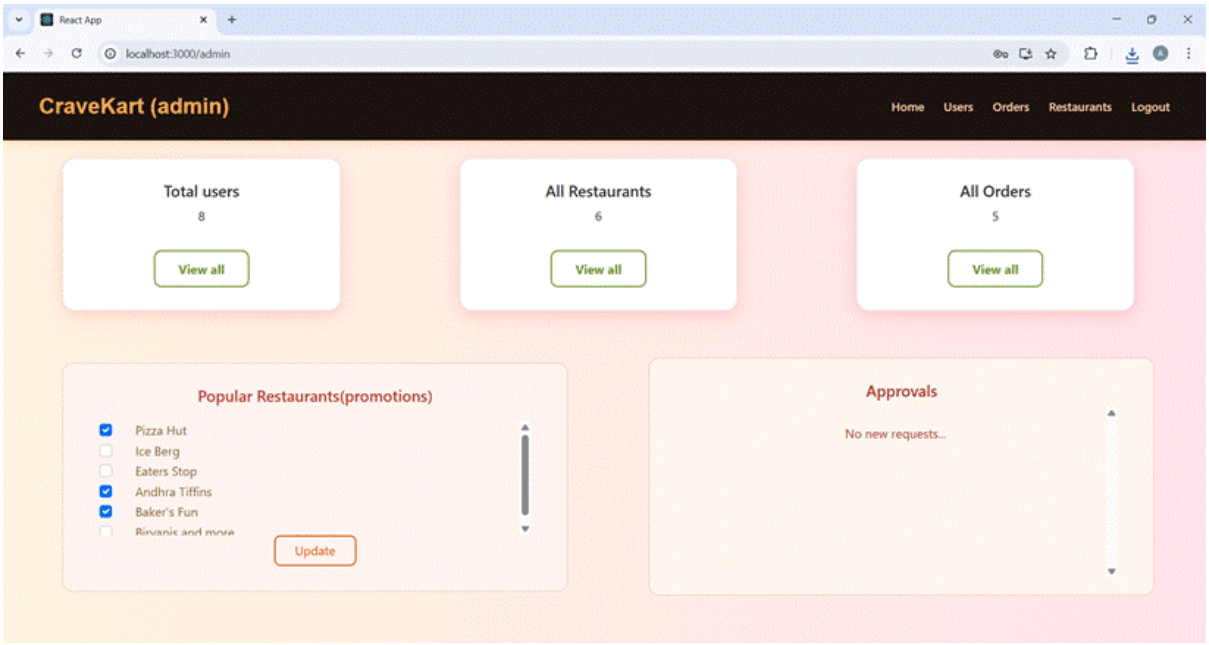
Customer: Abhinaya
Mobile: 9876543210
Email: abhi@gmail.com
Address: Guntur, 522001
Payment: cod
Date: 6/28/2025, 4:04:05 PM

Item	Qty	Price	Discount	Total
Parota	1	Rs.69	10%	Rs.62.1
Chocolate cake	1	Rs.499	20%	Rs.399.2

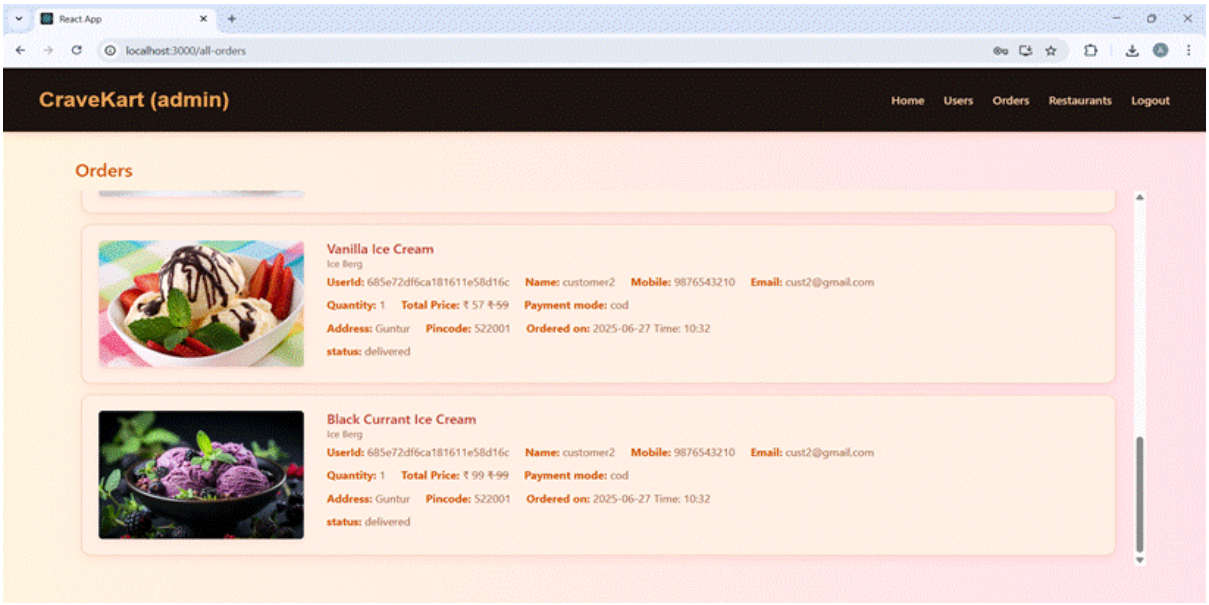
Total Discount: Rs.106
Delivery Charges: Rs.50

Grand Total: Rs.512

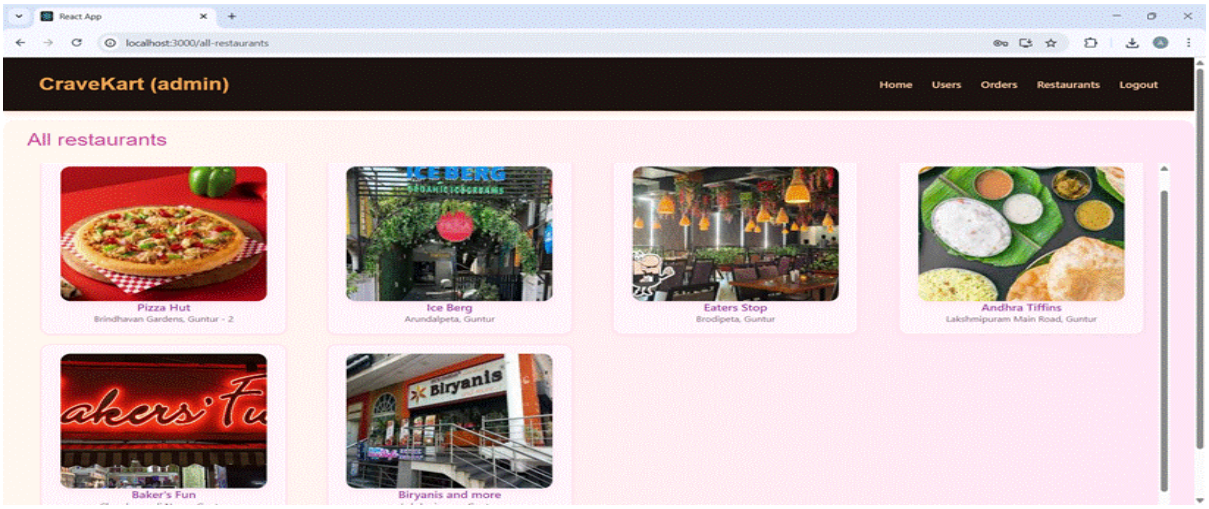
- **Admin dashboard**



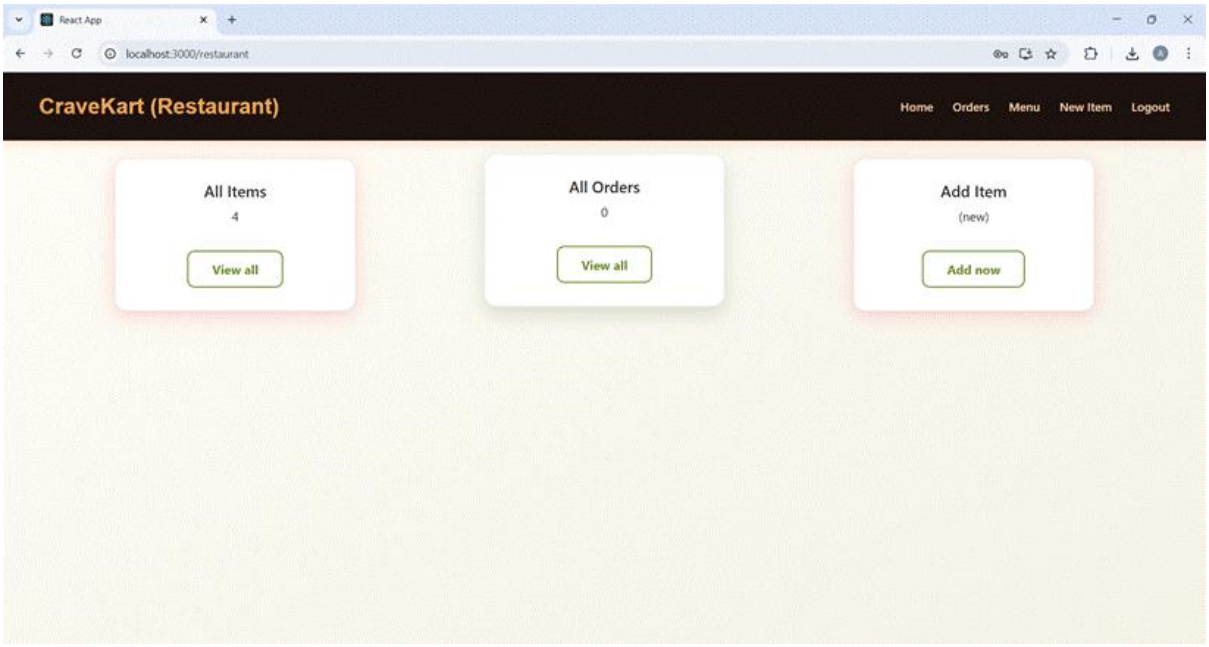
- **All Orders**



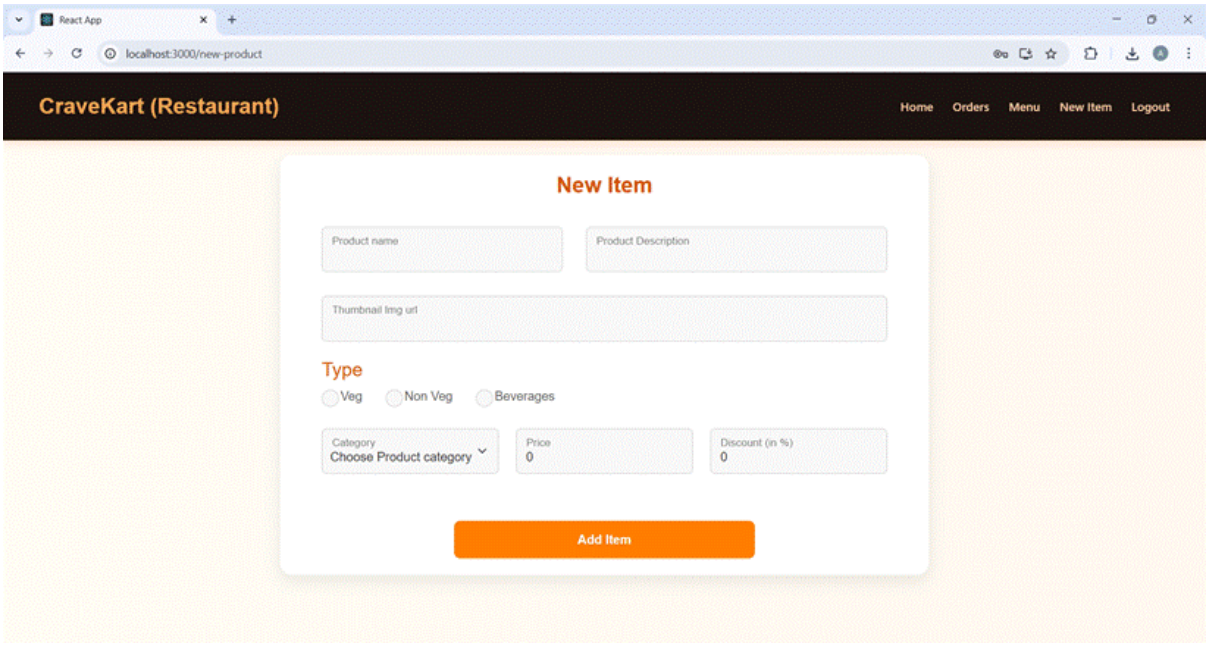
- **All restaurants**



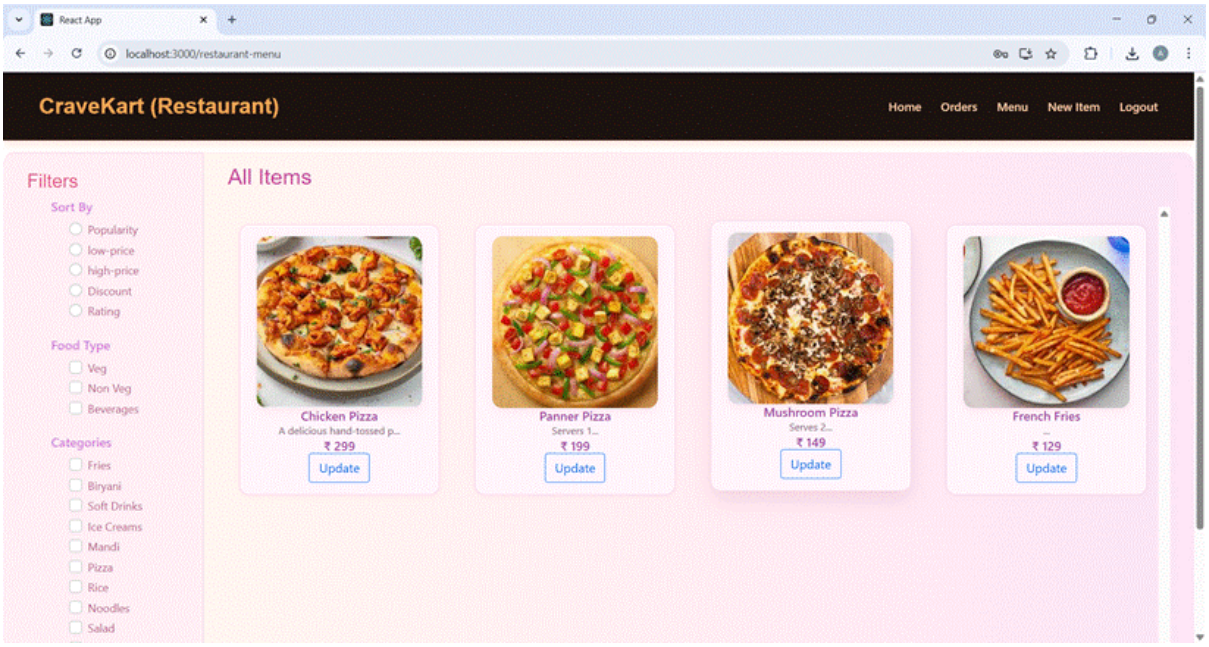
· **Restaurant Dashboard**



· **New Item**



All Items



8. ADVANTAGES & DISADVANTAGES

Adavantages

Advantage	Description
1. Simple & Cost-Effective	Manual and black box testing require minimal setup and are ideal for small-to-mid projects.
2. Real-User Validation (UAT)	UAT ensures the system meets user needs in realistic scenarios.
3. Flexibility	Manual testing allows for spontaneous testing of new features and edge cases.
4. Easy to Get Started	Tools like Postman and browser DevTools are easy to use and require no advanced setup.
5. Effective Role-Based Testing	Each user type (Customer, Restaurant, Admin) was tested distinctly, ensuring role separation worked well.

Disadvantages

Disadvantage	Description
1. Time-Consuming	Manual testing takes longer and becomes inefficient as the application scales.
2. Not Repeatable	Manual test cases are harder to automate, track, or reuse in future test cycles.
3. Prone to Human Error	Manual checks can miss bugs that automation might catch.
4. No Performance Testing	Tools like Postman don’ t measure speed or server load, missing out on performance issues.
5. Limited Coverage	Without automation, it’s hard to test every combination of inputs, roles, and workflows consistently.

9. CONCLUSION

The **OrderOnTheGo** project successfully delivers a responsive, user-friendly web application that simplifies online food ordering for customers while offering powerful tools for restaurants and administrators. The platform allows users to explore food options, manage their orders, and interact with restaurants seamlessly.

Throughout development, a structured Agile methodology was followed, with four well-planned sprints, detailed user stories, and thorough user acceptance testing. Features such as cart management, invoice generation, and role-based dashboards were implemented and tested successfully.

Manual and functional testing ensured the reliability of each module, and known issues were documented transparently. The project is now stable and ready for real-world use, with room for future enhancements like payment integration, real-time tracking, and mobile app development.

In conclusion, **OrderOnTheGo** stands as a complete, scalable food ordering solution that meets its core goals of convenience, speed, and usability for all users.

10. FUTURE SCOPE

1. Online Payment Integration

- Add support for UPI, cards, wallets using Razorpay, Stripe, or Paytm.

- Enable real-time payment confirmation and secure transaction handling.

2. Real-Time Order Updates

- Use WebSockets or Firebase to push live order status updates to users and restaurants.
- Reduce manual refresh dependency.

3. Mobile Application

- Develop native or hybrid Android/iOS app using React Native or Flutter.
- Enable push notifications and geolocation-based restaurant discovery.

4. AI-Based Recommendations

- Suggest restaurants or dishes based on user preferences and order history.
- Improve personalization using machine learning.

5. Multi-Language and Regional Support

- Localize the platform for different languages and regions.
- Improve accessibility and widen the user base.

6. Analytics Dashboard

- Provide data insights to admins and restaurants (orders, revenue, user trends).

11. APPENDIX

For any further doubts or help, please consider the GitHub repo, https://github.com/KalisettyAbhi234/OrderOnTheGo-Your-On-Demand-Food-Ordering-Solution/tree/main

The demo of the app is available at: https://drive.google.com/file/d/1aT5kXVJX83ht5Yap2FwRCRcOqnS3_Mxb/view?usp=sharing