PROJECT REPORT

Snack Squad: A Customizable Snack Ordering and Delivery App

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VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

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1. INTRODUCTION

1.1 Overview:

The Snack Squad project aims to develop a customizable snack ordering and delivery app using Kotlin programming language. The app will provide a user-friendly interface for customers to browse snack options, customize their orders, track deliveries, and provide feedback. It will streamline the snack ordering process, enhancing convenience and efficiency for both customers and snack providers. The app aims to revolutionize the snack ordering experience by offering convenience, variety, and transparency to both customers and snack providers.

1.2 Purpose:

The purpose of the Snack Squad app is to address the challenges and limitations of traditional snack ordering and delivery methods. By leveraging the power of mobile technology, the app aims to achieve the following:

- Simplify Snack Ordering: The app provides a streamlined and hassle-free process for customers to explore a wide range of snack options from different providers. It eliminates the need for manual phone calls, fragmented online ordering systems, and separate delivery apps.

- Personalized Snack Customization: Snack Squad allows customers to customize their orders based on their preferences, dietary restrictions, and portion sizes. It offers a user-friendly interface that enables users to modify ingredients, add special instructions, and create unique snack combinations.

- Real-time Delivery Tracking: The app provides a tracking feature that allows customers to monitor the status of their snack deliveries in real-time. This transparency enhances customer confidence and satisfaction, as they can stay informed about the progress and estimated time of arrival of their orders.

2. LITERATURE SURVEY

2.1 Existing Problem:

The existing problem in the snack ordering and delivery industry is the lack of a centralized platform that offers a seamless and convenient experience for customers. Current approaches include manual phone calls, fragmented online ordering systems, and third-party delivery apps, which can be time-consuming, inefficient, and lack transparency.

The existing problem in the snack ordering and delivery industry is the fragmented and inefficient nature of the current approaches. Customers often must rely on manual phone calls to place their orders, visit multiple restaurant websites or apps to browse menus, and use separate delivery apps for tracking their orders. This fragmented process can lead to delays, miscommunications, and a lack of transparency, resulting in a poor customer experience.

2.2 Proposed Solution:

The proposed solution is the development of the Snack Squad app using Kotlin.

- The app aims to address the existing problem by providing a centralized platform that streamlines the snack ordering and delivery processes. Through the app, customers can browse menus from various snack providers, select their desired items, customize their orders based on preferences and dietary restrictions, and place their orders seamlessly.

- The app also offers real-time tracking functionality, allowing customers to track the progress of their orders from the moment they are placed until they are delivered to their location. This feature provides transparency and peace of mind to customers, as they can easily monitor the status and estimated time of arrival of their snacks.

By consolidating the snack ordering and delivery processes into a single platform, the Snack Squad app simplifies and enhances the overall customer experience. It eliminates the need for multiple apps and phone calls, provides convenience, customization options, and real-time tracking, and encourages customer feedback to drive continuous improvement.

3. THEORITICAL ANALYSIS

3.1 Block Diagram:

The block diagram provides an overview of the Snack Squad project, showcasing the main components and their interactions.

[User Interface] <-> [Order Management] <-> [Delivery Management] <-> [Restaurant Interface]

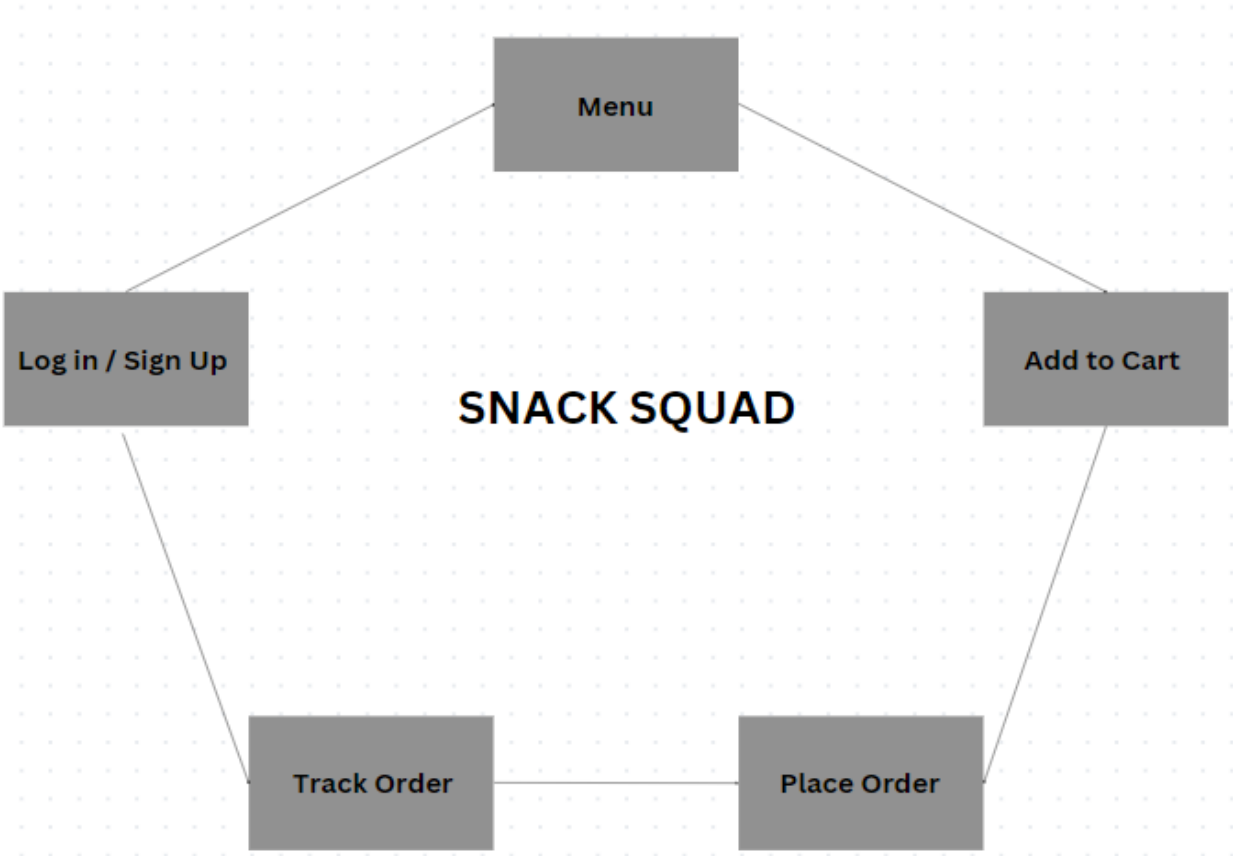


Figure: Block Diagram of Snack Squad

3.2 Hardware / Software Designing:

Hardware Requirements:

- Smartphones or tablets (iOS or Android) for user access to the Snack Squad app.
- GPS-enabled devices for tracking deliveries accurately.

Software Requirements:

- Kotlin programming language for app development.
- Android Studio for the development environment.
- Database management system such as MySQL for storing and retrieving data.
- APIs for integrating with external services like payment gateways and map services.
- Development frameworks and libraries for user interface design and app functionality.

The Snack Squad app primarily relies on software components to function effectively. The hardware requirements mainly involve the devices used by users and delivery partners, while the software requirements encompass the programming languages, development tools, and databases necessary for app development, data storage, and server-side processing.

4. EXPERIMENTAL INVESTIGATIONS

During the development of the Snack Squad app, several investigations and analyses were conducted to ensure the effectiveness and efficiency of the solution. These investigations involved:

- User Testing and Feedback: User testing sessions were conducted to gather feedback and insights from potential users of the app. This helped identify usability issues, understand user preferences, and refine the user interface and overall user experience.
- Performance Testing: Performance testing was carried out to evaluate the app's responsiveness and efficiency. This involved assessing the app's loading times, response times for user interactions, and the ability to handle concurrent user requests without significant delays.
- Integration Testing: Integration testing was performed to ensure seamless communication and data exchange between different components of the app. This involved testing the integration of the user interface with the order management system, the delivery management system, and the restaurant interface to verify smooth coordination and data synchronization.
- Security Testing: Security testing measures were implemented to identify and address potential vulnerabilities in the app. This involved assessing the app's resistance against common security threats, such as unauthorized access, data breaches, and information leakage.
- Scalability Testing: Scalability testing was conducted to evaluate the app's performance under increasing load and user demand. This helped identify any potential bottlenecks or limitations in terms of handling many concurrent users and processing a high volume of orders.
- Error Handling and Exception Testing: Comprehensive testing was carried out to ensure proper handling of errors and exceptions within the app. This included scenarios such as network disruptions, incorrect inputs, and system failures, with the aim of maintaining app stability and providing helpful error messages to users.

Through these experimental investigations, valuable insights were gained, and necessary adjustments and optimizations were made to enhance the functionality, performance, security, and user experience of the Snack Squad app. The investigations played a crucial role in validating the effectiveness and reliability of the solution before its deployment.

5. FLOWCHART

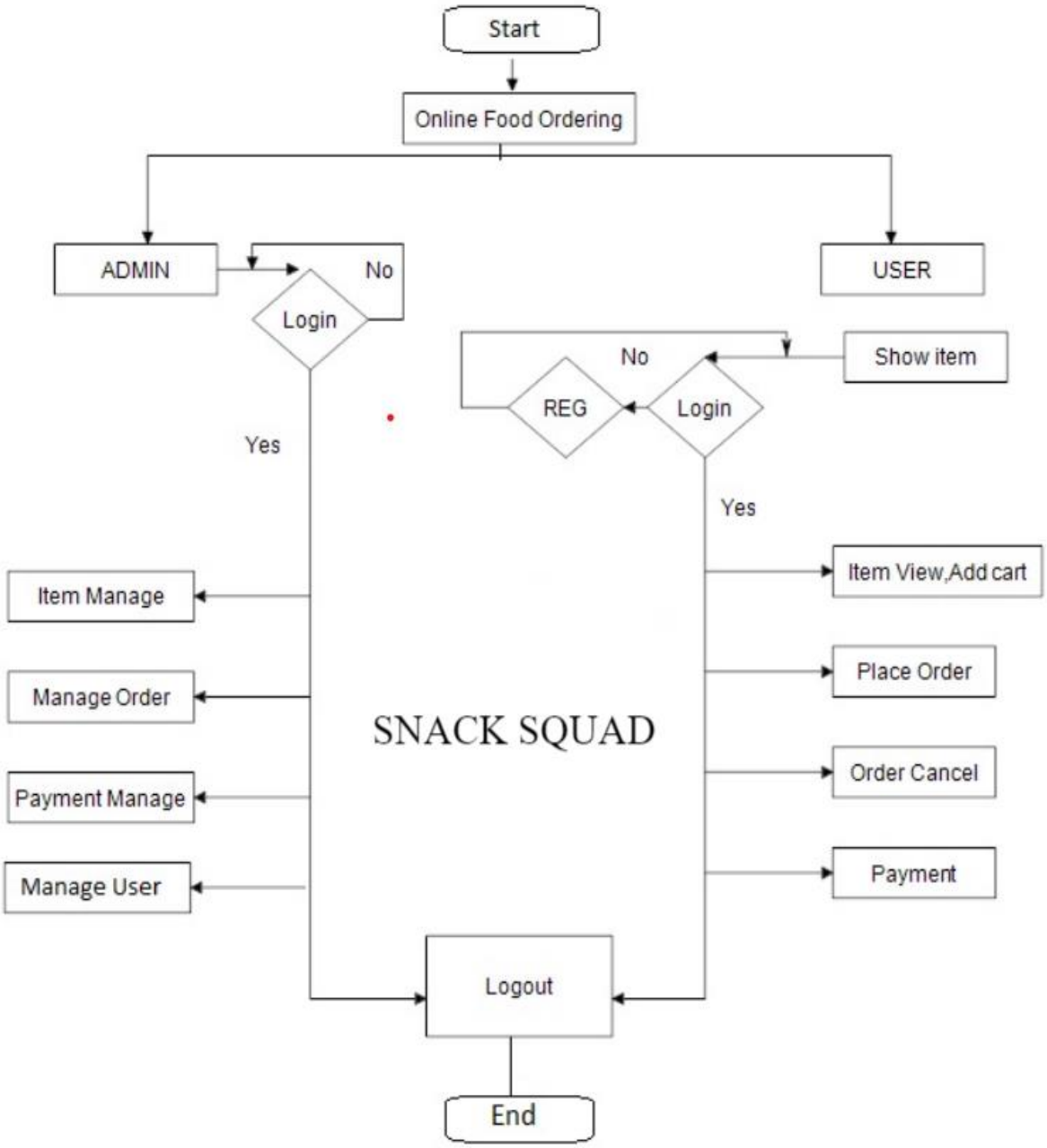


Figure: Flowchart of Snack Squad

The flowchart of the Snack Squad describes the flow which the user can follow easily to order the food. The user can log in into the app or sign-up using credentials. Further, user can create his cart and place the order. Also, user can track his order till it can deliver to the user's doorstep.

6. RESULT

The development of the Snack Squad app using Kotlin has resulted in a functional and user-friendly solution for customizable snack ordering and delivery. The app provides several key features and outputs that contribute to an enhanced snack ordering experience. The following are the final findings and outputs of the project:

- User-friendly Interface: The app offers an intuitive and visually appealing user interface that allows customers to easily navigate menus, customize orders, track deliveries, and provide feedback.

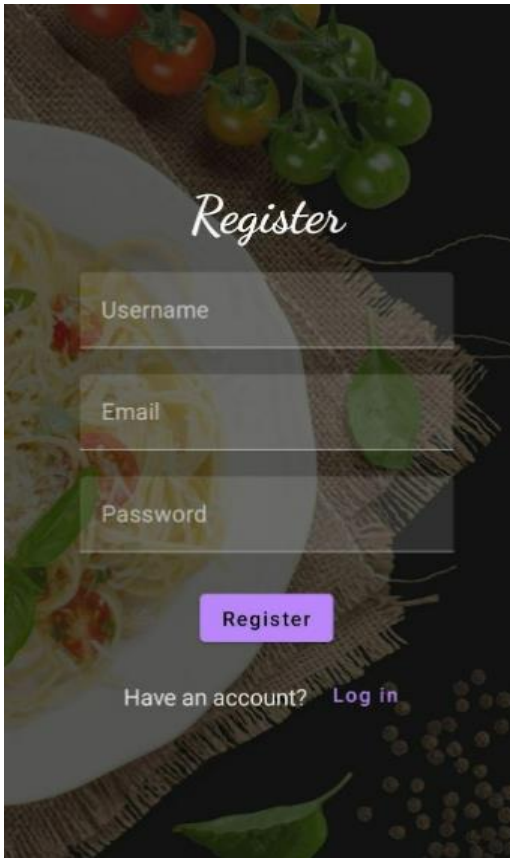
- Seamless Order Placement: Users can browse menus from various snack providers, select snacks, customize them according to their preferences, and place orders seamlessly through the app.

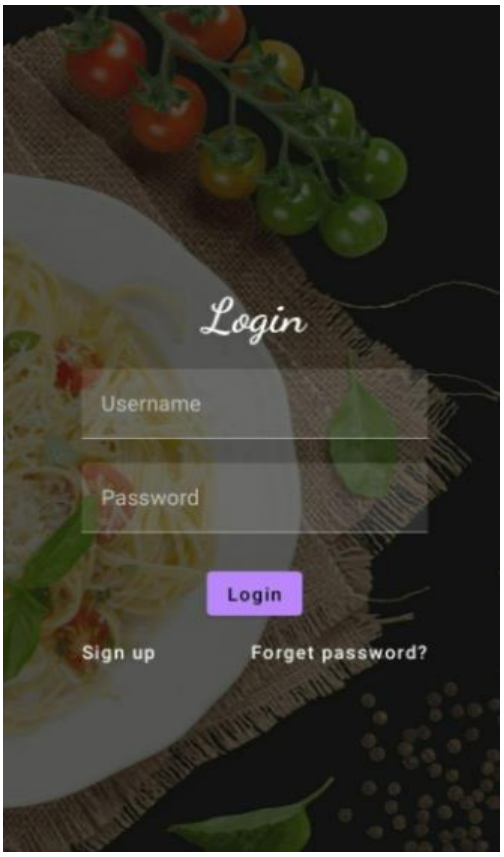
- Real-time Delivery Tracking: The app incorporates a tracking feature that enables users to monitor the progress of their snack deliveries in real-time. They can view the location of the delivery partner and receive estimated time of arrival updates.

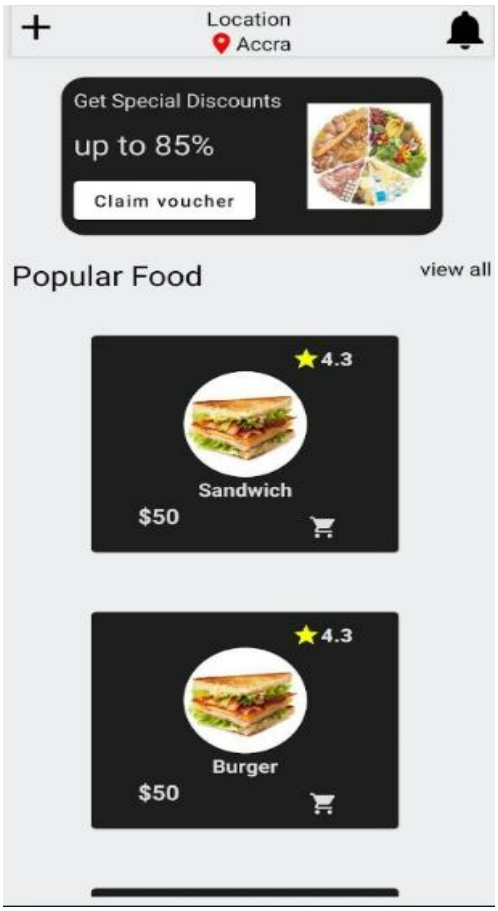
- Personalized Snack Customization: Customers have the flexibility to personalize their snack orders by selecting ingredients, portion sizes, and adding special instructions. This customization feature enhances the overall customer satisfaction.

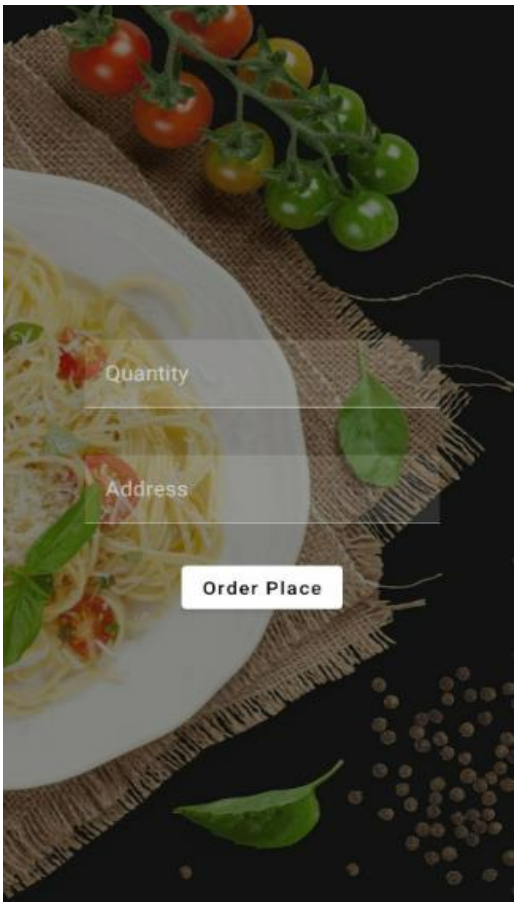
- Order Confirmation and Feedback: After placing an order, users receive an order confirmation along with an estimated delivery time. Upon delivery, users can provide feedback and ratings for the snack provider, contributing to continuous improvement.

SCREENSHOTS:









7. ADVANTAGES AND DISADVANTAGES

Advantages:

- Convenience: The app provides a convenient and user-friendly platform for customers to browse menus, customize orders, track deliveries, and provide feedback, all in one place.
- Personalization: Users can customize their snack orders based on their preferences, dietary restrictions, and special instructions, allowing for a personalized snacking experience.
- Real-time Tracking: The app's real-time tracking feature enables users to track the progress of their deliveries, providing transparency and peace of mind.
- Feedback Mechanism: The ability to provide feedback and ratings allows snack providers to improve their services and maintain quality standards, fostering a culture of continuous improvement.
- Increased Efficiency: The centralized platform streamlines the snack ordering and delivery processes, reducing manual phone calls and integrating all relevant information in one app, improving overall efficiency.
- Wide Variety of Options: The app offers access to multiple snack providers, allowing users to explore a wide range of snacks and choose from diverse menus.

Disadvantages:

- Dependency on Technology: The app's functionality relies on the availability and reliability of smartphones, internet connectivity, and GPS services. Issues with these technologies can impact the user experience.
- Limited-Service Availability: The Snack Squad app's reach and availability might be limited to specific geographic areas or snack providers, restricting access for users outside those areas.
- Potential Technical Issues: Like any software-based solution, the app may encounter technical issues, such as bugs, crashes, or system failures, which could disrupt the user experience.

- Reliance on Delivery Partners: The quality and reliability of the delivery service depend on the efficiency and professionalism of the delivery partners, which may vary and affect the overall experience.

Overall, the advantages of the Snack Squad app include convenience, personalization, real-time tracking, feedback mechanisms, increased efficiency, and a wide variety of options. However, potential disadvantages include dependency on technology, limited-service availability, potential technical issues, reliance on delivery partners, and privacy concerns.

8. APPLICATIONS:

The Snack Squad app has versatile applications in various domains and can be implemented in the following areas:

- Food Delivery Services: The app can be utilized by food delivery services to expand their offerings and include snacks as part of their delivery portfolio. It enables snack providers to reach a wider customer base and enhances the overall convenience of food delivery.
- Office and Corporate Environments: The app can be used in office and corporate environments to streamline snack ordering for employees. It simplifies the process of providing snacks to employees, allowing them to browse and customize their orders, leading to improved employee satisfaction and productivity.
- Event Catering: Event organizers and caterers can leverage the Snack Squad app to offer snack options to attendees during conferences, meetings, or social gatherings. The app enables efficient ordering, customization, and delivery management, ensuring a smooth and hassle-free snack experience for event participants.
- College and University Campuses: The app can be employed in college and university campuses to provide students with a convenient way to order snacks.

It allows students to satisfy their cravings, discover new snack options, and have snacks delivered directly to their location on campus.

- Hospitality Industry: The app can be integrated into hotels, resorts, and hospitality establishments to enhance the guest experience. Guests can use the app to order snacks directly to their rooms or to specific facilities within the premises, providing an additional service and convenience.
- Remote Areas and Residential Communities: The app can cater to remote areas or residential communities where access to a variety of snacks may be limited. It enables residents to explore different snack providers, customize orders, and have snacks delivered to their doorstep.
- Snack Vending Businesses: Snack vending businesses can adopt the app to modernize their operations and offer a more interactive and personalized experience to customers. The app can complement traditional vending machines by allowing customers to browse available snacks, customize orders, and receive timely delivery.

The Snack Squad app's versatility allows it to be applied in diverse settings and industries where snack ordering and delivery services are relevant. Its customizable nature and efficient delivery management make it a valuable solution in various scenarios, enhancing convenience and satisfaction for both customers and snack providers.

9. CONCLUSION

In conclusion, the development of the Snack Squad app using Kotlin has resulted in a comprehensive solution for customizable snack ordering and delivery. The project aimed to provide users with a convenient and personalized snack ordering experience while streamlining the delivery process. Through the project, several key findings and outcomes were achieved.

The Snack Squad app offers a user-friendly interface that allows customers to browse menus, customize orders, track deliveries, and provide feedback. It provides

convenience and personalization, allowing users to tailor their snack orders according to their preferences. The real-time tracking feature enhances transparency and peace of mind for users, while the feedback mechanism enables snack providers to improve their services continuously.

10. FUTURE SCOPE

There are several potential enhancements that can be made to further improve the Snack Squad app:

- Expansion of Service: The app can be expanded to include a wider range of snack providers, increasing the variety of options available to users.
- Loyalty Programs: Implementing loyalty programs or reward systems within the app can encourage customer retention and engagement.
- Advanced Analytics: Incorporating advanced analytics capabilities can provide valuable insights into customer preferences, ordering patterns, and popular snack choices, enabling data-driven business decisions.
- Integration with Payment Gateways: Integrating the app with popular payment gateways can offer users more flexibility in choosing their preferred payment methods.
- Social Features: Adding social features such as sharing snack recommendations or allowing users to connect with friends and share orders can enhance the social aspect of the app.
- Smart Recommendations: Implementing intelligent recommendation algorithms can suggest personalized snack options to users based on their past orders and preferences.

By incorporating these future enhancements, the Snack Squad app can further solidify its position as a leading customizable snack ordering and delivery platform, catering to a wider audience and delivering an even better user experience.

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APPENDIX

https://github.com/mayank-232/Snack_Squad