Design of a Web-Based Petty Cash Accounting Information System at Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java

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Abstract

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The rapid development of technology makes it easy for a company to get information. One is at Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java. One of the problems found is in the process of processing accounting data which is still done manually using the Spreadsheet application, so a Web-Based Accounting Information System is designed, with the software development method used namely a waterfall with the Unified Modeling Language (UML) modeling system tools. While the PHP programming language and MySQL database. This research produces an information system integrated into recording cash and preparing company cash reports. This accounting information system's design allows petty cash records to be managed effectively and efficiently.

Keywords: *Information Systems, Petty Cash, Waterfall, UML*

Abstrak

Perkembangan teknologi yang sangat pesat memberikan kemudahan bagi sebuah perusahaan untuk mendapatkan informasi. Salah satunya pada Kantor Regional 2 Otoritas Jasa Keuangan (OJK) Jawa Barat. Salah satu permasalahan yang ditemukan terdapat dalam proses pengolahan data akuntansi yang masih dilakukan secara manual dengan menggunakan aplikasi Spreadsheet. Sehingga dirancanglah Sistem Informasi Akuntansi Berbasis Web. Metode pengembangan perangkat lunak yang digunakan adalah waterfall dengan tools sistem pemodelan Unified Modeling Language (UML). Sedangkan bahasa pemrograman PHP dan database MySQL. Penelitian ini menghasilkan sistem informasi yang terintegrasi dalam pencatatan kas serta pembuatan laporan. Melalui perancangan sistem informasi akuntansi ini pencatatan kas kecil dapat dikelola secara efektif dan efisien.

Kata-kata kunci: *Sistem Informasi, Kas Kecil, Waterfall, UML*

1.   Introduction

Current technological developments make it easy to get the information needed quickly, precisely, and accurately. Technological developments can also increase intelligence and science and technology (Science and Technology). An information system is a collection of computer technologies that can provide information in response to human needs to assist in making quick decisions [1]. This system makes getting information in an optimal service and streamlining a process more accessible. An accounting information system is an organizational element that collects, categorizes, organizes, analyzes, and disseminates data to support business decision-making [2]. The company's accounting information system has cash in and out transactions for company needs; cash is a component that the company is free to use when needed. Cash is not essential in running the institution's operational activities efficiently because it is easily embezzled, so cash must be controlled by completing storage, execution, and recording tasks [3]. Petty cash is money an institution or organization sets aside to cover various expenses with small amounts of rupiah [4]. It is a supporting component in an operational activity at an institution so that if the cash flow is normal, operational activities within an institution will run smoothly [5R5].

Otoritas Jasa Keuangan (OJK) is an institution tasked with implementing an integrated regulatory and supervisory framework for all activities in the financial services sector. Research at Otoritas Jasa Keuangan (OJK) Regional Office, 2 of West Java, found that petty cash records were inadequate. It is reflected in all transactions recorded using Microsoft Excel so that there is a possibility of inaccurate financial reports and the risk of lost or damaged documents. Registering cash management is still conventional, so it takes a long time to make a financial report.

The existence of an accounting information system that can be used to answer and resolve the problems above. Sulistiyowati researches the design of cash accounting information systems designing a Web-Based Petty Cash Accounting Information System that produces applications that can inform transactions using the system [6]. And another study conducted by Annisa, Syahidin & Karyadi regarding designing a visual-based and object-oriented petty cash accounting information system that produces the required reporting more effectively and efficiently [7].

The accounting information system created by the author for Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java can facilitate the management of employee data, processing

cash in and cash out, reports on the realization of money in and cash out, and reports on the status of employee cash payments.

Design of a Web-Based Petty Cash Accounting Information System at Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java was created using Microsoft Visual Studio Code tools as the front end and Microsoft Access as the back end and added an automatic code feature for numbering proof of transactions to minimize the occurrence of double numbering. The design uses Sublime Text 3 as a text editor, Google Chrome as a Web browser, and Xamppp as a local server with the waterfall development method. The design of this system uses the UML (Unified Modeling Language) modeling method, which is implemented using PHP (Hypertext Preprocessor), HTML (HyperText Markup Language), CSS (Cascading Style Sheet), and MySQL database.

2.   Method

A system is a unit consisting of several elements that are interconnected with each other to achieve a goal [8]. The approach used is an object-oriented method. An object-oriented method is a software development method containing data and a design that will be applied to the software [9]. The modeling method used is the Unified Modeling Language (UML). UML is a tool that can help systems and methodologies that can be used to develop an object-oriented plan [10]. To make it easier for developers to create designs, UML describes specifications, construction, and documentation of various components of software systems [11]. UML consists of use case diagrams, activity diagrams, class diagrams, deployment diagrams, sequence diagrams, and user interface design.

The system development method that the author applies is the waterfall method because the development is carried out in stages or sequentially according to the needs of the system design. Software development will be systematic and sequential, using the waterfall method according to the steps [12].

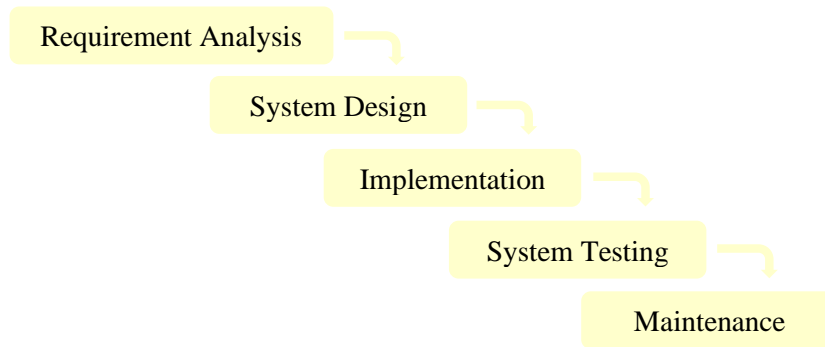The stages of the waterfall development method are presented in **Figure 1.**

Requirement Analysis

System Design

Implementation

System Testing

Maintenance

Figure 1. Waterfall Method

The stages in the waterfall method are

a. Requirement Analysis

The needs analysis process is used to see the system requirements the user requires.

b. System Design

Design planning uses Data Flowmap, Usecase Diagrams, and Activity Diagrams.

c. Implementation

The Implementation uses the Laravel and Bootstrap frameworks with the MySql database.

d. System Testing

Testing is carried out to check whether there are still problems in a system; in this design, the author chooses to use Blackbox testing because testing is carried out at the end of making the system. Questionnaire distribution was made to determine the level of success of a plan by users.

e. Maintenance

Maintenance is carried out so that the designed system can be updated according to the needs of the cash treasurer.

3. Results and Discussion

3.1 Requirement Analysis

At this stage, the authors collect and analyze the needs for designing a petty cash management system, namely: 1) The system can provide employee data processing functions; 2) The system can perform data processing of incoming and outgoing cash; 3) The system can print

reports on cash in and out, information on the realization of income and expenses, and reports on the payment status of cash contributions.

3.2 System Design

3.2.1 Flow Map Diagrams

A flow map diagram combines maps and flowcharts to show the movement of objects from one location to another. The flow map is shown in **Figure 2**.
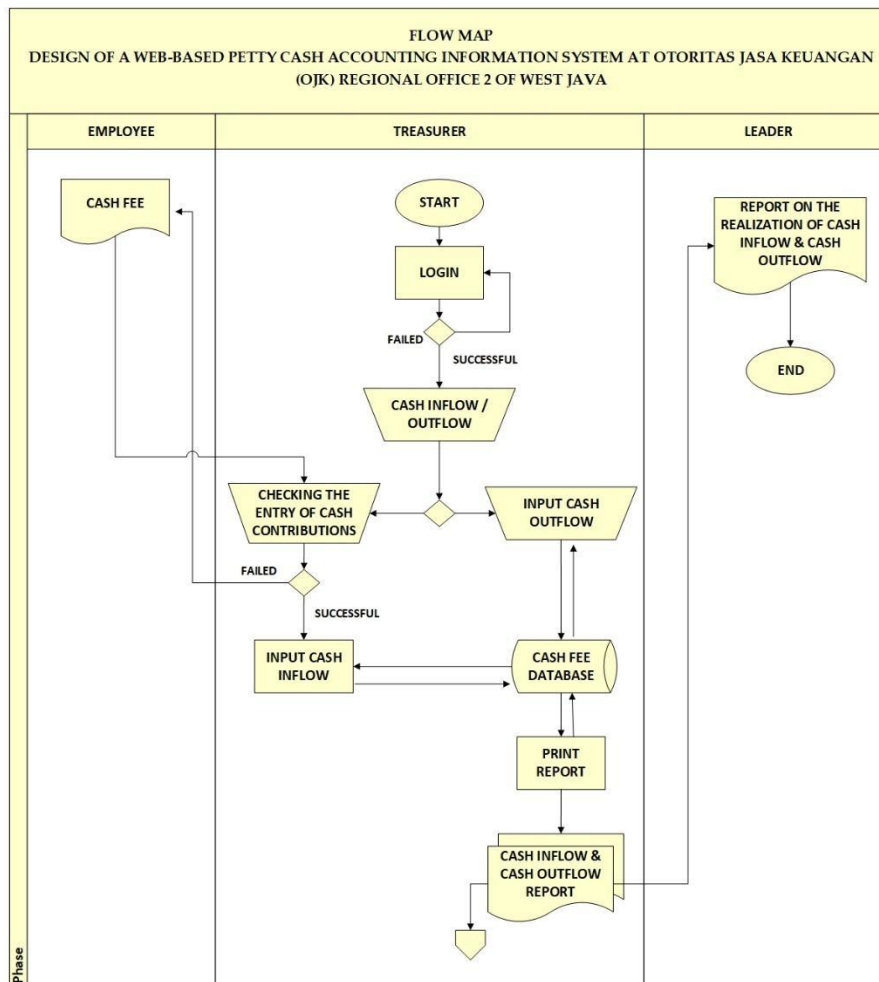

Figure 2. Flow Map Diagrams

3.2.2 Use Case Diagrams

A Use Case Diagram is a component of a functional drawing on a system. So creators and consumers understand each other and know how the system's flow will be developed [13], as shown in **Figure 3**.
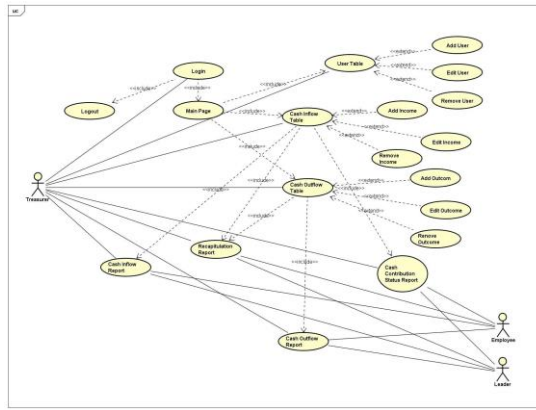
Figure 3. Use Case Diagrams

3.3.3 Activity Diagram

An Activity Diagram is a type of Diagram that can represent sequential system processes, displaying the workflow and operation of a system that is displayed vertically [14]. The Activity Diagram is shown in **Figures 4**.
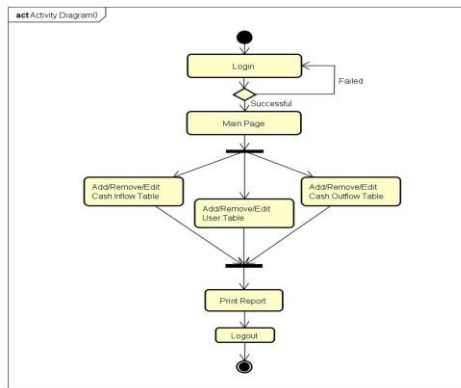
Figure 4. Activity Diagram Without Using Swimlane

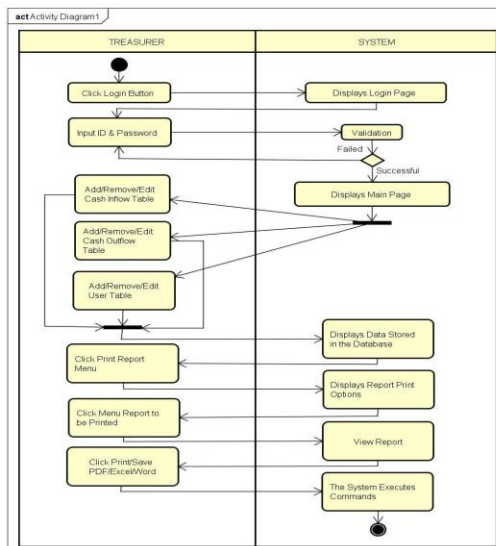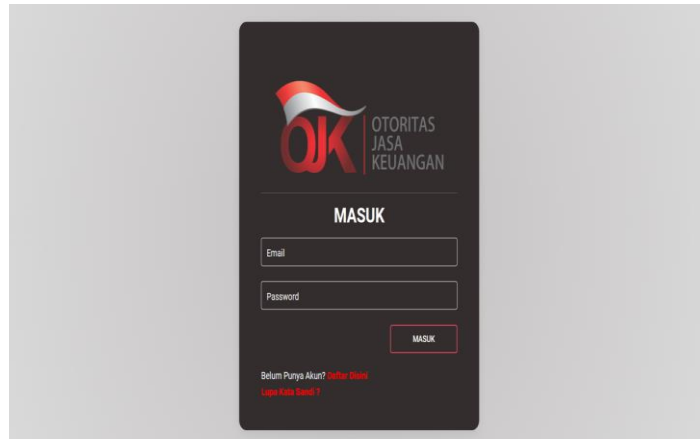Activity Diagram Using Swimlane is presented in **Figure 5**.

**Figure 5.** Activity Diagram Using Swimlane

3.3 Implementation

3.3.1   Login Form

The user or user enters the correct e-mail and password that has been determined and validated to access the program's main menu. The login form display is shown in **Figure 6**.

Figure 6. Display Login Form

3.3.2   Home Menu

The home menu is the main menu display, and users can automatically see the total income, expenses, cash balance, and graphs. The Home Menu display is shown in **Figure 7**.
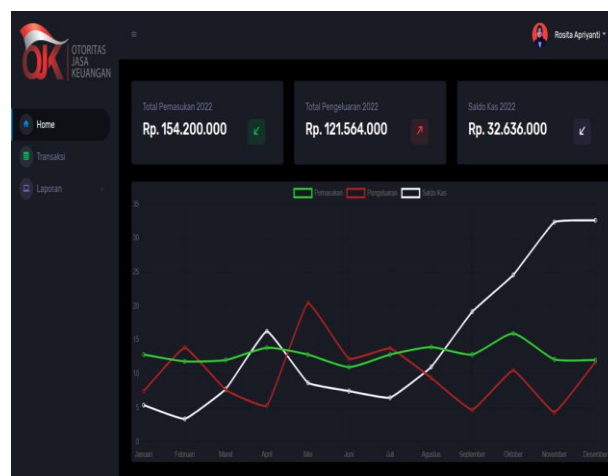
Figure 7. Display Home Menu

3.3.3   Transaction Menu

Users can input cash income and disbursement data in the transaction menu in the program we made here. The employee data input menu is connected to employee data in the company, do a name search. The system automatically records the Employee Identification Number, Position, and nominal to be paid. The input of cash disbursement transactions with the type of expenditure has been adjusted according to its designation, and all that remains is to fill in the full description in the information menu. Display of the Transaction Menu in **Figure 8**.
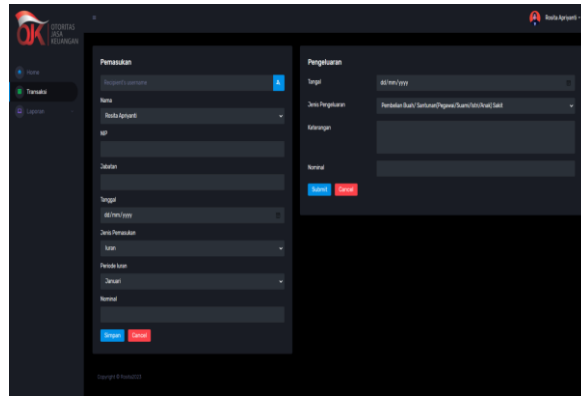
Figure 8. Display Transaction Menu

3.3.4   Report Menu

This system can display reports of Cash inflow, Cash Disbursements, Recapitulation Reports, and Cash Contribution Payment Checklists on the report menu. The information can be printed and saved in PDF. Display of the Appendix Menu in **Figure 9**.

Figure 9. Display Report Menu

3.3.5   Cash Receipts Reports

The following shows a cash receipts report that can be printed or saved as a PDF. Display of Cash Receipts Report in **Figure 10**.

Figure 10. Display Cash Receipts Reports

3.4   System Testing

3.4.1 Blackbox Test Method

Testing this system using the Blackbox method. The Blackbox method is a testing method carried out on an industrial apprenticeship system at Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java, whose testing emphasizes the specification of the software's functionality [15]. The Blackbox test results are described in **Table 1**.

Table 1. Blackbox Testing

Level	Test Components	Test Conditions	Test Result	Status
Treasurer	Login	Enter Email and Password	Successfully Login to the System	Successful
Treasurer	User Table	Enter new user data, saving, changing, deleting, canceling, and searching for those that have been saved.	It was successfully saving user data, changing user data, deleting user data, canceling user data input, and searching for user data that had been committed.	Successful
Treasurer	Cash Inflow Table	Enter data on cash contributions from employees, searching for employee data automatically links to the staffing system, and choosing the type of income and cash contribution periods using the combo box feature, nominal appears automatically based on position. Saving, changing, deleting, canceling input, and searching for cash contribution data that has been saved	Managed to bring up employee data automatically linked to staffing data, the combo box feature functions correctly on the choice of type of income and cash contribution period, and the nominal appears immediately by the provisions of the position status. Successfully saving cash contribution data, changing cash contribution data, deleting cash contribution data, canceling the input of cash contribution data and searching for cash contribution data that has been saved	Successful
Treasurer	Cash Outflow Table	Enter cash disbursement data, and choose the type of cash disbursement using the combo box feature by the provisions for using cash funds. Change, change, delete, cancel, and search for data that has been saved	Successfully inputting cash disbursement data, the combo box feature functions correctly in the choice of type of expenditure. Successfully save, change, delete, cancel input, and search for cash disbursement data that has been saved.	Successful
Treasurer	Report	Display income reports, expense reports, recapitulation results reports which can be automatically displayed based on the input results of cash contributions, and cash contribution status reports, which are automatically displayed based on the input of cash contributions for each period. Reports can be printed and saved in PDF files.	Successfully displaying income report data, expense reports, and recapitulation results reports whose calculations have been automatically calculated by the system based on inputting cash contribution data and cash contribution status reports that appear automatically based on inputting cash Contribution income data each period. Reports can be printed and saved in PDF files.	Successful

3.4.2   Questionnaire Test Method

After the design and testing stages as a data reviewer for the efficiency of the petty cash system, a questionnaire was created. This questionnaire was developed using Google Forms and distributed to the cash treasurer admin at Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java as a user of this system. Questions regarding the petty cash system at Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java are as follows: Can the petty cash website at OJK Regional Office 2 West Java be a system for recording petty cash transactions that are effective and efficient is presented in **Figure 11**.
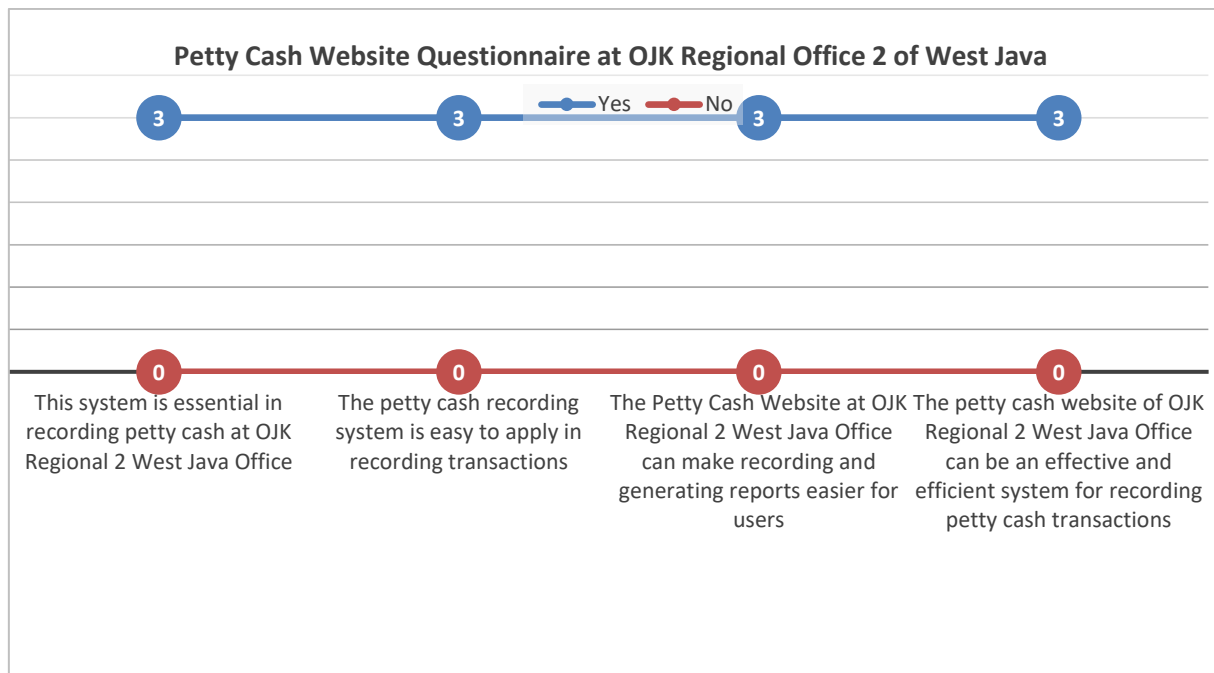

Figure 11. Questionnaire Results

As shown in Figure 11 above, three respondents answered "Yes", and no one answered "No." So the Petty Cash Website at Otoritas Jasa Keuangan (OJK) Regional Office 2 of West Java can be an effective and efficient recording system.

3.5 Maintenance

The last stage in developing this information system is system maintenance. The author uses the Perfective type maintenance system to enhance work methods or maintainability (ability to be maintained). This action also enables the system to meet previously unknown user requirements. When making substantial changes to any module, the maintenance staff also takes the opportunity to make improvements to the program code, pay attention to relationships that are no longer needed, and minimize the occurrence of human errors when inputting data. For

example, these maintenance activities may take the form of software reengineering or restructuring, changing report formats and content, defining more efficient processing logic, and improving device operating efficiency.

4. Conclusion

From the results of designing a web-based petty cash accounting information system, recording can be done anywhere because it is already online using a website. This system helps the treasurer process petty cash transaction data according to the desired period. This petty cash fund accounting information system makes data processing more accessible, the recording becomes very effective and efficient, a report is generated or displayed more accurately, and data storage becomes safer because it is already stored in a database. The scope of this system focuses on recording petty cash. Therefore, the authors hope that for further research, the accounting information system for recording petty cash can be developed, especially in posting transactions into journals automatically. In addition, To complete the program made by the author, the transaction menu does not yet have a journal recap which limits the processing of petty cash transaction data; therefore, in the future, the development of this system is expected to be equipped with journal recording facilities.

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