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# Cross Platform Application for Food Delivery Services

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***Abstract*— In the ever-developing field of food delivery services, the " Cross-Platform Application for Food Delivery Services " prototype project brings great solutions to close this gap. The project aims to create a comprehensive and user-friendly platform that perfectly meets the needs and demands of today's customers. With the proliferation of smartphones and the transition to online services and applications, food delivery has become an important part of almost everyone's life, that is, their daily life. However, existing applications often fall short of providing a real and personalized experience, leaving users with varying needs and priorities. The current problem is that existing food delivery applications have limitations or some shortcomings; This is because these apps lack important features like loyalty services, diet filtering for special meals, personalized recommendations and pre-orders or bulk orders. Users are faced with a fragmented experience that does not meet their personal preferences, nutritional needs and other needs. Our prototype aims to define the food app service concept by offering a cross-platform application with missing features. Loyalty services encourage user retention, purchases and reward user loyalty, custom filters help with dietary restrictions, personalized recommendations enhance user experience knowledge, and pre-ordering or multi-ordering streamlines or clarifies restaurant operations and services. The solution is designed to create a comprehensive, user-oriented and technological platform that defines the new online food business model for convenience and people's satisfaction of use. The " Cross-Platform Application for Food Delivery Services " model not only solves the current problems of food delivery services, but also leads to forward-looking innovation in this field. It promises seamless, personalized and visual delivery of perfect food. This project represents a significant step towards improving the user experience and opens the door to further growth in food service.**

***Keywords*— cross platform, prototype, food delivery, services.**

## I. INTRODUCTION

The advancement of technology has changed the way we eat and satisfy our appetite. In today's world driven by fast-paced lifestyles and the digital revolution, the demand for food delivery services is increasing. However, the fact that the current food delivery application is still open to improvement leads to the development of our food distribution application model. The project aims to create new solutions that meet customers' changing needs and address the inefficiencies and limitations of the current supply chain. Our model will include advanced features such as loyalty service, filters for special dishes, personalized recommendations, and specialty restaurants. These features will revolutionize the way food is delivered to customers and help restaurant owners be more efficient. Various algorithms such as collaborative filtering, content-based filtering and hybrid models have been adopted in recommendation and food distribution. These algorithms show different levels of accuracy in recommendations. For example, collaborative filtering shows that there is some truth to user feedback. However, shortcomings such as cold start problems and problem infrequency limit its effectiveness. Content-based filtering can provide accurate results but may struggle with the diversity of recommendations. Our project will explore these algorithms and adapt them to the specific needs of the food delivery application to arrive at the right recommendations when solving these problems. Research into food distribution practices highlights the fundamental limitations of current approaches. These shortcomings include poor personalization of recommendations, inaccurate delivery time estimates, lack of attention to consumer preferences and poor use of loyal service methods. In addition, existing platforms often have problems with the visibility of dishes, making it difficult for users to know the options. Our project will carefully analyse these problems to provide solutions that improve the user experience, making it more personal, useful and effective. New solutions will be used in our project to solve the research problem. These may include creating optimal strategies, using machine learning and artificial intelligence to predict delivery times, and the use of custom filters. Our loyalty program is designed to provide real value to users and restaurants. By combining these features, our model will redefine the criteria for food delivery applications and fill gaps in the existing literature. Our team involved in field research is very diverse. We will update the existing algorithm to improve the accuracy of the personalized recommendation process and ensure that users receive food recommendations that suit their preferences and eating and drinking needs. The introduction of the loyalty program will benefit customers and restaurant partners by engaging and encouraging users to continue making decisions. Our project aims to improve accuracy, security and overall user experience in the field of food application by eliminating the deficiencies identified in existing studies and setting new standards for the industry.

## II. LITERATURE REVIEW

1. Lidya Chitra Laoh, Timothy Adithia P, (2020) “Android App Food Delivery Service”: This study aims to increase customer convenience in Airmadidi Indonesia. The aim is to bridge the gap between existing practices and support the food and beverage industry, especially small retailers with limited resources. This study used a modelling approach that includes the use of diagrams and scenarios for different users such as buyers, sellers and drivers.
2. Zahita Cahyani, Rahmat Nurcahyo, (2020) "Research on Ordering Goods in Indonesia": The purpose of this study is to analyse the popularity of two applications for mobile food service (MFOA) ordering goods in Indonesia, namely GoFood. and GrabFood Star rating based on customer information. This study used a combination of MySQL data extraction and web scraping techniques to collect data for two applications. Data were tested for descriptive statistics, normality, and homogeneity. Mann-Whitney analysis was used in the comparison because the data were not normally distributed and were not homogeneous. The results show that GoFood has more restaurants in the food and beverage category compared to GrabFood. Overall, GoFood is more popular than GrabFood for mobile food delivery. The strengths of this study include revealing the popularity of food delivery services, which is useful in strategic planning and decision-making. However, this study still has limitations, such as focusing on Jakarta, and further research is needed to explore the factors affecting the popularity of these apps.
3. Andhika, Yonky Pernando, (2019) "Global Application! Using a mobile phone to buy vegetarian food": This article describes a project on the development of a mobile phone to promote carrying and selling vegetarian food in Batam, Indonesia. Research topics. The aim of the research is to create a platform that will allow people to easily access and purchase healthy foods using Android technology. The key technology adopted is the integration of cash on delivery (COD) as payment method to increase public trust.
4. Cristina-Edina Domokos, Barna Sera, (2018) "Netfood: Food Ordering and Delivery Software System" ordering and efficient tracking from suppliers.
5. Faisal Bin Al Abid, A.N.M Rezaul Karim, (2017) "Cross-Platform Development of Online Food Delivery Applications" highlights its objectives, methods, procedures, results and advantages/disadvantages. The main purpose of this study is to solve the problems of creating applications for various mobile devices such as Android and iOS by using the cross-development process.

## III. OBJECTIVES

1. Improve user experience: To create an intuitive and effective user interface for seamless navigation and interaction application.

2. Personalized recommendations: To create an algorithm to provide food recommendations based on user preferences and order history.

3. Loyalty Program Integration: To create a loyalty program that encourages retention and repeat business by rewarding frequent users.

4. Special Diet Filters: Meals can be easily filtered according to special diet to meet different customer needs.

5. Instant Order Tracking: To Enable a feature that allows users to track their orders and know food preparation and delivery.

6. Efficient operation: To Allow users to schedule food orders in advance for easy pickup or on-time delivery.

7. Cross-platform compatibility: To use Flutter to ensure seamless functionality and compatibility across iOS and Android platforms.

8. Expand restaurant options: To integrate more restaurants and flavours to provide users with a variety of dining options.

9. Streamline the returns process: To optimize the returns process to ensure fast order processing and efficient delivery.

10. Advanced security measures: To ensure security protocols to protect user data and transactions, ensure the reliability of the application.

## IV. LIMITATIONS

1. Limited native: Cross-platform apps may not take full advantage of a particular platform and may face limitations compared to native apps.
2. Performance varies: App performance may vary from device to device and may not match the fluidity of native apps.
3. Plugin compatibility: Not all plugins are available or updated on Flutter, which may limit some functionality.
4. Development Challenges: Complex features may require further development to ensure cross-functional integration.
5. Platform-related issues: Cross-platform applications may face unique issues that require individual solutions.
6. Security issues: Ensuring the security of user data and transactions across multiple platforms can be difficult.
7. Resource intensive: Menu visualization can be resource intensive and may affect application performance on older devices.
8. Learning Curve: Developers will need time to learn Flutter, which will impact initial development time.
9. Dependencies on Flutter updates: Compatibility with future Flutter updates must be maintained.
10. App Store Review Process: iOS and Android have their own review processes, which can cause potential delays in app updates and releases.

## V. CONCLUSION

In conclusion, the development of our "Cross-platform application for food distribution" model is an important step in the reform of the food industry. Our work aims to provide comprehensive information, user-oriented and technological solutions to problems in this area, focusing on features such as loyalty services, special diet filters, personalized recommendations and booking capabilities. Also by solving the limitations of existing food delivery applications and improving the user experience, our model has the potential to create new business models. It will deliver a seamless, personalized and visually immersive food shopping experience that meets users' needs and preferences. This project not only meets the needs of today's fast-paced digital world, but also paves the way for future innovations in food delivery services.

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