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E-GROCERY SYSTEM DESIGN FOR COURIER SERVICE DEVELOPMENT

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Abstract: Since the Covid-19 virus, there has been a decrease in the mobility of citizens in traditional markets, and many are affected by the termination of employment. In Batam, especially the Tiban area, most of the people are workers, with their busyness from morning to evening and often even late at night, giving people little time to shop for their daily needs in the market. E-groceries are starting to become more popular now, allowing people to shop online for their daily needs. E-grocery provides a variety of services, delivery services, and ease of use of applications to users. The design of the E-Grocery system significantly provides several operational advantages such as making data processing easier to trace and building personal relationships with customers and couriers so that they become closer. This is the company's competitiveness in selling their daily needs. This research aims to provide benefits to the community, sellers, and couriers to make it easier to shop for daily necessities such as fruits, vegetables, and other necessities, and also to help reduce the unemployment rate of the community by becoming a courier for delivery orders. The design of the E-Grocery system uses the agile method, with the software modeling language using UML. The result of this research is the E-grocery application, an android-based mobile application. With the e-grocery application, sales have been digitized to facilitate the distribution of daily goods to busy working people.

Keywords: delivery services; e-grocery; mobile application; system information; uml

Abstrak : Sejak Virus Covid-19 melanda telah terjadi penurunan mobilitas masyarakat di pasar tradisional Kota Batam, banyak yang terkena Pemutusan Hubungan Kerja (Phk). Kota Batam sendiri, khususnya daerah Tiban, mayoritas masyarakatnya adalah pekerja, dengan kesibukan dari pagi sampai sore bahkan tak jarang hingga malam hari, membuat masyarakat memiliki sedikit waktu untuk berbelanja kebutuhan sehari – hari ke pasar. Saat ini, *E-grocery* mulai banyak bermunculan memungkinkan orang-orang untuk berbelanja kebutuhan sehari-sehari secara online. *E-grocery* menyediakan berbagai macam pelayanan, layanan pesan antar, kemudahan penggunaan aplikasi kepada pengguna. Perancangan sistem *E-Grocery* secara signifikan memberikan sejumlah kelebihan operasional seperti pemrosesan data menjadi lebih mudah ditelusuri, dapat membangun hubungan personal dengan pelanggan dan kurir sehingga menjadi lebih dekat. Hal ini merupakan daya saing perusahaan dalam menjual kebutuhan sehari – hari mereka. Tujuan dari penelitian ini adalah memberi kemanfaatan kepada masyarakat, penjual dan kurir untuk mempermudah dalam berbelanja kebutuhan sehari - hari seperti buah - buahan, sayur mayur, serta kebutuhan lainnya, juga membantu mengurangi tingkat pengangguran masyarakat dengan menjadi kurir pengantaran pesanan. Perancangan sistem *E-Grocery* menggunakan metode agile, dengan bahasa pemodelan perangkat lunak menggunakan UML. Hasil dari penelitian ini adalah Aplikasi *E-grocery* yang merupakan Aplikasi *mobile* berbasis android. Dengan adanya aplikasi *E-grocery* maka penjualan sudah digitalisasi sehingga memperlancar pendistribusian produk harian kepada masyarakat yang sibuk bekerja.

Kata kunci: aplikasi mobile; delivery services; e-grocery; sistem informasi; uml

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INTRODUCTION

An information system is a collection of several components in the form of humans as well as procedures for producing information in order to achieve goals and objectives in decision making[1].

Referring to previous research, the e-grocery system has the opportunity to reach a larger number of customers with the ability to distribute products quickly and accurately.[2]. E-grocery research can help in expanding market share, not only consumers who are close to the market and far from the market[3].

In previous research, e-grocery greatly influences consumer decisions in various ways, where smartphone use is increasing, online shopping trends tend to increase.[4]. Referring to previous research, e-grocery is very helpful for grocery stores in making buying and selling transactions so as to increase sales.[5].

In e-grocery research conducted in Indonesia as a whole, both on food ingredients e-grocery and supermarket e-grocery.[6]. in their research that online shopping applications are very helpful for stores in increasing sales and can assist consumers in finding basic food information.[7]. Previous research e-grocery design can improve services to reach the wider community in marketing goods and provide convenience in marketing goods and make it easier for consumers to shop[8]. With the e-grocery application designed by previous researchers, it can make it easier for shop owners to make sales that are synchronized with member data, so they can predict how many items should be provided for sale.[9]. Referring to previous research which resulted in an application that can make it easier for traders to buy and sell, and can make the ing process for buying and selling transactions[10]. The design of an online shopping application designed by previous researchers that produces an e-commerce application at UD Hoky Celluler Shop can solve problems and also meet the needs needed by the store. And E-commerce applications make it possible to get new customers[11].

The specific purpose of this research is to make it easier for people from the middle and upper classes to shop online, especially the necessities of daily life (vegetables and fruits) and reduce the unemployment rate of people in Batam city affected by Termination of Employment (PHK) by registering themselves. as a daily delivery courier.

METHOD

The method used in this research is software development method with agile methodology. Furthermore, the application that has been designed will be implemented and used by several users to find out if there are bugs and errors in the application.

*Agile development*is a further approach from SDLC (System Development Life Cycle) which is used to facilitate the development of applications that require a fairly short time, also provides a success rate for system development or applications are more structured, better design[12]. This Agile method emphasizes more on the iteration flow, if in one flow there is a revision it will be repeated or iterations without disturbing the finished process first.

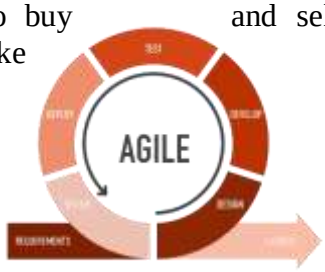

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Image 1. Agile Methodology

Image 1 Agile Methodology The stages :

a. Stages of requirements
In this stage, the requirements for the system to be built are collected.

b. Design Stage
The system features and interfaces are designed. The develop stage is the stage in building the system.

c. Test Stage
Performed to test the functionality of the system being built.

d. Deploy Stage
Are all processes carried out so that the system can be used by users

e. Review Stage
It is a stage to get feedback from users regarding errors and bugs in the system in order to improve the quality of the system being built

f. Launch Stage
Is the stage to deploy applications on the play store so that they can be used by users. Each step in agile can be done iteratively (iteratively).

RESULTS AND DISCUSSION

Results obtained from The design of the E-Grocery System is in the form of a mobile-based daily goods ordering application which can be seen ÷

a. App start screen
The initial display that appears for the first time when the application is run will display a register form, you can register as a trader, buyer and courier and customers, sellers, couriers can login to the application after successfully registering.

Image 1. Registration Form

b. Login Form
After the user has finished registering, they will be directed to login to the e-grocery application.

Image 2. Login Form

c. Application Select Form
This form allows the user to choose as a trader, buyer or courier.

Image 3. Application Select Form

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d. Buyer Menu Form
After the buyer successfully chooses to login as a buyer, the buyer is directed to the menu form, where the menu form consists of various shops that provide daily needs.

Image 4. Buyer Menu Form

e. Form Display of goods sold in the store.
This form serves as information on goods, prices and quantities available in the store. This form will appear when the buyer selects a store on the main menu.

Image 5. Form of available goods

f. Goods Order Form
This form serves to place an order for goods, how much and what types of goods will be ordered.

Image 6. Goods Order Form

g. Order List Form
It contains information on the buyer's groceries purchased at one of the grocery stores and orders ready to be packaged will also be sent to the address.

Image 7. Order List Form

h. Main Menu Form as Seller
This form functions as a seller where this menu can see orders for goods ordered by buyers.

Image 7. Seller's Main Menu Form

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i. Seller Item List Form
This form serves to see what items are being sold by the seller.

Image 8. Item List Form

j. Add Item Form
The Add Item form is used to add sales items in the daily necessities store where you can add stock and prices.

Image 9. Add Item Form

k. Order Form Login
This form will display the data of buyers who ordered goods at the store.

Image 10. Order List Form

l. Order Form Accepted
Form Orders received on the ORDER page, will move to the delivered page.

Image 11. Order Form Received

m. Order Delivery Form
In this position, the status on the Buyer application changes to a courier order, and the order data will appear in the Courier application. Order data will move to the Completed Page if the Courier has successfully delivered the order to the Buyer's address.

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Image 12. Order Delivery Form

n. Courier Main Page in the form of a list of Orders.
This form functions where the courier can view order data after the seller prepares the buyer's order.

Image 13. Courier Main Page in the form of a list of orders.

o. Courier Order Form
This form functions so that couriers can see a list of orders that have been ordered by buyers in several stores and prepared by the seller.

Image 13. Courier Order Form

p. Order Delivery Form
After the Courier taps the Accept button, the Order Data will move to the delivery page, and the order status in the Buyer application changes to delivered.

Image 14. Order Delivery Form

q. Order Complete
Thus, the Order data will move to the Completed page both in the Courier application, and in the Seller application. And the order status in the Buyer application is complete.

Image 15. Order Complete

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r. Completed Form
The money from the delivery of the order given by the Buyer to the Courier will be handed over to the Seller. If the Seller has received the order money from the Courier, the Seller can tap the Done button in the Seller app, and the Order data will be deleted and lost from the Buyer app, Seller app, and Courier app.

Image 16. Completed Form

s. Application Exit Form
This form serves to exit the e-grocery application.

Image 17. Logout Form

CONCLUSION

The E-grocery application can make it easier for people to shop for daily needs such as buying fruits, meat, chicken, vegetables and many other daily needs. With the e-grocery application, the mechanism of selling has accessibility which is very broad with a pattern of disseminating information about the products in stores in accordance with the needs that can be accessed anywhere and in the process of transformation between buyers and sellers who are still traditional with the existence of e-grocery, sales have been digitized with the aim of facilitating the distribution of daily products to the public. busy working. And this e-grocery App can also help reduce the unemployment rate of the community by registering as a courier for delivering e-*grocery* orders.

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