Analysis and Design Management Information System Pension Benefit Feature of Core System Dana Pensiun Lembaga Keuangan

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Abstract— *Dana Pensiun Lembaga Keuangan (DPLK) is a Pension Fund established by a bank or life insurance company to organize a Defined Contribution Pension Program for individuals, both employees and independent workers, which is separate from the employer's Pension Fund for employees of the bank or life insurance company concerned. Currently, there are still DPLK operating companies that manage Pension Funds manually or have not been integrated with the system in accordance with the recommendations of the OJK. In phase 1, the features for participant registration, payment of contributions, investment management and reporting have been developed. In the second phase, the pension benefit payment feature was developed. The method used is the System Development Life Cycle (SDLC) with the Waterfall model. This research produces a feature of payment of pension benefits in the DPLK Core System. The results of the tests carried out are the system can run the process of paying pension benefits according to the needs of the user.*

Keywords— *DPLK, SDLC, Waterfall, MIS, Pension Benefit.*

I. INTRODUCTION

Dana Pensiun Lembaga Keuangan (DPLK) is a Pension Fund established by a bank or life insurance company to organize a Defined Contribution Pension Program for individuals, both employees and independent workers, which is separate from the employer's Pension Fund for employees of the bank or life insurance company concerned. DPLK is also a means for the community to have investments for old age. The current DPLK business development must also be supported by a good system to be able to compete in order to provide the best service to DPLK participants.

In the implementation of DPLK, there are two parties who will contribute, namely participants and the DPLK organizing company (Banking Company or Insurance Company). In DPLK there are stages of participation such as participant registration, payment of contributions, investment of participant contributions and claims or payments of participant pension benefits. In carrying out the implementation of DPLK, a good management information system is needed to be able to manage participant and company data as well as investments from both. This is also supported by OJK (Financial Services Authority) regulations, namely POJK 15/2019 Governance of Pension Funds which stipulates that "Pension Funds must have a reliable financial reporting system for the purposes of supervision and other stakeholders." In one of the insurance companies that are the organizers of the DPLK already has a good system. The company has implemented phase 1, namely the system can cover the membership registration process, payment of participant contributions and investment of participant contributions. However, this system is still not perfect because it still requires features that are capable of carrying out the claim process or payment of participant pension benefits which will be implemented in phase 2.

The DPLK implementation process requires a system that can support operational performance in managing membership data, investments, withdrawals and good data recording and reporting. Currently, there are still several DPLK companies that have not used the appropriate system to support DPLK business processes. This system that is not in accordance with this is such as the existence of manual recording of participant data, manual calculation of funds and investments and manually calculated portfolio reporting.

The importance of a management information system in the implementation of DPLK that can support operational performance, there are journals that discuss management information systems for the administration of Pension Funds. In research with the title *Analisa Dan Perancangan Sistem E-Claim Pada Pt Asuransi Jiwa Syariah Bumiputera Cabang Medan*. The research conducted research on the development of the PT. Bumiputera Sharia Life Insurance Medan branch. System development is carried out to facilitate the process of submitting claims made by customers. Previous claims were submitted by filling out paper forms or manually. With the development of the system, the claim submission process will go through the application so that it will make it easier for customers to submit claims and will facilitate data storage and make it easier for admin staff to verify participants data that submitting claims. The system design that will be developed by the author already uses a web-based application. This will make it easier for users to access applications to submit claims (Alda Penira, Afsha Zahara, Mardiah Ramadhani and M Luthfil Amin, 2020).

In research with the title *Perancangan Sistem Informasi Klaim Asuransi Jiwa Menggunakan Ms.Visual Basic 6.0. Pada Pt. Asuransi Jiwasraya Kota Bandar Lampung*. The study conducted research on a system within an organization that

brought together the daily transaction management needs, operations support, managerial, and strategic activities of an organization and provided certain external parties with the necessary reports. This research is to conduct research on the system development of PT. Jiwasraya Life Insurance. This system can process customer data input, employee data input, customer claim data input and customer claim payment data input. This system can make it easier for officers to report and reconcile data. This system can provide convenience for customers in processing claims. This system can also make it easier for officers to serve patients or customers who will register (Ahmad Cucus, 2013). Based on the two previous studies above, the authors conducted research that was similar and in accordance with the needs of a management information system to support DPLK operations.

II. RESEARCH METHODS

The research method used in this study uses the SDLC (Software Development Life Cycle) method with the Waterfall model. The system development uses the Waterfall model because it supports efficiency in planning user needs and requirements for development. In the Waterfall research model, there are 4 stages carried out, namely, needs analysis, design, implementation and testing as shown in Figure 1.
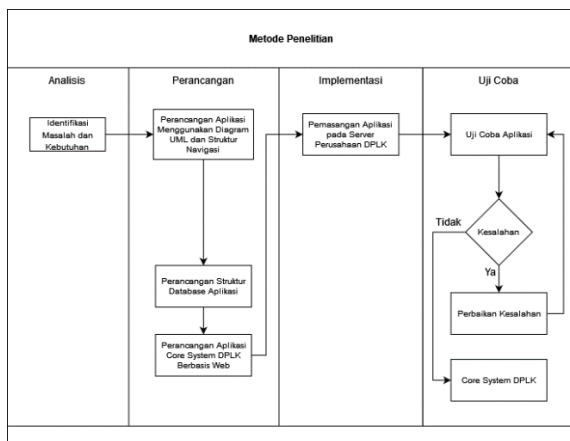

Fig. 1. Research methods

In the needs analysis stage, what is needed for the development of the DPLK System for the claim or payment of pension benefit features is to define the fields and information required by users of the DPLK Core System. At the design stage, it is a description of the navigation structure for User Maker and User Approver and the UML diagram of the DPLK System, the claim feature or the payment of pension benefits. After that go to application design. The design made is in the form of an interface of the DPLK System. At the implementation stage of the DPLK system, the claim or payment of pension benefit features was built using Sublime software, the database used was MySQL, the framework used was Angular and the language used was JAVA. At this stage, the application deployment process is also carried out to the server of the DPLK service provider company. This deployment process is carried out to install applications and services from the DPLK Core System. At the trial stage, which

means the DPLK system for claiming or paying pension benefits has been completed and will be tested first. At this stage the columns that are the user's needs will be displayed and tested according to the needs and existing test scenarios. The test is carried out to find out the shortcomings in the application, whether there are still errors or not. At this trial stage, several stages were carried out, namely System Integration Test (SIT), User Acceptance Test (UAT).
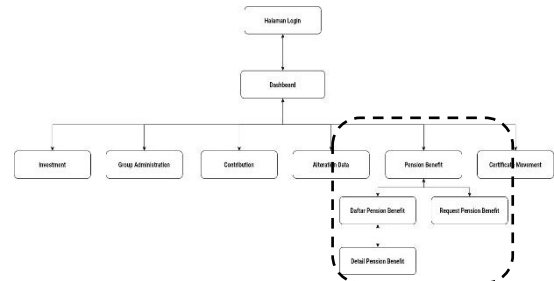

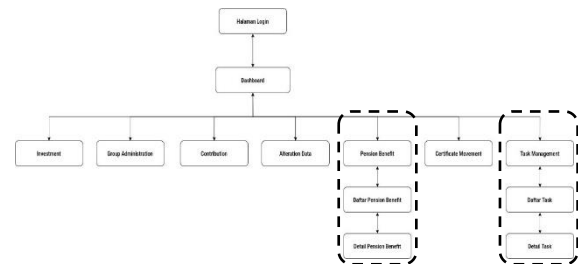Fig. 2. User Maker Navigation Structure
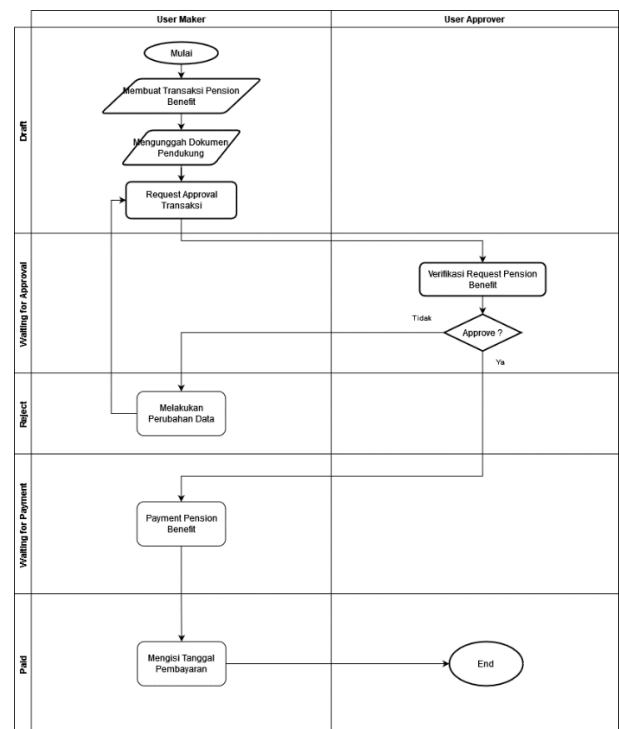

Figure 3. User Approver Navigation Structure

Fig. 4. Activity Diagram

In the two stages of the trial, two testing methods were carried out, namely positive and negative tests. At the SIT stage, testing is carried out by a tester/quality assurance (QA) from the

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internal team that performs system development or the vendor. At the UAT stage, testing is carried out by users who will use the application after the application has been developed. In the positive testing method, the tester conducts trials with positive cases. These positive cases are carried out according to the estimated normal data that will be entered into the system. In the negative testing method, the tester conducts trials with negative cases. Negative cases are carried out by entering inappropriate data into the system.
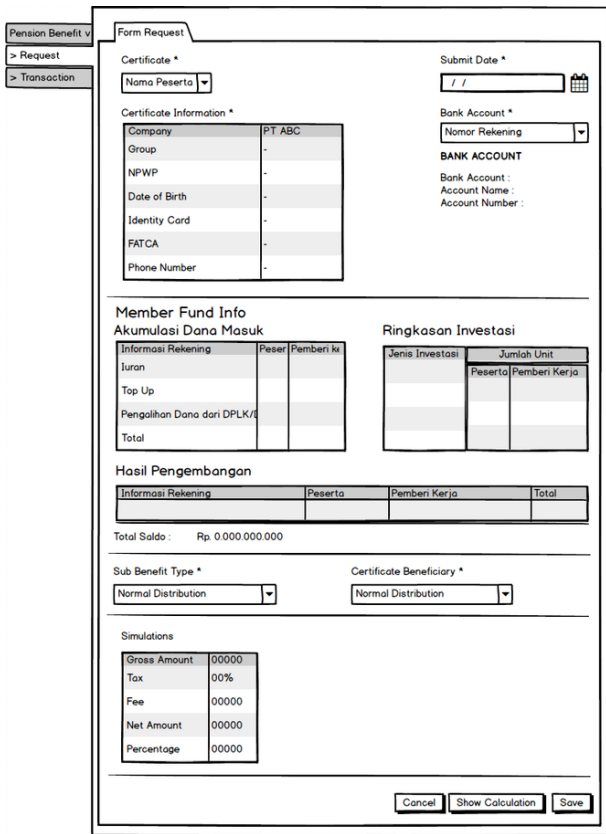
System Screenshot Results

Fig. 7. Screenshot System of the Retirement Benefit Request Page

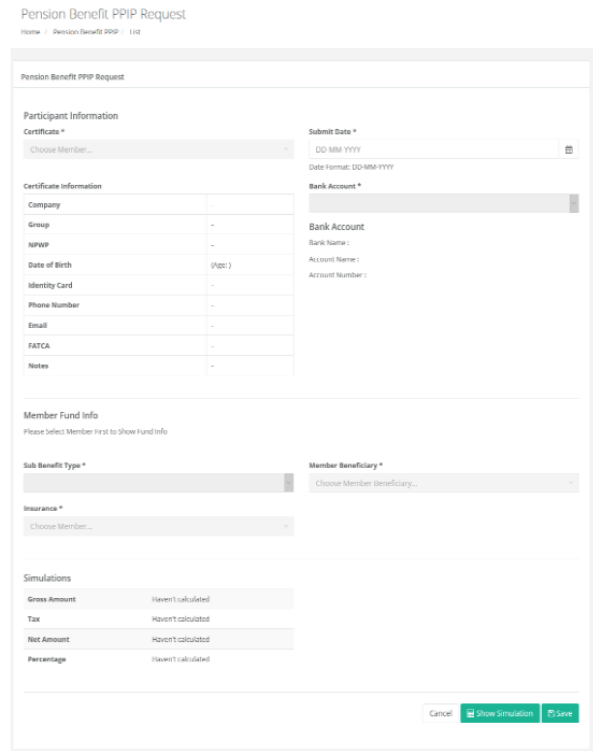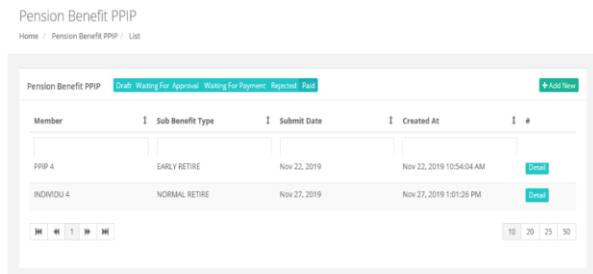Fig. 5. Interface Design of Retirement Benefit Request Menu

Fig. 8 Screenshot System of List of Participant's Pension Benefit Payment Transactions

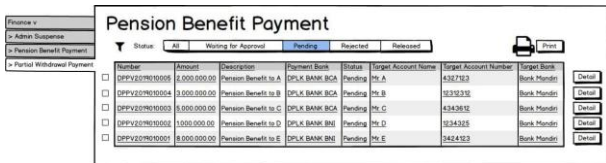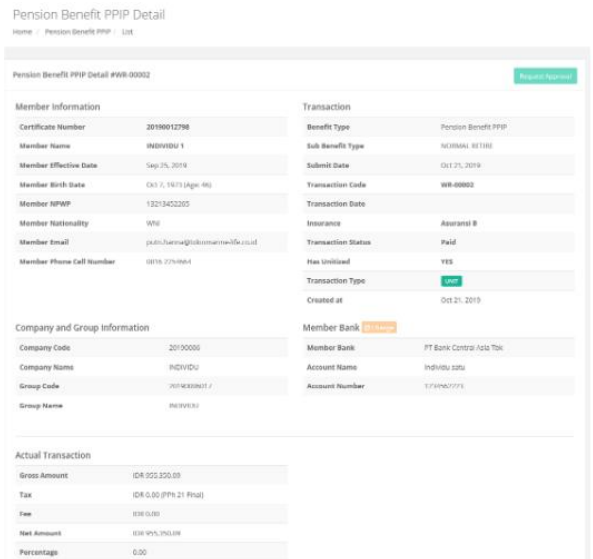Fig. 6. Interface Design of Retirement Benefit Payment Request List

III.   RESULTS AND DISCUSSION

In this chapter, we will discuss the results of planning and developing a pension benefit payment menu in the DPLK Core System application using the SDLC Waterfall method. At this stage, the captured images from the system display that have been implemented are also attached. This stage also explains the results of the trials conducted at the SIT and UAT stages.

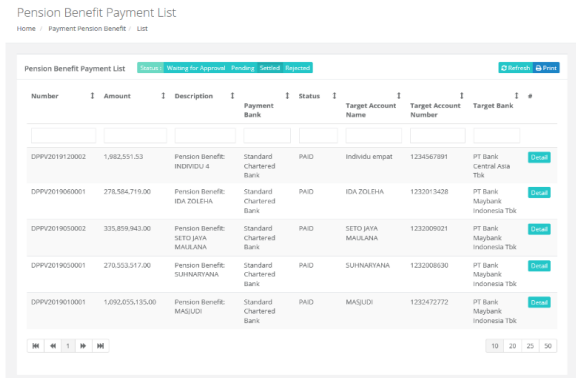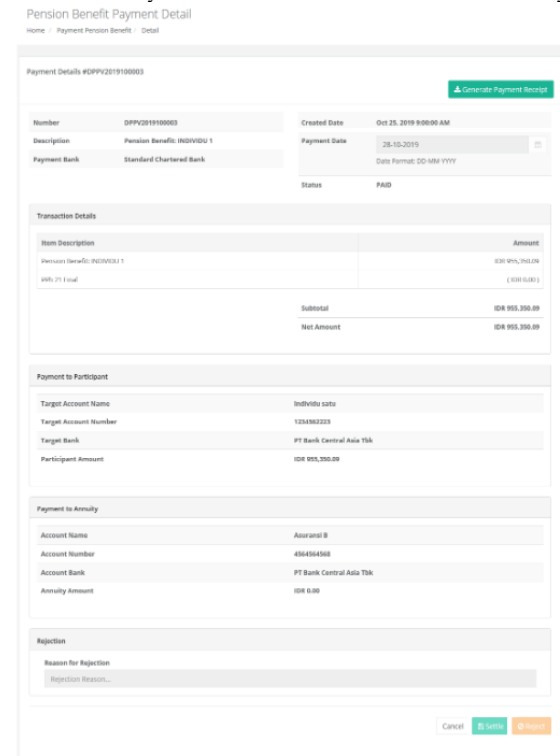Fig. 9. Screenshot System of Details of Pension Benefit Transactions

Fig. 10. Screenshot System of List of Pension Benefit Transaction Payments

Fig. 11. Screenshot System of Details of Pension Benefit Payment Transactions

User Acceptance Test Results

User Acceptance Test (UAT) is carried out after the program development process is complete. UAT is carried out by users of the system who will use the system. UAT is done by checking the system that has been developed. If the system is in accordance with the needs of the user and has successfully run the process without errors, the UAT documentation will be marked with the status "Passed". If it doesn't work and there are still errors, the UAT documentation will be marked with the status "Failed". The following are Table 1 and Table 2 documentation of the UAT results from the development of the pension benefit payment feature:

TABLE 1. UAT Result User Maker

No.	Sesi & Menu	Activity	Expected Result	Result
1	Login	The user logs in with the existing username and password	User has successfully logged into the system	Passed
2	Dashboard	The user selects the Pension Benefit menu	The system successfully redirects the display to the Pension Benefit menu	Passed
3	Pension Benefit	User fills in the existing fields to request Pension Benefit	The user has successfully filled in the available fields	Passed
4	Pension Benefit	User presses save button Request Pension Benefit	The system has successfully saved Request Pension Benefit data	Passed
5	Pension Benefit	The user presses the request for approval button	The system has successfully processed and requested approval from the approver	Passed

TABLE 2. UAT Result User Approver

No.	Sesi & Menu	Activity	Expected Result	Result
1	Login	The user logs in with the existing username and password	User has successfully logged into the system	Passed
2	Dashboard	The user selects the Task Management menu	The system successfully redirects the display to the Task Management menu	Passed
3	Task Management	User checks Request Pension Benefit data	The system has successfully displayed the data of participants who made a Request Pension Benefit	Passed
4	Task Management	The user presses the approve / reject transaction button	The system has successfully saved the Approval Request Pension Benefit data	Passed

IV. CONCLUSION

Based on the objectives described in chapter 1, the conclusion of the research conducted on the analysis and design of a management information system for the payment menu for pension benefits in the DPLK Core System is the development of a system to support DPLK business and operations in accordance with OJK policies related to the payment of participant benefits. successfully carried out and meet the needs of system users in the company.

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