EXPRESS EATS

A PROJECT REPORT

Submitted by

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Project Report

1. INTRODUCTION

1.1 Project Overview

The Food Delivery App is designed to streamline the process of ordering and enjoying meals. With a user-friendly interface, it offers a comprehensive set of features, including restaurant listings, cart management, order history, and favorites, allowing users to seamlessly navigate the app, customize their orders, and conveniently reorder their favorite dishes. Real-time delivery tracking and secure payment options further enhance the user experience, ensuring timely and secure food deliveries. Our primary objectives are to provide a convenient food ordering platform, connect users with a wide range of restaurants, and maintain a high level of service quality and user engagement, making our app the preferred choice for food enthusiasts seeking a hassle-free and delightful dining experience.

1.2Purpose

"Express Eats" is a purpose-driven food delivery app designed to provide users with a rapid and hassle-free solution for ordering and receiving meals. Its primary objective is to save users time and effort by offering a seamless and efficient platform for accessing a wide range of dining options. Whether users are in a hurry or simply seeking convenience, the app focuses on expediting the food delivery process, allowing them to browse through a diverse selection of restaurants, place their orders quickly, and have delicious meals delivered promptly to their doorstep. "Express Eats" is dedicated to making the dining experience more convenient and time-efficient, catering to the needs of modern, fast-paced lifestyles.

2. LITERATURE SURVEY

2.1Existing problem

Food delivery app industry, several persistent issues continue to affect users and restaurants alike. Late deliveries, often leading to lukewarm or soggy meals, remain a common concern. Inaccurate orders with missing or incorrect items can result in frustration and disappointment. High service and delivery fees charged by some apps can make ordering less cost-effective for users. Limited customization options for special dietary preferences or ingredient exclusions are also a prevalent problem. Inconsistent partnerships with a variety of restaurants, including local favorites, may result in a limited selection for users. Inadequate customer support for order issues or complaints can lead to a poor user experience, and the environmental impact of disposable packaging is becoming a growing concern in today's sustainability-conscious world.

2.2References

- https://www.netsolutions.com/insights/essential-features-food-orderingapps/
- https://doit.software/blog/food-delivery-app-development#screen71
- https://www.octalsoftware.com/blog/food-delivery-app-development-guide
- https://www.researchgate.net/publication/353474489_Online_Food_Delivery_App_'Foodie

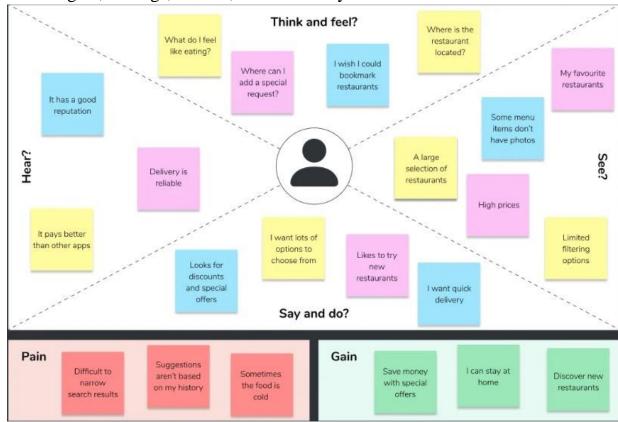
2.3Problem Statement Definition

The current food delivery app ecosystem faces significant challenges, including late deliveries, order inaccuracies, high service fees, limited customization options, inconsistent restaurant partnerships, poor customer support, and environmental concerns related to disposable packaging. These issues collectively result in a suboptimal user experience, hinder the growth of participating restaurants, and contribute to environmental sustainability problems. Solving these challenges is imperative to create a more efficient, customer-friendly, and environmentally responsible food delivery service that can cater to a wider audience and meet the evolving demands of today's consumers.

3. IDEATION & PROPOSED SOLUTION

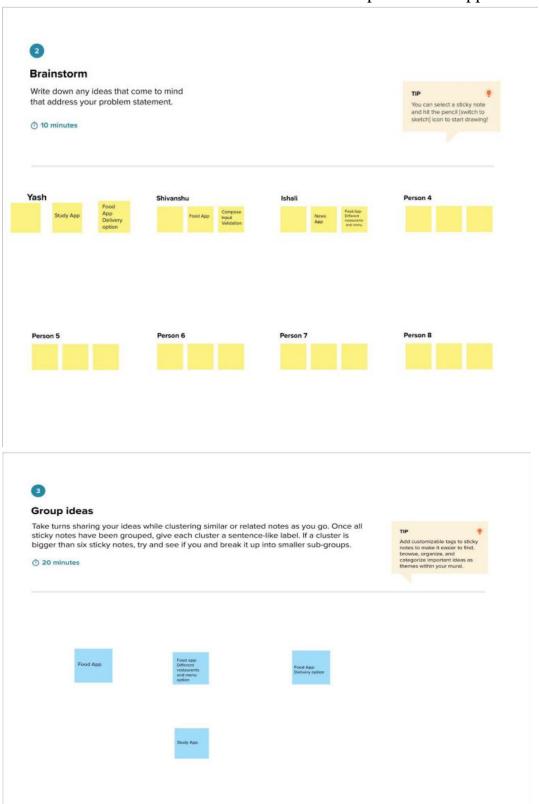
3.1Empathy Map Canvas

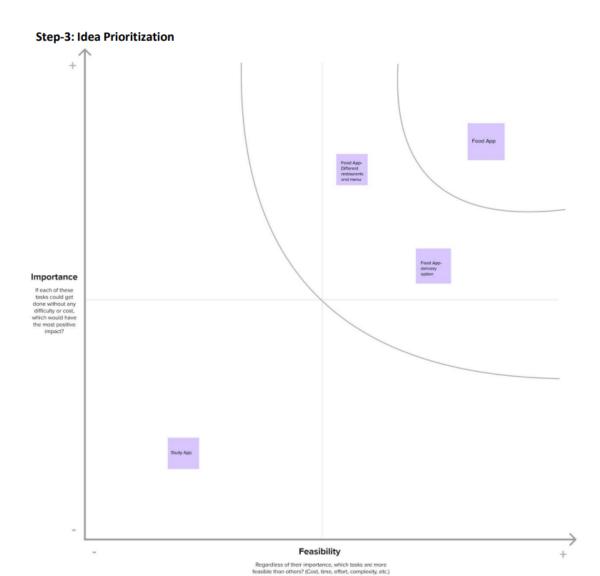
An empathy map canvas for a food delivery app can help you understand the thoughts, feelings, actions, and needs of your users.



3.2Ideation & Brainstorming

Ideation and brainstorming for a food delivery app involve generating creative ideas and solutions to address various aspects of the app.





4. REQUIREMENT ANALYSIS

4.1 Functional requirement

Functional requirements for a food delivery app outline the specific features and capabilities the app must have to meet user needs and achieve its goals.

- 1. User Registration and Authentication:
 - User account creation with email or social media login.
 - Verification process for secure and personalized access.
- 2. Restaurant Listings:
- Comprehensive listings of partner restaurants, including their names, menus, ratings, and cuisine types.
 - Filters and search options for easy restaurant selection.
- 3. Menu Display:
- Clear and detailed menus for each restaurant, including item names, descriptions, prices, and images.
 - Special categories for popular, new, and featured items.
- 4. Cart Management:
 - Add and remove items from the cart.
 - Edit quantities and add special instructions.
 - Calculate and display the total order cost.
- 5. Order Placement:
 - Easy order placement with delivery or pickup options.
 - Secure and transparent payment processing.
 - Delivery address input and storage for future orders
- 7. Order History:
 - A history of past orders, including order details and receipts.
 - Option to reorder from order history.
- 8. Favorites and Recommendations:
 - Ability to mark favorite restaurants and dishes.
- Personalized recommendations based on user preferences and ordering history.
- 9. Notifications:
 - Push notifications for order status updates and promotions.
 - Alerts for special deals and discounts.
- 10. Customer Support:
 - In-app customer support or chat for order-related inquiries.
 - FAQs and contact information.

4.2Non-Functional requirements

- 1. Security: The system should prevent unauthorised access or misuse of sensitive information, such as consumer payment and personal information.
 - This could include regulations for the use of encryption, secure servers, and other data integrity safeguards.
- 2. Scalability refers to the system's ability to accommodate increases in the number of users or orders without deteriorating performance.

 This could include the capacity to add more servers or other hardware as needed to accommodate rising demand.
- 3. Reliability: The system should be available and working when required, with as little downtime as possible. This could include requirements for the system's ability to handle failures or unforeseen events, as well as the utilisation of backup systems and processes to assure service continuity.
- 4. Maintainability: With a clear and well-documented codebase and a solid testing and deployment procedure, the system should be simple to upgrade and maintain over time. This could include requirements for using version control, automated testing, and other tools and processes to keep the system reliable and up to date.
- 5. Usability: The system should be simple to use for both customers and restaurant employees, with a clear and intuitive interface and simple navigation.
 - This could include criteria for the system's layout and design, the use of clear and simple language, and the provision of assistance and support.
- 6. Performance: The system should be able to process a high volume of orders efficiently. This could include system speed, the quantity of orders it can process at once, and the ability to handle peak periods of activity.

7. PROJECT DESIGN

a. Data Flow Diagrams & User Stories

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

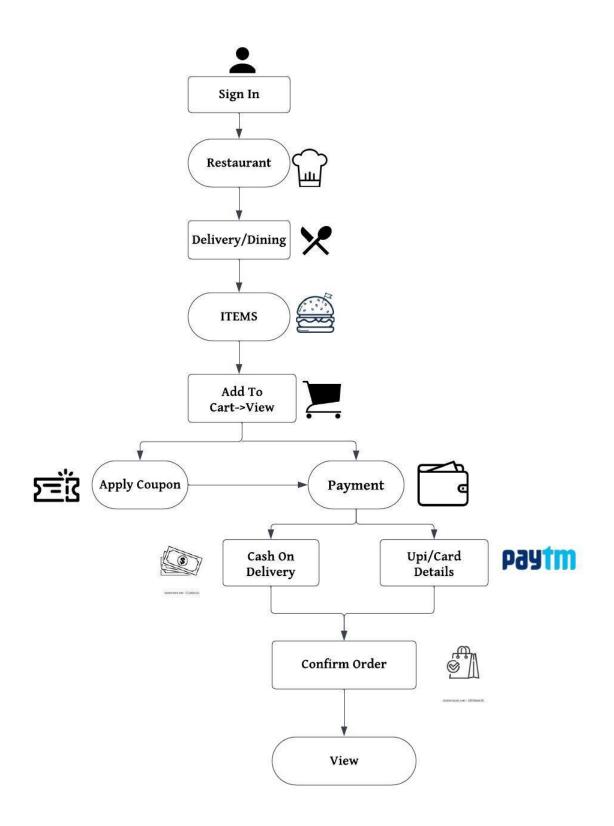
DFD

- Sign-in/Sign-up: Users start by signing in or creating an account if they're new to the app.
- Restaurant Selection: After signing in, users choose between delivery or dining in options.
- Order Customization: Users browse the selected restaurant's menu, add items to their cart, and make any desired customizations.
- Payment Process: Users proceed to payment, apply any available coupons, and enter their payment information.
- Order Confirmation: After confirming the order, the app processes the payment, and users receive a confirmation.
- Order Tracking: Users can view their order history and track the status of their current order in the "View My Orders" section.

User Stories

Use the below template to list all the user stories for the product.

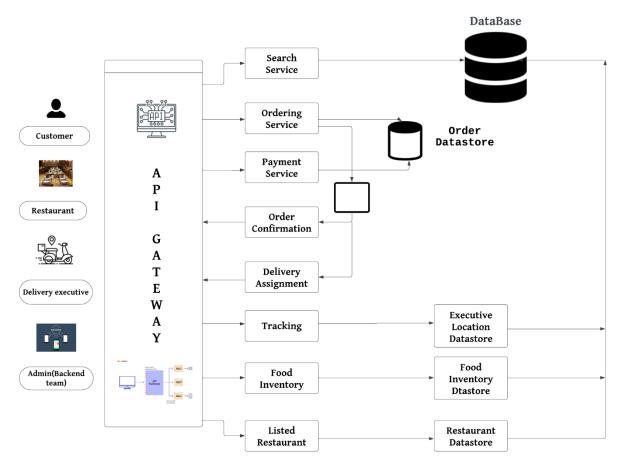
User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
(Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Gmail		Medium	Sprint-2
	Login	USN-4	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard		See details of order tracking, history, and account management.			
Customer (Web user)						
Customer Care Executive						
Administrator						



b. Solution Architecture

This architecture offers a structured and efficient system for the food delivery app, supporting user interactions from account creation to order completion.

- 1. User Interaction Layer: This layer manages user identification and authentication, ensuring secure access to the app. It handles user sign-in, signup, and session management.
- 2. Data Processing and Communication Layer: Positioned in the backend, this layer acts as an intermediary between the user interface and the database, facilitating user requests and data retrieval via a RESTful API.
- 3. Data Retrieval and Presentation Layer: This component is responsible for fetching data from the MySQL database and presenting users with a list of nearby restaurants and their menus, making it easy for users to browse and select their preferred food items.
- 4. Location Services and Optimization: Utilizing location data from GPS or location-based services, this layer determines the user's current location and identifies nearby restaurants, enhancing the user's ability to find relevant dining options. It also optimizes search queries for improved app performance.



8. PROJECT PLANNING & SCHEDULING

a. Technical Architecture

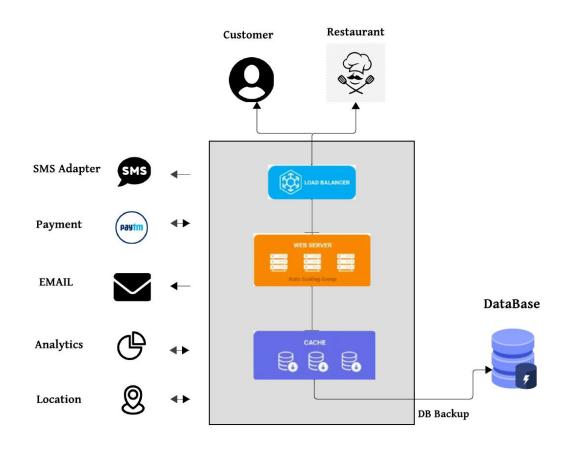


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	To create a Web UI for Android, you can use WebView, which is a component that allows you to embed web content in your Android application.	Android Studio -Kotlin
2.	Mobile App	You can create mobile app UIs using XML layouts and Kotlin for logic.	Kotlin
3.	Database	The app, developed in Kotlin for Android, utilizes a local database for efficient data storage and retrieval, including user profiles, orders, and menus. Additionally, the database serves as a backup mechanism, ensuring data integrity and availability, even in offline scenarios.	Local Database
4.	Cloud	The app, built in Kotlin for Android, leverages auto- scaling web servers in the cloud to efficiently handle varying traffic loads. This ensures seamless performance, scalability, and responsiveness for users, whether during peak dining hours or quieter periods.	Auto-scaling web servers for storage.
5.	File Storage	A food delivery app in Kotlin for Android Studio requires file storage for local databases & images (restaurant menus, user profile pictures) and caching.	Local Filesystem
6.	Location	For GPS tracking, the business entity can use Google Location API for Android.	Google Location API
7.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Set up the Android Studio development environment on your local machine. You can use the Android emulator or physical Android devices for testing. Ensure you have the necessary dependencies, such as a local database (e.g., SQLite), and configure the development environment for testing and debugging.	Android Studio, cloud-auto scaling and load balancing

debugging. Cloud Server Configuration: configure the server
environment with the necessary runtime

components, such as the Android emulator, and	
ensure that the app can connect to the cloud	
database securely. Implement auto-scaling and	
load balancing to handle varying user loads.	

Table-2: Application Characteristics:

Scalable Architecture Inv for		Description	Technology	
		Involves load balancing to distribute traffic, stateless application servers for horizontal scalability, a cloud-based, scalable database for data storage, and caching mechanisms to reduce server load.	Kotlin ,Load balancer ,auto scaling	
2.	Availability	Load balancers and distributed servers ensure the food delivery app's availability by evenly distributing traffic and allowing for horizontal scaling to meet fluctuating user demand. High availability measures, such as failover mechanisms and redundancy, guarantee uninterrupted service, even in the face of server or database failures. These technologies are essential to provide a reliable, responsive user experience and maintain continuous app functionality, particularly during peak hours or unexpected disruptions.	Kotlin, firebase ,analytics tool	

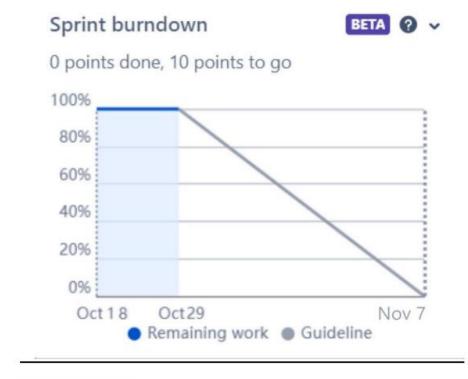
S.No Characte	eristics	Description	Technology
4. Performa	nce	Implement a robust caching strategy to reduce the load on your servers. Utilize Content Delivery Networks (CDNs) for efficient delivery of static assets like images, ensuring faster load times for users across various locations. Design the application to handle a high number of requests per second, allowing for horizontal scaling and auto-scaling to accommodate peak usage times, guaranteeing responsive service even during rush hours or promotional events. Google Analytics for analytics and performance comparison.	CDN, auto scaling ,load balancer, analytics

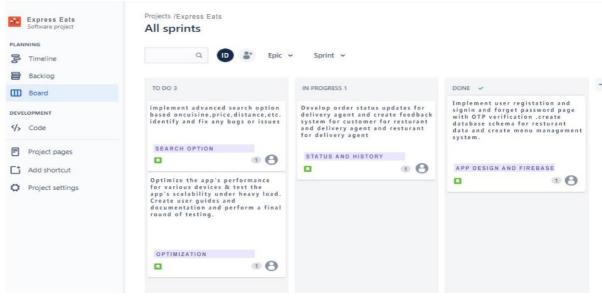
b. Sprint Planning & Estimation

Story Points	St	Priority	Team Members
1		High	Yash
2		High	Shivanshu
4		High	Ishali
3		Medium	Yash
2		Medium	Shivanshu
1	vy	Medium	Ishali
1		Low	Shivanshu
		1	l Low

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	07	6 Days	18 Oct 2023	23 Oct 2023	15	09 November 2023
Sprint-2	06	6 Days	24 Oct 2023	30 Oct 2023		
Sprint-3	02	6 Days	02 Nov 2023	07Nov 2023		

c. Sprint Delivery Schedule





9. CODING & SOLUTIONING

- a. Features
- Dashboard Activity

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Once the restaurant owner sets up an account. They go back to the home page or dashboard. Here they can keep track of the pending orders, completed orders, and ones on the way to delivery for better insight and summary of what is going on.

LOGIN

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The rider will receive login credentials from the admin to enter the application.

Register/Sign Up

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The page is about the sign-up process for a food delivery app. Users visit this page to create an account and gain access to the app's features, such as ordering food, tracking deliveries, and managing their profile. Users typically provide their personal information, including name, email, and password, to register on the platform.

Restaurant List

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| Die of Bit Ver | Bergete Code | Betator | Build No. | Dods VG. | Worldow | Boys | Section | AllestatementAdjoner | AllestatementAdjoner
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A restaurant list page on a food delivery app typically displays a curated or search-based list of available restaurants. Users can browse through these lists to view restaurant options, their menus, ratings, and reviews. This page allows users to select a restaurant they want to order from, making it a crucial step in the food ordering process.

Menu

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Toperataryab) you not make just com Sectional Experiments Assigned & Communicational Experiments & Communicational Exper
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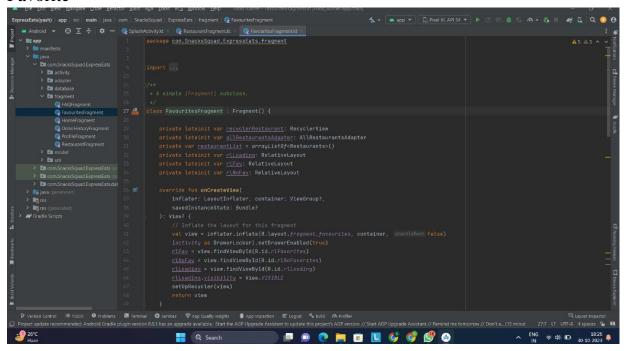
A menu page in a food delivery app presents the list of dishes and items available from a specific restaurant. Users can browse through the menu to view food options, descriptions, prices, and sometimes images. They can select items they want to add to their order from this page, customizing their meal choices before proceeding to the cart or checkout.

Order History

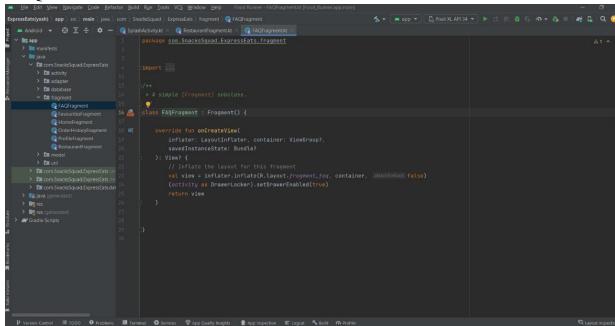
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| Percentation | Perc
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An order history page in a food delivery app displays a record of all the orders a user has placed in the past. Users can review details of previous orders, such as the date, time, items ordered, total cost, and delivery status. It allows users to keep track of their ordering history and easily reorder their favorite meals or check the status of recent orders.

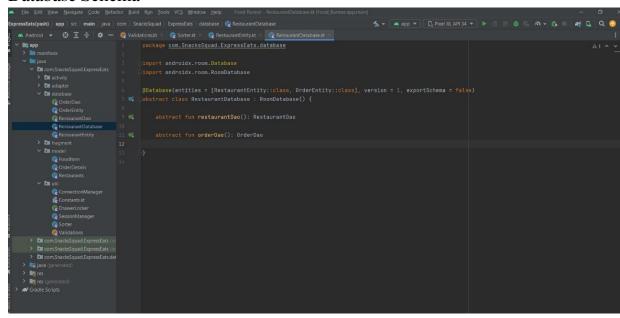
Favorite



FAQ

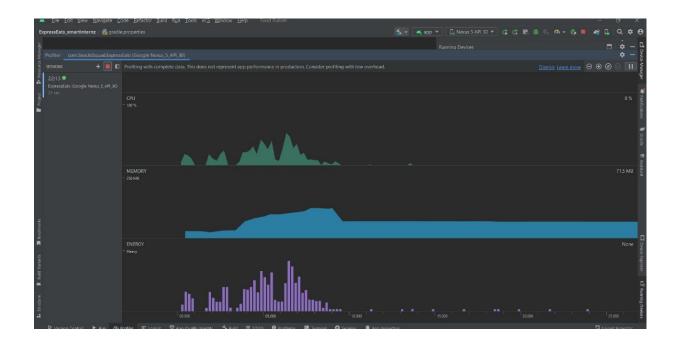


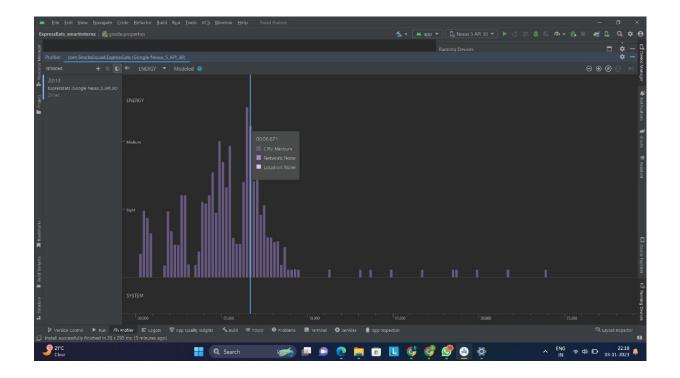
b. Database Schema

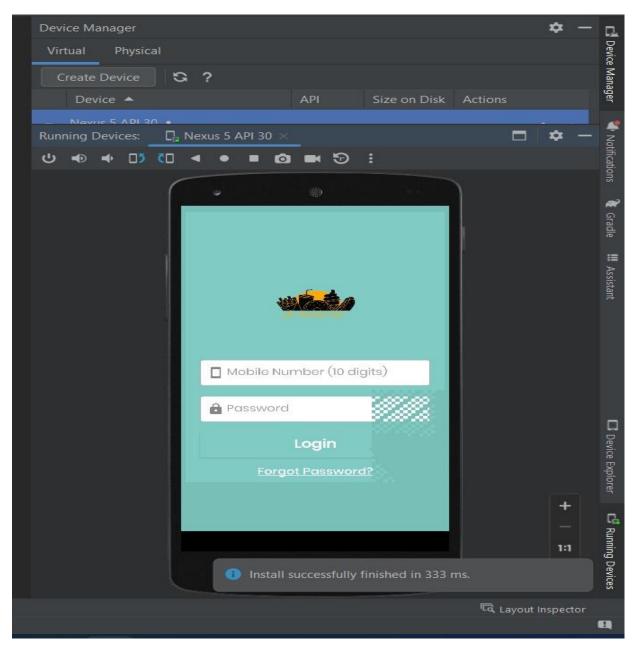


10. PERFORMANCE TESTING

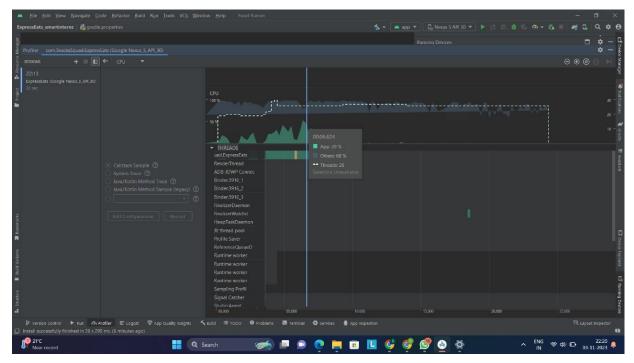
a. Performance Metrics



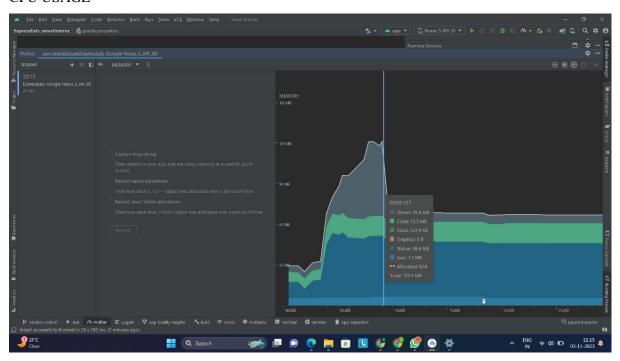




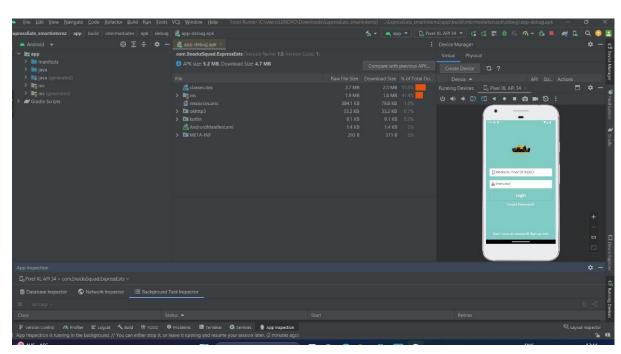
Screen Render Time



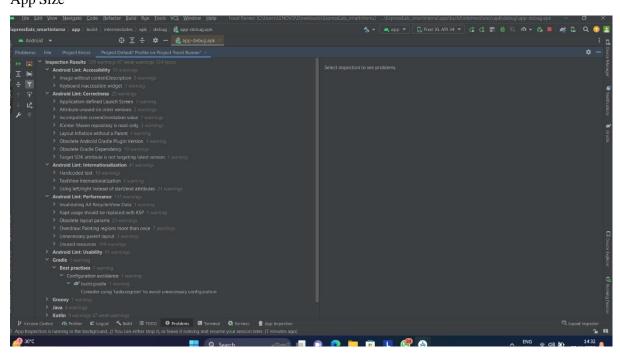
CPU USAGE



Memory Usage

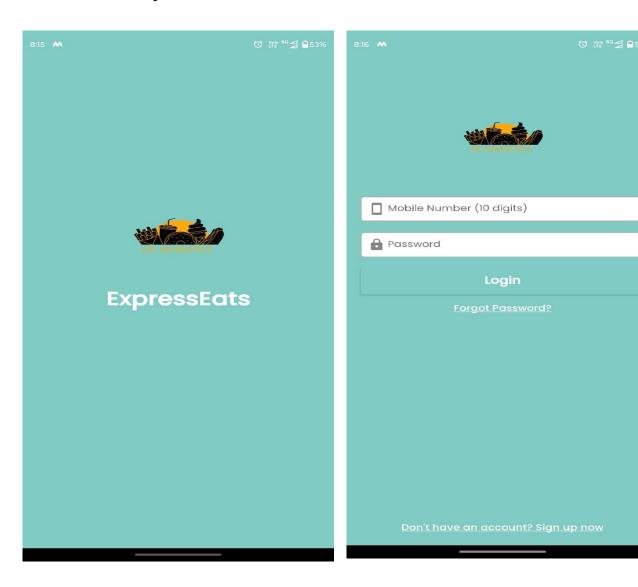


App Size

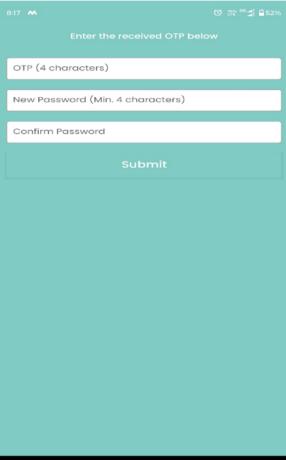


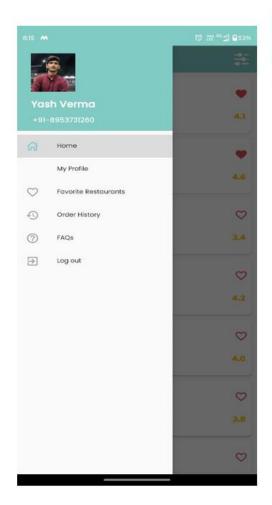
11. RESULTS

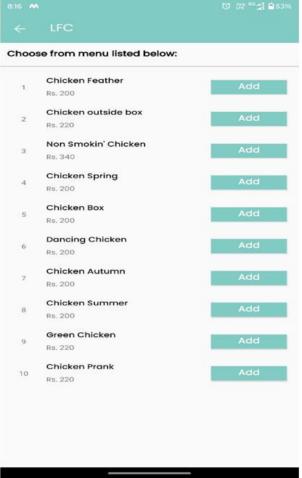
a. Output Screenshots

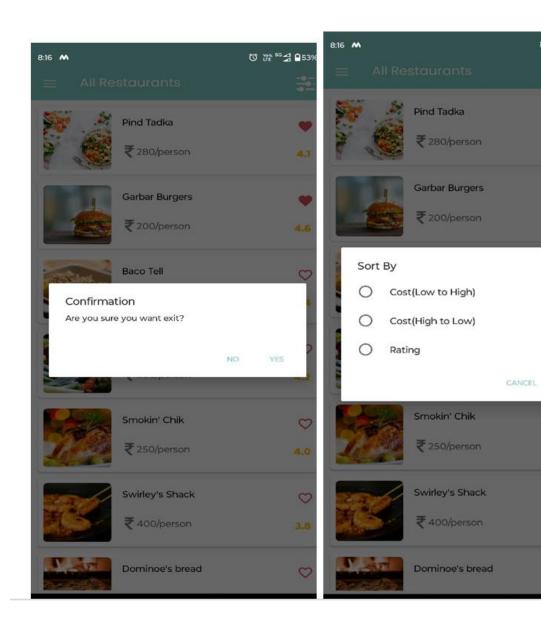






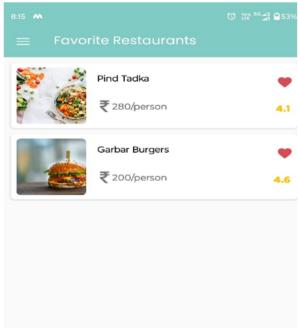






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12. ADVANTAGES & DISADVANTAGES

Advantages:

1.Convenience:

Advantage: Food delivery apps offer unparalleled convenience, allowing users to order their favorite meals from a variety of restaurants with just a few taps on their smartphones. This eliminates the need to cook, dine out, or wait in long lines.

Benefit: Users can enjoy a wide range of cuisines and dishes from the comfort of their homes or workplaces, making it a time-saving and hassle-free dining option.

2.Diverse Choices:

Advantage: Food delivery apps provide access to a vast selection of restaurants and menus. Users can explore different cuisines, discover new eateries, and cater to various dietary preferences.

Benefit: This variety ensures that users can find something to suit their cravings, whether it's pizza, sushi, vegetarian, or international cuisine.

3.Real-Time Order Tracking:

Advantage: Many food delivery apps offer real-time order tracking, allowing users to monitor the progress of their orders from the restaurant to their doorstep.

Benefit: This feature provides transparency and reassurance to users, knowing when their meal will arrive and eliminating uncertainties about delivery times.

Disadvantages:

1. Additional Costs:

Disadvantage: Food delivery apps often come with added costs, including delivery fees, service charges, and tip suggestions. These expenses can significantly increase the overall cost of a meal.

Challenge: Users may find that the convenience of food delivery apps comes at a premium, making dining out or cooking at home a more cost-effective option.

2. Quality and Freshness Concerns:

Disadvantage: The quality and freshness of delivered food can be compromised during the delivery process. Some dishes may not taste as good as they would in the restaurant.

Challenge: Users may be disappointed if their meals arrive cold, soggy, or not as expected, impacting the overall experience.

3. Environmental Impact:

Disadvantage: Food delivery apps contribute to environmental concerns, especially when it comes to packaging waste and delivery vehicle emissions. Challenge: The increase in single-use packaging and frequent delivery trips can have negative environmental consequences, which may not align with sustainability goals.

13. CONCLUSION

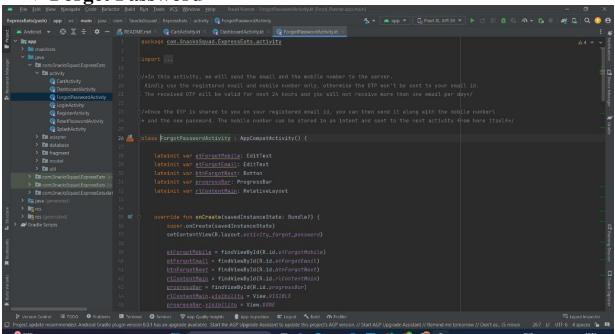
An online food ordering system is developed where the customers can make an order for the food and avoid the hassles of waiting for the order to be taken by the waiter. Using the application, the end users register online, read the E-menu card and select the food from the e-menu card to order food online. Once the customer selects the required food item the chef will be able to see the results on the screen and start processing the food. This application nullifies the need of a waiter or reduces the workload of the waiter. The advantage is that in a crowded restaurant there will be chances that the waiters are overloaded with orders and they are unable to meet the requirements of the customer in a satisfactory manner. Therefore, by using this application, the users can directly place the order for food to the chef online. In conclusion an online food ordering system is proposed which is useful in small family run restaurants as well as in places like college cafeteria, etc. This project can later be expanded on a larger scale. It is developed for restaurants to simplify their routine managerial and operational task and to improve the dining experience of the clients. This also helps the restaurant owners develop healthy customer relationships by providing reasonably good services. The system also enables the restaurant to know the items available in real time and make changes to their food and beverage inventory based on the orders placed and the orders completed.

14. FUTURE SCOPE

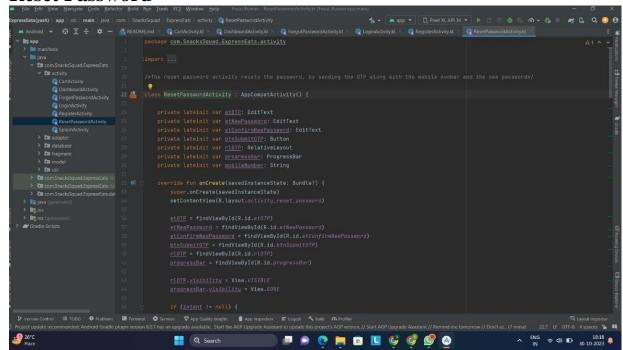
The future scope of online food delivery apps is characterized by ongoing growth and adaptation to meet evolving consumer needs. We anticipate a broader geographic reach, with expansion into new markets, including emerging regions. These apps will continue to diversify their offerings, catering to a wider range of culinary preferences, including healthconscious and specialized diets. Sustainability and eco-friendly practices will play a pivotal role in reducing environmental impact, and innovations such as virtual kitchens and advanced personalization will enhance the variety and convenience of food choices. Subscription services, contactless delivery, and collaborations with other service providers will further streamline the food delivery process. As technology advances, AI, machine learning, and blockchain will be instrumental in optimizing routes, predicting user behavior, and ensuring supply chain transparency. The future of food delivery apps promises to be dynamic, customercentric, and increasingly aligned with environmental and health-conscious goals.

15. Appendix

❖ Forget Password



❖ Reset Password



❖ Cart Activity

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- ➤ GITHUB LINK (Source Code)
 https://github.com/smartinternz02/SI-GuidedProject-587981-1697002884.git
- > Project Demo Link

https://drive.google.com/file/d/14prY5GpRUtbtRaz76q LeBOJj5d2Dfk5X/view?usp=sharing