MOBILE APPLICATION DESIGN "GROSIRKEUN"TO IMPROVE MICRO SMALL AND MEDIUM ENTERPRISES (MSMEs) PRODUCTIVITY DURING THE COVID-19 PANDEMIC BASED ON E-COMMERCE

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Abstract

At this time, there are many MSME actors who have had an impact on the Covid-19 pandemic, especially in the middle to lower wholesale stall sector, they have a lot of difficulty in shopping for shop needs, especially during the current pandemic where social activities are limited. For this reason, the purpose of designing this Mobile Application is expected to help the MSME sector in shopping more efficiently based

on the nearest location and can be delivered directly by the seller. The method used in designing this application is by using the Extreme Programming Method based on the Kotlin programming language which is connected to the MySQL database. The results of this study are an e-commerce-based mobile application where all transaction processes become easier and can solve problems of transaction difficulties during a pandemic, because users no longer need to access the website on a computer to make transactions, they only need gadgets such as smartphones. And can directly choose the region where he lives according to the available sellers, this will certainly help streamline time in ordering and selling users.

Keywords: *E-Commerce, Wholesaler, Information System, Extreme Programming, Covid-19*

Introduction

Since the virus entered Indonesia since 2019, many middle and lower business actors have been affected by the economy due to the Implementation of Citizen Activity Restrictions (PPKM) in almost all areas. Indonesian area[1, 2].

Nowadays technology allows less effective human work to be more effective thanks to technology. So we need a system that has been digitized to help complete the work so that the results are efficient. Advances in this era are smartphones, with the existence of smartphones, humans today use more instant features to carry out digital activities, such as online shopping. The impact of smartphones is huge in the business world. Since smartphones began to be used in the commercial sector, applications began to appear to support trade to facilitate the trading cycle[3].

Wholesale stores usually carry out many transactions every day, such as transactions for shop equipment, kitchen utensils, and so on, all these transactions are usually carried out manually either in payment or in the delivery of goods. Due to the recent Covid-19 pandemic, residents were limited to traveling, making it difficult for certain groups to shop for their shop equipment[4].

Based on the problems that the authors have found, there are still many business activities that are carried out manually including the process of buying and selling transactions and shipping. To solve this problem the author provides a solution in the form of an e-commerce system design to support transaction activities at wholesale stores[5, 6].

Literature Review

Related research on the design of websites and mobile apps with e-commerce and digital marketing on MSMEs previously produced an information system design to assist Hydroponic MSMEs in distributing their products [7]. In addition, with the design of this system in the form of a website and also a mobile application, it can help in managing digital marketing and products[1]Referring to the system design that has been made for the MSME sector, to handle the case study problems that we are researching, we need an online information system in the form of a mobile application that can manage all transaction and delivery activities. Therefore, with this application design, it is hoped that it can help buying and selling activities more effectively and efficiently[8, 9]. As shown in the table. 1

Table 1

Literature Comparison

Researchers (previous)		Researchers (now)	
Davy Ronald Hermanus, Yovanka Davincy, Bryan Ghilchrist, Jajat Sudrajat, (2021)	This system can make it easy for sellers to sell their products online using the website and mobile app. With the activities carried out by the team for 2 months at Sae Garden, it is hoped that they can provide an understanding of the use of online information systems and digital marketing for sellers.	Ibnu Topan, Fikri Rahmat Ramadhan Neu, Ahmad Rizki Hafiffudin, Sulaiman Saleh, Deandro Fitra Rahmansyah, Ucu Nugraha, (2021)	This system can make it easier for customers to make decisions regarding the payment method to be used, either using an interbank transfer system or cash on delivery (COD) or can be called pay on the spot. This system can also display location information to customers regarding the selection of the nearest wholesale store from home or where the customer is located so that it can be reached easily. This information system can also be used as a reference to application developers in terms of making and developing this information system.

Methods

Data Collection Methods

a. Observation

Activities are carried out by directly observing the activities that run at several wholesale stores, such as the buying and selling process to recording all products sold.

b. Interview

Activities were carried out by directly asking some questions and also a question and answer session for the wholesale shop owner.

c. Internet/Library Studies

The research method used in this journal is using the literature study method. Where in the work of this journal, we search, collect, and analyze data obtained in several journals and literature scattered on the Internet.

d. Data Collection Data

Collection activities are carried out to meet data needs, which include employee/admin data, and transaction data.

Analysis and Design

The method we use in developing this software is the Extreme Programming (XP) development method. Extreme Programming (XP) is one of the most widely used agile software development approaches [9-11]. Extreme Programming (XP) is a development methodology for software that can be used to improve the quality of software and respond to changing needs which includes several processes such as Fig. 1

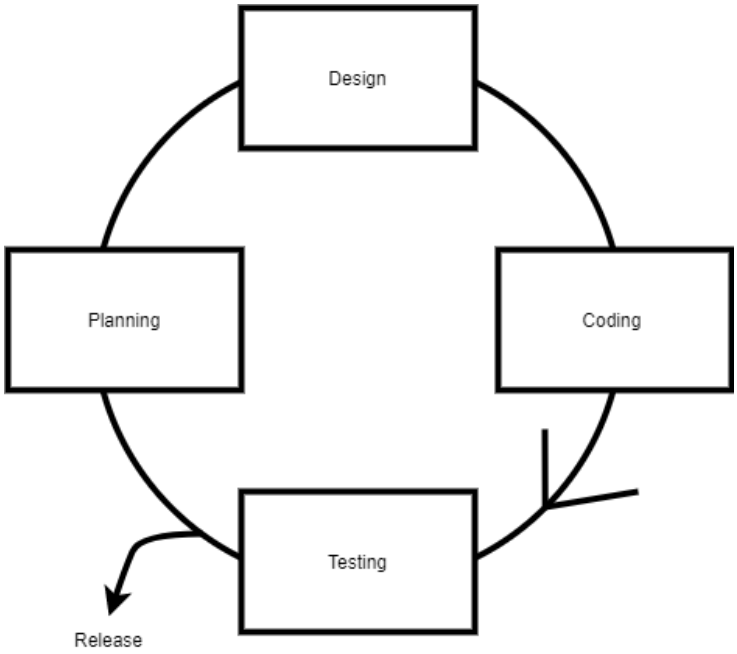

Fig. 1. Extreme Programming Method

The details of the application of the method to the software development that we make are as follows :

1. Planning: the first stage is to plan what kind of software will be made according to the purpose created.
2. Design: the second stage is designing the application. At this stage we create an application or software that can manage all the functions that support e-commerce activities, including functions for managing item data, user data, and catalogs and so on.
3. Coding: At the Coding stage. According to a predetermined design, we developed the application using the Kotlin Programming Language as the system processor. As well as in data storage media, we use MySQL as its database management[8].
4. Test: In this test stage. We test whether the applications that have been made before being released are in accordance with the designs made or not. First, we tested all the features through a simple test case on the frontend, which aims to make it easier for users to access the mobile application.

Results and Discussions

This wholesale application based on e-commerce, named Grosirkeun, produces output in the form of wholesale product information from several nearby stores based on customer locations that can be used. For grocery shopping purposes, the advantage in this application is that customers do not need to directly search for products but simply use this application and the product will be sent directly by the seller. With this application, it is expected that product management and allocation can run efficiently and effectively, such as planning purchases, sales and delivery planning. The following is the design of an e-commerce-based mobile application system that will be built. Here is the design of the application [8, 12, 13].

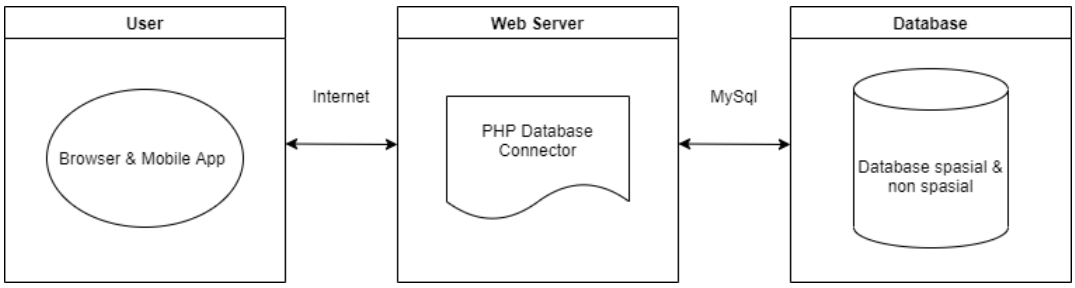

Fig. 2. Architecture Diagrams

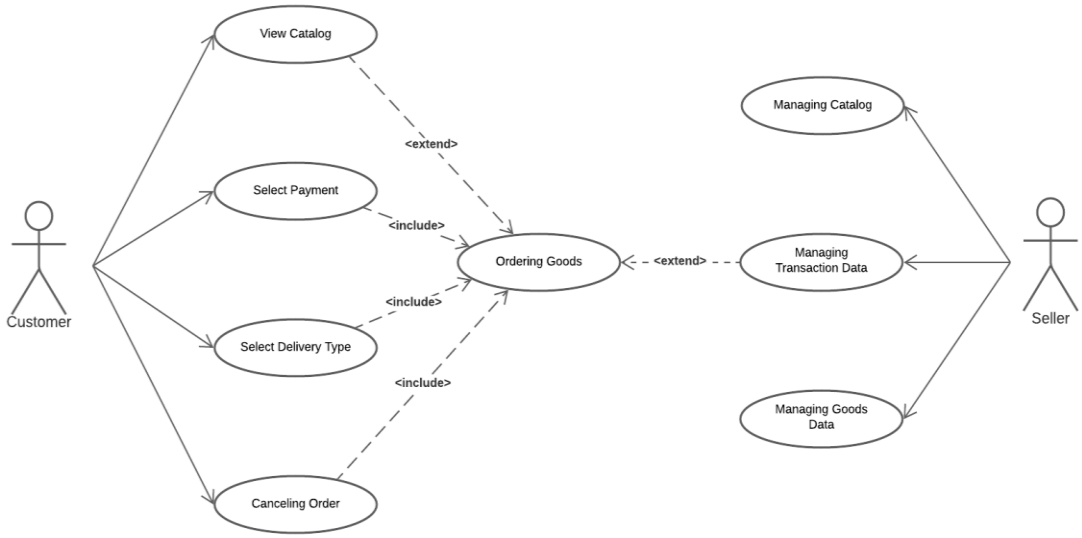

Fig. 3. Use Case Diagram

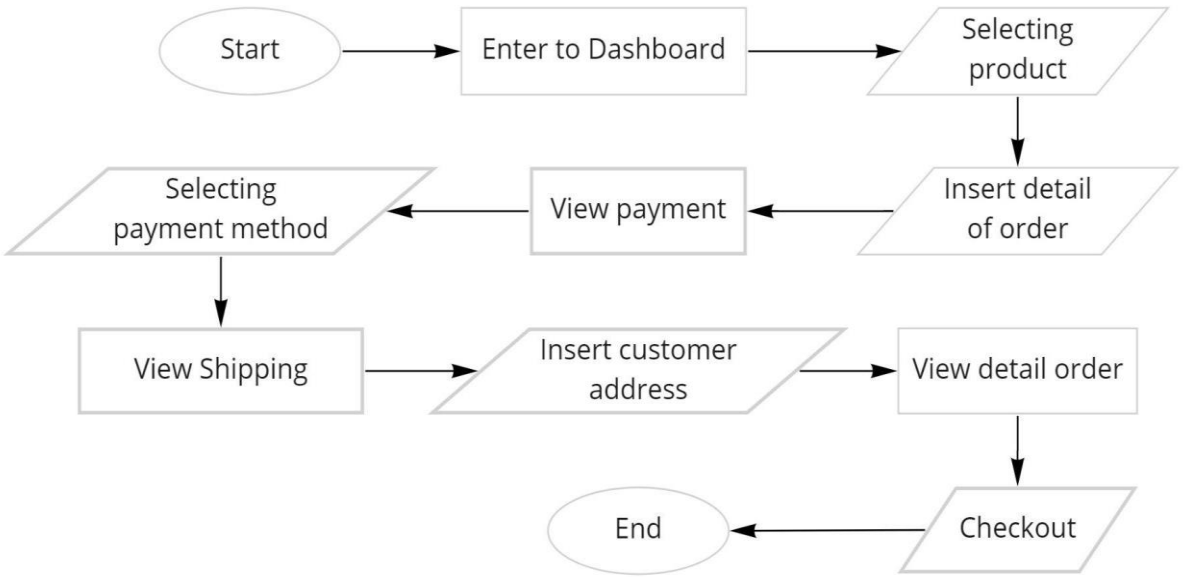

Fig. 4. Flowchart

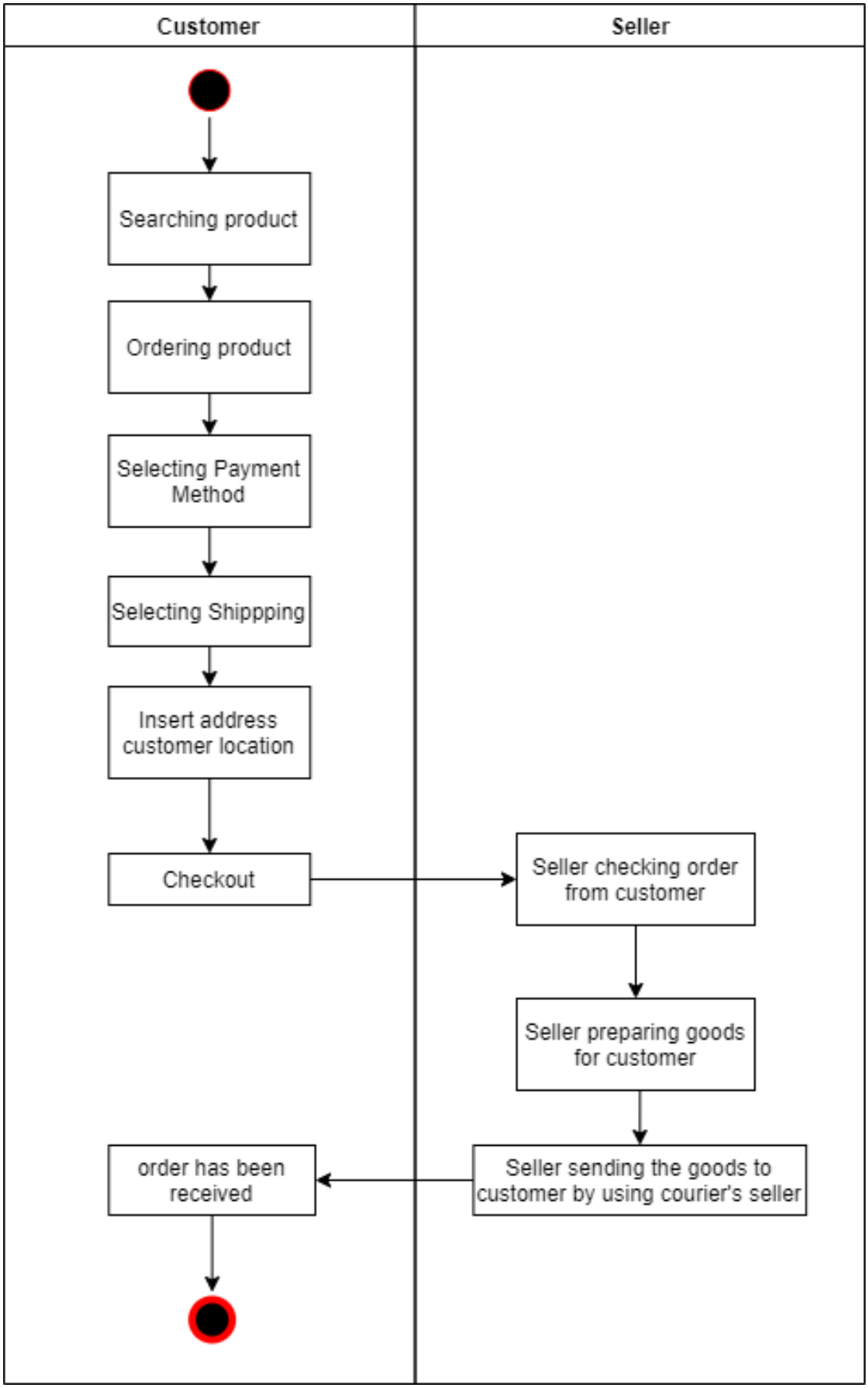

Fig. 5. Activity Diagrams

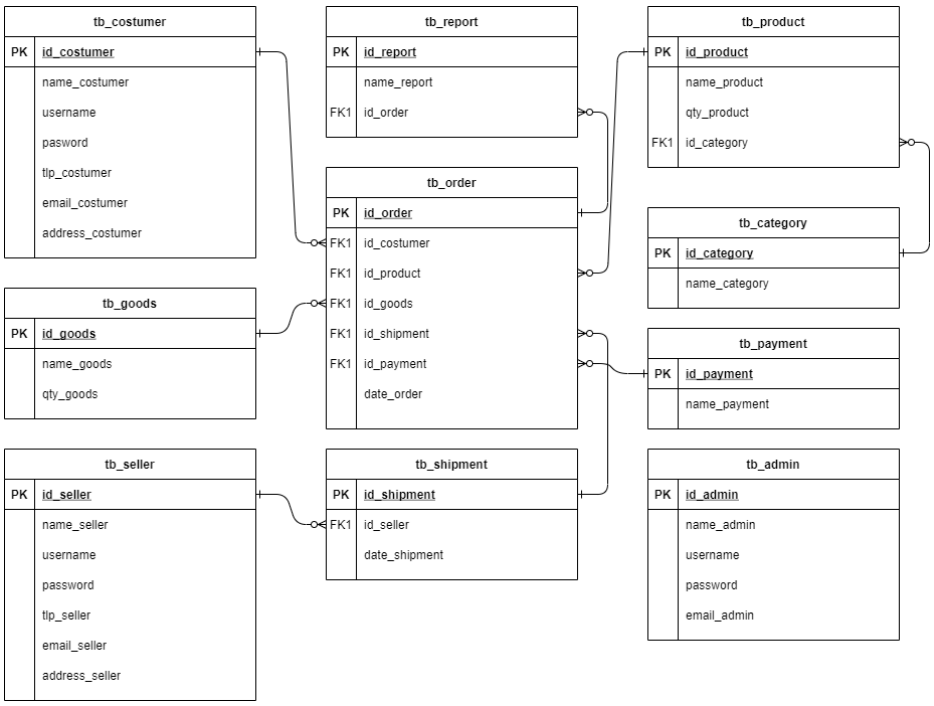

Fig. 6. Relational Diagrams

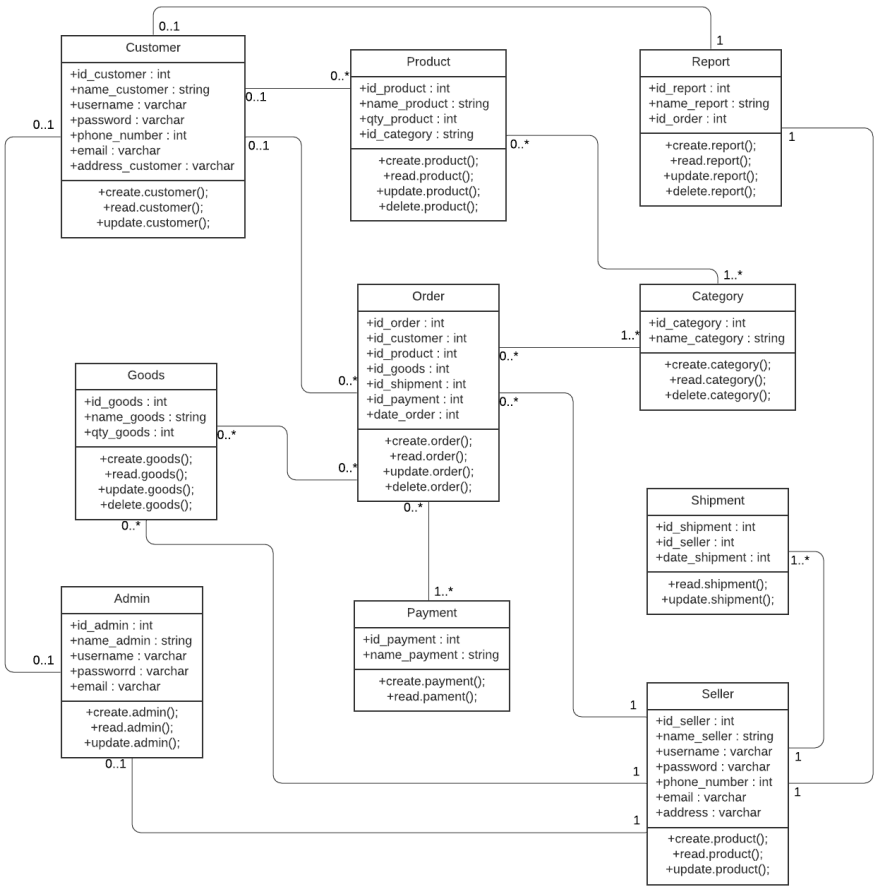

Fig. 7. Class Diagram

Mockup

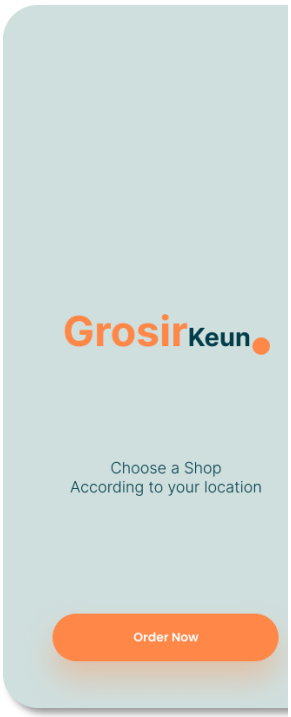

Fig. 8. Splash Screen

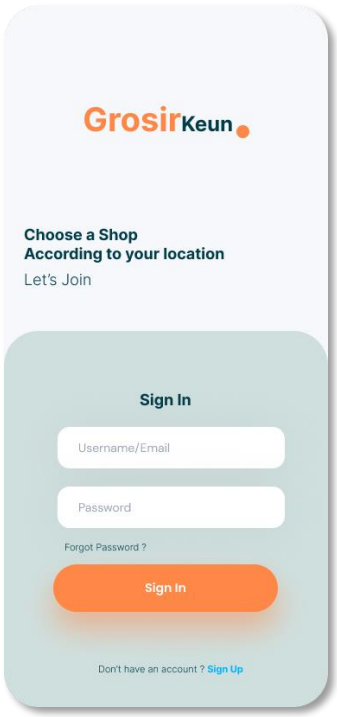

Fig. 9. Login Screen

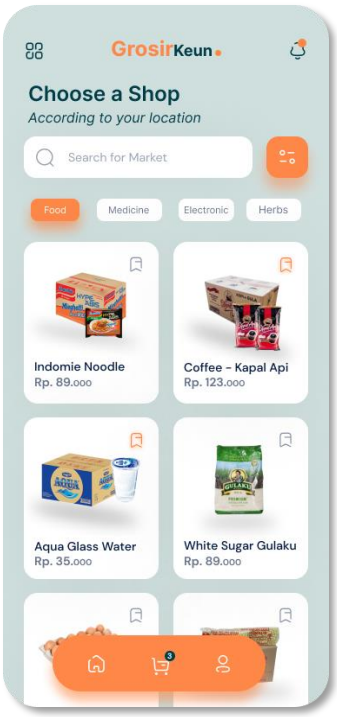

Fig.10. Dashboard Screen

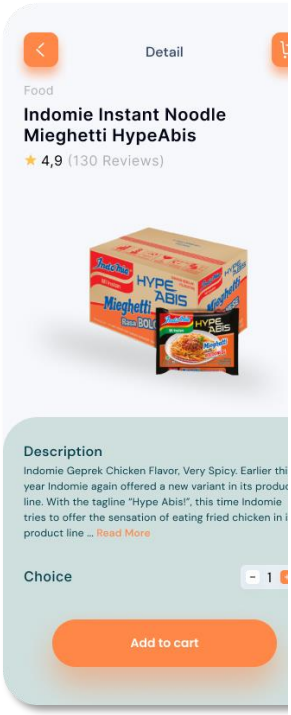

Fig.11.Product Screen Details

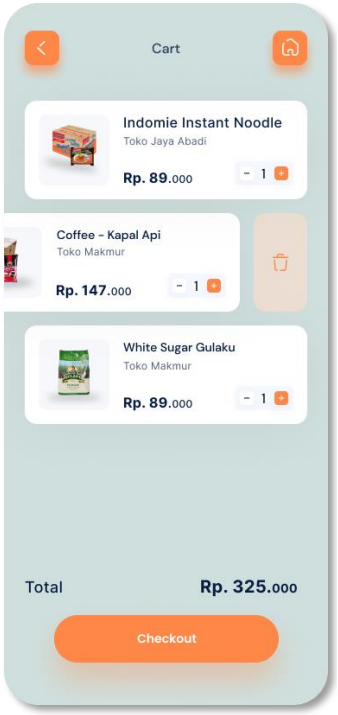

Fig. 12. Cart Screen

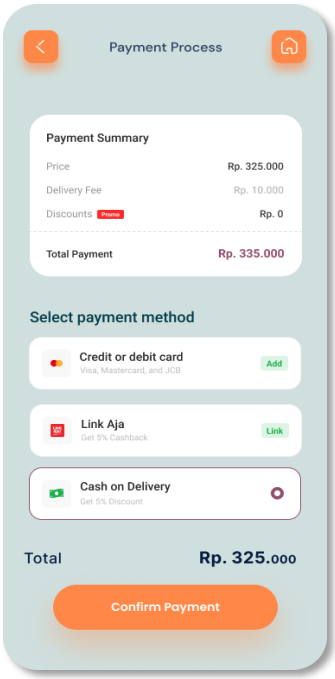

Fig.13.Payment Screen

Conclusion

E-commerce is one of the most needed systems at this time, especially during a pandemic. There are so many MSME actors, especially wholesale food sellers, who have difficulty in earning their income due to the decrease in offline buyers.

Therefore, we designed an E-commerce-based information system aimed at wholesalers. In this system, customers can buy various types of products available at local wholesalers based on online. The product will be sent directly to the customer's house immediately after making payment. This system is expected to facilitate transaction activities during the pandemic. Therefore, customers do not need to visit the store and can reduce physical contact and can be accessed anywhere, anytime.

Suggestion

The author conveys suggestions to readers or application developers, namely the design of this system still needs a lot of improvement and development to make it easier to use and then the need for regular updates on the system to display changing product stock. The security system must also always be improved so that data collection is maintained and improvements to weaknesses in the system and in the future the author hopes that there will be additional features that are in accordance with the needs of wholesale business actors as a whole. and the author also suggests to socialize the seller and buyer in the use of this system so that this system can be used properly.

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