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GraBriyani@KRUs Kitchen

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Abstract : Due to the global pandemic COVID-19, the use of online food ordering systems had tremendously increased. This is similar to KRUs Kitchen, a catering service company that provides 'nasi briyani' as its main menu during this pandemic. However, this company uses a manual way of food ordering which is tedious to be managed. Therefore, the GraBriyani@KRUs Kitchen mobile based application was proposed to provide a more systematic and efficient food ordering and delivery. This project was conducted by following the Rapid Application Development (RAD) methodology, which starts from requirements planning and ends with cutover. It was evaluated through User Acceptance Testing (UAT). The objective of this evaluation is to test the prototype whether the application is easy to use and to ensure that the application works as expected. Apart from that, the other reason is to find any errors or bugs so that it can be fixed before the final system is released. Feedback received from respondents will be used to improve the application as well. There were 34 respondents involved in the evaluation. Positive feedback was received from the respondents since they agreed that the prototype could be used to complete the tasks as it is intended for. Moreover, it was found to be useful, can be used easily and has security elements. Overall, the respondents are satisfied with the prototype. This project will be beneficial for the KRUs Kitchen's staff, customers and runners. The KRUs Kitchen's staff can manage the orders more efficiently and systematically, while the customers can place orders and keep track of their orders more easily. On the other hand, the runners can manage their delivery more efficiently. Most importantly, this system will help the caterer to provide better customer service to the customers.

Keywords: GraBriyani@KRUs Kitchen, Online Food Ordering System

1. Introduction

Food delivery is a courier service where food is provided to customers by restaurants, shops or independent food delivery companies. Orders are generally taken from a restaurant or grocery store's website or phone, or through a food ordering company. Main dishes, tableware, snacks, desserts or food may be included in the shipped pieces, which are usually delivered in boxes or bags. Runners normally

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drive, but they may use motorcycles or electric scooters in major cities, where houses and restaurants are very close to each other. Malaysia's 100% home delivery market is valued at RM253 million in 2014 and is forecasted to grow at 11% per annum [1]. This is specifically evident in the segment of fast food that offers home delivery.

Particularly during this time of the Covid-19 pandemic, the online food delivery system is becoming increasingly relevant. The government has set up the MCO (Movement Control Order) to control citizens' migration to minimize the spread of the virus. The individuals then use the online food delivery system to order regular meals. This MCO also affects the income of various industries, especially the catering industry. One of them is KRUs Kitchen. KRUs Kitchen is a company specializing in the provision of services for food ordering as well as event and canopy management. Since 2005, KRUs Kitchen has begun operating and has a lot of experience in offering better service and quality food service as well as delicious dishes at reasonable prices. Their expertise is in providing government, corporate and royal bodies with catering and food services for weddings and other banquets. They were excelling in the catering services before the pandemic, however now their business is highly affected due to the restrictions set by the government. To prevent the spread of the virus, the epidemic's outbreak caused people to need to comply with the SOP (Standard Operating Procedure), which has caused the ceremonies to be cancelled or postponed. Indirectly, this has affected the KRUs Kitchen's operation.

KRUs Kitchen is now relying only on 'nasi briyani' sales online. The customers need to order the food by using WhatsApp or Facebook Messenger, and the KRUs Kitchen staff will manage the order manually. This was a tedious work especially when the order comes from many customers from different locations. Therefore, GraBriyani@KRUs Kitchen was created to facilitate KRUs Kitchen's staff and customer to order and deliver the 'nasi briyani'. GraBriyani@KRUs Kitchen is a system designed to enhance KRUs Kitchen's business and provides a more systematic and efficient way of managing orders. It will act as an effective method of food delivery to provide and improve the restaurant's efficiency, affordability and credibility.

2. Materials and Methods

Rapid Application Development (RAD) was used to develop this system [2]. There were four phases in RAD: requirements planning, user design, rapid construction, and cutover. The requirements were obtained by interviewing the potential user and referring to current systems and existing literature on food ordering systems. The low-fidelity prototype was designed and developed to fulfil the gathered requirements. The system was developed by using Kotlin and SQL. Among the tools that were utilized are Android Studio Development Kit and phpMyAdmin in the rapid development stage. Finally, an evaluation was conducted to test the usability of the developed system through an online questionnaire. The scale used for these questions is five-point Likert scale which ranges from strongly disagree to strongly agree [3]. The system will be updated according to feedback gathered from respondents.

3. Results and Discussion

GraBriyani@KRUs Kitchen is intended for three types of users which are customer, admin and runner. They need to install the GraBriyani@KRUs Kitchen on their mobile phones, sign up and log in to the apps before they can use it. The main screens for the customer are shown in Figure 1. After login, the customer can make an order, purchase order and view the payment history through the installed apps. The customer can choose the 'nasi briyani' type from the available menu, the quantity and delivery date for each order. They can also update or delete the order made.

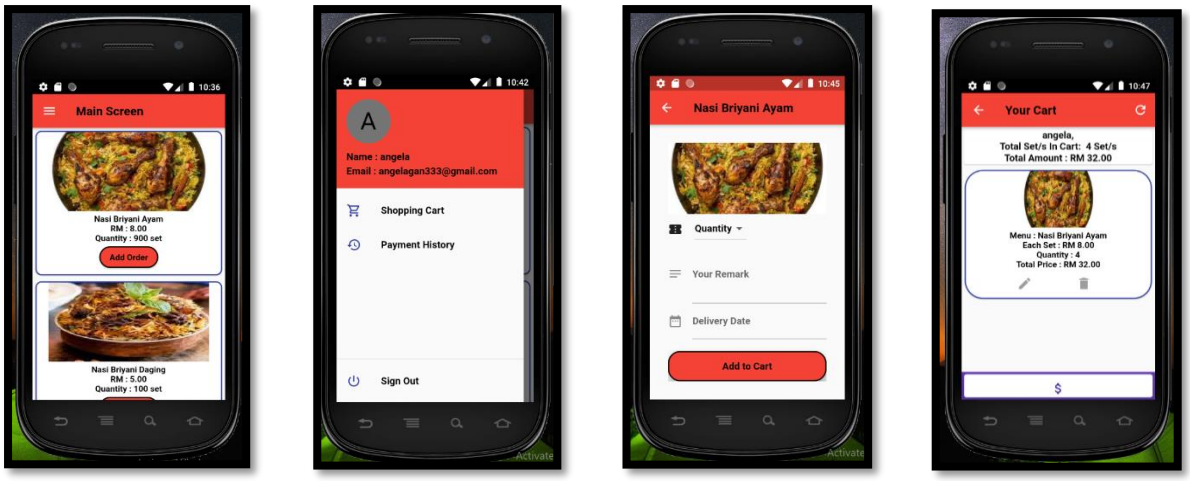

Figure 1: The interface of GraBriyani@KRUs Kitchen (Customer)

Among the functions that can be performed by the admin after login are manage menu, manage order, manage runner and view report. The main screens are depicted in Figure 2. The admin can mainly add, update and delete the available 'nasi briyani' on sale. More importantly, the admin can view the orders made by the customers and assign runners appropriately to deliver the order. At the end of the month, the admin can also view the sales that they have achieved throughout the month.

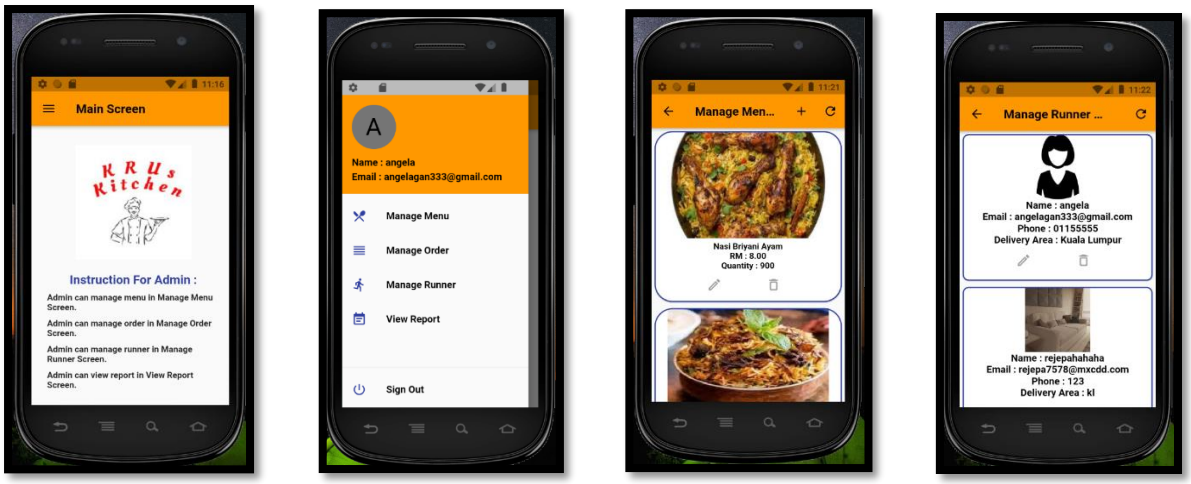

Figure 2: The interface of GraBriyani@KRUs Kitchen (Admin)

For the runners, they can view orders and update order status once they login to the GraBriyani@KRUs Kitchen apps. The main screens are illustrated in Figure 3. Once the order has been assigned to the runners, they can check through the GraBriyani@KRUs Kitchen apps. Once they have delivered the 'nasi briyani', they can set the status to delivered, so that the admin can know that the food has been delivered successfully.

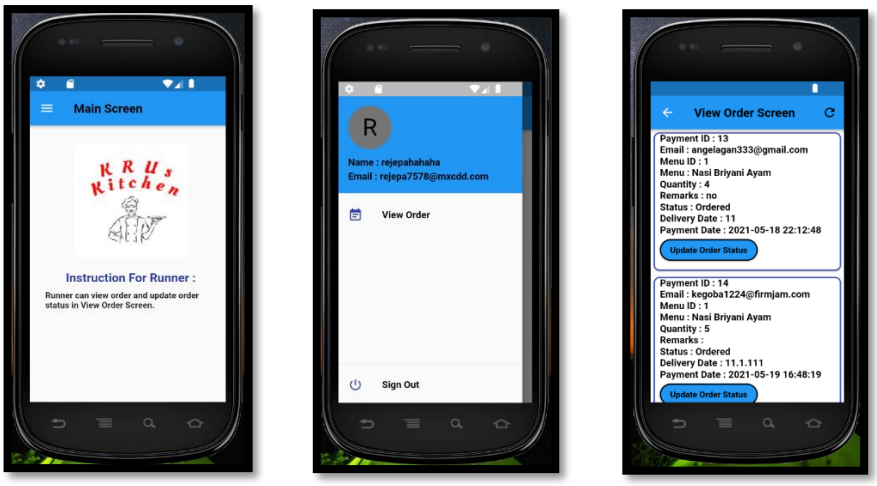

Figure 3: The interface of GraBriyani@KRUs Kitchen (Runner)

The GraBriyani@KRUs prototype was tested using User Acceptance Testing (UAT) to test whether the application is easy to use and to ensure that the application works as expected [4]. Apart from that, the other reason for testing the apps is to find any errors or bugs so that it can be fixed before the final system is released. Feedback received from respondents will be used to improve the application as well [5]. The potential respondents were contacted through email, and they were provided with the details and steps to conduct the test on the GraBriyani@KRUs Kitchen application. They were instructed to install the GraBriyani@KRUs Kitchen application on their mobile phones and try to use it. After they finished testing the application, the respondents were asked to fill in an online questionnaire to provide their feedback regarding the tested application. There were 34 respondents involved in the evaluation. The questionnaire was adapted from Lund [6], which includes questions about the usability of the application, which comprises of completion of task, usefulness, ease of use, satisfaction, and security of GraBriyani@KRUs Kitchen application.

Based on the analysis of the data gathered, most of the respondents agreed on the completion of the task. This indicates that the task and time to complete the task are reasonable and acceptable. Besides, it is also found to have security features. Furthermore, majority of the respondents agreed to the usefulness of GraBriyani@KRUs Kitchen application. In this paper, the outcomes for ease of use and satisfaction are provided. Figure 4 illustrates the outcome for ease of use for Briyani@KRUs Kitchen application, where majority of the respondents agreed that the application is easy to be used. This suggests that the application can be used easily without a need for training to use it.

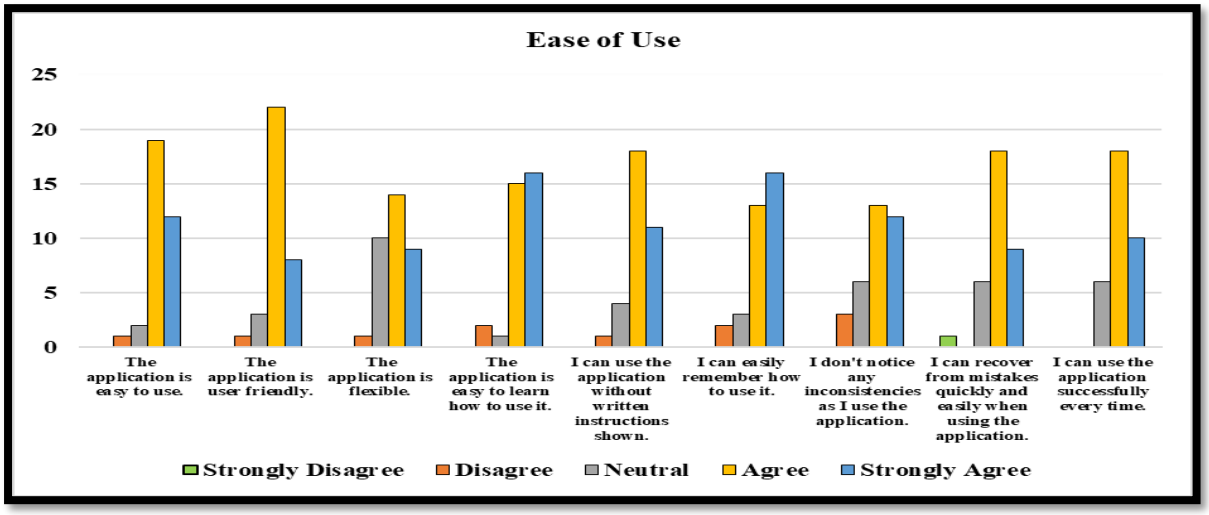

Figure 4: The ease of use of GraBriyani@KRUs Kitchen

More importantly, the majority of the respondents were satisfied with the GraBriyani@KRUs Kitchen application. Figure 5 depicts the outcome for the satisfaction of GraBriyani@KRUs Kitchen. This implies that the application meets the requirements of the potential users and satisfies them.

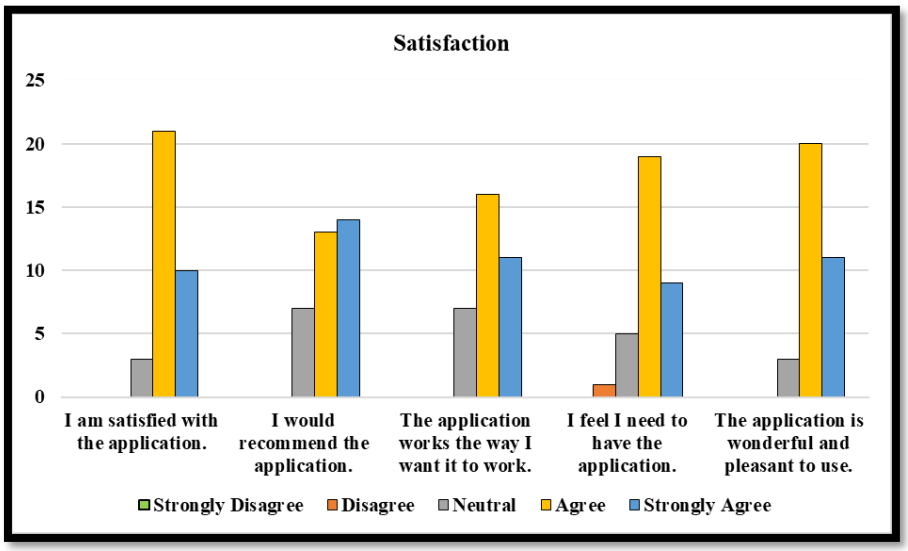

Figure 5: The satisfaction of GraBriyani@KRUs Kitchen

4. Conclusion

As a conclusion, GraBriyani@KRUs Kitchen application has been successfully developed and evaluated to provide a more systematic and efficient food ordering and delivery. It provides a platform for the customers to order the 'nasi briyani' from KRUs Kitchen. Furthermore, this application allows the admin to manage the orders more systematically and exclude human errors. It also allows the runners to accept and update the order status for their deliveries. With this application, the food orders can be managed more efficiently. It is hoped that the application can reduce the hurdles of managing orders which are obtained from various customers from various places. It is also hoped that the sales can be increased with the increased visibility of this company through online business.

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