Date	9th November 2023
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Project Name	Snack Ordering Application
Maximum Marks	

INTRODUCTION:

Project Overview:

The Snack Ordering App is a mobile application designed to streamline the process of ordering snacks from various vendors. The app aims to provide a convenient and efficient way for users to browse, select, and order their favorite snacks from local or partner snack vendors. Whether it's a quick snack for a movie night at home or catering for a larger event, this app will offer a user-friendly and seamless experience for snack enthusiasts.

Purpose:

A snack ordering app serves as a convenient and efficient solution for satisfying the on-the-go cravings of today's busy consumers. It streamlines the process of selecting, customizing, and ordering a variety of snacks from the comfort of one's mobile device, offering a seamless and contactless way to access a wide range of delectable treats. Whether you're in need of a quick energy boost, a late-night indulgence, or a healthy on-the-fly option, this app provides a user-friendly platform for discovering, ordering, and enjoying snacks, making it a time-saving and delightful companion for individuals seeking convenient and delicious snack options.

Existing problem:

One of the existing problems faced by many snack ordering apps is the lack of a seamless and user-friendly payment system. Users often encounter difficulties when trying to complete their orders and make payments, resulting in a frustrating and time-consuming experience. Issues such as payment processing errors, slow loading times, and a limited range of payment options can deter potential customers and lead to abandoned carts. Improving the payment process by ensuring it is quick, secure, and supports various payment methods is essential for enhancing the overall user experience and increasing the app's success in the competitive snack delivery market.

LITERATURE SURVEY:

References:

Kirti Bhandge, Tejas Shinde, Dheeraj Ingale, Neeraj Solanki, Reshma Totare,”A Proposed System for Touchpad Based Food Ordering System Using Android Application”, International Journal of Advanced Research in Computer Science Technology (IJARCST 2015).

Varsha Chavan, Priya Jadhav,Snehal Korade,Priyanka Teli, ”Implementing Customizable Online Food Ordering System Using Web Based Application”, International Journal of Innovative Science, Engineering Technology(IJISET) 2015.

Resham Shinde, Priyanka Thakare, Neha Dhomne, Sushmita Sarkar, ”Design and Implementation of Digital dining in Restaurants using Android”, International Journal of Advance Research in Computer Science and Management Studies 2014.

Ashutosh Bhargave, Niranjan Jadhav, Apurva Joshi, Prachi Oke, S. R Lahane,“Digital Ordering System for Restaurant Using Android”, International Journal of Scientific and Research Publications 2013.

Khairunnisa K., Ayob J., Mohd. Helmy A. Wahab, M. Erdi Ayob, M. Izwan Ayob, M. Afif Ayob, ”The Application of Wireless Food Ordering System” MASAUM Journal of Computing 2009.

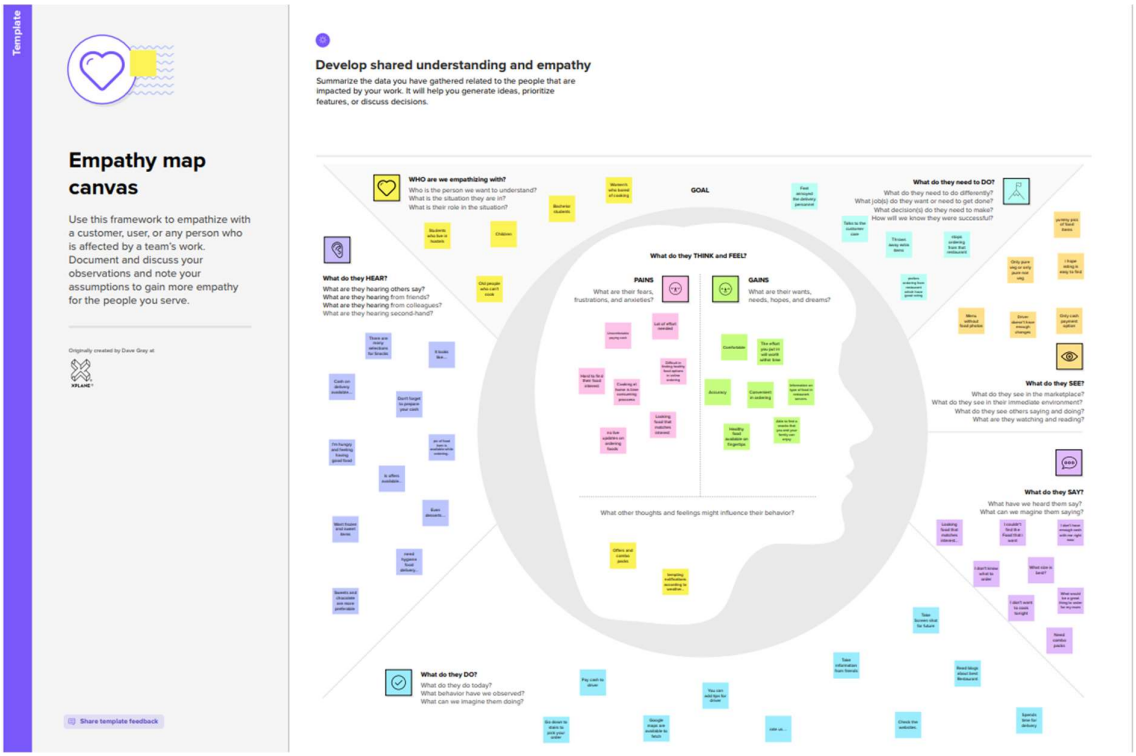
Problem Statement Definition:

The problem statement for the snack ordering app is to create a user-friendly mobile application that allows customers to conveniently browse, select, and place orders for a wide variety of snacks from local vendors and restaurants. The app should address the challenges of limited accessibility to snacks and provide a seamless ordering and payment experience. It should also consider features such as real-time order tracking, customized preferences, and a robust delivery system to ensure timely and accurate delivery of snacks to the customers' desired locations. The goal is to simplify the snack ordering process, enhance the overall user experience, and facilitate the efficient distribution of snacks from vendors to consumers.

IDEATION & PROPOSED SOLUTION:

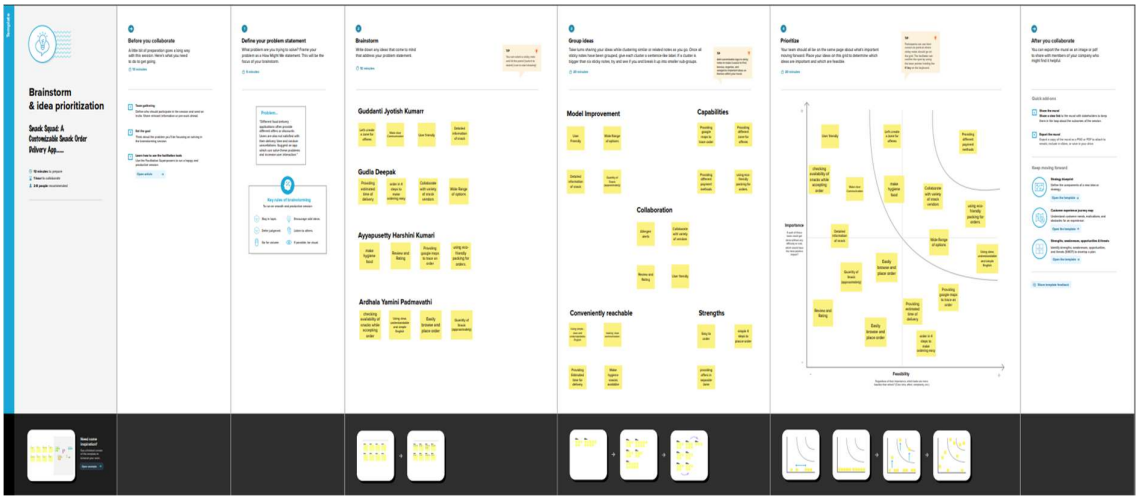
Empathy Map:

An empathy map for a snack ordering app would consider the feelings, thoughts, and behaviors of its users. Users may feel hungry or excited about getting a tasty snack, which can be an emotional driver for them. They might be thinking about convenience, choice, and affordability when using the app. Their behaviors could include scrolling through the menu, customizing their orders, and making quick decisions. Understanding their emotions, thoughts, and actions helps the app's developers design a user-friendly interface that caters to these needs and desires, creating a more engaging and satisfying snack-ordering experience.



Ideation & Brainstorming:

An ideal snack ordering app should offer a user-friendly platform for snack enthusiasts to discover, order, and enjoy a diverse range of snacks. It should include features like personalized snack recommendations based on user preferences and past orders, a visually appealing and easily navigable menu showcasing a variety of snack options, integrated user reviews and ratings for each snack, and a streamlined checkout process. Additionally, incorporating social sharing capabilities to allow users to share their snack choices and experiences with friends and followers would enhance the app's community aspect. To boost customer engagement, the app could host regular snack-themed contests and promotions, offering discounts or exclusive snacks as rewards. Furthermore, an efficient delivery tracking system and secure payment options should ensure a seamless and reliable user experience. The app's success would be driven by its commitment to delivering convenience, variety, and a sense of culinary adventure to snack lovers everywhere.



REQUIREMENT ANALYSIS:

Functional requirement:

A snack ordering app's functional requirements should include features such as user registration and authentication, a catalog of available snacks with detailed descriptions and prices, the ability to add snacks to a shopping cart, order placement and payment processing, real-time order tracking, user reviews and ratings for snacks, search and filter options for snack discovery, order history and order status updates, notifications for order confirmation and delivery, and customer support functionality. Additionally, the app should support multiple payment methods, offer customization options for snacks where applicable, and provide a user-friendly interface with smooth navigation and responsive design for both mobile and web platforms.

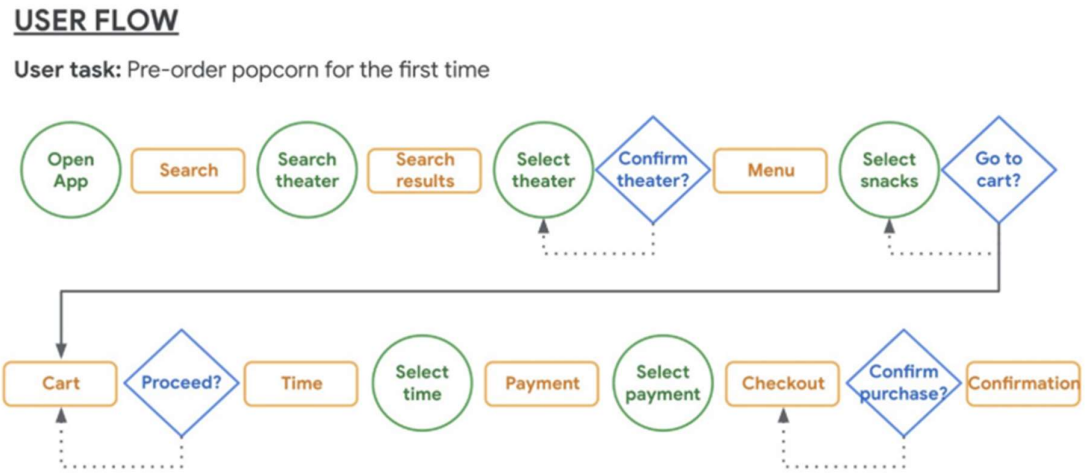
Non-Functional requirements:

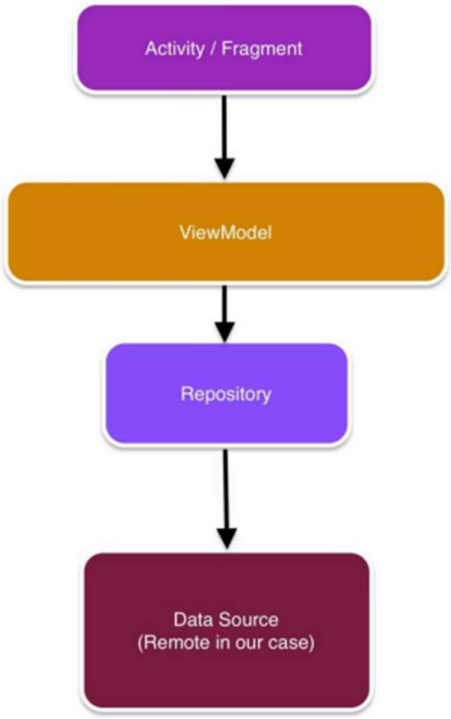
Non-functional requirements for a snack ordering app are essential to ensure its performance, reliability, and user satisfaction. These requirements encompass aspects such as scalability, where the app should handle increased user loads during peak hours without degradation in performance. Security is another key factor, ensuring that customer data and transactions are protected against unauthorized access. Usability and responsiveness are also crucial, as the app should provide a seamless and intuitive user experience across different devices and screen sizes. Reliability and availability are vital to minimize downtime and disruptions in service. Moreover, the app should be efficient in terms of resource utilization to optimize server and network resources. Compliance with industry regulations and standards, as well as support for multiple languages and currencies, may be necessary for a broader user base. Ultimately, a well-rounded snack ordering app should meet these non-functional requirements to deliver a robust, secure, and user-friendly experience.

PROJECT DESIGN:

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.





USER STORIES

User Type	Functional Requirement	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile User)	Registration	USN 1	As a user, I can register for the application using mobile number	I can access my account	High	Sprint 1
		USN 2	As a user, I can register for the application using Facebook	I can access my account	Low	Sprint 2
	Payment	USN 3	As a user, I can use more secure payment options for safety	For Secure payment	High	Sprint 1

Solution Architecture:

The architecture design of the snack Ordering app involves several steps to ensure a well organised, scalable, and maintainable system. Below are the certain steps of architecture building.

1. Login and register Activity
2. Ui design of snack items catalog
3. Cart Activity
4. Payment section

Login and Register Activity:

The solution architecture for the Login and Register Activity encompasses a user-friendly interface

designed with Jetpack Compose. This UI incorporates essential components such as text fields for

email and password input, along with a seamless navigation flow between the login and registration screens. Optionally, Firebase Authentication is integrated for a secure user authentication process, providing a robust and scalable solution for user identity management.

ViewModel architecture is employed to manage the business logic associated with user authentication, including input validation and communication with Firebase Authentication services.

The Navigation Component is utilized to define and manage the navigation flow, ensuring a smooth

transition between login and registration screens.

UI Design of Snack Items Catalog:

The architecture for the UI design of the Snack Items Catalog leverages Jetpack Compose to

create an engaging and intuitive interface. This UI presents snack items with rich visuals, including

images, names, and prices, and incorporates features such as search, filtering, and sorting for a

seamless browsing experience. The Repository Pattern is employed to abstract data access,

facilitating the separation of concerns and promoting a modular structure. This architecture

ensures the efficient retrieval and display of snack catalog information while maintaining scalability

as the catalog expands.

Cart Activity:

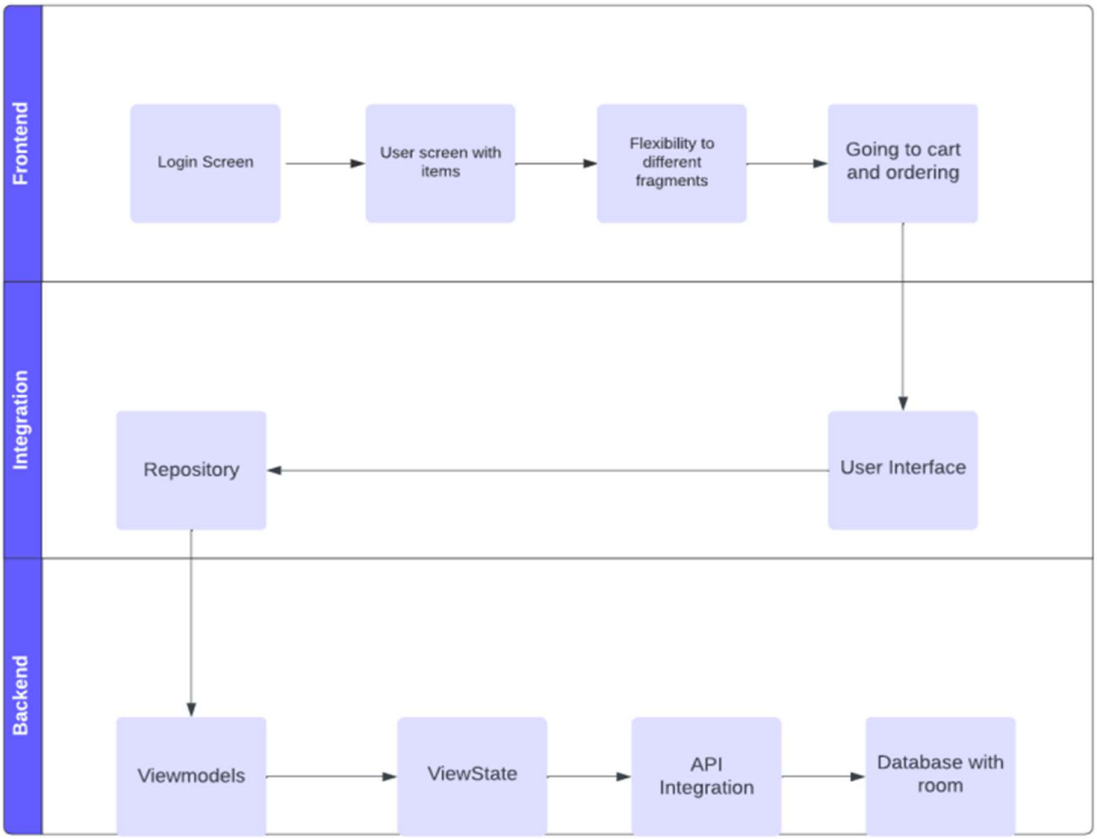
The Cart Activity architecture centers around a user-friendly UI developed with Jetpack Compose,

providing an interactive and visually appealing shopping cart experience. ViewModel architecture is

implemented to manage the business logic associated with the shopping cart, including adding/removing items, updating quantities, and calculating the total cost. The Repository Pattern ensures efficient communication between the UI and the underlying data, managing the shopping cart's state. Navigation Components are utilized to facilitate smooth navigation between the snack catalog and the cart, creating a cohesive and user-centric shopping flow. Payment Section: The architecture for the Payment Section involves the integration of a secure and scalable payment gateway solution. The UI, developed with Jetpack Compose, includes a seamless payment section where users can input payment details and complete transactions. ViewModel architecture handles the business logic associated with payment processing.

PROJECT PLANNING & SCHEDULING:

Technical Architecture:


Frontend
Login Screen
User screen with items
Flexibility to different fragments
Going to cart and ordering
Integration
Repository
User Interface
Backend
Viewmodels
ViewState
API Integration
Database with room

Sl no.	Component	Description	Technology
1	Login Screen	a well-designed login screen balances user convenience with security measures to create a positive and secure authentication experience. The goal is to make it easy for legitimate users to access their accounts while protecting against unauthorized access.	Composable jetpack components with kotlin
2	User Interface	the UI serves as the bridge between users and the functionality of an application. A well-designed UI enhances user experience, making the interaction with the software intuitive, efficient, and enjoyable.	Kotlin
3	Repository	In the Model-View-ViewModel (MVVM) architecture, "ViewState" usually refers to an object that holds the UI-related data for a particular screen or component. The purpose of the ViewState is to separate the concerns of the UI from the underlying business logic or data source.	Kotlin

4	Viewmodels	The ViewModel is a part of the Android Architecture Components and is used to store and manage UI-related data. It survives configuration changes (like screen rotations) and can be shared between different UI components. The ViewModel is responsible for interacting with the backend and providing data to the Compose UI.	Kotlin
5	ViewState	In Jetpack Compose, you use the state variable to represent the state of your UI components. When the state changes, Compose automatically recomposes the affected parts of the UI. State variables are often used to represent data retrieved from the backend.	Kotlin
6	API Integration	Use libraries like Retrofit or the built-in HttpURLConnection to make network requests to your backend API. Retrofit is a popular choice for making API calls as it simplifies the process of defining and handling API requests.	Google console

Sl No.	Characteristics	Description	Technology
1	Open Source frameworks	Utilisation of open source frameworks in the project	Kotlin - jetpack compose
2	Security Implementations	Implementation of security and access controls	Kotlin - jetpack security
3	Scalable Architecture	Architectural design that justifies scalability	Kotlin - jetpack compose
4	Availability	Ensuring high availability of the application	Kotlin

Sprint Planning & Estimation:

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 for the application by entering my mobile number, email, password, and confirming my password.	9	High	Jyotish
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	4	Medium	Harshini
Sprint-2		USN-3	As a user, I can register for the application through google, Facebook	2	Low	Yamini
Sprint-1		USN-4	As a user, I can use more secure payment options for safety	9	High	Jyotish
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	7	High	Harshini
Sprint-2	Dashboard	USN-6	As a user, I can log into the app with save information	5	Medium	Deepak
Sprint-1		USN-7	As a user, I want history of my order and account details as my account section	9	High	Yamini
Sprint-2		USN-8	As a user, I want the app to verify my OTP automatically	8	High	Deepak

Sprint Delivery Schedule:

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	49	8 Days	24 Oct 2023	31 Oct 2023	49	31 Oct 2023
Sprint-2	28	5 Days	01 Nov 2023	05 Nov 2023	28	05 Nov 2023

CODING & SOLUTIONING:

Feature 1:

Display a clear and visually appealing menu with snack options.

Include images, descriptions, and prices for each item.

Search and Filter:

Feature 2:

Implement a search functionality to help users find specific snacks.

Provide filters based on categories, dietary preferences, or popularity.

Cart Functionality:

Feature 3:

Enable users to add snacks to their cart.

Show a summary of the cart, including itemized details and total cost.

Order Placement:

Feature 4:

Allow users to review their order before finalizing the purchase.

Provide options for delivery or pickup.

Feature 5:

Order History:

Maintain a history of users' past orders.

Allow users to reorder easily from their order history.

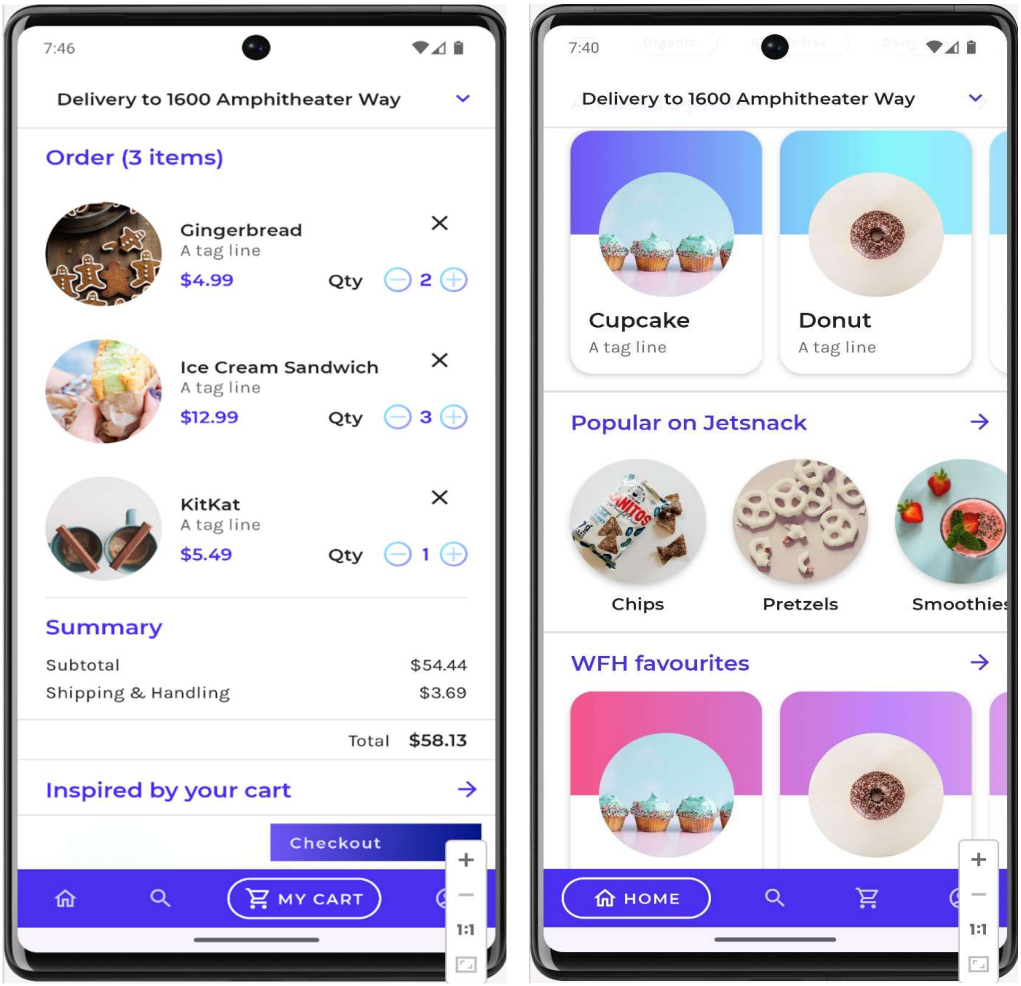
PERFORMANCE TESTING:

Performance Metrics:

The simple snack ordering app is a user-friendly mobile application designed to streamline the snack ordering process. Developed using modern technologies, including Jetpack Compose for a sleek interface, the app offers a range of features. Snack catalog: A visually appealing catalog showcases a variety of snacks ,complete with images, names and prices. Cart Management: Users can easily add snacks to their cart and review selections and modify orders before finalising. Technologies used: Jetpack compose : Modern UI ToolKit

RESULTS:

Output Screenshots:



ADVANTAGES & DISADVANTAGES:

A snack ordering app, like any other technology or service, comes with its own set of advantages and disadvantages. These can vary depending on the specific app and how it's designed and implemented. Here are some general advantages and disadvantages of snack ordering apps:

Advantages:

1. Convenience: Snack ordering apps provide users with the convenience of ordering their favorite snacks from the comfort of their homes or workplaces. This eliminates the need to visit a physical store, saving time and effort.

2. Wide Variety: Many snack ordering apps partner with multiple restaurants or snack providers, offering users a wide variety of snack options to choose from. This variety caters to different tastes and preferences.

3. Customization: Users can often customize their orders, specifying ingredients or preparation methods to suit their dietary restrictions or preferences.

4. Order Tracking: Most snack apps offer order tracking features, allowing users to monitor the status and location of their orders in real-time.

5. User Reviews and Ratings: Users can read reviews and view ratings of snacks and restaurants, helping them make informed choices.

6. Promotions and Discounts: Snack apps often provide exclusive discounts, promotions, and loyalty programs, helping users save money on their orders.

7. Cashless Transactions: Payment through the app is typically cashless, reducing the need for physical currency and making transactions more convenient and secure.

8. Delivery Options: Users can choose between delivery to their doorstep or pickup options, giving them flexibility.

Disadvantages:

1. Fees: Snack ordering apps may charge fees for delivery or service, which can increase the overall cost of the order.

2. Quality Control: The quality of snacks can vary depending on the restaurant or provider. Users might not always receive the same quality as dining in at the physical location.

3. Delivery Time: Busy times or adverse weather conditions can affect delivery times. Users may have to wait longer than expected for their snacks to arrive.

4. Dependency: Relying on snack ordering apps for convenience might discourage people from cooking at home or visiting physical stores, potentially impacting local businesses.

5. Technical Issues: Like all technology, snack ordering apps can have technical glitches or downtime that may disrupt the ordering process.

6. Data Privacy: Users need to share personal and financial information with the app, raising concerns about data privacy and security. It's essential to choose apps with strong security measures.

7. Impulse Spending: Easy access to snacks can lead to impulsive spending, which might not be healthy for individuals' finances or diets.

8. Limited Geographic Coverage: Some snack apps may not be available in all areas, limiting access for some potential users.

CONCLUSION:

In conclusion, the snack ordering app promises to revolutionize the way we satisfy our cravings with its user-friendly interface, extensive snack variety, and efficient delivery system. By seamlessly connecting customers to their favorite snacks, this app not only enhances convenience but also offers a delightful snacking experience. With features such as personalized recommendations, secure payment options, and real-time order tracking, it caters to the modern consumer's demands. The snack ordering app is set to redefine snack-

time indulgence, ensuring that users can conveniently access their favorite treats with just a few taps, making it a must-have for all snack enthusiasts.

FUTURE SCOPE:

The future scope for a snack ordering app is promising, as the food delivery and mobile app industries continue to evolve and expand. Here are some potential areas of growth and development for a snack ordering app:

1. Personalization and Recommendations: Implementing advanced machine learning and AI algorithms to provide personalized snack recommendations based on user preferences, past orders, and real-time data like location and weather.

2. Health and Dietary Features: Offering options for users to filter snacks based on dietary preferences, such as vegan, gluten-free, low-sugar, or keto-friendly snacks. Additionally, providing nutritional information for each snack can be a valuable feature.

3. Augmented Reality (AR) Integration: Allowing users to visualize snacks in their real environment through AR can enhance the user experience and help them make more informed choices.

4. Voice and Chatbot Integration: Developing voice-activated ordering and chatbot support for easy and convenient interaction with the app, making it more accessible and user-friendly.

5. Subscription Models: Introducing subscription plans for regular snack deliveries, providing users with a cost-effective and convenient way to get their favorite snacks on a recurring basis.

The future of snack ordering apps will largely depend on technology trends, changing consumer preferences, and the ability to provide a seamless and convenient experience. Continuously adapting to these factors and innovating within the app will be key to success in this evolving industry.