PROJECT REPORT

Snack Squad: A Customizable Snack Ordering and Delivery App

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In fulfillment of the requirements for the course of

Android Development in Kotlin

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 purpose of this project is to showcase the use of Android Jetpack Compose, a modern UI toolkit, to build a snack squad app. The Snack Squad app is a simple e-commerce application that allows users to browse and purchase snacks. The project demonstrates various features of Android Compose, such as creating interactive UI components, handling user input, and managing state.

The app provides a registration and login system for users to access the main page. Once logged in, users can view a list of snacks and add them to their cart by tapping on the "Add to Cart" button. The cart displays the list of selected items, and users can proceed to checkout to complete the purchase. Additionally, an admin login allows for viewing the orders placed by users.

1.2 Purpose:

The main purpose of this project is to help developers learn how to utilize Android Jetpack Compose to build a functional and visually appealing UI for a mobile application. By working on this project, developers will gain hands-on experience with Android Studio and learn how to integrate a database into their app.

The specific learning outcomes of this project include:

- Understanding the fundamentals of Android Jetpack Compose and its advantages over traditional UI frameworks.
- Building user registration and login functionality to secure access to the app.
- Designing and implementing the main page with a list of snacks using Compose's declarative syntax.
- Enabling user interaction by allowing them to select snacks and add them to the cart.
- Managing and updating the state of the app to reflect the user's actions.
- Implementing a cart feature to display the selected items and enable the checkout process.

- Integrating a database to store and retrieve user information and order details.
- Implementing an admin login to view the orders placed by users

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.

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.

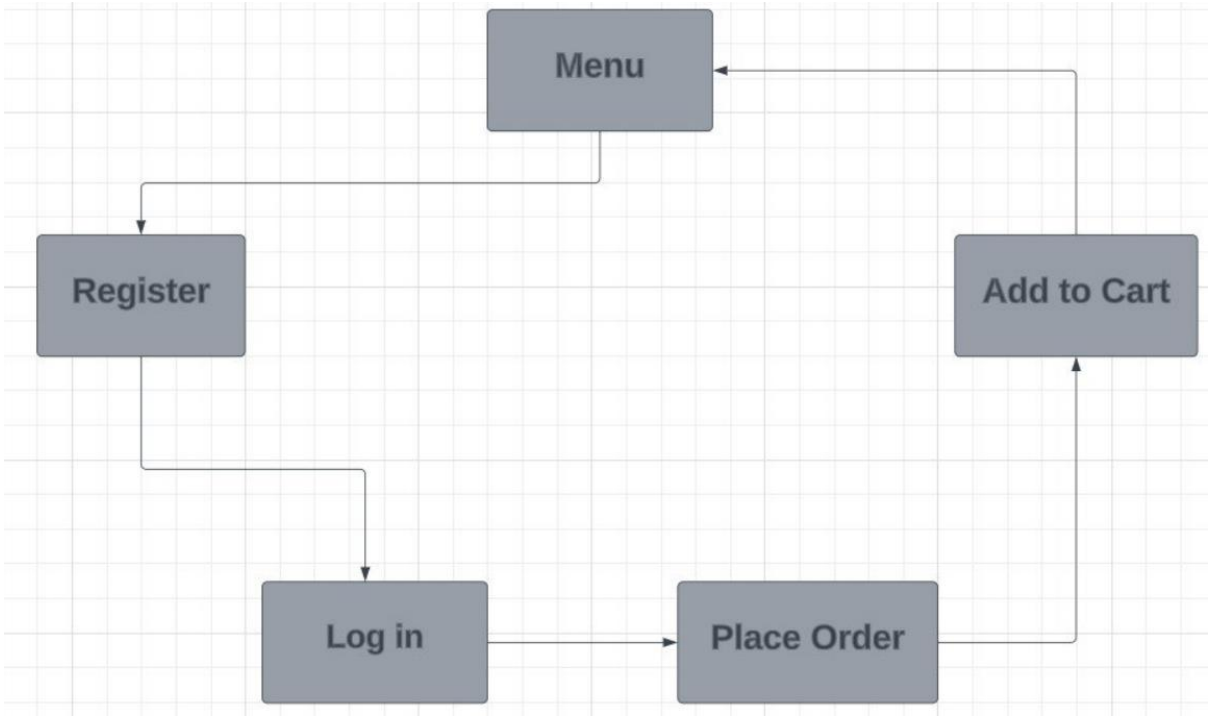


Figure: Block Diagram of Snack Squad

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 Room Database for storing and retrieving data.
- 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.

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

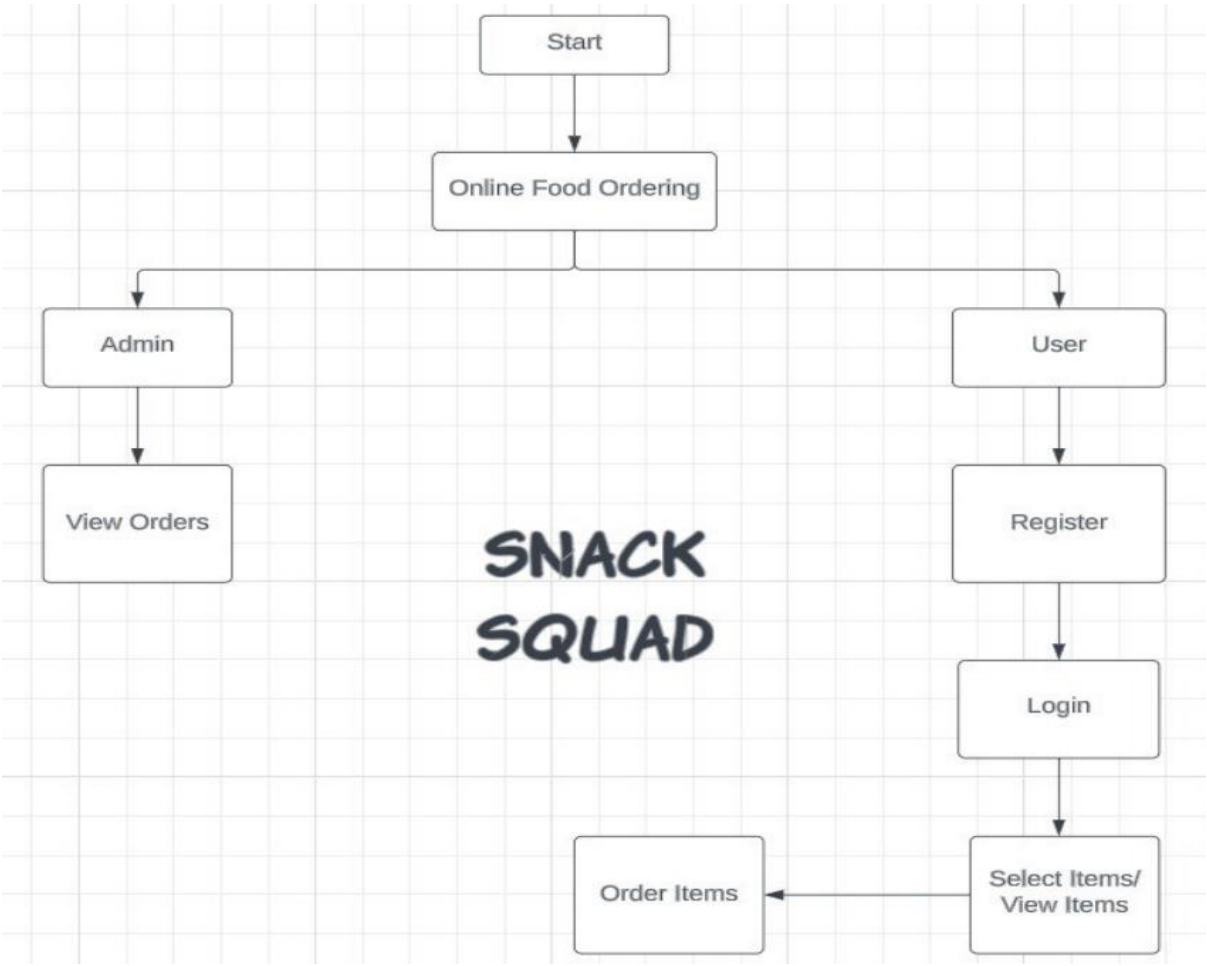


Figure: Flowchart of Snack Squad

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.

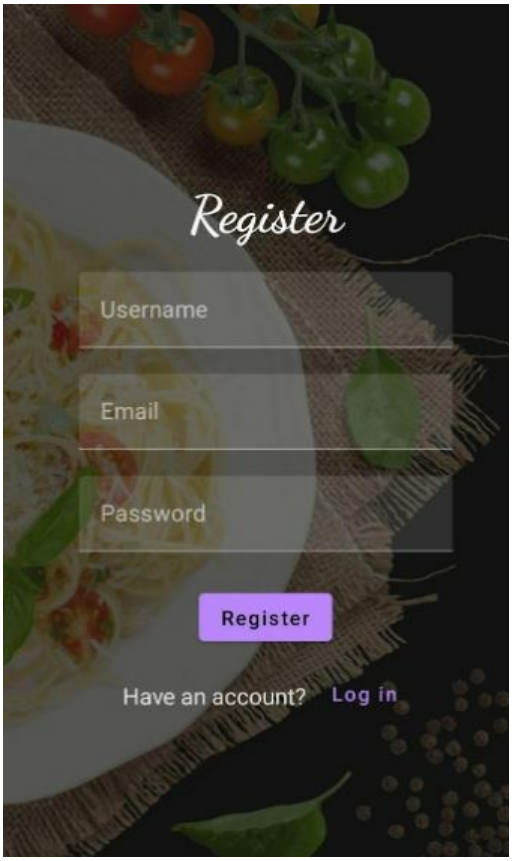
6. RESULT

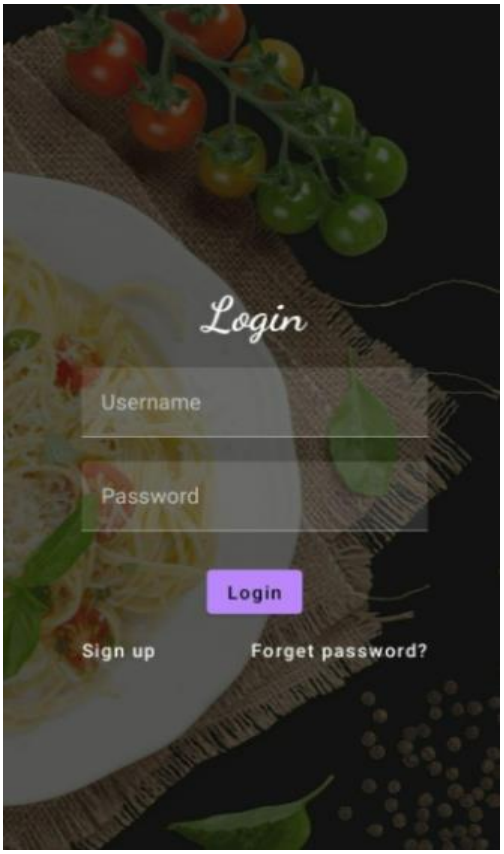
The result of the project is a functional Snack Squad app built using Android Jetpack Compose. The app successfully demonstrates the use of Compose's powerful UI toolkit to create an intuitive and visually appealing user interface for an e-commerce application. Users can register and log into the app, ensuring secure access to the main page. On the main page, they can browse a list of snacks and easily add items to their cart by tapping the "Add to Cart" button. The app effectively manages the state, providing real-time updates and feedback to the user as they interact with the interface. The cart feature allows users to view and manage the items they have selected, making it convenient for them to proceed to checkout and complete their purchase. The integration of a database enables the storage and retrieval of user information and order details, ensuring that the app maintains accurate and up-to-date records.

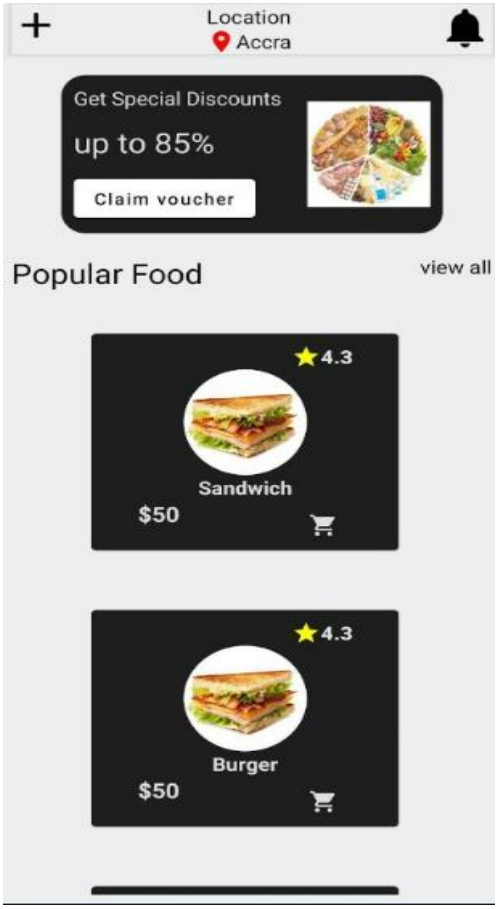
Additionally, the app includes an admin login functionality that allows administrators to view the orders placed by users. This feature provides efficient order management and tracking capabilities, enabling administrators to fulfill orders and keep track of the app's inventory.

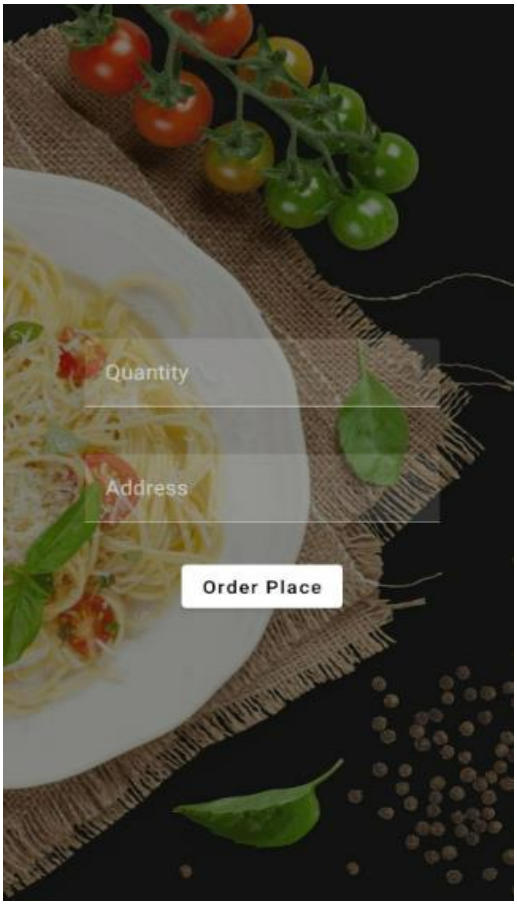
Overall, the result of the project is a fully functional Snack Squad app that showcases the capabilities of Android Jetpack Compose. The app provides a seamless and engaging user experience, demonstrating the potential of Compose as a modern UI toolkit for Android app development.

SCREENSHOTS:


Register
Username
Email
Password
Register
Have an account? Log in


Login
Username
Password
Login
Sign up
Forget password?


Location
Accra
Get Special Discounts
up to 85%
Claim voucher
Popular Food
view all
4.3
Sandwich
$50
4.3
Burger
$50


Quantity
Address
Order Place

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.
- 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.

Overall, the advantages of the Snack Squad app include convenience, personalization, 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 project focused on utilizing Android Jetpack Compose to build a Snack Squad app, showcasing the capabilities of this modern UI toolkit. Through the development of the app, developers gained valuable experience in working with Android Studio and integrating a database into their application.

By successfully completing the project, developers achieved several key learning outcomes. They gained a solid understanding of the fundamentals of Android Jetpack Compose and its advantages over traditional UI frameworks. They also acquired the skills to implement user registration and login functionality, ensuring secure access to the app.

Furthermore, developers learned how to design and create the main page using Compose's declarative syntax, providing an intuitive and visually appealing interface for users to browse and select snacks. They also gained proficiency in managing and updating the app's state, allowing for real-time feedback and interaction.

The project also emphasized the importance of integrating a database into the app, enabling the storage and retrieval of user information and order details. This integration enhanced the functionality of the app, providing a seamless and efficient experience for users and allowing for effective order management from the admin perspective.

Overall, this project served as an excellent learning opportunity for developers to expand their knowledge and skills in Android app development. It provided a practical demonstration of using Android Jetpack Compose to build a fully functional e-

commerce app, encompassing essential features such as user authentication, product browsing, cart management, and order tracking.

By mastering these concepts and techniques, developers are now equipped to embark on their own projects using Android Jetpack Compose, creating dynamic and engaging user interfaces with enhanced usability and interactivity.

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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12. APPENDIX

GitHub Repo Link -

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