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Web-Based Honorarium Confirmation System Prototype

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Abstract. Improving services in academic environment can be applied by regulating salary payment process for all employees. As a form of control to maintain financial transparency, employees should have information concerning salary payment process. Currently, notification process of committee honorarium will be accepted by the employees in a manual manner. The salary will be received by the employee bank account and to know its details, they should go to the accounting unit to find out further information. Though there are some employees entering the accounting unit, they still find difficulty to obtain information about detailed honor information that they received in their accounts. This can be caused by many data collected and to be managed. Based on this issue, this research will design a prototype of web-based system for accounting unit system in order to provide detailed financial transaction confirmation to employee bank accounts that have been informed through mobile banking system. This prototype will be developed with *Waterfall* method through testing on final users after it is developed through PHP program with MySQL as DBMS

1. Introduction

Rapid improvement on technology influences on various life activity processes. The technology development has influenced on digitalization in various service processes given by an organization to its stakeholder. This also can be seen in an Indonesian university in term of its services improvement for its academic society. University has applied various information technology-based facilities to facilitate, improve and increase its service quality for all its society. They have applied in many fields, such as implementation of academic information system related to teaching and learning process, employee information system related to electronic absenteeism system and there are also chances for system development on various financial process businesses.

One of the financial aspects managed by university is salary and honor payment system for all employees and lecturers. As a form of control, this payment process must be informed to lecturers and employees so that they can find out the information in their related bank accounts and also as one of the ways to maintain financial transparency. So far, the honorarium notification process received by the employees and lecturers is conducted in a manual manner. The employees or lecturers do not know in details their honor and when their honors are received in their bank accounts. This is certainly a bit burdensome because the checking process must be conducted personally by looking at finance staff having its duty then continued by checking on the file manually into each bank account. Currently, the process procedure requires special time because it certainly takes longer time.

Current existing condition can be solved by applying information system on confirmation related to employee honorarium through web-based system. In this research, front end preparation for web-based users creates a website prototype for the finance department that can be used for the lecturers and employees to check any information related to the financial transaction into the bank accounts. By visiting at the website, any information seekers will know in details about each employee or lecturer



transaction, namely each salary that has been entered into their bank accounts based on the bank notification through available mobile banking application.

This certainly facilitates any employees and lecturers to know information about source of money received as well as conformity on transferred number and informed one by the finance department without they have to visit the finance department. Through web-based system, the lecturers / employees will be assisted in obtaining any information easily because the mobile banking application provided by the bank party provides detailed information related to the transferred money. This also can be used as a checking tool if there is any difference between the transferred number and the informed one by the finance department through this website so that the financial transparency can also be maintained by applying privilege to maintain data privation.

Based on the description, then through this research, it will create *aprototype* of an information system that can provide conformation on the received honorarium by an employee or lecturer in a digital manner using web-based technology which then is called as Honor Transaction System so that there will be sustainable information access. This *prototype* will conduct the data delivery from the finance department to the website database. This *prototype* is expected to be the initial idea to facilitate the services given for the lecturers and employees related to the received honorarium information.

2. State of the art

Several studies have been conducted to utilize information technology to perform process control and notification to business process in a company. In this study [1] a model has been developed for monitoring bus positions so that bus users can plan related to waiting times at a bus stop. Position data is recorded by the mobile application carried by the conductor and regularly sent to the server and the service is accessible to all users through the web network. This is similar to what will be done in this study where financial transaction data will be sent to the web so that it can be monitored by stakeholders in the relevant PNB environment. To monitor the transaction data that has been prepared in the financial section, the future should be built a model of Host to Host to enable the process of data synchronization between campus parties with bank partners. With this model the user will know clearly where the data flow has been triggered by the financial section. Research [2] related to the synchronization model has done a synchronization approach between 2 pieces of database with binary log approach.

The research model undertaken by [3] states that to expand access to information services it is necessary to model an application development that can be accessed easily and without requiring large bandwidth requirements, this can be a way to improve service to the entire academic community. In research [4] stated marketing information system that implemented through the website. In [5] stated information system can be used to control the inventory spare part system. [6] create a web-based payment application intended for external companies to held an automatically payroll processing system and some related function system for employees in the company. [7] in his research made a payroll system employee using a web-based system worked on using .NET, Html, CSS, SQL, Ajax and JavaScript.

In the study [8] presented the design and application of micropayment systems that rely on Web services technology to complete commercial transactions. The system may access the limited resources offered to pay for the services received by requesting a Web service provided by the Payment Service Provider that acts like an online bank. The process of financial transactions through computer networks requires standardization so that various organizations can communicate with no major changes to the software used [9]. [10] Efforts to integrate information to provide public services in universities are conducted with the implementation of digital-based interactive systems. Papers written in [11] discuss the various PHP programming frameworks and their comparisons and then determine the most effective frameworks for the same task, and the results are recommended as a web based system development software.

3. Research Method

This research will design simulator of making honorarium system application which take the example of case in financial unit at Bali State Polytechnic University. The research will be conducted by waterfall method. This method is widely selected in the implementation of software development. [12] And [13] stated a similar thing that Waterfall System Development Life Cycle is used for the development of information systems. [14] Compares several methods of system development to say the waterfall method can be selected in system development when the system requirement made has been clearly known. System's design will be implemented using MySQL and PHP.

Based on the stages in the waterfall method and produced *outputs* by the research process namely *prototype system*, and then in this research, the stages conducted are as follow:

3.1 Requirement (need analysis)

This stage is analysis on the system requirements. The analysis is addressed to obtain as much information from users so that it will create a computer system that can perform any desired tasks by its users. This stage will create user requirements as a document connecting between users in making the system. This document will be the reference system analysis to be translated into the programming language. To perform the requirement analysis process, in this research, it will conduct data collection techniques related to the honorarium notification process for the employees and lecturers which has been applied currently at Bali State Polytechnic namely by conducting interviews with Finance department as well as lecturers and employees.

3.2 Design System

The design process will translate the requirements of a predictable software design before coding. This process will produce a document in the form of system requirement. The system design process in this research focuses on: Design of function and process logic model which will be illustrated in context diagram and data flow diagram; Database Design as described by relationship between entity and table relation which later will be applied in the system; User Interface which will later become the digital communication medium between the finance department and the employees and lecturers, and control design as an effort to design so that it can protect any information to be issued by the system.

3.4 Implementation

Implementation is conducted by starting the program production process (coding). Coding is a translation design in a language that can be recognized by the computer. The coding process in this research is an attempt to implement the design into the prototype of honorarium notification system. The coding will be done through PHP programming using My SQL as its DBMS.

3.5 Verification

This stage is a stage conducted to test on the results of system development; whether it has been well-adjusted to the user requirements or not. In this research, the testing process will be conducted by testing on black box and white box.

4. Results

4.1 Architecture System

To solve the current honorarium confirmation process, it is designed a system generally illustrated in the following figure1.

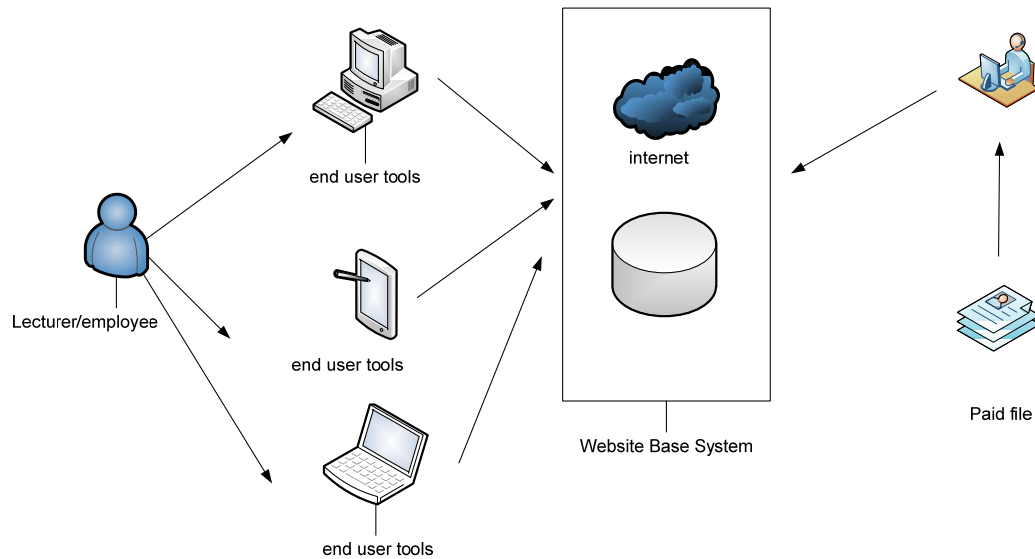


Figure 1.Honor Transaction System Architecture

The finance officer will input the data on the pay file that has been paid according to the payment procedure scheme by the bank into the system. Through internet connection, the employees or lecturers can connect to the website by logging into the website. The connection to the system can be done via computer, laptop or mobile device. The connection through internet network will make much faster transfer process, as well as data search process. This service will display various required information related to honorarium details. Implementation of this system general design will use PHP programming language, Apache as Web Server and My SQL as the DBMS. This software's are selected because three are open source so that it is much easier in its development.

4.2 Database Design

Based on results of data collection, there are 2 main related entities, namely employee and honor. The relation correlation is m (the amount) to m (the amount) because each activity obtaining honor can be followed by many people. The employees can has many honors in one period of transaction because they can be committees in various activities as well. The relation correlation is illustrated in the following diagram relational entity in figure 2 below.

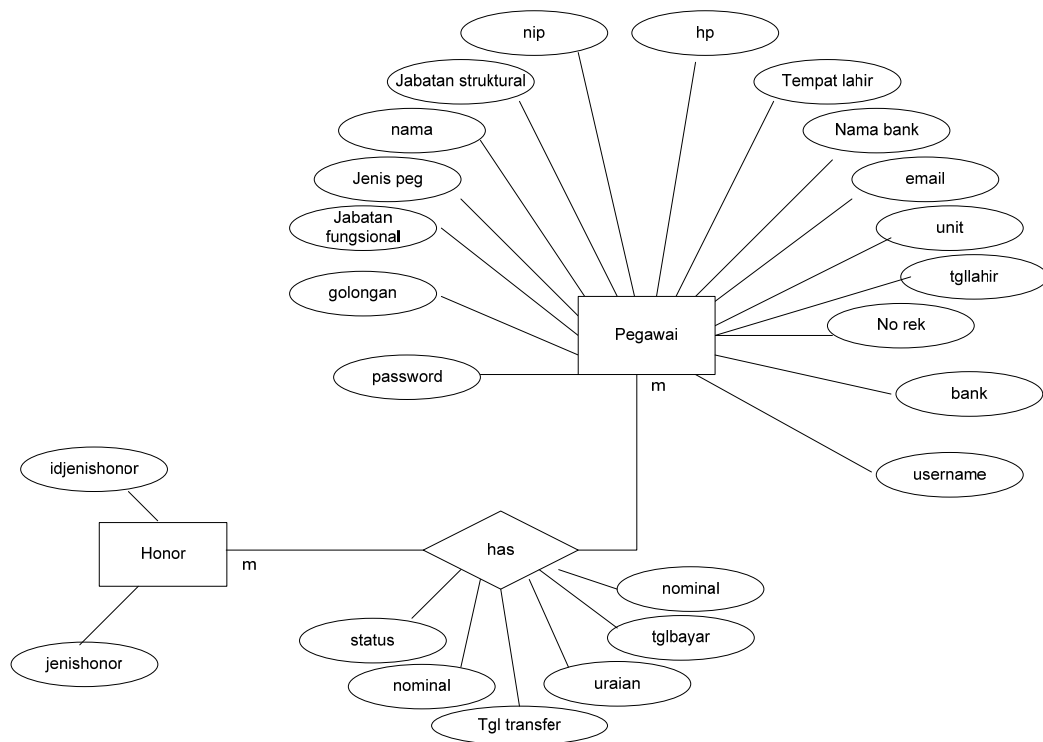


Figure2. Entity relationship diagram

The relationship between two entities, honor and employee is illustrated through the ERD which will be mapped into the database using the database relation mapping method and then there will be normalization process to find out any physical database design to be implemented by the system through the DBMS as seen in figure 3 below.

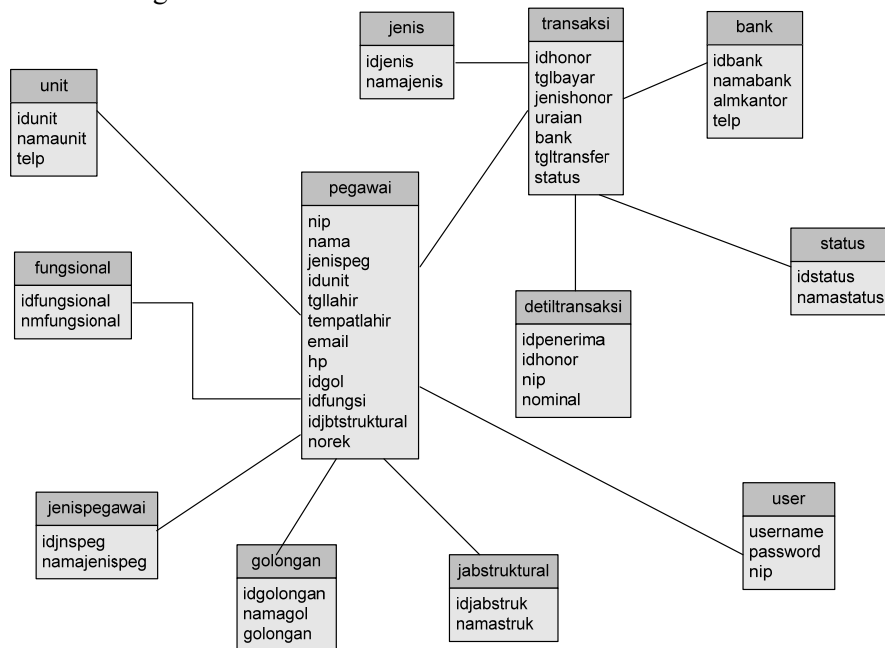


Figure 3. Physical Data Model

4.3 Process Design

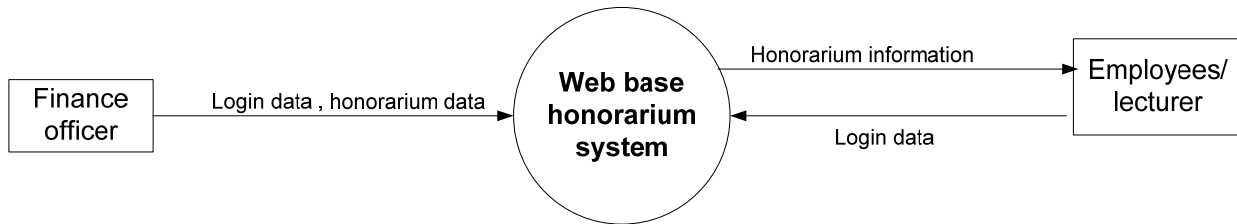


Figure 4. Prototype system process

Figure 4, it is described the Entity of Finance Unit as an operator entity serving a role to prepare any data related to master data and honorarium data that has been declared to be completed by the operator in charge of receiving payment letter evidences. While the lecturer / employee entity asks the services related to the honorarium detail information that they want to know.

4.4 Output System

Through the interface, the end user which is the finance unit, can input various data masters required as sources of process and output, as well as be used for inputting transaction data on the honor obtained by each employee through the back end system. Meanwhile, in the front end side, the employees can obtain detail personal honorarium by conducting transaction data search that has been inputted by the financial in the previous process. System prototype has main page interface as follow as figure5:

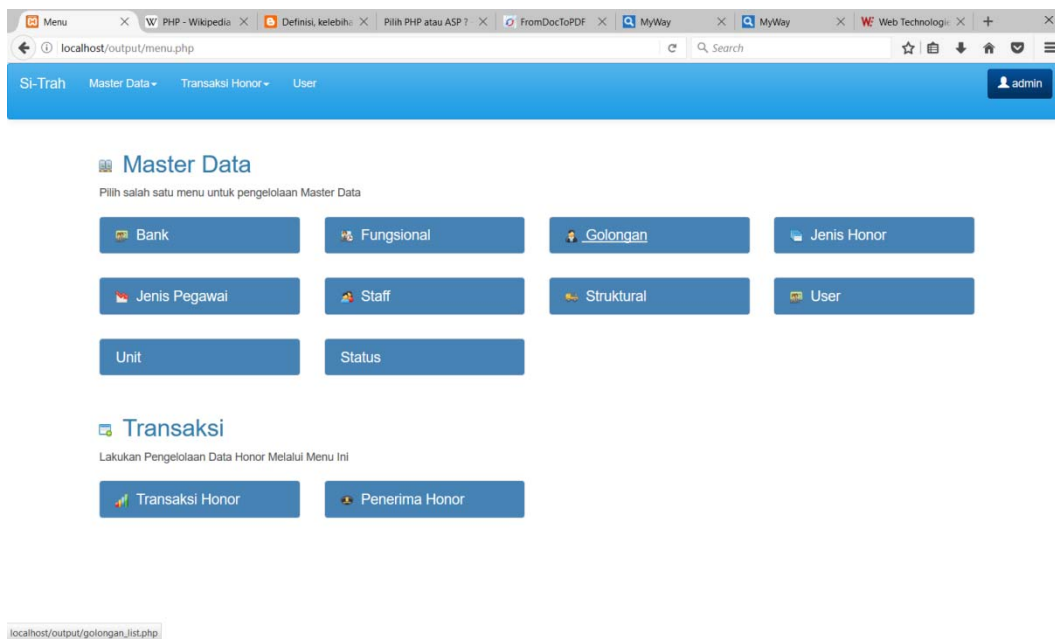


Figure 5.Output system

5. Testing

The created system prototype in this research has been tested in back and front end sides. The testing is conducted using black box and white box methods. Based on the testing stage, the database design can be applied in physical database and the system application can be operated without any errors.

6. Conclusion

Recording of financial data taking a case of an employee honorarium confirmation on the Finance Unit of Bali State Polytechnic can be implemented to web based system. The information search process is previously conducted manually, then the information gain process can be accelerated through the implementation of web-based system, while still considering on the confidentiality of personal data by setting the system right access.

7. Acknowledgments

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