Design Of Online Shopping Application Based On Mobile Devices And Android Studio In PT. Midi Utama Indonesia

Bakhtiar Rifai[1], Yesi Ratna Sari[2] and Nanang Nuryadi[3]

[12]Teknik Informatika, Fakultas Teknik. STMIK Nusa Mandiri Jakarta. Daerah KhususIbukota Jakarta. 12250. Indonesia.
[2]Teknik Komputer, AMIK BSI Tegal, Jl.Sipelem No.22 Depan Mall Rita Tegal Barat

E-mail: bakhtiar.bri@nusamandiri.ac.id, yesiratna@ayomidi.dx.am, nanang.nyd@bsi.ac.id

A R T I C L E I N F O	A B S T R A C T
	Self-service is an alternative place to shop. a special place that can meet the daily shopping needs of consumers. Product Ordering for customers remains a constraint if the distance of the place of residence with a minimarket are far apart, or lazy customers out due to rain. Of the few existing cases, Order and delivery system is still done over the phone. The way they have constraints, such customers do not know the Menu and price list that is in the minimart. This research aims to build the application so that the delivery Order and delivery information becomes quickly, accurately, and can Order the Products online via smartphones. This application was built using the software Android Studio as the manufacturer of the application and its data base for the management of SQLite. This application can help consumers to get information about the Product- markets are offered as well as facilitate consumers in the process of Ordering a Product and can help increase sales for companies.

1. Introduction

With the development of m-commerce technology today makes the operating system of mobile devices increasingly diverse, the emergence of an open Android operating system makes users to get to find and get various information easily and quickly. Supported by the increasing number of mobile phone vendors that produce their products using the Android-based operating system which shows that the buyer's interest in Android products is very high because the OS (Operating System) is open, so to develop applications is not too difficult[1]

With the development of technology, new innovations are needed for media information and ways to transact with consumers. In addition, Alfamidi feels that the increasingly fierce competition between stores can be seen from the number of outlet developments in the Jakarta area[2].

In this research, the online shopping system will be applied to mobile device-based online shopping ordering applications, so that it can make changes in people's behavior in the alfamidi swadarma raya environment about conventional shopping turning into mobile and easier without having to queue and leave the house.

While the purpose of this study is How the purpose of the application of android applications on purchasing goods at PT Midi Utama Indonesia Tbk is to help customers in the transaction. What is the purpose of the application of android applications on online purchases at PT Midi Utama Indonesia Tbk is to pamper customers with no longer long queues. What is the purpose of the application of the android application on online purchases at PT Midi Utama Indonesia Tbk is to anticipate fraudulent prices at the cashier and also to minimize errors at the cashier.

2. Literature Review

In a research process requires a relevant source to support each idea. Here the authors include several scientific journals that are relevant to the research that the author will discuss:

Based on research conducted by Susilowati & Negara, in 2018 entitled Implementation of the Rapid Application Development (RAD) Model in Designing E-Marketplace Applications: That the current shopping system has a limited time issue, differences in commodities between one market with others, as

well as other obstacles that make sellers and buyers limited transaction and marketing time by producers or sellers. To overcome these problems need to be made a means of e-market (online market). The method used in this research by Susilowati & Negara, is Rapid Application Development (RAD). So as to produce a system with the main goal of shortening the time to work on applications and processes so that as soon as possible empower the software system precisely and quickly which consists of the requirements planning stage, system design, instruction and implementation.[3]

The 2014 study, entitled Designing Information Systems for Mobile Smartphone-Based Public Transportation Route Guides at the Jakarta Transportation Agency by Prabowo et al., Identified the problem, namely: The tendency of urban communities to use private vehicles to travel at certain levels so as to cause transportation problems, causing congestion and making people lazy to shop out of the house ". In this study, researchers used a software development method that is the Software Development Life Cycle (SDLC) method. From the explanation in this journal, the researcher concludes that one solution is to minimize related problems so this application is made so that it is expected to be able to help people to shop and fulfill their daily needs[4].

research conducted by Ardian in 2013 with the title: Information System for Selling Web-Based Beauty Products at PT Dian Mustika, researchers analyzed the problem, namely: Lifestyle at this time has an impact on changing the pattern of sales systems from face to face communication through cyberspace or known as e-commerce term. Almost all agencies use the internet and have an online container for the smooth running of their business. So far, sales of these products are still manual and have not been neatly arranged. Likewise, the sales report still uses manual data input on the computer. Problems that occur companies do not yet have an online container to display the products sold by so that consumers are less familiar, and the product sales are less than optimal. In his research, Ardian used a method, namely: the waterfall method. In his research it can be concluded that: With this web-based application, sales and reports that were previously manual are easier and faster. Applications that are made can facilitate consumers in terms of getting product information offered and also the process of purchasing products, because the existing process can minimize the time, cost and effectiveness of the processes carried out from the consumers themselves. And, sales using the internet media are very effective when compared with sales that are manual. Besides being more cost-effective in terms of cost, the internet can make it easier for consumers to see and buy the products offered[5].

2.1. Basic Concepts of the Program

The basic concept of the program that is used in making online shopping application orders based on mobile devices with Android Studio is as follows:

a. Android

Android is an operating system for cellular phones based on Linux. Android provides an open platform for developers to create their own applications for use by a variety of mobile devices. Initially, Google Inc. buy Android Inc., a newcomer who makes software for mobile phones. Then to develop Android, the Open Handset Alliance was formed, a consortium of 34 hardware, software, and telecommunications companies, including Google, HTC, Intel, Motorola, Qualcomm, T-Mobile, and Nvidia. It functions the same as the Symbian operating system on Nokia, iOS on Apple and BlackBerry OS.

Android has a life cycle that is the basic logic of the flow of an application that is built. The system is very instrumental in determining whether the application is run, paused, or stopped altogether. Because Android is very sensitive to the application lifecycle and its components. There needs to be handling of each condition so that the application is stable[6].

b. Android Studio

Android studio is an official IDE (Integrated Development Environment) for Android application development and is open source or free. The launch of Android Studio was announced by Google on May 16, 2013 at the Google I / O Conference event for 2013. Since then, Android Studio has replaced Eclipse as the official IDE for developing Android applications.

Android studio itself was developed based on IntelliJ IDEA which is similar to Eclipse accompanied by the ADT plugin (Android Development Tools)[7].

c. Java

The Java programming language is one of the many programming languages that can be run on various operating systems including mobile phones. This programming language was first created by James Gosling while still joining Sun Microsystems. This programming language is a development of the C ++ language because many adopt the syntax of C and C ++. Currently Java is the most popular programming language used. The advantage of Java from other programming languages is that it can be run on various types of operating systems so that it is also known as a multiplatform programming language, object-oriented programming (PBO), has a complete library.

d. Web Service
    Web service is a set of application logic and its objects and methods to make it easier for some application components to connect with other applications in an organization or outside the organization using platform-neutral standards and are not bound by programming languages. used. This can happen because the XML standard is supported by many large companies in the world, which are used to exchange data. Apart from that, the use of SOAP as methods of objects in a web service can be accessed from other applications as well as the application accesses local methods[7].

e. JavaScript Object Nation (JSON)
    JSON is a lightweight data interchange format. JSON is a completely independent text format but uses conventions that are familiar with the programming languages of the C family, including C, C ++, C #, Java, JavaScript, Perl, Python, and so on.

3.   Research Methods

Researchers in data collection as wellinformation needed for the ingredientsThis research program uses the methodthat is:

3.1   Looping Algorithm
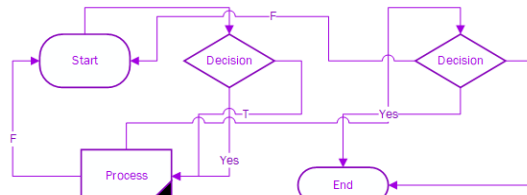Looping algorithm is an algorithm that runs certain steps repeatedly or looping.

Fig 1. *DiagramChart looping algorithm*

3.2   Conditional Algorithm
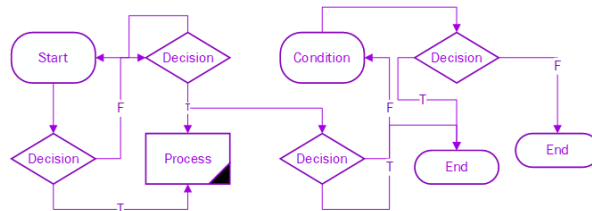Conditional algorithms are algorithms that take the next step when conditions are met.

Fig 2. *DiagramChartconditional Algoritm*

3.3   Data Collection Techniques
To obtain data and information needed in writing in this study the author directly came to the store that was the object of research and data collection needed by:

a. Observation
    The author makes direct observations on the company and indirect observations on the online store application developed by other application developers on PlayStore.

b. Interview
    In writing this thesis report, in order to obtain complete information, the writer conducted a data collection by interviewing and writing important points in the interview with the main target of the Head of Alfamidi Shop, Swadarma Raya branch and the residents around the area regarding mobile-based online shopping ordering applications. devices.

c. Literature Study
    In addition to carrying out the above activities, the author also conducts literature studies through relevant online journals, books and articles in order to provide a better understanding of the writer to develop his application.

3.4 Application Development Methods

System development techniques use incremental methods already developed from the waterfall model, as these incremental methods consist of stages that facilitate, if at one stage are mismatched or encountered, can go back to earlier levels:

a. Need Analysis

This step is an analysis of system requirements. Data collection in this stage can carry out a research, interview and literature study. This stage will produce the User requirements document or it can be said as data related to the user's wishes in making the system. This document will be the system analyst's reference for translating into the programming language.

b. Design

This process focuses on: data structure, software architecture, interface representation, and procedural details (algorithms). This stage will produce a document called software requirements. This document will be used by programmers to carry out system-making activities.

c. Code Generation

This stage is the real stage in working on a system.

d. Testing

After the coding is complete, the system will be tested. The purpose of testing is to find errors in the system and then it can be fixed.

e. Support

Software that has been delivered to customers has changed. These changes can be due to an error because the software must adapt to the new environment (periperal or new operating system) or because the customer requires functional development.

4. Results and Discussion

4.1. Identification of Problems

a. Analysis of Application Requirements

Application requirements to be analyzed include the software and hardware used. Software requirements that will be used by the author. The software used by the author to make this application, as follows:

b. Android Studio

Android Studio is a very fun software system for creating an application on an android device. Uniquely, Android Studio can improve imperfect Source Code such as selecting gradle versions, APIs, libraries, and code recommendations when there are defects in the code and many more listed in logcat.

4.2 Design

System design or design in general is intended to provide a general description of the system to be built. This design identifies the components of the information system that will be built in detail.
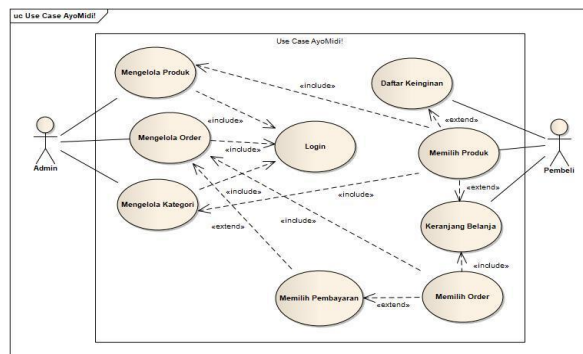
4.3 Software Architecture

a. *Use Case Diagram*
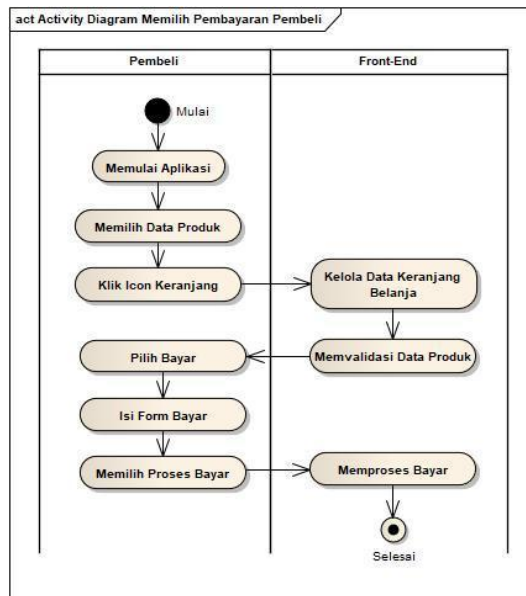

Fig 3.*Use Case Diagram*

b. *Activity Diagram*
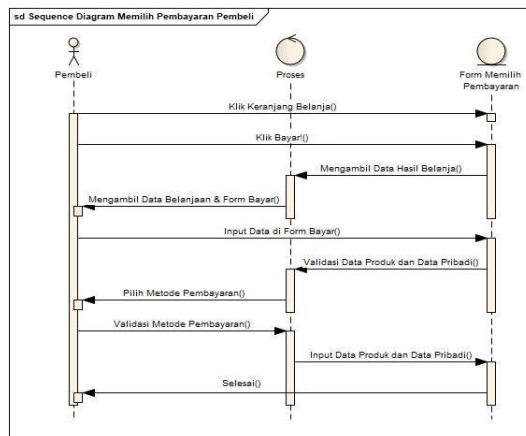

Fig 4. *Activity Diagram*

Fig 5. *Sequence Diagram*
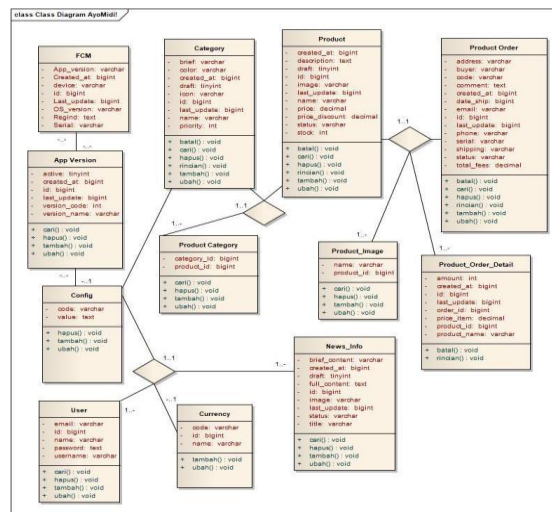
c. *Class Diagram*

Fig 6. *Class Diagram*

4.4 User Interface

The user interface is made of 2, the back-end interface and the front-end interface where the back-end interface uses the web while the front-end interface uses the Android
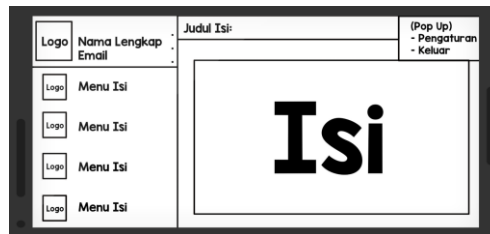
a. **application.***Back-End*

Fig 7. *Interface Back-End*

b. *Front-End*

Fig 8. *Interface Front-End*

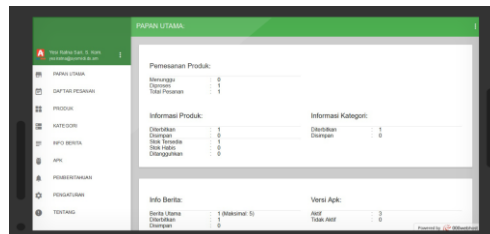### 4.5 Implementasi

a. *Back-End*

Fig 9.Implementasi *Back-End*

b. *Front-End*

Fig 10. Implementasi *Front-End*

Display front-end implementation on Android applications for users

5.　Conclusions

The conclusions that can be drawn from this application are:
a.　No need to bother leaving the house due to a delivery system that makes people comfortable shopping everyday.
b.　Cashiers who have facilitated transactions, and reduce the risks that previously arose long before the application was made.

6.　References

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