

Analysis and Design of Workflow Monitoring System at PT Adimitra Baratama Nusantara

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Abstract— The purpose of this research is to create a system to monitor the workflow of each division so it can improve the effectiveness of employee performance. The research method is divided into two analytical methods, which consisted of interview and literature studies, and design methods by using object-oriented approach and the waterfall process model. The results are in the form of a workflow monitoring system that can help monitor supply chain processes, this application helps companies in reporting the results of work easily and integrated, including orders, inventories and production reports, delivery schedule and delivery processes, and payments, and also provides a centralized database system for the company. Conclusions taken from the writing of this essay is with workflow monitoring system, all reports, work processes and data reported in the system becomes more integrated and easily obtained, thus providing benefits in the form of easy business process monitoring for PT. Adimitra Baratama Nusantara.

Index Terms—design, monitoring, workflow, supply chain

I. INTRODUCTION

PT. ADIMITRA BARATAMA NUSANTARA is one of the companies who engaged in coal mining trade and industry which are being developed and are growing rapidly. PT. Adimitra Baratama Nusantara still has a major constraint in which the company does not have a good system to monitor incoming orders to be compared with the amount of inventory, goods delivery, and the payment status of the customer. This is because the work activities of various other divisions haven't been integrated and is done manually with Microsoft Excel and printing on paper. Communication is done by using either email or telephone. Therefore, PT. Adimitra Baratama Nusantara need a web-based system to monitor the workflow from each division and other content related to support activities in running the business. The workflow application would ensure that each person handling the claim used the correct online form and successfully completed their step before allowing the process to proceed to the next person and procedural step.^[3]

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II. METHOD

A. Analysis

The authors did the analysis using data collection methods, which are: Interviews and Literature Studies.

B. Design

For the design method, the authors used System Development Life Cycle (SDLC) approach with waterfall process model. The waterfall process model suggests a systematic, sequential approach to software development that begins with customer specification of requirements and progresses through planning, modeling, construction, and deployment, culminating in ongoing support of the completed software.^[2] In modeling the application, the authors used UML notation. Notation is a textual and graphical language to describe a system and a formalized context separately. The goal is to simplify communication and documentation.^[1] Some of UML notations the authors used are:

- a. Use Case Diagram
- b. Sequence Diagram
- c. Activity Diagram
- d. Class Diagram

According to the conducted analysis, there are seven main actors in the workflow used by PT. Adimitra Baratama Nusantara. They are administrator (admin), manager, marketing, production, shipping, operational, and finance. Their interactions in the workflow monitoring system are described with a use case diagram as in *Figure 1*, while the database model used for the system is described with a class diagram as in *Figure 2*. A total of twenty classes are used in the diagram covering all main aspects of the system such as the users, divisions, and schedules.

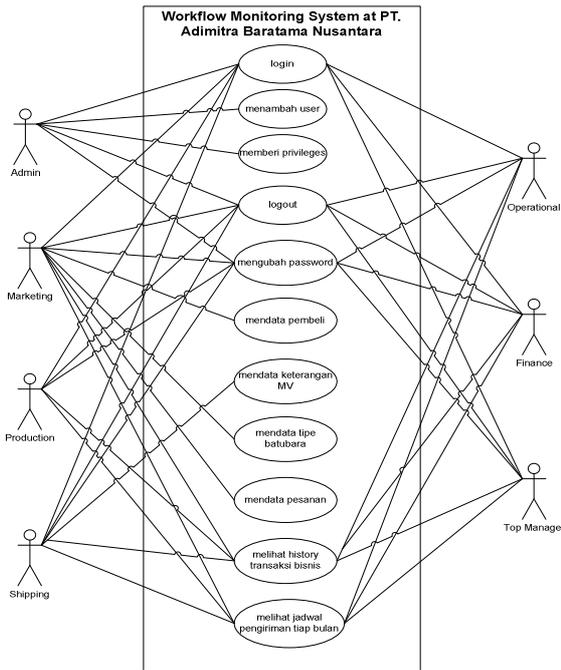


Figure 1: Use Case Diagram of Workflow Monitoring System

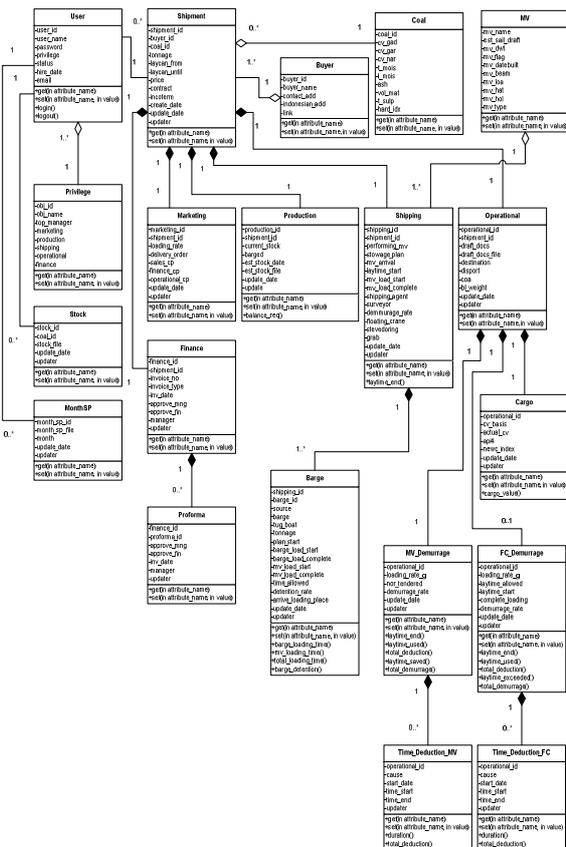


Figure 2: Class Diagram of Workflow Monitoring System

C. Coding

Programming language used is PHP with Yii framework, the

software used are: Adobe Dreamweaver CS3 and Adobe Photoshop CS3 for programming and design, MySQL for making the database, and also virtual server XAMPP for testing applications.

D. Implementation

Application system developed requires hardware, software, and internet connection on a computer. Because the application is web-based, no special installation is required to run this application. Users simply need to install a browser on the computer which is connected to the internet.

III. RESULTS

The system developed is a workflow monitoring system, which is an automated business process management system using web-based applications. The purpose of this system is to support the company's internal business processes and monitor the workflow of each division for orders to be distributed to the consumer on time. Users of this system are the manager and his or her employees which are divided into 5 divisions, namely marketing, production, shipping, operational, and finance.

IV. CONCLUSIONS AND RECOMMENDATIONS

With a workflow monitoring system, all reports and work processes are reported to the system so that the data reported in the system become more integrated and easy to obtain, reports on the development process of a shipment become more easily monitored either by top managers or relevant employees, system is web-based so that all reports can be accessed anytime, as long as there is a computer which is connected to the internet.

Some recommendations the authors thought possible are: the development of e-commerce on the application so that consumers can directly place an order through the website and also e-marketing to market the products, adding security in the access rights for each employee, allocation of an employee as system maintenance officer.

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