

Design and Build Melijo.id Application as a Selling Platform for Mobile Vegetable Traders and Farmers

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ABSTRACT

In conditions like today where the whole world is being hit by a major disaster, namely the Covid-19 virus, it has an impact on various sectors, especially the economic sector in Indonesia. With social and physical distancing policies that limit crowds, the production of goods and services is hampered. This has a direct impact on informal jobs which in their activities require mass crowds such as mobile greengrocers and farmers who find it difficult to distribute goods to consumers. With this condition, Melijo.id as a marketplace-based mobile application and online service is present as an innovative product as a solution for mobile greengrocers and farmers to make it easier to sell products online during the Covid-19 pandemic. The method used in developing this application is the SDLC method with the waterfall model as a system development tool. The results of the study show that the existence of Melijo.id can help farmers, mobile greengrocers and consumers in fulfilling their daily needs and helping the economy in Indonesia amid the pandemic.

Keywords: *Mobile greengrocer, Farmer, Mobile app, Marketplace, SDLC Waterfall*

1. INTRODUCTION

As time goes by, the current era is very different from the previous era. This is indicated by the development of internet technology in Indonesia. The development of internet technology in Indonesia has received encouragement from the government where all people are encouraged to use internet media in the application of carrying out their daily lives ranging from online shopping, online transactions, and so on [1]. According to Sulaiman, et al (2020), online shopping options make consumers have more variety in offering when they are going to buy a product or service. Consumers will be more likely to choose a place that has an advantage [2]. So, from all the statements above it can be concluded that with online services it will be easier for people to carry out their daily activities.

One example of the application of internet technology in everyday life is online shopping through e-commerce [1]. There are many e-commerce that we can find when doing online shopping, such as Shopee, Lazada, Bukalapak, and so on. The reasons people

choose to do online shopping compared to traditional, among others; the use of e-commerce allow consumers to receive information and also transact anywhere and anytime, allow customers to connect virtually anytime, and various conveniences in accessing information [3].

The Covid-19 pandemic has had an impact on various sectors, especially the Indonesian economy. The Indonesian government has implemented various policies in response to the Covid-19 pandemic. One of the policies is the implementation of social distancing, physical distancing for the people of Indonesia in early March 2020[4]. Based on Government Regulation of the Republic of Indonesia Number 21 of 2020, the government has decided to implement Large-Scale Social Restrictions in handling Covid-19. After this policy came into effect, not all people obeyed it properly because there was still a lack of public awareness in dealing with this case, so this policy was considered less effective. Although the policy has been in effect since early March 2020, it turns out that there are still offices and even shopping centers that operate with the involvement of many people. In

addition, people still have no fear in doing activities outside the home.

With the enactment of this PSBB policy, for a relatively long period of time offices and most industries are prohibited from operating for and the impact of this policy can cause economic losses and the supply chain will also be affected, including disruption of the production of goods and services [5]. Based on the report “*Seri Analisis Ekonomi Makro: Outlook Ekonomi Indonesia*” by LPEM FEB UI, the Covid-19 pandemic will significantly affect economic conditions. Indonesia's GDP 2020 is projected to grow at a slower rate of 2.4% - 2.6% in 2020. Another prediction is that inflation will increase at 3.3%. This condition requires a quick response.

Given the various conditions above, "Melijo.id" is here to become an innovative product as a solution for mobile greengrocers and farmers to make it easier to sell products online during the Covid-19 pandemic. With the "Melijo.id" platform in the form of an application and website, it is hoped that it can reduce direct physical contact between sellers and buyers so that people don't have to worry about carrying out their daily activities. In addition, "Melijo.id" can also help the wheels of the Indonesian economy where economic activities can continue despite various limitations in the era of the Covid-19 pandemic. Therefore, "Melijo.id" can answer the needs of the community in doing shopping, especially shopping for basic needs without having to leave the house.

2. LITERATURE REVIEW

2.1 Mobile Greengrocer

Mobile greengrocer is one of the jobs in the informal sector. Mobile greengrocer generally use cars or motorbikes as a means of transporting merchandise that is used to peddle vegetables around the city. They meet buyers or customers in housing and other crowded locations [6]. They meet buyers or customers in housing and other crowded locations. They do not stay in a certain location, but move from one place to another.

2.2 SDLC Waterfall

The SDLC process is a limited set of activities used to develop software products. SDLC consists of the process of designing, developing, maintaining, and improving software efficiency [7]. The waterfall model is a classic model that is systematic, sequential in building software. Name of this model is actually a “Linear Sequential Model”. This model is often referred to as with the “classic life cycle” or the waterfall method). This model takes a systematic

approach and sequentially. It is called a waterfall because of the stages that are passed have to wait for the completion of the previous stage and run sequentially. [8]

3. RESEARCH METHODS

Design is the stage after the analysis of the system development cycle by configuring the hardware and software components of the system by describing, planning and sketching or arrangement of several separate elements into a unified whole so that the system can function[9]. Application development of a software that in operation can run on mobile devices that are integrated with features such as GPS. Mobile applications allow users to connect to internet services using mobile devices to access information and provide convenience for users to be able to access anytime and anywhere [10]. Marketplace is a place for business activities and transactions where buyers can find as many suppliers as possible according to the criteria needed to get them according to market prices. As for sellers, they can find out which customers need their goods [11].

3.1 SDLC Waterfall

SDLC Waterfall is a method that has a characteristic that in its execution, each stage must be sequential and cannot jump to the next stage. Thus the results will focus on each stage so that the work can be carried out optimally. The SDLC Waterfall approach is widely used in system development with the following steps:

- Requirements

The initial stage is to prepare and analyze the needs of the software to be worked on. Information and insights obtained in the form of information from interviews, surveys, literature studies from users who want the product along with the system requirements.

- Design

Before entering the coding process, application design needs to be done to create an overview of the appearance and interface of the software which will then be executed as an application. At this stage, the Melijo.id application display begins to be prepared.

- Implementation

Melijo.id's design results are translated into a programming language so that it becomes an application that can be used.

- Integration and Testing

The process of integration and system testing is carried out in the form of combining modules that have

been made in the previous stage. After the system integration process is complete, the next step is to enter the module testing which aims to find out whether the software is complete with the design and functionality of the application running well or not.

- Operation and Maintenance

At this stage the user can use the Melijo.id application and if a bug or error is found, repairs will be made to the problem.

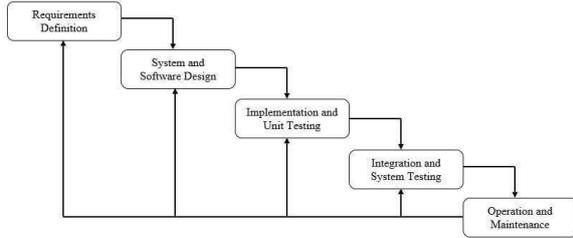


Figure 1 SDLC Waterfall method

The method used in collecting data in this research is through interviews and literature study. Interviews were addressed to suppliers, namely green house owners and greengrocers. The interviews in this study referred to questions related to barriers to sales and the vegetable distribution process during the Covid-19 pandemic. A literature study was conducted to obtain data on theories, findings that are used as reference materials to support research activities by studying and managing literature, theses, journals, books and other written media related to the topic of this research discussion.

4. RESULT AND DISCUSSION

The application designed is a marketplace-based mobile application and online service aimed at farmers and mobile greengrocer to be able to sell their products online during the Covid-19 pandemic. With the presence of the Melijo.id application, farmers and mobile greengrocers can reach a wider range of consumers and can continue to sell without being constrained by the social restrictions imposed by the government. During this pandemic, the presence of the Melijo.id application is expected to improve the smooth economic cycle of mobile greengrocers and farmers.

The Melijo.id application is also intended for the general public to be able to meet their daily needs more easily and practically. The public or consumers will get the food they need from mobile greengrocers and farmers who sell on the Melijo.id application. Consumers can make purchases of their daily food needs either on a small scale or retail or large scale or wholesale. Consumers will also benefit from getting fresh food ingredients and more affordable prices

because they have made purchases directly from farmers as the first party.

4.1 Class Diagram

Class diagrams describe the structure of the system in terms of defining the classes that will be created to build a system. Class Diagram design in this study as shown below:

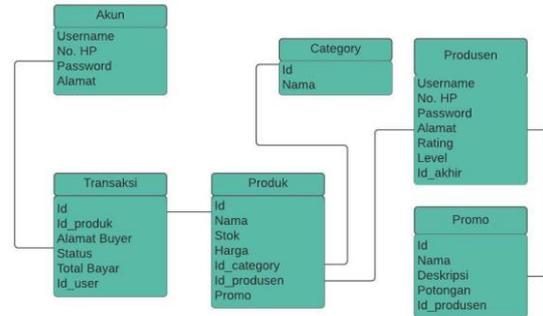


Figure 2 Class diagram

4.2 Actor Glossary

An actor description describes a person who interacts with the system. Actors can provide input information on the system, receive and provide information on the system. In the Melijo.id application system, there are 3 actors, namely farmers as suppliers, mobile greengrocer as sellers and the general public and housewives as buyers or end users.

Table 1 Table Glossary

Term	Synonym	Activity
Farmer	Supplier	Farmers have the authority to regulate their merchandise by inputting goods into and out, determining prices and viewing available stock data.
Mobile greengrocer	Seller	Mobile greengrocers have the authority to regulate their merchandise by inputting

		incoming and outgoing goods, determining prices and viewing available stock data and if they want to make direct sales, they can activate the "sales" system and activate the position information system.
General public and housewives	Buyer/end user	The general public and housewives can access the Melijo.id application through 2 features, namely the market menu and the shopping menu. The market menu is devoted to wholesale purchases to farmers. Meanwhile, the retail shopping menu is directed to mobile greengrocers.

4.3 Implementation and Result

The following is the appearance of the Melijo.id application:

- Login Display

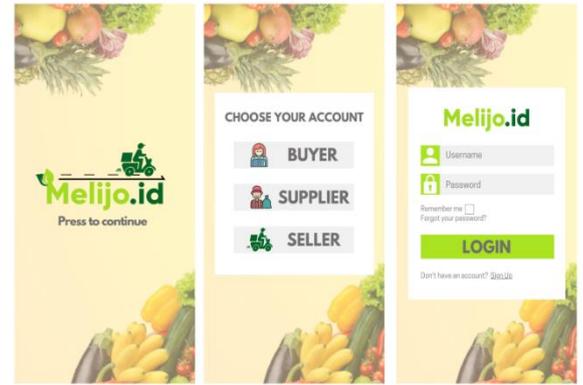


Figure 3 Login Display

This is the initial view when entering the Melijo.id application for the first time where there are three login options, namely first as a buyer for consumers such as housewives and the general public, second as a supplier for farmers, and third as a seller for mobile greengrocer. To log in, users need to enter the registered Melijo.id account username and password that matches the registration. If the user does not have a registered account, select the Sign Up menu and register for a Melijo.id account by inputting the required data such as Name, Address, Email, and Phone Number

- Buyer Display

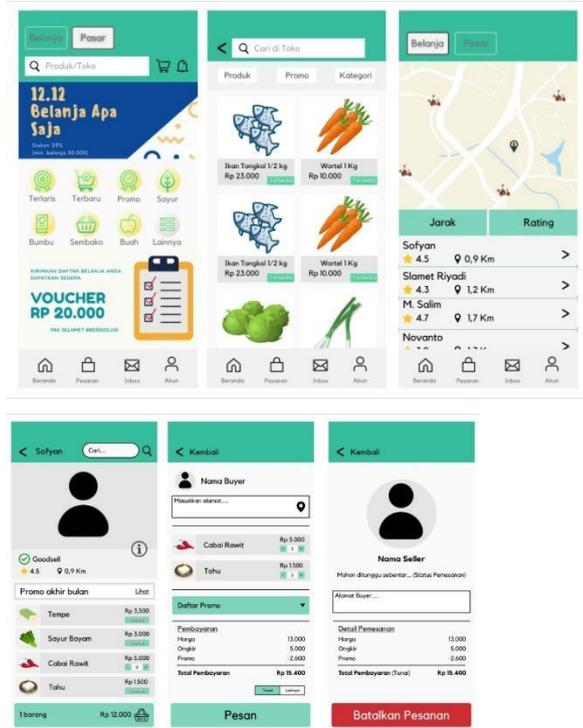


Figure 4 Buyer Display

The buyer display is aimed at consumers who log in to Melijo.id with a buyer account. In this view, there are two main menus, namely the Market menu and the Shopping menu. In addition, at the bottom of the application there are several menus, namely Home to make purchases of goods and some of the main features, Orders to view the latest status of goods that have been ordered, Inbox to view messages, and Accounts to manage the account profile you have.

The Market Menu is specifically for consumers who want to make purchases in bulk or wholesale to farmers. There are several features in this menu, namely:

- Search
To do a quick search for the item you need.
- Shopping cart
To view items that have been added to the cart to be purchased.
- Bells
For the latest notifications.
- Category
To see items that have been categorized by type such as best-selling, newest, promo, vegetables, spices, basic necessities, fruit, and other categories.
- Advertisement
Such as promos or discount events held by suppliers and sellers.

The Shopping Menu is specifically for consumers who make purchases in small or retail quantities from mobile greengrocers. When opening this menu, there are several features that can be used, namely:

- Map
Displays the current location of consumers and sellers around.
- List of seller names
Displays name along with rating info and distance from the consumer's location.
- Distance and Rating
To sort the list of seller names based on the closest distance or the highest rating.

When you want to make a purchase, the buyer can choose which seller to shop with. After that, info about the selected seller will appear, such as profile photos, ratings, distances, promos, and a list of what items are being sold. After the buyer chooses what items to buy, enter the address to which the goods will be sent and make payment according to the total amount listed.

● Seller Display

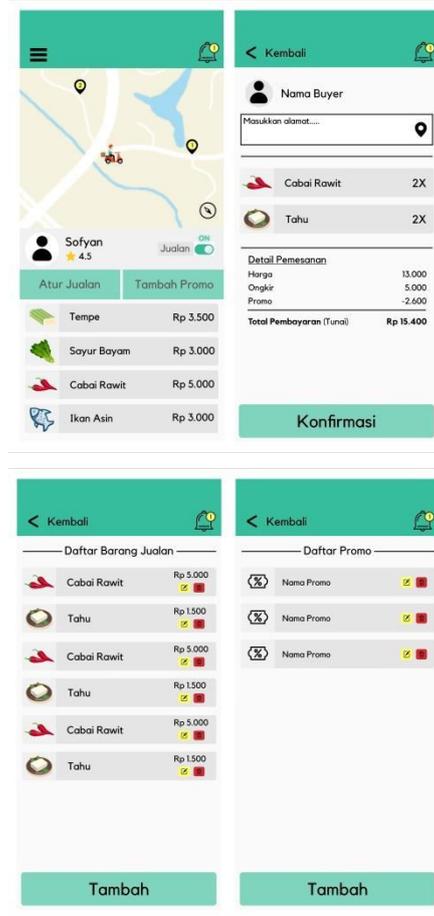


Figure 5 Seller Display

This display is specifically for mobile greengrocers who log in to the Melijo.id application as a seller. In this view there are several features that can be used, namely:

- Map
Displays the current location of the mobile vegetable seller.
- Sales Status
To set the seller can accept orders or not.
- Manage Sales
To manage the goods to be sold along with their prices and availability.
- Add Promo
To manage shopping promos to buyers.
- Bells
For notifications when there is an order from a buyer.

When there is an order from a buyer, information on the buyer's name, destination address, a list of items ordered, and the total cost to be paid by the

buyer will be displayed. After confirming the order, the mobile vegetable seller as a seller can send the ordered goods to the destination location

- Supplier Display

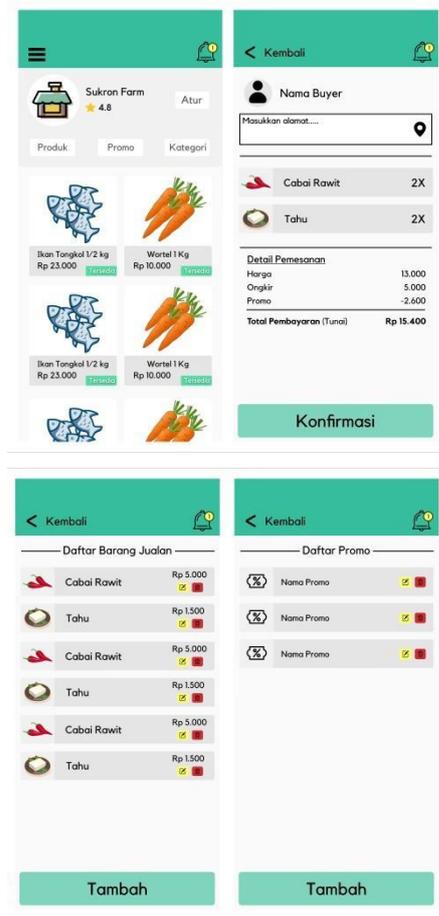


Figure 6 Supplier Display

This display is aimed at farmers as suppliers who sell their harvests. There are several features that can be used, namely:

- Arrange
To manage supplier profiles such as name, address, and other information.
- Product
To manage the goods sold along with their prices and availability quantities.
- Promo
To manage shopping promos to buyers.
- Category
To manage sales items by category.
- Bells
For notifications when there is an order from a buyer.
When there is an order from a buyer, information on

the buyer's name, destination address, a list of items ordered, and the total cost to be paid by the buyer will be displayed. After confirming the order, the mobile greengrocers as a seller can send the ordered goods to the destination location.

5. CONCLUSION

The Melijo.id application is a marketplace-based mobile application and online service aimed at farmers and mobile greengrocers to be able to sell their products online. Melijo.id is also aimed at the general public to be able to meet their daily food needs in an easy and practical way while following health protocols by reducing direct physical contact. The presence of the Melijo.id application is a solution for the community to be able to continue to run the economy in the midst of the Covid-19 pandemic. It is hoped that the Melijo.id application in the future can optimize the distribution of food ingredients and can create a modern market system by utilizing technological developments.

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