



Design and Implementation of the External Quality Assurance System Application Case Study of the National University Quality Assurance Agency

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ABSTRACT

This study aims to describe the implementation of the application of the External Quality Assurance System (SPME) case study of the National University Quality Assurance Agency. In this case the SPME application is managing website-based document management so that it can support SPME performance. Data collection is done by qualitative methods, namely through observation, interview, and documentation. The results of the study are as follows (1) Campus can implement an external quality assurance application system, (2) In implementing the system, the data and information used are correct and accurate so that it can support SPME activities in the campus environment, (3) All activities implementing the external quality assurance system can be documented.

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1. Introduction

The University is a higher education institution in Indonesia that plays an important role in the development of educational development in Indonesia. At the university knowledge and technology are developed and will give birth to seeds that are trained to advance education in Indonesia. To improve the quality of education, the university is given an autonomy to determine, manage and supervise independently its education. In 2006 the Director General of Higher Education deemed it necessary to form an SPMPPT commission to develop a Quality Assurance System at the tertiary level, as for the three subsystems produced, the Higher Education Database (PDPT), the Internal Quality Assurance System (SPMI), and the External Quality Assurance System (SPME)) [1]. Based on Article 6 of Permenrisetdikti No.62 of 2016, In previous studies, E-Document research was carried out on the Academic Quality Assurance Agency information system [3]. In other studies the use of a codeigniter framework is used in building a Quality Assurance System website [4]. Other studies also benefit from document management using software to process document data [5].

2. Research Methods

Qualitative methodology is used in this research because it is a case study. According to Satori (2011: 22) qualitative research is research that reveals reality correctly, in data collection and analysis it is also obtained naturally [6]. The design of this application is based on the website, and uses the PHP programming language, Javascript, and CodeIgniter framework, and also MySQL. The details of designing the application will be explained as follows.

2.1 PHP Programming

HypertextPreprocessor (PHP) is an open source programming language, PHP is able to make applications dynamic and can be connected to the database, PHP also processes data through the Common Gateway Interface [7].

2.2 Javascript Programming

Javascript is a programming language in the form of scripts that are widely used in building a website. Javascript has a method called Ajax, the Ajax method is able to send data or commands to the server without having to switch pages [8].



2.3 CodeIgniter Framework

CodeIgniter is a framework with an MVC model (Model, View, Controller). With the MVC model, CodeIgniter is able to produce a very neat code structure, both in terms of code and file structure [9], in Figure 1.

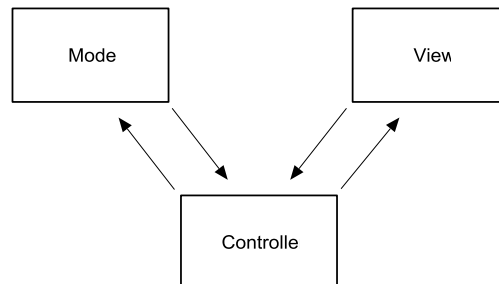


Fig 1. The MVC concept.

2.4 MySQL

MySQL is a database management that uses the basic command Structured Query Language (SQL). Researchers use MySQL because it is open source and free, There are two forms of SQL that researchers use to design applications, namely, Data Definition Language (DDL), and Data Manipulation Language (DML).

2.5 Quality Assurance Agency (BPM)

The design of the BPM system is in accordance with the vision and mission of the university. BPM makes tools and guidelines for quality assurance both academic and non-academic activities, BPM coordinates the implementation of quality assurance activities within the university, BPM analyzes the achievement of the results of the implementation of quality assurance of each element and or unit of the university organ, evaluates all activities of BPM, in figure 2 .



Fig 2. BPM system.

2.6 System Planning

The design of the SPME application system forms a website-based system that can be used in any condition at any time as long as it is connected to an internet connection. All system design is done through coding so as to produce a system, in figure 3.

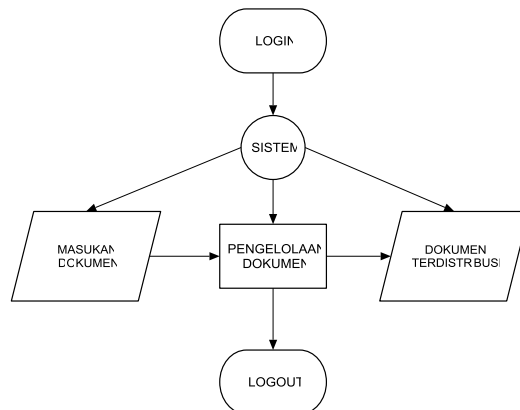


Fig 3. Flowchart Application System.

3. Results and Discussion

After going through a long process in designing the system, the next process is describing the entire application system. The display that will be explained is the master user, master document, and document reference.

3.1 Display Master User

This page serves to give access to internal users to use this application. Only admin permissions can manage access rights for users, in Figure 4.

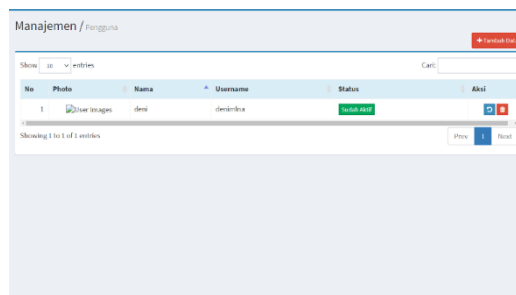


Fig 4. Display the User Master.

3.2 Document Master View

This page serves to upload supporting documents in accordance with the specified category. This page can be accessed by admin and user, in Figure 5.

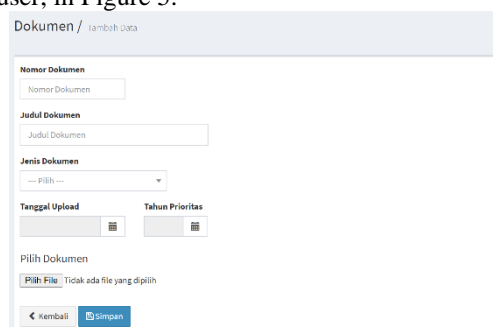


Fig 5. Display of Master Documents.

3.3 Document View

On this page the admin can enter, change, delete, and download documents. Instead the user can only enter, change, download documents, in Figure 6.

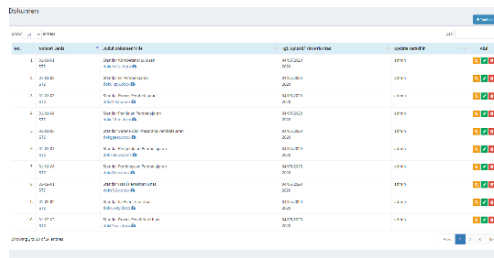


Fig 6. Document Display.

3.4 Document Reference Display

This page contains how to set the document type and type code to be used as a document template, only the admin has access rights to this page, in Figure 7.

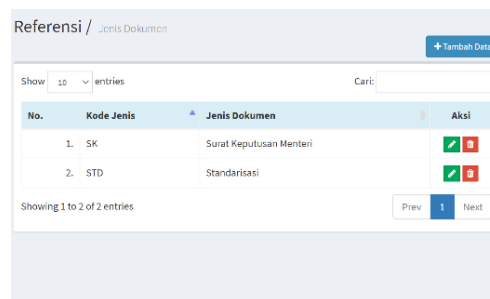


Fig 7. Document Reference Display.

3.5 Database Testing

From Table 1 and Graph 1 is the result of database testing with a total of 10000 document data. The test is carried out when the data reaches 2500, 5000, 7500 and 10000. The data shows no error in uploading documents with an average response time of 0.16s.

Table 1
Database Testing.

Amount of Document Data	Response time
2500	.13s
5000	.14s
7500	0.19s
10000	0.19s
Average	.16s

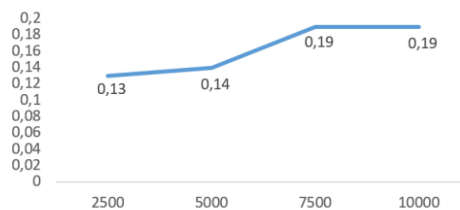


Fig 8. Database Testing Graph.

4. Conclusion

Based on this study, the results and trials and evaluations of the overall application of SPME document management, the researchers draw the following conclusions:

- Applications can and can be used optimally, so they can be implemented in the Quality Assurance Agency (BPM) work unit.
- The use of this application can support the work of SPME in the process of managing and distributing documents.

- c. The type of document can be defined in each category, namely Decree, Announcement, Policy, Guidelines and Standard Operating Procedures.

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