

Information System Location Selling Coffee Using Google Maps

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ABSTRACT

The existence of suppliers in the coffee industry is very important in maintaining business continuity. Coffee farmers in general are still faced with a coffee trade system that is still controlled by traders. This trading system condition can regulate coffee sales transactions, both with regard to time, place and to whom the farmers' coffee beans are sold. The purpose of this research is to make it easier for sellers and buyers of coffee to find the whereabouts of coffee sellers. This research uses the Google Maps API to decide the location of coffee sales. In addition, this application is built using supporting software Android Studio and MySQL database. The results of the research show that the application functions properly without any errors or debug when the testing program is carried out where the results of the processing system display, including being able to find the location of the farmer, knowing the number of available coffee stocks and showing the way to the farmer's site.

Keyword : Coffee Farmers, Sales Locations, Google Maps, Android



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1. INTRODUCTION

The existence of suppliers in the coffee industry is very important in maintaining business continuity. Coffee farmers in general are still faced with a coffee trade system that is still controlled by traders. This trading system condition can regulate coffee sales transactions, both with regard to time, place and to whom the farmers' coffee beans are sold. This condition resulted in the coffee distribution network not being well integrated (Parining et al., 2015). This has resulted in a small selling price received by coffee farmers as one of the actors in the trading system chain (Sirait, 2020). The potential for good coffee should be supported by an efficient system and can protect all parties involved in the coffee trade system (Sarjana et al., 2017) (Kustiari et al., 2018). Identification of coffee trading needs to be done to see the role of the institution and the good coffee trading process (Desiana et al., 2017). For that we need an application-based system that can give information to the public about the existence of coffee sales (Gusti et al., 2016).

The use of Google Maps in supporting information systems, especially mobile-based information systems, has now become very important (Rothfeld et al., 2019) (Yu et al., 2019). The information presented is not only text and images but is also equipped with a site map (Shih et al., 2019). With a site plan that uses a google map, the public will certainly get more detailed information, especially information on the location where coffee is sold (Yang & Hsu, 2016).

The research conducted (Ariyanti et al., 2015) in this study, it discusses the development of a geographic information system for higher education directories in Bengkulu City that can be used by institutions and the community to support the development of education in Bengkulu City. This application development uses the PHP programming language and MySQL database, and uses Google Maps Api. The result of this research is the development of an interactive geographic information system because it has facilities that are able to display information that is needed by students and prospective students.

There is also research conducted (Syarif et al., 2016) this research uses GIS on mobile devices in the community for the purpose of promoting land sales. The seller needs a massive promotion for the sale of his land. With that need, a My Landmark application was designed, an android-based application

that uses the GIS feature by using the Google Maps API support to serve land sales information to help the community. The result of this research is the development of my Landmark application with features based on Geographical Information Systems (GIS) available in it. The application has been integrated with the My Landmark system on the server side, so that it can be accessed with an internet connection. Based on the explanation of the problems that have been described and from the research that has been conducted by several researchers, this study formulates how to build an Android-based coffee sales application by utilizing Google MAPS with the aim of making it easier for coffee sellers and buyers to find the existence of coffee sellers.

2. RESEARCH METHOD

The preparation of research requires a clear structured framework of stages, this framework represents the steps that will be taken in solving the problems to be discussed (Syahputra et al., 2017). The research framework used is presented in the following figure.

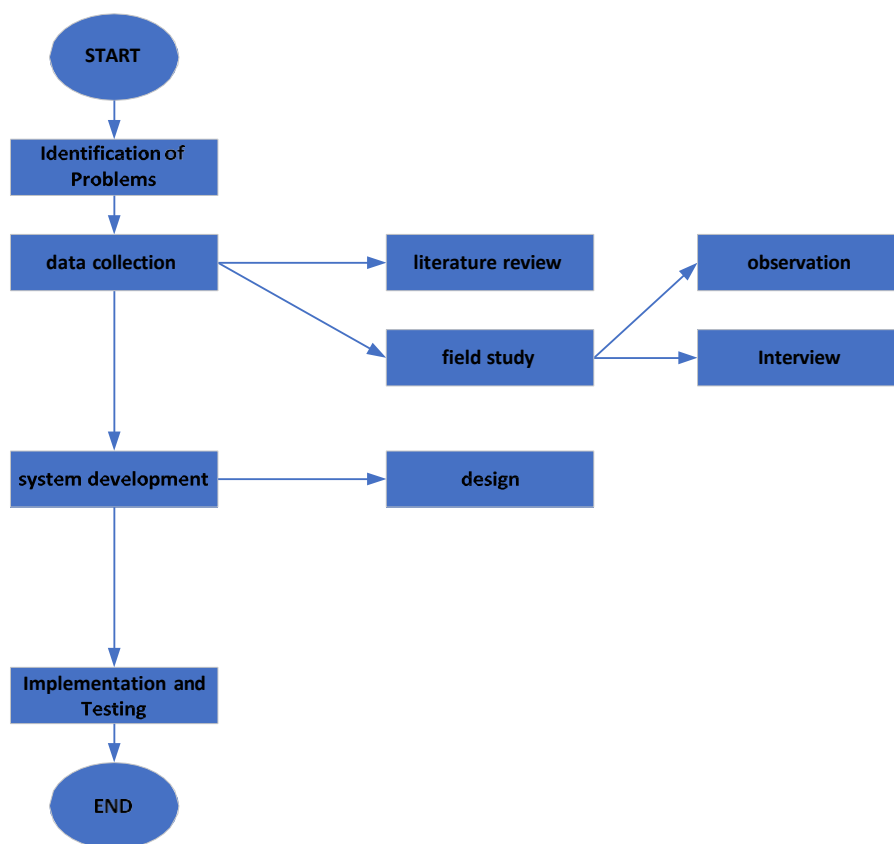


Fig 1. Research Framework

The research stages described are the process of this research stage, along with explained of each of these steps:

A. Identification of Problems

At this stage determines the problem solved. In this research problem solved is to build Android-based application that can give location information of coffee sales by utilizing the Google Maps.

B. Data collection

In a study of data collection in stages as follows:

- 1) Literatur review

This stage by studying the theories related to online sales system, determining the site using Google MAPS and android application development that supports problem solving research.

2) Field Study

Field study to obtain coffee data. In carrying out this collection in two ways, namely.

- Observation: observation activities conducted direct observations in the field locations of farmers selling coffee, the object of research conducted observation area Karo.
- Interview: Interviews were conducted to coffee farmers in Karo. Interviews were conducted to decide the trading system running coffee.

C. System development

Use Case Diagram, activity diagram dan Class Diagram. In developing this system done by designing business processes. In designing this system business process using the Unified Modeling Language (UML). The part of the UML method used in designing this application includes Use Case Diagrams, Activity Diagrams and Class Diagrams.

1) Use Case Diagram Design

Use Case Diagrams describe the functionality that the application provides in application design (El-Attar, 2019). Use case diagrams used to explain all the functions that an application must have, which has features that can be used by admins, farmers and buyers. The following is an application use case design.

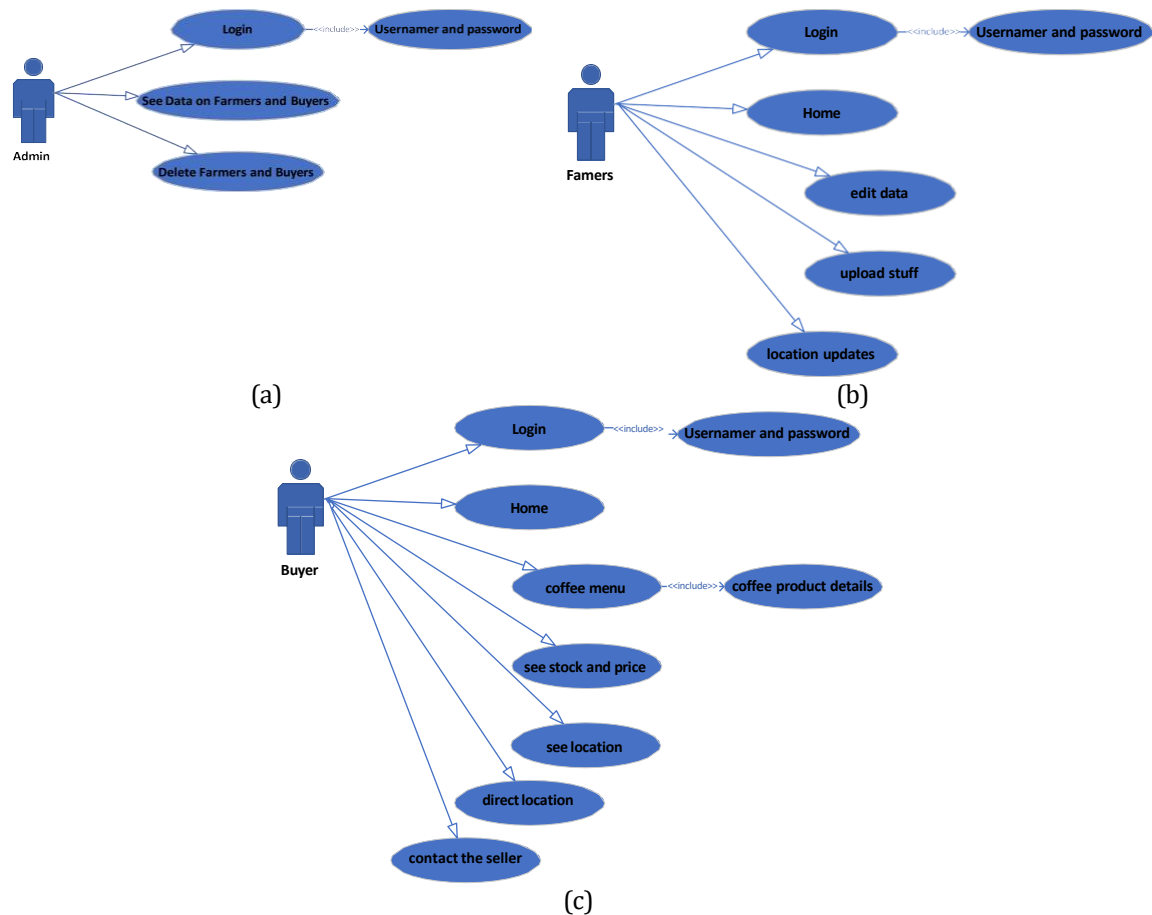


Fig 2. Use Case Diagram System
(a) Admin, (b) Famers, (c) Buyer

In Figure 2, it is known that there are three actors who use the system, namely admin, farmer and buyer, in the picture, each menu is also presented that can managed and viewed according to use rights, besides that the image also manages the process after opening the application, system user required to login first

Table 1. System Users

Operator	Description
Admin	Is a person who is responsible for managing the application
Farmer	Is a person who is responsible for inputting coffee sales data as well as inputting sales locations
Buyer	A people who are looking for farmers through google maps

2) Activity Diagram Design

The following is an activity diagram for the system to comments, edit, cut data and sales locations.

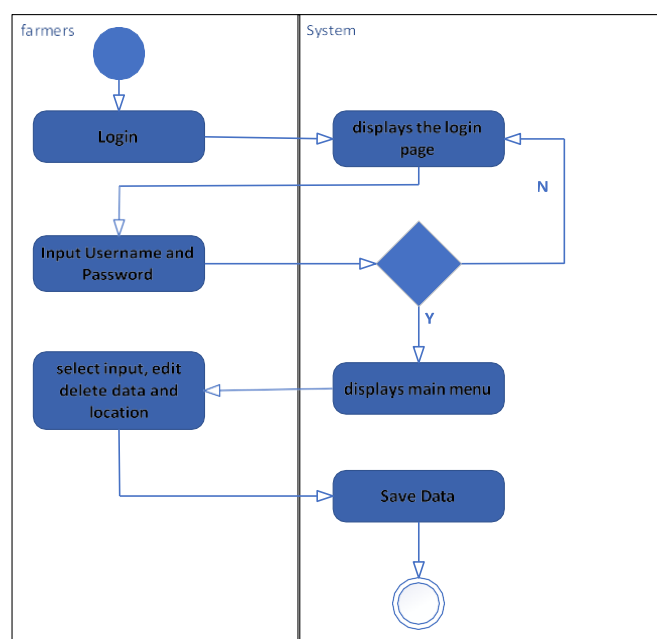


Fig 3. Activity Diagram Input, Edit, Delete Data and Location

From Figure 3 presented, for the comments process, edit and cut data and sales locations, the farmer first logs in, after login accepted the system will display the main page where the menu is a menu for managing coffee sales data and coffee sales location data. Data that is advice, edited or deleted will then be stored in the database.

3) Class Diagram Design

Class diagram is a static from that describes the structure and class description and its relationship between classes (Sergievskiy, 2017), along with the class diagram system design in this application.

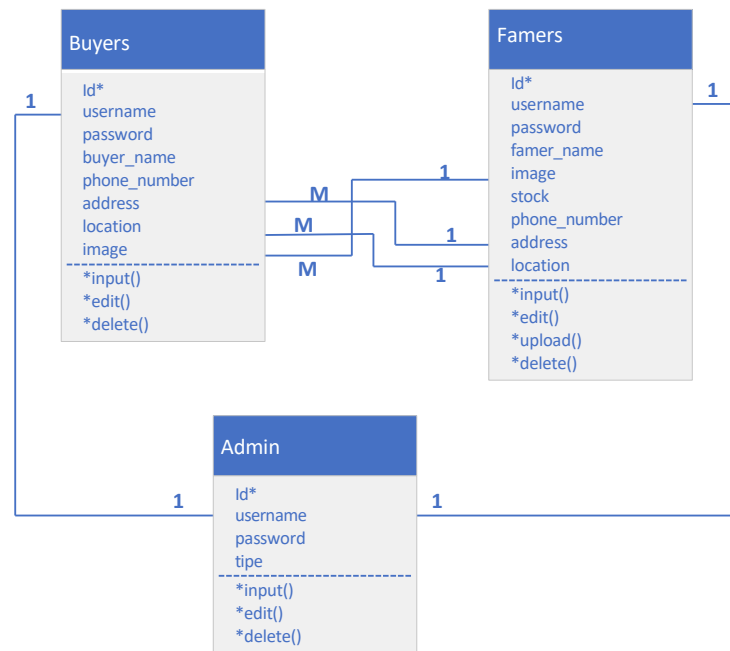


Fig 4. Class Diagram System

3. RESULTS AND DISCUSSION

In accordance with the purpose of this research is to build applications where coffee sales information system which will allow coffee farmers and buyers to share information about the sale of coffee, then follows shows the result of system development has been done.

A. Registration Menu Display

Fig 5. Form Registration

In Figure 5 is a page for first registration for users (farmers / prospective buyers) to enter and use the system. In registering, the user must fill in the requested data according to the list displayed by the system.

B. Search Form Display



Fig 6. Search Menu Display
(a) Site, (b) Name

In Figure 6, a search menu display is presented, this information search can use two programs, namely searching by site and searching by name of coffee products. Search based on site is used if we want data on the location of coffee farmers according to the site we enter in the search field. Meanwhile, in a search based on coffee products, we enter the keywords of the coffee product we want.

C. Product Display

The following is a look at the products that have been registered in the application by knowing the number of stocks and product quality. In this view, we can also find out the location of the farmer and the distance traveled to the site of the coffee farmer.

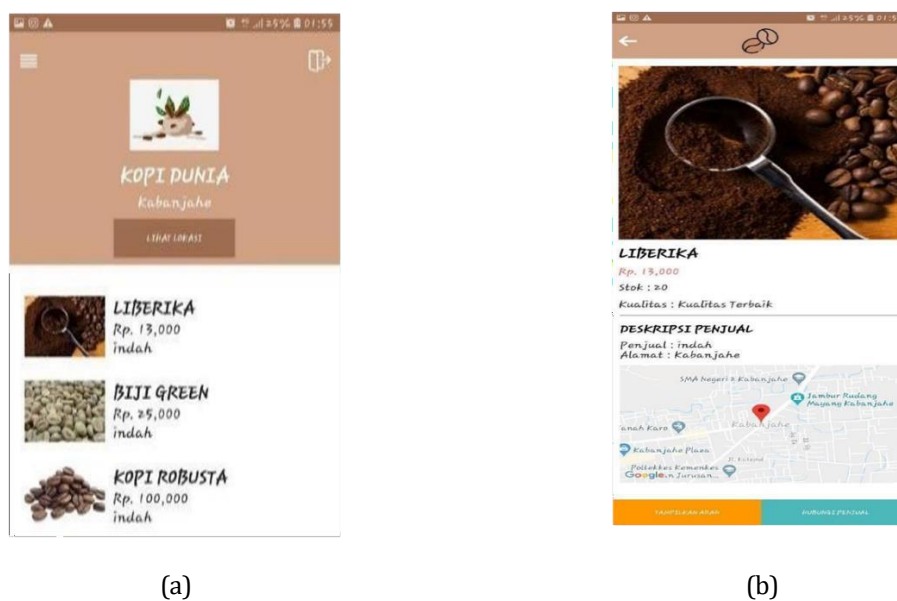
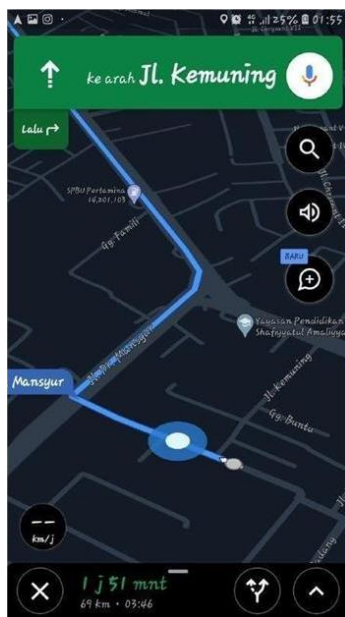


Fig 7. Available Product Display
(a) List of Coffee Products, (b) Product Details and Site

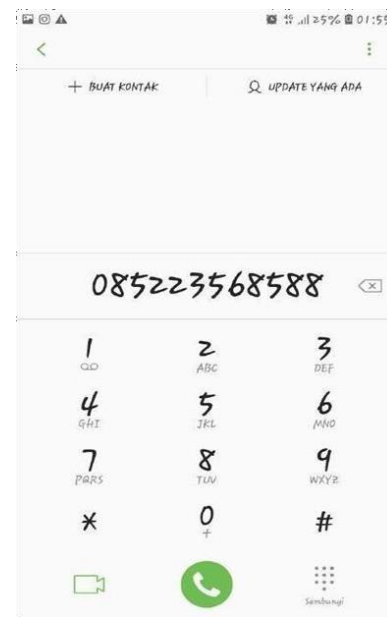
In the coffee product list image displays the products that has been register into the system where on this display displays the coffee name, price and business name. Whereas in the product detail image and place displays a detailed description of the product we want to see and displays the sales address.

D. Farmer's Route and Contact View

Here is a detailed view of the road route from the user's site to the seller's site which has been connect to Google Maps, so here we know the path and mileage that we are going to go through, then we can also get the farmer's contact person by clicking the "contact seller" button.



(a)



(b)

Fig 8. Route View and Person Contact
(a) Route, (b) Farmer Personnel Contact Number

4. CONCLUSION

All stages have been carried out so that it can be concluded in this study is the application to update the site where the sale of coffee can be run in accordance with the goals of this research. Applications to work properly without any error when done testing or debug a program wherein the processing system can search for a site to show them farmers, can decide the amount of coffee stock available and shows the way to the location of farmers.

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