



Android-Based Vehicle Collateral Storage Application at PT. Pegadaian (Persero)

Salomo Hasiolan Sidauruk¹, Ucuk Darusalam², Novi Dian Nathasia³

^{1,2,3}Fakultas Teknologi Komunikasi dan Informatika, Universitas Nasional

Email : salomo.036@gmail.com, ucuk.darusalam@gmail.com , novidiannathasia@gmail.com

ARTICLE INFO

Article history:

Received: 15/01/2021

Revised: 30/01/2021

Accepted: 15/02/2021

Keywords:

Pawn, Android, Software Development Life Cycle (SDLC)

ABSTRACT

The development of technology in this era of globalization is growing quite rapidly, one of which is a multi-functional device that is often used today is a mobile application as a medium for accessing information easily. PT. Pegadaian (Persero) is a credit institution that distributes credit on a legal basis for pawning. In the pawnshop line, Pegadaian can receive gold, electronic, and vehicle pawn services. For vehicle pawning, the validation process based on the condition of the car is still done manually using a checklist document, therefore the application is made using the Android Studio programming language to digitize the vehicle pawn process at Pegadaian which is designed using the Software Development Life Cycle (SDLC) method.

Copyright © 2021 Jurnal Mantik.
All rights reserved.

1. Introduction

The development of technology in this era of globalization is growing quite rapidly, one of which is a multi-functional device that is often used today is a mobile application as a medium for accessing information easily. The development of mobile applications is supported by the development of programming languages, one of which is the increasingly increasing programming language for mobile today is Android.

Android is an open source code so that people can customize features that don't exist in the Android operating system to their liking. Android is an operating system for linux-based smartphones. One of the advantages of Android compared to operating systems through technology that is increasingly developing today is that the use of mobile applications can be done more effectively, efficiently and optimally.

PT. Pegadaian (Persero) is a credit institution that distributes credit based on the legal basis of pawning in order to avoid the practice of borrowing money with unreasonable interest. Especially now that the economic situation of the Indonesian people is experiencing difficulties and has caused many people to experience a downturn. In the current situation PT. Pegadaian (Persero) is an alternative for people to get funds easily, quickly and safely through pawning the goods they have as collateral.

In the pawnshop business line, Pegadaian can accept gold, electronic, and vehicle pawn services. For vehicle pawning, the validation process is based on the condition of the car including the body, engine, last kilometer and vehicle documents such as BPKB and STNK which are still recorded manually so that it can cause complaints from customers regarding the condition of the vehicle when entering Pegadaian and when redemption is different from the conditions according to customer. This application is expected to be able to digitize the process, including figs of each corner of the vehicle according to the conditions and reports of the validation results that can be seen by the customer in real time.

2. Theoretical basis

2.1 Mobile application

A mobile application is an application that allows for mobility using equipment such as PDAs, cell phones or cellphones. By using a mobile application, it can be easy to carry out various kinds of activities ranging from entertainment, selling, studying, doing office work, browsing and so on.

Several studies have also used a lot of mobile applications, both for entertainment, making communication services easier, as well as controlling DSLR camera tools. Mobile applications are built with several mobile programming languages. As for examples of mobile programming for cell phones, including Javafx mobile, J2ME, C ++, C # .NET and Flash Lite.



2.2 Android

Android is an operating system for mobile phones that is based on Linux. Android provides an open platform for developers to create their own applications that can be used by a variety of mobile devices. What is needed to start Android programming is the Android SDK (Software Development Kit) and also the JDK (Java Development Kit) and requires a Java IDE which is used to write Android coding, and also an Emulator to run applications that have been created.

2.3 Database

Database is a collection of information stored on the computer systematically so that it can be checked using a computer program to obtain information from the database. Database is a representation of a collection of facts that are related to each other stored together in such a way and without unnecessary redundancies, to fulfill various needs.

Database used in designing this application is the Firebase database, a database based on NoSQL.

2.4 Pawn shops

Pegadaian is a financial institution that officially has a license to carry out its operational activities in the form of credit financing to the public in the form of channeling funds in relatively small amounts and large amounts on the basis of pawning, as well as deposit services, estimation services. The goods being pawned must have an economic value so that they can be used as an estimated value by the pawnshop. Pegadaian is an activity to guarantee valuable items to get money and goods that are guaranteed to be redeemed by customers according to the agreement of both parties. Collateral that can be pawned include gold, vehicles, electronics to land or building ownership certificates.

Pegadaian's contribution as a financial institution for the Indonesian economy, especially in financial services through the distribution of loan funds with a pawn system, greatly helps the community as well as micro, small and medium enterprises (MSMEs) in meeting cash needs as well as access to funding quickly, easily and with simple administration.

2.5 Foundations of Conventional Pawn Laws

Government Regulation of the Republic of Indonesia Number 178 of 1961 Article 5, which is aimed at building a national economy in the credit sector based on the legal basis of pawning prioritizing the needs of the people and peace towards a just and prosperous material and spiritual society.

3. Research methods

To complete this final project, it is used *Software Development Life Cycle* (SDLC) is the process of developing or changing a software system by using the models and methodologies that people use to develop previous software systems. One of the models that SDLC has is the waterfall technique. Waterfall technique provides a software life-flow approach in an ordered manner starting from analysis, design, coding, testing and supporting stages [6]. This chapter explains what is used in the implementation of this research, The stages of the Waterfall method are described as follows:

3.1 Analysis

The process of gathering needs is carried out in an incentive manner to specify software requirements so that the user can understand what kind of software is needed. This software requirement specification needs to be documented. System requirements analysis is needed to understand the basis of the program to be made, the scope of information and the functions required. For that we need a system requirements analysis.

3.2 Design

Design is a stage in creating a flow or process and a display on the system that will be made based on data from the analysis stages that have been carried out in the previous stages which will later be continued at the implementation stage.

3.3 Implementation

At this stage, the design implementation is made into a software program. This new system was created using the React Native Android Studio application

3.4 Testing

Testing the program using a black box to produce in accordance with the expectations that have been designed before. The use of black boxes in application testing will provide an explanation of the suitability of expectations in programming.

4. Results and Discussion

4.1 Analysis Phase

The analysis was carried out by means of a literature study on several journals on the results of the android application and analysis of the conventional vehicle pawn process flow using vehicle checklists which could cause data errors and complaints from customers when redeeming collateral.

4.2 Design Stage

At this design stage, how interactions in the application can be designed are designed. The making of this user experience design uses a visual application. The diagrams used are in the form of use case diagrams, activity diagrams and class diagrams.

a. Usecase Diagram Design

Use case is a list of actions or stages that define the interaction between actors and the system to achieve a goal. In this use case, there are two actors, namely warehouse staff and customers, then there are six usage instructions, checking vehicle conditions, vehicle data input, reports. pawn and report recap. Usecase diagram stages can be seen in Fig1 usecase diagrams.

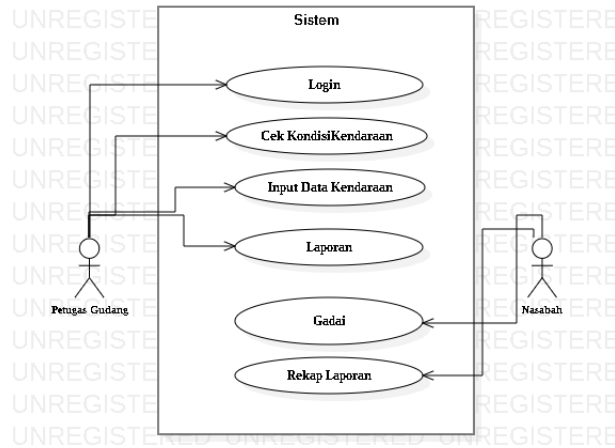


Fig 1. Usecase diagram

b. Activity Diagram Design

Is a Figan activity of a system or process that is in software. The activities contained in the vehicle collateral storage application can be seen in Fig 2 the activity diagram,

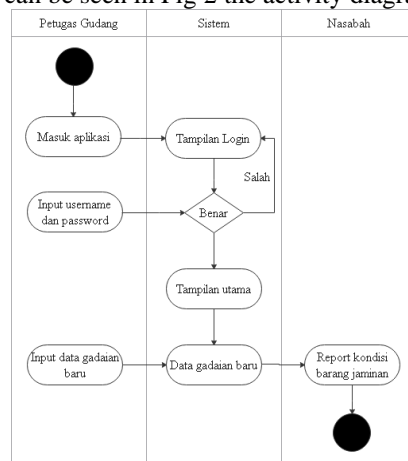


Fig 2. Activity Diagram

c. Class Diagram

In this Class Diagram, it describes the system structure in terms of defining the classes that will be made to build applications, it can be seen in Fig. 3 the class diagram below.

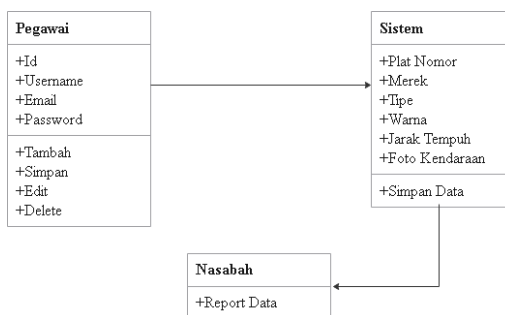


Fig 3. Class Diagram

d. Implementation

At this implementation stage using React Native Android Studio

1) *Display Coding*

The following is a display of the scripting process when compiling a vehicle collateral storage application which can be seen in Figure 4 below.

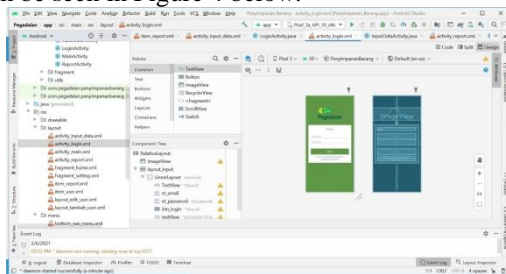


Fig 4. Scripting Process

2) Login View

In making the application, the first thing to do is create a login page. This page is the starting page when the user starts running the application. The login page display when the application is run is shown in Figure 5 below.

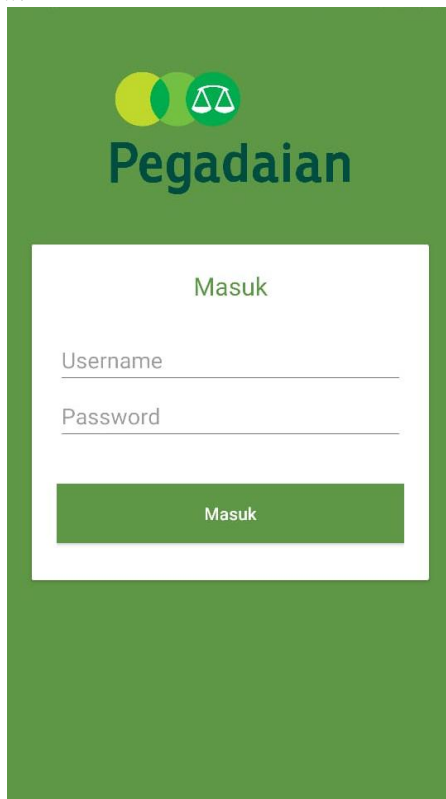


Fig 5. Login page

3) Main Menu Display

The next stage enters the main page of the application. The main page is used to display the main menu of the application, namely data input and the report menu. The main page display when the application is run is shown in Figure 6 below.

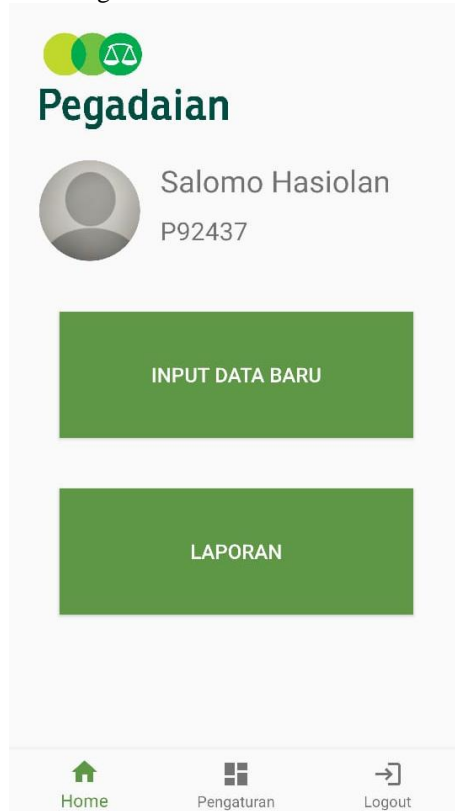


Fig 6. Main page

4) Data Input Menu Display

Next there is a display of the vehicle data input menu, in this menu the user can input data on applications related to the condition of the vehicle to be guaranteed, The data input page display when the application is run is shown in Figure 7 below.

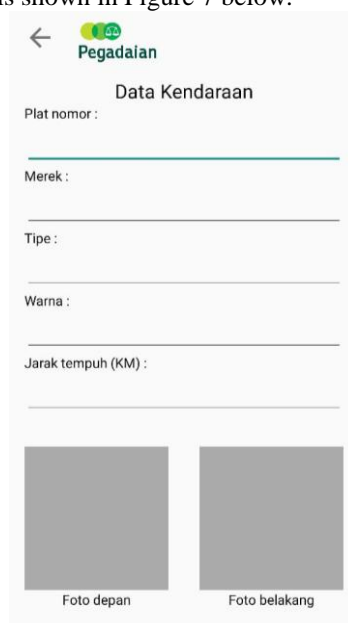


Fig 7. Data Input page

5) Report Menu Display

On the report page display, there is data that has been inputted, which data can be selected to be viewed or downloaded. The report menu page display can be seen as shown in Figure 8 below.

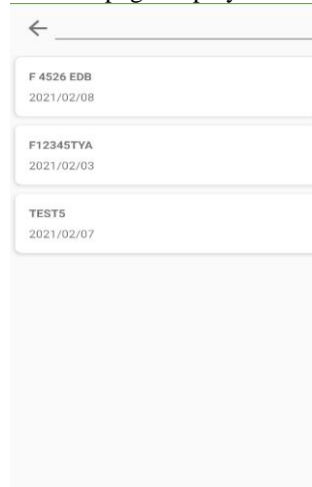


Fig 8. Report page

6) Report Detail View

Next, the report detail menu page displays, which displays the result data from the user input data that displays the condition of the vehicle to be guaranteed. The view of the detail report page when the application is run is shown in Figure 9 below.

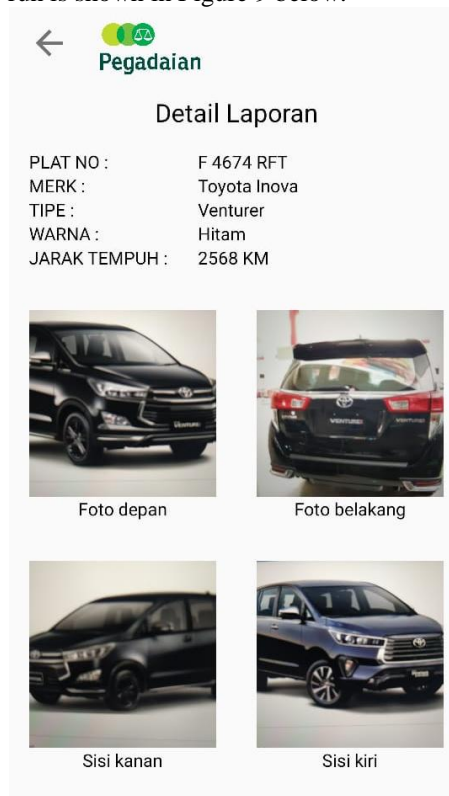


Fig 9. Report Details page

7) Display Settings Menu

In the Settings menu display in this application, there are menus for adding, updating and deleting users in the application. The display of the data input page when the application is run is shown in Fig. 10 below.

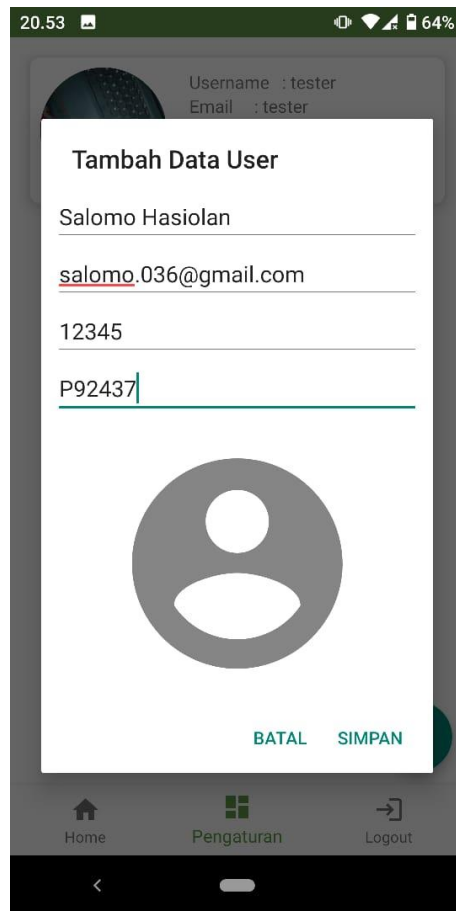


Fig 10. Settings page

e. Testing

In this test using the Black Box test, for the results of the Black Box test, by testing the success of each menu function found in the Android-Based Vehicle Collateral Storage Application. Based on testing on this application, it can be concluded that all the functions on the buttons contained in this application can run according to their function

4. Conclusion

The following conclusions can be drawn from the design of an Android-based vehicle storage application system at PT Pegadaian (Persero)

- a. This information system can digitize the physical check process of vehicles that were previously still carried out conventionally into a single Android-based application. So as to improve paperless systems (move from paper-based to electronic-based)
- b. Make it easier for customers to know the condition of the vehicle to be pawned, thereby reducing the risk of complaints from customers when they are about to redeem collateral.

Suggestions for future developments to make this application even better, are developed with more features that will make transactions easier for customers and the system in this application becomes integrated with the main pawnshop system.

5. Reference

- [1] M Teguh Prihandoyo, "Unified Modeling Language (UML) Model for Web-Based Academic Information System Development", Harapan Polytechnic with Tegal, 2018
- [2] Yeni Nurjani, "Application of Auction Items Sales at PT. Pegadaian (Persero) CPP Sipin Jambi Area Based on Android ", STMIK Nurdin Hamzah, 2018.
- [3] Kurniawan, H., & Tanjung, M. R, "Geographical information system for Nature Tourism objects in North Sumatra Province based on mobile android" Sifototenika, 2017
- [4] ahel, F., & Ginting, E, P "The Design of Learning Media Applications for the Introduction of National Heroes to

- Enhance the Nationalist Feeling Based on Android" Teknomatika, 9 (02), 113-120. 2019
- [5] Juliawan, D., Puspasari, R., & Sianturi, CJ M, "Application for Borrowing and Returning LCD Projector Based on Android and Web Service." IT (INFORMATIC TECHNIQUE) JOURNAL, 5 (2), 162-171.2018
- [6] Haris, H, "Journal of Android-Based iLocation Applications", ISSN 2354-6972, 2017
- [7] Kurniadi, D., "Designing E-Academic System Architecture with a Digital Campus Concept Using the Unified Software Development Process (USDP)". Journal of Scientific Insights, 2014
- [8] Siti Aisa, "Designing an Android Based English Learning Application". Vol 8 No 2 2019
- [9] Aryani, D., Nurdin, MA, & Baskara, P. "INFORMATION SYSTEMS MANAGEMENT OF MOTOR VEHICLES ASSETS". AT STMIK RAHARJA TANGERANG. STORY Journal, 3 (1), 75- 84.2017
- [10] Sri Rahayu, "Designing a Marriage Registration Information System at KUA with an Object Oriented Methodology". Vol 8 No 2 e-Journal of JUSITI 2019
- [11] Pressman, Roger S. 2001. Software Engineering: A Practitioner Approach. Mc Graw Hill.
- [12] Arinda Lestari, John RoniCoyanda, Dasrial. 2015. " Online Auction Information System at Pt.Pegadaian (Persero) 26 Ilir Palembang Branch Service Unit.
- [13] Sukamto, & Saladin. (2013). Information System Analysis and Design. Yogyakarta: Andi Offset
- [14] Sommerville, I. (2011). Engineering Software 9th Edition. Addison-Wesley
- [15] Andi Juansyah. 2015. Development of a Child Tracker Application Based on Assisted - Global Positioning System (A-Gps) with the Android Platform.
- [16] Amilia Malinda Putri. 2017. Implementation of Collateral Goods Auction at PT.Pegadaian (Persero) Cokronegaran Surakarta Branch Office.