

Designing an Android-Based E-Commerce Application for Picci-Picci Traditional Handicraft Products at the Craftsman Group of BUMDes Mamuju Tengah

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Abstract

The sale of traditional goods picci - picci BUMDes Mamuju Tengah based on android application is made to make it easier for the public to find out information about the latest traditional products available in BUMDes. This study uses research methods such as observation, interviews and literature study. As for the system development method using Design Science Research (DSR). Based on the results of research with the design of this information system, it can facilitate the dissemination of information about the latest products available in the BUMDes of Mamuju Tengah and facilitate the processing of sales transaction data and information.

Keywords

e-commerce; android; picci – picci; user interface



I. Introduction

The impact of the Corona Virus Disease 2019 (Covid-19) pandemic has an impact on the national economy, one of which is Small and Medium Enterprises (SMEs). The Covid-19 pandemic poses a threat to the income of SMEs because of the difficulty of running their business, especially in marketing and selling products that are carried out offline. With the development of digital technology today, business actors need to add and or change their online marketing and sales methods (Azizah et al., 2020). Businesses done online can increase marketing reach as well as acquire new potential customers (Rulandari, Rahmawati, & Nurbaiti, 2020). In interviews conducted by the author with the owner of a business entity, he admitted that the marketing strategy carried out so far still does not have a good marketing program/method because he is only waiting at home, relying on requests for peni orders from peni. Thus, sales turnover is highly dependent on requests from collecting traders (Pohan, 2019).

Along with the rapid development of technology, several business actors want to increase their business by utilizing existing information technology, one of which is the picci-picci craftsman group. The picci-picci craftsman group is a group of business actors under the auspices of BUMDes (village-owned enterprises) that make traditional crafts such as batik clothes, bags that are recycled from plastic waste such as kbag mina Salugatta wrappers, precisely in Budong-Budong District, Central Mamuju Regency, West Sulawesi. With the pandemic situation still ongoing and the exact time when the pandemic will end is still unknown, it has an impact on the sales of picci - picci crafts for this group of craftsmen. The development of the world of technology and information affects all human life in fulfilling their needs (Ngafifi, 2014). The online market or often called Electronic Commerce is a new opportunity and adds to the competitiveness of the purchasing transaction system, therefore it is very much needed in facing market competition to get significant results in running E-Commerce (Irviani, Setyorini, & Muslihudin, 2018). According to data released by IDC, as of September 2013, Android has become the most

favorite operating system in Indonesia with a market share of 60%, far from BlackBerry which is only 30% Windows phone (9%), and iOS (3%).

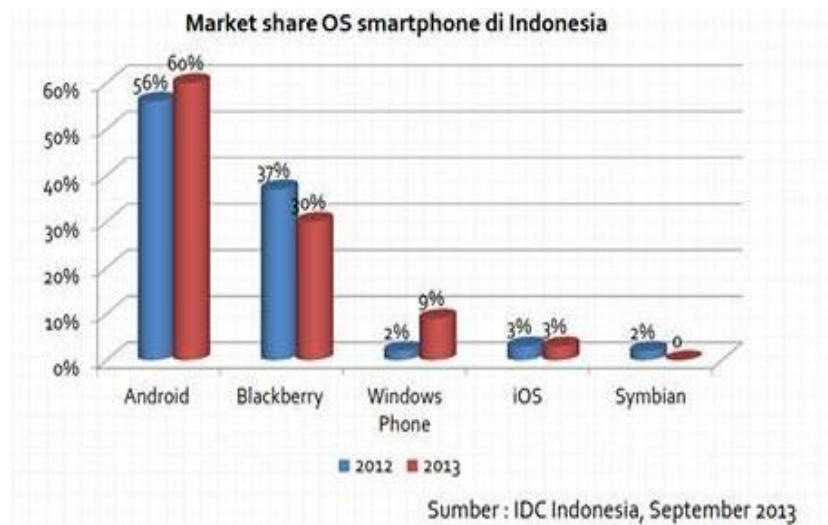


Figure 1. Market Share OS Smartphone Indonesia

Steven Yurie Frediyatama (2014) this research uses a Cloud-based system and other features are added, to support other processes that help the restaurant work efficiency. Muhammad Rifa'i, Tri Listyorini, Anastasya Latubessy (2014) This study explains that this application makes it easy for buyers to see a house virtually in the catalog provided before buying a house. Febri Nova Lenti (2017) this research resulted in an online-based B2B-B2C E-commerce system for end-consumer interface for transactions and mobile-based for the interface between affiliates and suppliers/owners.

From several studies, Mobile Commerce Applications can directly carry out product order transactions and some use open source which uses Java as a programming language, making it easier for development to create applications on Android.(Isnanto & Putra, 2013). Based on the explanation above, because of the ongoing weakness in the KSM product marketing information system, an Android application-based system will be created as a marketing medium and selling community handicraft products.

The use of technology provides great benefits to the business world. Companies that use technology are companies that are able to compete in the competition(Rahmidani, 2015). One technology that can increase business competition is the use of electronic commerce (e-commerce), where e-commerce is used to market various products and services both in physical and digital form.(Wibowo, 2014).

Marketing is a process of planning and execution, starting from the conception stage, pricing, promotion, to the distribution of goods, ideas and services, to make exchanges that satisfy the individual and his institutions (Dianto in Asmuni *et al*, 2020). According to Tjiptono in Marlizar (2020) marketing performance is a function that has the greatest contact with the external environment, even though the company only has limited control over the company's environment. In the world of marketing, consumers are assets that must be maintained and maintained their existence in order to remain consistent with the products we produce (Romdonny and Rosmadi, 2019).

Currently a good strategy is needed in marketing the product. E-commerce is very appropriate to use in marketing the products sold by a store. E-commerce can facilitate transactions between sellers and buyers in different places and buyers can find product info such as prices, models, colors, and other product info easily.(Wijaya & Andry, 2021).

The development of e-commerce is increasing rapidly in Indonesia, this requires all business actors to be able to adapt by selling their products online (Laura Hardilawati, 2020). Advances in technology can simplify the business processes of a business. The increasing use of smartphones around the world has made the development of e-commerce shift from websites to smartphones. Currently, smartphones help all kinds of human activities such as sending and receiving messages, ordering necessities of life such as food and drinks or other secondary needs. Android smartphones are currently owned by almost all levels of society and are used for entertainment, communication, doing business, buying and selling goods through applications and so on.

UD Hoky Celluler Shop is a trading business that sells cellphones and accessories. UD Hoky Celluler Shop wants to expand its business by selling its products through Android because by selling its products through Android, UD Hoky Celluler Shop can increase customer satisfaction and get new customers.

To meet these needs, an Android-based e-commerce application was designed to help UD Hoky Celluler Shop improve customer satisfaction and get new customers and also simplify its business processes because UD Hoky Celluler Shop does not have records related to stock of goods owned and storage of goods is regulated by the owner, so if the customer wants to buy an item, the customer has to wait because the owner needs to check first whether the item is there or not (Wijaya & Andry, 2021). Recording sales reports using paper or manually also poses a risk of losing report records and also the paper can be damaged.

Based on this description, this study aims to help BUMDes Mamuju Tengah to increase sales of existing traditional goods by creating an Android-based e-commerce application. This e-commerce application is different from other e-commerce applications because the application built is an e-commerce application specifically for traditional goods made for the Central Mamuju BUMDes but in the future the application can sell on this created e-commerce.

Related research related to learning in this field of research, such as the research entitled "Design and Build Web and Android-Based Ordering and Sales Applications at YT Stores. Interior Wall "2020 (Martan & Sitohang, 2022). In this study to support the realization of an application that is able to develop a business at the YT Store. Wall Interior researchers create web and android based applications which will later contain features such as the types of wallpapers offered, how many stock items are in store, and how to order them. (SITEPU & ISMAWARI, 2019). So that the availability of the application is able to assist customers in knowing the information offered at the store. Furthermore, research entitled "Design and Development of Multimedia Applications for Learning Primatology Based on Android" in 2021. The results of designing a multimedia application for learning primatology are designed for Android-based smartphone devices with a minimum version (Al Hakim & Annisa, 2021). From the results of several studies above, it shows that when using an Android or web-based application for the buying and selling process, the process of delivering information on the product will become easier, as well as ease of accessing the application application.

The application of Android-based e-commerce is the right solution in dealing with this condition, the creation of an Android-based e-commerce application is expected to be the solution that has been expected, the design of this application includes the name of the name dima The design of this application utilizes UML or unified modeling language as a platform which is used to model the designed system, while for the system development method using Design Science Research (DSR). (Vani, Hidayat, & Yudhistira, 2021). coupled with the creation of an application user interface designed to facilitate the

implementation of the system to be made and application testing using the black box method.

The first thing the author does is to identify the problem based on a literature study. Literature studies carried out are based on national journals and determine the problem formulation and problem objectives that are limited by problem boundaries. Make a scenario design that will be carried out for research. Designing e-commerce Applications. Testing using the black box method. If the simulation matches the scenario, the results will be tested and evaluated.

II. Review of Literature

2.1 Information Systems

According to Ida Nuraida (2008), the information system is a set of procedures that are systematically organized, if implemented, will provide information that can be utilized in the decision-making process. According to Al-Bahra Ladjamudin, (2005) Information System is an integrated and complementary processed data unit that produces output in the form of images, sound and writing.

2.2 Application Program

According to Dop (2013), the term application comes from English application which means application, application or use, while in general, the definition of application is a ready-to-use program that is made to carry out a function for users of application services and other application service users that can be used by users. which will be addressed. Verdy Yasin (2007) explains that the application is a subclass of computer software that utilizes direct computer capabilities to perform a task that the user wants.

2.3 Android

According to Kasman (2013) Android is an operating system for mobile phones and touch screen tablets based on Linux. But along with the development of Android, it has turned into a platform that is so fast and innovating.

2.4 E-Commerce

According to Loudon (1998) E-Commerce or Electronic Commerce is a process carried out by consumers in buying and selling various products electronically from company to company by using a computer as an intermediary for business transactions carried out.

E-Commerce has a function to facilitate communication between producers, consumers, marketing and promotion of goods or services. Expanding the reach of potential customers with a broad market. Simplify the selling and buying process. Make payments easier because it can be done online. Facilitate the dissemination of information.

2.5 KSM (Non-Governmental Organization)

Community self-help group (KSM) is a group of people who agree to help each other and work together to build financial resources to encourage and develop productive businesses and improve the living standards of members and families. KSM or (Non-Governmental Organization) is an association of people who unite themselves voluntarily in a group due to the same vision, interests, and needs so that the group has the same goals to be achieved together.

III. Research Method

In this study the authors used the DSR (Design Science Research) method. The author's purpose of using this DSR method is to develop the application that will be built. An online sales system by combining the principles, practices, and procedures necessary for the research produced to have a good level of success and satisfaction for users.(Alip, Kosasi, Yuliani, Syarifudin, & David, 2021). The stages of the DSR research method used are as follows:

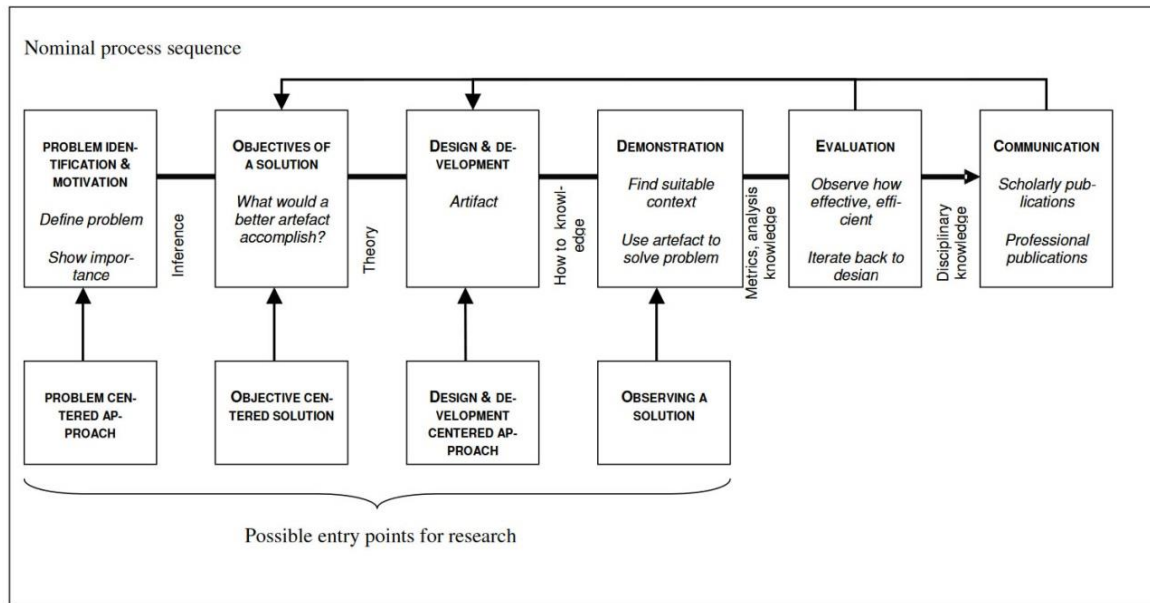


Figure 2. The stages of the DSR research method

IV. Results and Discussion

4.1 System Design

- Identify problems and motivate*(identifying problems and motivating) At this stage it is necessary to determine research problems specifically for partners with a survey by visiting partners and interviewing partner owners and existing staff. To provide an overview of the system to be built. As well as existing problems so that they can be used to develop an artifact that provides an effective solution to proceed to the next stage.
- Define objectives of a solution*(defining goals for solutions) At this stage is to formulate the goals of the problem to get a solution and find out about what is feasible when building a system.
- Design and development*(design and development) At this stage the author designs and develops a system that is in accordance with the objectives of the solution to be completed using the Unified Modeling Language (UML) system modeling and database design. This is done to design the layout of the system in accordance with the analysis required by the system.

1. Use Case Diagrams

Describes how to know what functions are contained in the system and who is allowed to use these functions.

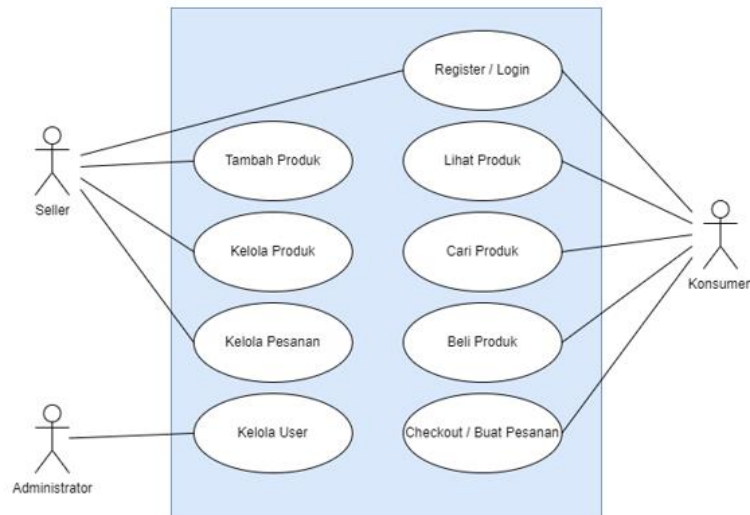


Figure 3. Use case

2. Class Diagram

It is a UML link between classes and a detailed explanation of each class that is in the design of the system. Class Diagram also shows what are the rules and responsibilities of entities that determine behavior in the system and shows the attributes and operations that exist in a class related to connected objects. (Robinson Robinson)

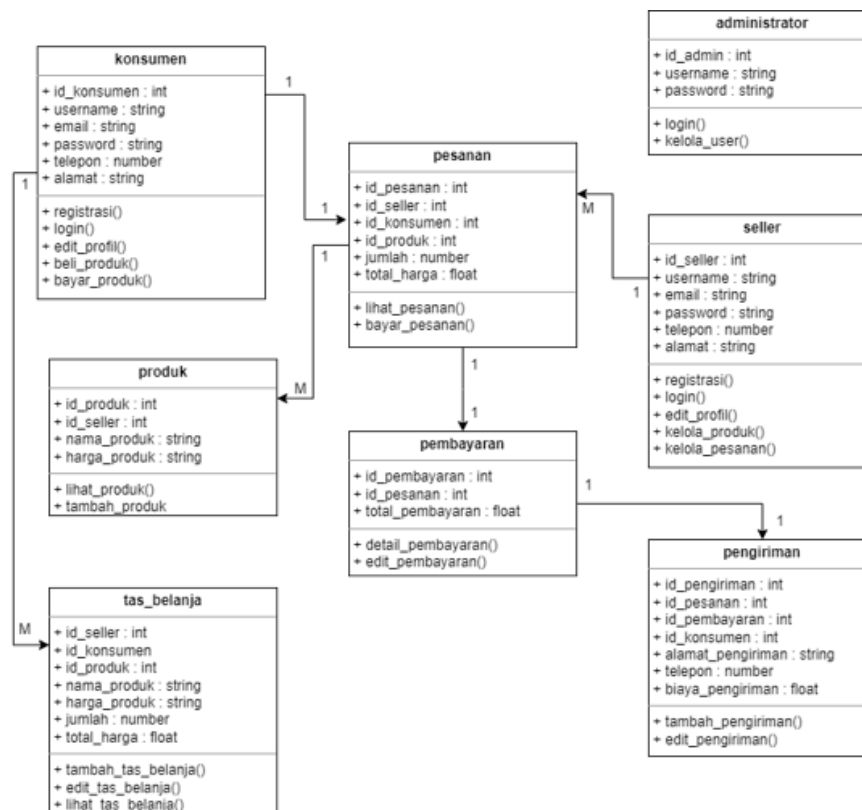


Figure 4. class diagram

3. Activity Diagrams

Describes how the workflow or activities that exist in the system. Activity diagrams in research.

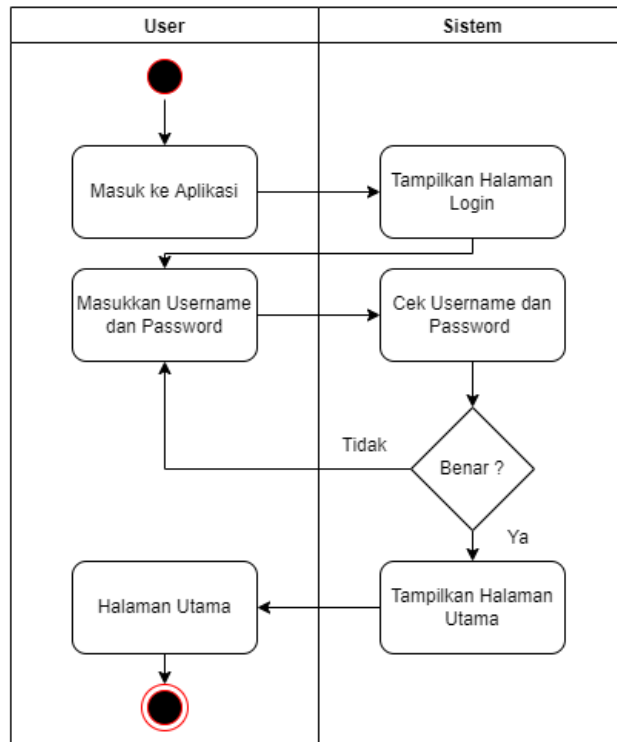


Figure 5. Activity login diagram

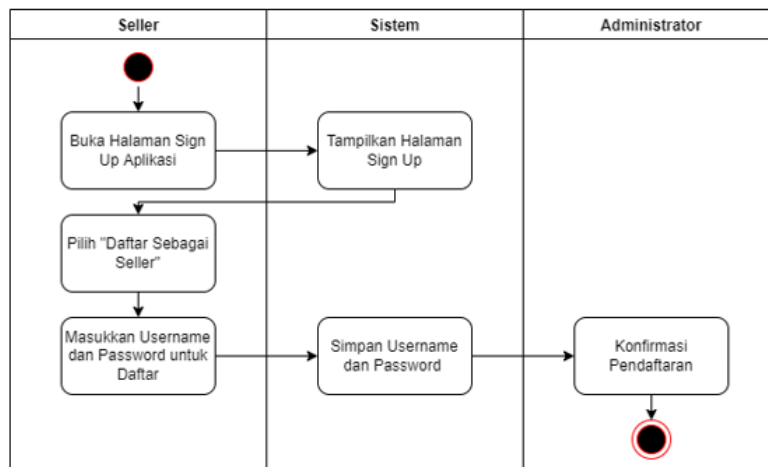


Figure 6. Seller list activity diagram

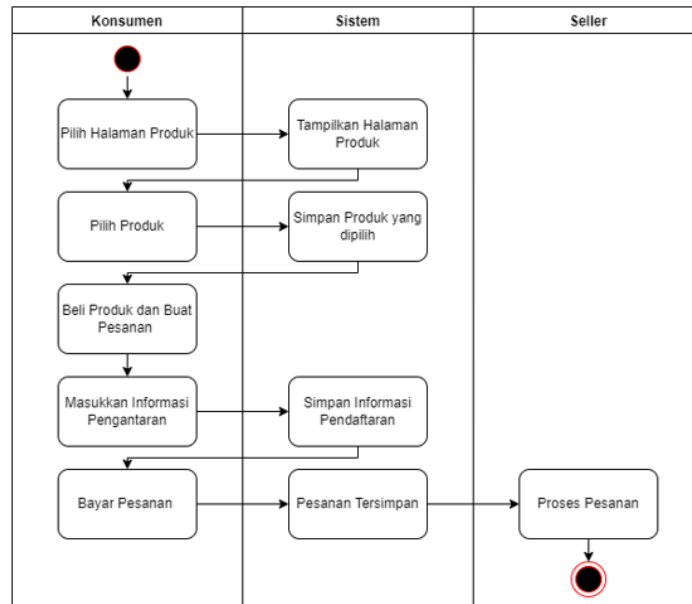


Figure 7. Activity diagram of buying a product

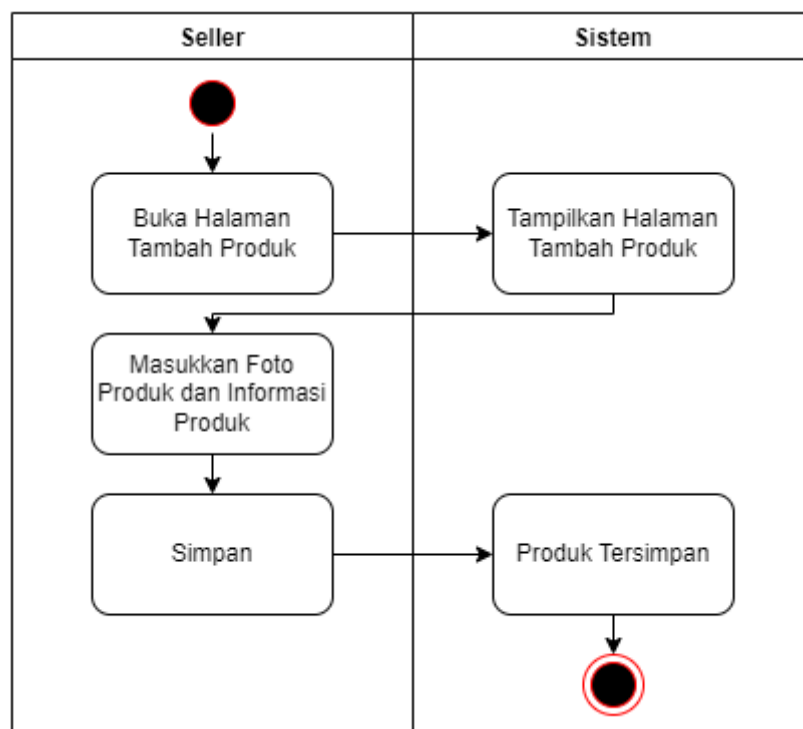


Figure 8. Add product activity diagram

4. Sequence Diagrams

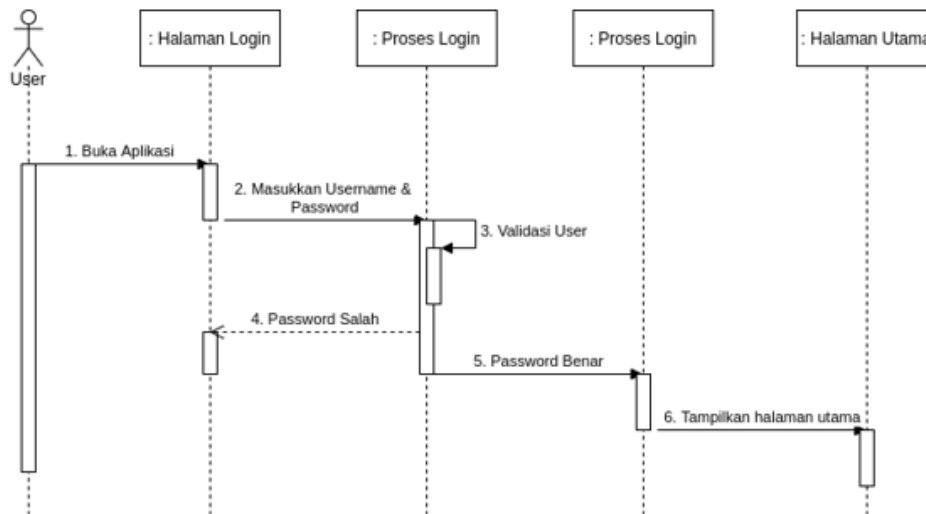


Figure 9. login sequence diagram

In this user login sequence diagram, it describes the process sequences carried out by the user in logging in to the application. The user enters the password in the login form then in the process the password is checked for validation, if the password matches the one in the database, the main menu will appear, if the password is wrong, repeat the password again.

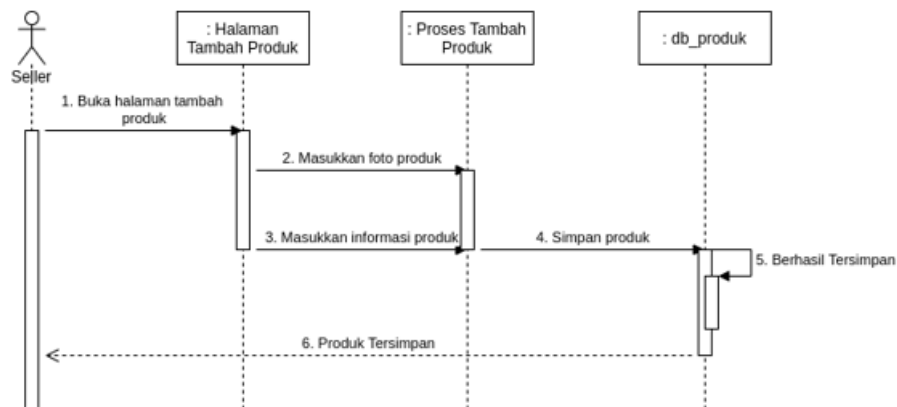


Figure 10. Sequence diagram for adding products

In this added product sequence diagram, it explains the process sequences for sellers to add products to the system.

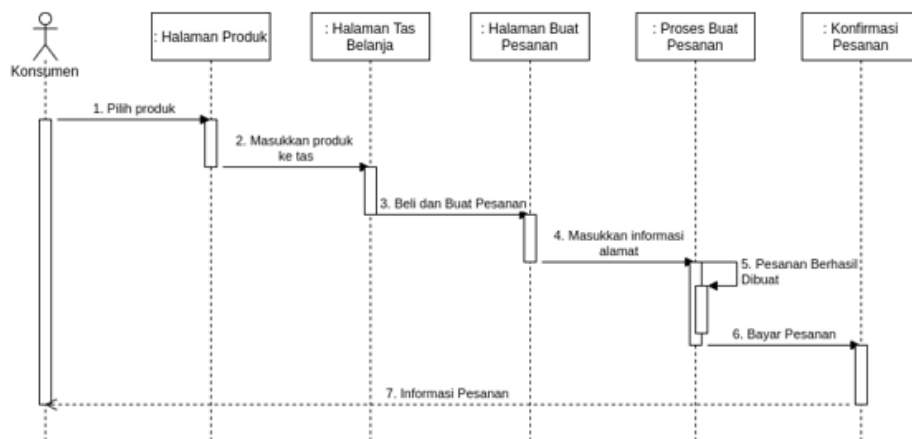


Figure 11. Sequence diagram of buying a product

In this product buying sequence diagram, it explains the sequences of how the consumer buys the products in the system.

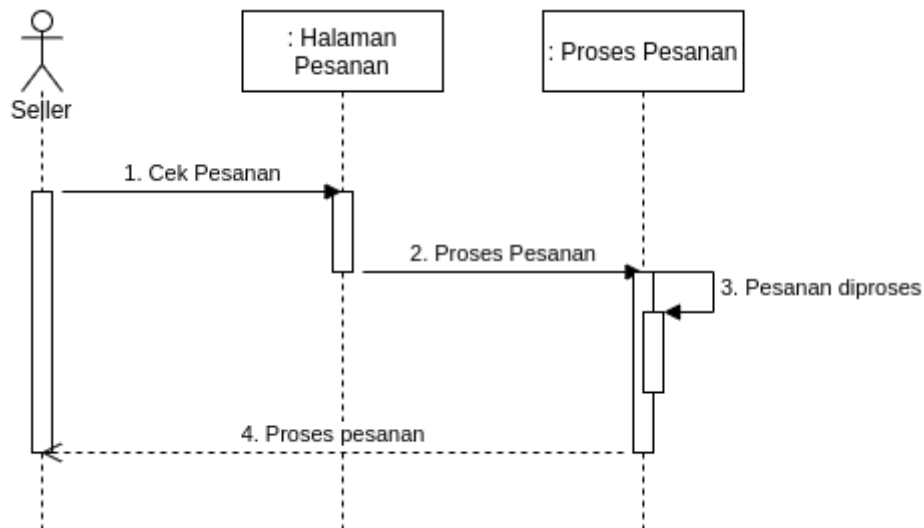


Figure 12. Sequence diagram of the order process

In this order process sequence diagram, it explains the sequences of how the seller processes to check orders that are on the system.

- d. Demonstration at this stage the use and testing of the system uses blackbox (blackbox testing) on the application that has been made for the Central Mamuju BUMDes case study by involving the owner and partner users, this is done.
- e. Evaluation at this stage the author evaluates by observing how effective and well the system has been and provides solutions to existing problems, with the initial goal of building the system, an evaluation is needed to find out the feasibility of the system.
- f. Communication at this stage, communication is carried out on the problem of how important artifacts and design information is in the system, regarding its effectiveness for other researchers.

4.2 Main page

The following is a display of the main page of the Clutr e-commerce application and an explanation of each menu.

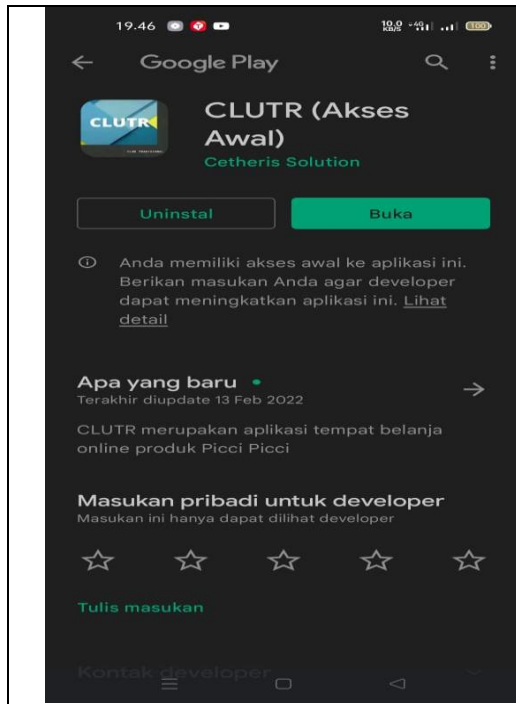


Figure 13. Display of the application on the playstore

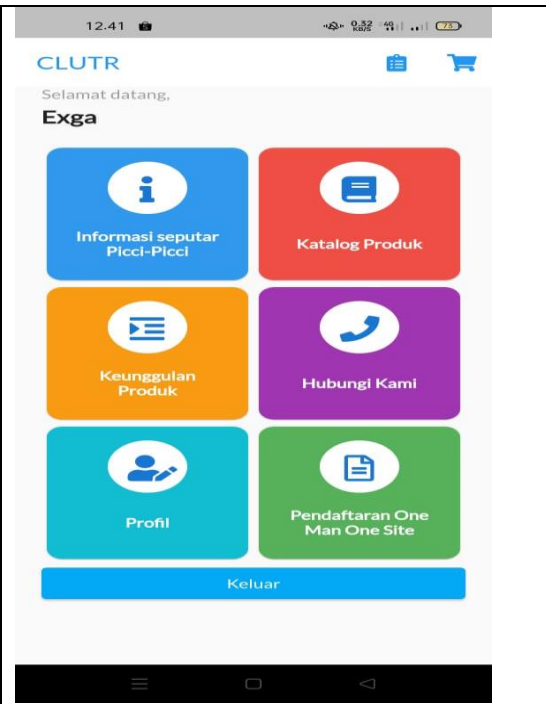


Figure 14. display the main menu of the application

a. Information about picci-picci

In the Information menu about the picci-picci there are pictures and information that can be given to customers related to the materials that are made to make them.

b. Product Catalog

In this Product Catalog menu, there are product images as well as prices and detailed product descriptions that will be purchased by the customer.

c. Product excellence

In the Product Advantage menu, it contains images and product advantages made by BUMDes Mamuju Tengah craftsmen.

d. Contact us

On the Contact Us menu, this is a chat menu to communicate with the seller or user.

e. Profile

In this profile menu, you can see the personal data of the account owner that has been registered by the customer.

f. One man One Site registration

The One man one site feature can be used when the application user has registered as a collector, this feature can provide a more affordable price with purchases of at least 100 Pcs. The combination of elements by taking into account the strengths and weaknesses of the digital marketing application is an effort to increase the potential for product sales.

4.3 User Page View

This page is a page that can only be accessed by users to add products, provide information in the application and so on.

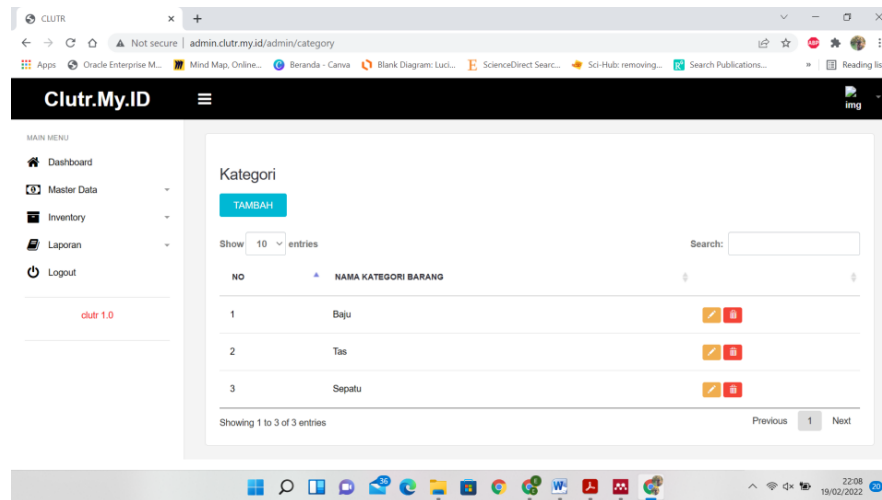


Figure 15. Web display for users

4.4 Test Results and Marketing Training

In this study, before the system was implemented, it had passed the testing phase, system testing was carried out using blackbox testing. Testing on an application aims to check whether a program has been running properly or there are still errors. The use of blackbox testing has been widely used by testers to check whether the program is appropriate or not. In this study, the software that will be studied using Blackbox Testing is an online buying and selling system called Clutr. The application will be tested using Blackbox Testing where this test aims to see whether the program is in accordance with the desired function of the program without knowing the program code used.

Researchers have also conducted a survey of partners based on the database in the application. The survey found that in general partners gave a satisfied response to the content and design of the Clutr application. Partners mentioned that the accessibility of the application is easy to use for parents, even the appearance is attractive and easy to read.

If the user wants to view the report on a certain date, the user can enter the start and end date of the transaction by pressing the box next to the start date to enter the start date of the transaction and the end date to enter the end date, then the user can press the search button to display the sales report accordingly. with the desired date. Users can view transaction details by pressing the order id number then the application will display an order detail display containing product images, customer names, product names, number of products purchased by customers, customer addresses, date customers ordered products, delivery services, delivery receipts, and total price. of the product purchased. Before entering the sales report view, the user needs to press the sales button on the admin home screen.

The admin home display is the display when the UD Hoky Celluler Shop user successfully logs into the application using the email that has been registered in the application. Users can see what stock of goods is available on the admin home display and also if the user only wants to see the stock of the cellphone the user can press the cellphone button, if the user only wants to see the stock of accessories, the user can press the accessories button, if the user wants to see the stock of goods that have run out, user can press the empty stock button. Users can also view product details by pressing the product

image then the application will display a product detail view. Users can add products to the cart to input transactions that occur offline.

V. Conclusion

The conclusion obtained from the results of this study in the development of e-commerce applications specifically for traditional crafts for craftsmen of BUMDes Mamuju Tengah, which can facilitate the dissemination of information about the latest products from peni from peni consumers optimally and provide 24-hour information and can be accessed anytime and anywhere. anywhere. Future research can be done using SSL (Secure Socket Layer) and encryption algorithms, to optimize security in e-commerce system transactions.

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