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Exploring the Effectiveness of Preordering Technologies in the Food Industry to Other Technology Solutions

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Abstract: ***There is frequently a sizable influx of people looking to interact, shop, or eat on college campuses as well as in public locations like food courts and retail malls. But because of the heavy traffic, there are frequently huge queues at the restaurants, which costs customers a lot of time. The current COVID-19 outbreak has also highlighted how crucial it is to minimise intimate contact between people. As a result, using contactless ordering and payment systems has grown in popularity as a way to reduce the spread of disease. Hence, using effective and secure contactless transaction technologies may help to improve customer service while also emphasising public health and safety. To solve the problem of lengthy queues at restaurants in congested public spaces. We will make an application which it let you schedule a certain time for your order to be ready by placing an advance food order while shopping or even from home. Then, simply go to the food outlet and collect your food, ready to enjoy. Our Work can be used in a restaurant and universities cafeteria.***
Keywords: Android Application, Crowd Management, Time Management, Takeaway.

I. INTRODUCTION

With the rise of urbanization, large cities have become hubs of activity, with people constantly on the go. From shopping to casual meetups, these bustling cities offer a wide range of experiences. However, with large crowds comes the issue of long wait times at food establishments, such as food courts, malls, and food trucks. This often leads to frustration among customers who are forced to wait in long lines before placing their orders. In the wake of the COVID-19 pandemic, the need for contactless pickups and transactions has become more important than ever. The crowded conditions at food hauls and long lines have increased the risk of the spread of various diseases.

As a result, there is a need for a solution that can reduce customer wait times while also ensuring their safety. This is where the concept of a food ordering application comes in. The primary objective of this app is to provide customers with the convenience of pre-ordering food from participating restaurants. By using this app, customers can place their orders in advance and specify their preferred pickup time. This will help them save time that they could spend doing something else while also avoiding the long lines that are typical of busy food establishments.

The app will be designed to manage data related to food items, orders, and customer information for the efficient administration of participating restaurants. This will allow restaurants to keep track of their inventory, manage their orders, and ensure that their customers are satisfied with their experience. The app will be cross-platform, which means that it will be available for both Android and iOS devices.

This will ensure that the app can reach a wider audience and cater to the needs of a diverse range of customers. In terms of functionality, the app will allow customers to browse participating restaurants and their menus, select their desired food items, and place their orders.

Customers will also be able to specify their preferred pickup time and pay for their order through the app. Once the order is ready, customers will be notified through the app and can either pick it up alone or split it with a friend or family member. For participating restaurants, the app will provide a dashboard that will allow them to manage their inventory, track their orders, and view customer information.

This will enable restaurants to streamline their operations and provide better service to their customers. Overall, the food ordering app is an innovative solution that aims to provide customers with a seamless and convenient food ordering experience. With its cross-platform functionality, efficient data management system, and user-friendly interface, the app is set to revolutionize the way we order food from busy food establishments.

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II. LITERATURE SURVEY

Food takeaway management is an emerging research topic that still has a lot of unexplored areas for further investigation. While some research has been conducted in this domain, the existing work has mainly focused on optimizing applications, time management, and crowd management.

One study by Shady Boukhary and Eduardo Colmenares explored the use of Uncle Bob's Clean Architecture to address state management issues in Flutter mobile applications. The study utilized a Flutter package to create an application from scratch and examined the architecture. The researchers found that the Flutter Clean Architecture was a potentially effective option for the architecture of Flutter mobile applications. Another study by Pallavi Munihanumaiah and Sarojadevi H. proposed a novel research methodology for designing and building mobile consumer apps over communication networks. The study targeted consumer applications such as utility billing and electronic health records (EHR) and implemented a mobile client that received services from a base station server linked to a database server. The applications were evaluated for accuracy and performance, considering variable input data types and sizes. A third study by Bhuvana Sekar and Jiang B. Liu described the TriTHEApp Android application, a location-based service designed to provide three features: arrival announcement, handset theft monitoring, and emergency call. The arrival announcement tool aimed to make the client's uncertain waiting time known, while handset theft monitoring tracked the user's Android device. The emergency call feature was designed to ensure the personal safety of the Android device user. Finally, a study by Zimei Liu examined the impact of different crowd flows on crowd risk in large gathering spots. The study analysed four common crowd flows, including two-way flow, heterogeneous crowd flow, circular flow, and arching phenomenon, based on crowd route selection investigation. The study aimed to assess the crowd risk associated with large crowds gathering in large gathering spots. Overall, the existing research in food takeaway management highlights some critical areas that need further investigation. For instance, the studies show the importance of optimizing applications for improved user experience, ensuring data accuracy and performance, enhancing location-based services, and mitigating crowd risks. However, several gaps in the research still need to be addressed. For instance, there is a need for research on food takeaway management that considers the environmental impact of food packaging and delivery. Also, there is a need for studies that explore the impact of food takeaway management on food waste reduction and sustainable food systems. Furthermore, research that examines the challenges faced by food takeaway management in low-income and rural areas is necessary. Such studies can help identify opportunities to improve food delivery and access to healthy food options in these areas.

In conclusion, while the existing research in food takeaway management has highlighted some critical areas for further investigation, there is still much to be explored in this emerging research domain. Future research in this area should aim to address the identified gaps to improve food takeaway management practices and promote sustainable food systems.

III. METHODOLOGY

This section will go over design options and how we plan to implement the application.

The following methodology describes the development process for a food takeaway application, which is built using Flutter framework and Dart programming language. The application includes a backend system built on top of Firebase Realtime Database. To begin, the latest version of Flutter and Dart SDK should be downloaded and installed. Once the development environment is set up, the first step is to set up the project by creating a new Flutter project using the command line interface. The project name and package name should be defined in order to create a package file that will be used to upload the application to app stores. After the project is created, the first screen of the application should be designed using the Flutter widgets. The screen layout can be created using XML-like syntax, known as Flutter Widgets, which allow for the easy creation of interactive UI elements. The design can be previewed using the built-in Flutter simulator or by running the application on a connected device. Once the initial screen is complete, the backend system should be set up using Firebase Realtime Database. This database is a NoSQL cloud database that allows for the real-time storage and retrieval of data, which is useful for updating menus, orders, and other data in real-time. The database should be set up and initialized within the Flutter application using the Firebase SDK, and the data should be stored and retrieved using Firebase API. After the backend system is set up, the next step is to add features such as menu browsing, order placement, and payment processing. These features can be implemented using Flutter widgets, which can be customized to match the application's design. To process payments, integration with payment gateways such as Stripe or PayPal can be used. Once the application is complete, it should be thoroughly tested on both simulators and real devices to ensure that it functions correctly and is user-friendly. The application should also be optimized for performance, including minimizing load times and reducing memory usage. Finally, the completed application can be uploaded to app stores such as Google Play or the Apple App Store.

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The application should be properly signed and packaged, with all necessary metadata such as descriptions, icons, and screenshots included. Once uploaded, the application can be marketed to potential users through social media and other marketing channels.

IV. DESIGN MODULES OF TAKEAWAY APPLICATION

Application divided into two parts USER and ADMIN.

A. User Side

1) Screen Splash

When you launch an Android application, the first splash screen appears, which will blink for 30 seconds. The splash screen displays application names along with its logo. Basically, the splash screen is an inbuilt feature of the Android Studio tool, and after selecting the splash screen module, it directly opens the inbuilt design of the screen.

2) Registration Screen/Menu Screen

The registration screen will appear after the splash screen. The user must first register in order to proceed with the process. The registration screen requires the user's full name, email address, mobile phone number, and full address. Then, after clicking the Proceed button, the next screen, which is a search screen, will appear. If the user forgets his password, he will receive a forget password link to his registered email address, where he can update his password. Menu Screen will appear after registration screen. The home screen will appear on the left side of the application, with various options for users to choose from. The home screen displays the registered logo and user name, as well as the user's contact information, which the user can change as needed. It also includes a list of restaurants, a shopping cart, and tracking.

3) Payment

Payment gateways such as BHIM, PAYTM, PAYUMONEY, and others have been used in this application. All payment gateways are available to users for online payments.

B. Admin Side

Admin can manage activities like accept order or cancel, add stocks of orders, add items and remove it.

1) Login Screen

The first screen will be a login screen. Admin login with Credentials.

2) Item Management

Admin can manage items like adding or deleting and can give modification choices to user.

V. CONCLUSIONS

Takeaway management is a comparatively new research topic and there is plenty of space for further research in this domain. This application will make life quite easier. It will help in saving the time which can be spend with friends and family and reduce the crowd stress on the restaurants, cafeterias in universities where recess time is limited and every public food clubs. Customer can pay online and schedule the takeaway time. It has the navigation system which help customers to reach the destination. When the food is ready it will notify the customer to take away the dish. Finally, in today's fast-paced world, people are always looking for ways to save time and get things done efficiently. The food takeaway app is a perfect solution for those who want to enjoy their favorite meals. As we have seen, the benefits of using a food takeaway app are numerous. Firstly, the app provides a user-friendly interface that allows customers to browse through menus, place orders, and make payments easily. This convenience saves customers time and effort that they would have spent standing in the long queues. It also helps restaurants to improve their efficiency by reducing the time taken to process orders. Secondly, the food takeaway app makes it easy for customers to find and order food from a wide range of restaurants. This variety of options ensures that customers have access to their preferred cuisines and can try new foods. Thirdly, the app provides a platform for restaurants to reach a wider audience and increase their sales. By listing their menus on the app, restaurants can attract customers who may not have heard of them before, thereby increasing their customer base and revenue.

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In addition, the food takeaway app provides valuable insights into customer behavior that can be used to improve the user experience and tailor marketing efforts. This data can help restaurants to identify popular dishes, understand customer preferences, and offer personalized promotions that are likely to appeal to customers. Overall, the food takeaway app has transformed the way we order food. It has made the process simpler, more convenient, and more efficient. The benefits of using a food takeaway app are clear, and we can expect to see more and more people embracing this technology in the future.

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REFERENCES

[1] Shady Boukhary and Eduardo Colmenares," A Clean Approach to Flutter Development through the Flutter Clean Architecture Package. Breckling, Ed., The Analysis of Directional Time Series: Applications to Wind Speed and Direction, ser. Lecture Notes in Statistics. Berlin, Germany: Springer, 1989, vol. 61.

[2] Shao Guo-Hong, Beijing Vocational College of Agriculture, Beijing, CN," Application Development Research Based on Android Platform". M. Wegmuller, J. P. von der Weid, P. Oberson, and N. Gisin, "High resolution fiber distributed measurements with coherent OFDR," in Proc. ECOC'00, 2000, paper 11.3.4, p. 109.

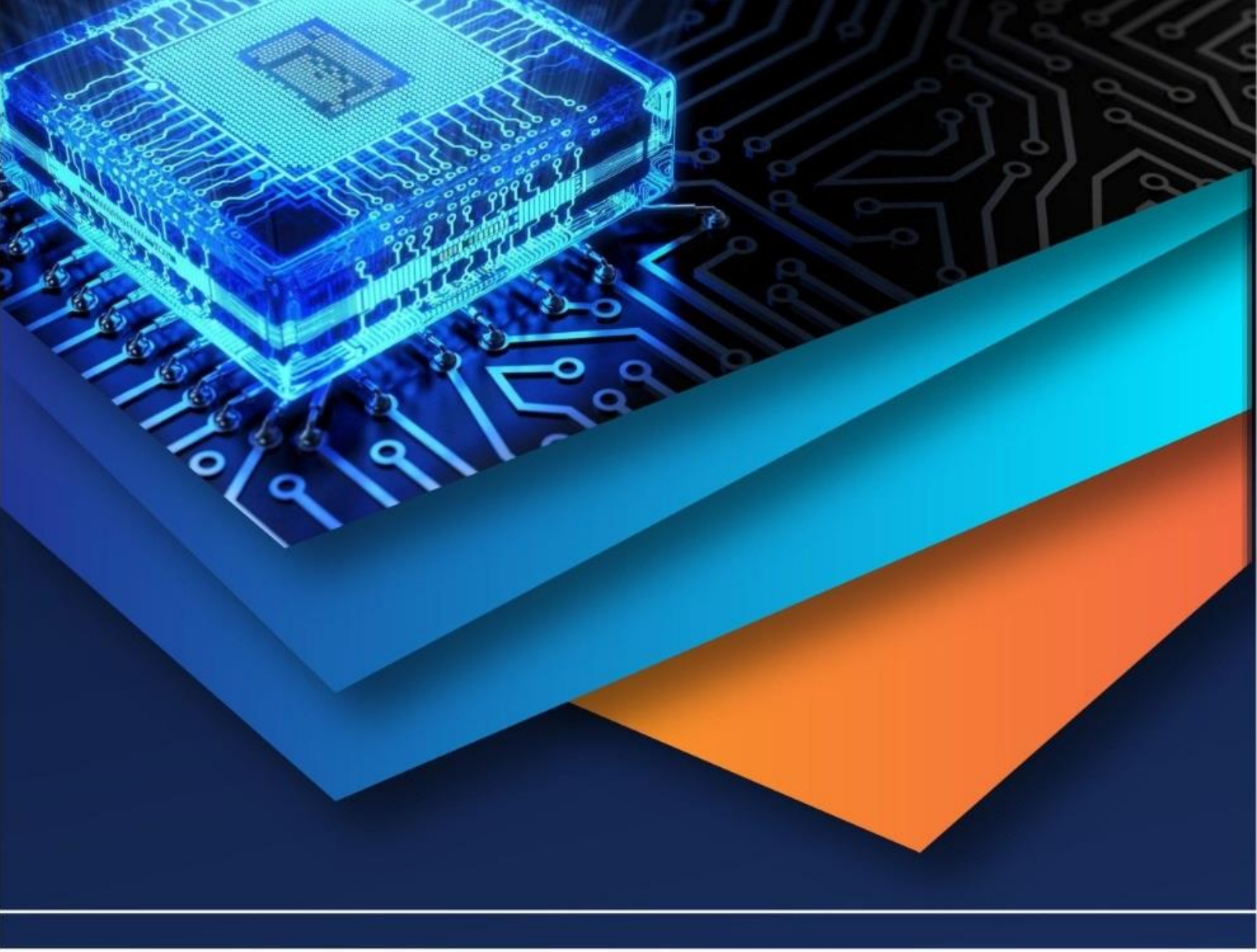
[3] Pallavi Munihanumaiah, Department of CSE, Nitte Meenakshi Institute of Technology, Bangalore, India and Sarojadevi H., Department of CSE, Nitte Meenakshi Institute of Technology, Bangalore, India," Design and development of network-based consumer applications on Android" (2002) The IEEE website. [Online]. Available: http://www.ieee.org/

[4] Bhuvana Sekar, Computer Science and Information Systems Department, Bradley University, Peoria, Illinois, U.S.A and Jiang B. Liu Computer Science Information Systems Department, Bradley University, Peoria, Illinois, U.S.A," Location based mobile apps development on Android platform".

[5] Lars Carius, Technical University of Munich," Cloud-Based Cross-Platform Collaborative AR in Flutter". "PDCA12-70 data sheet," Opto Speed SA, Mezzovico, Switzerland.

[6] Faisal Bin Al Abid, Department of CSE, International Islamic University, Chittagong, Bangladesh and A.N.M. Rezaul Karim Department of CSE, International Islamic University, Chittagong, Bangladesh," Research on the Cross-app development". J. Padhye, V. Firoiu, and D. Towsley, "A stochastic model of TCP Reno congestion avoidance and control," Univ. of Massachusetts, Amherst, MA, CMPSCI Tech. Rep. 99-02, 1999.

[7] Bin Zhang, Beijing University of Posts and Telecommunications, Beijing, China," Research and implementation of cross-platform development of mobile widget".



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