



Designing the Quality Assurance Agency E-Document Application at the National University Website Based

¹Dianita Ayu Putri Astari, ²M. Iwan Wahyuddin, ³Deny Hidayatullah

Progam Studi Informatika,
Fakultas Teknologi Komunikasi dan Informatika, Universitas Nasional

Email: ¹dianitaayuputriastari@Gmail.Com, ²iwn_wyd@yahoo.com, ³deny@civitas.unas.ac.id

ARTICLE INFO

ABSTRACT

Article history:

Received: 10-7-2020
Revised: 29-7-2020
Accepted: 01-8-2020

Keywords:

*E-document,
UML method,
black box testing,
quality assurance body*

The National University Quality Assurance Agency is an agency that has the function of maintaining and improving quality so that quality is always guaranteed as well as possible. One of its duties is collecting documents for lecturers and employees. Documents are accurate evidence of recording information sources used for selecting, processing or storing information. This document is very important for seeing the level of achievement of organized activities. The purpose of this E-Document Application was made to optimize the creation of an electronic document processing system for the Quality Assurance Agency (BPM) at the National University in collecting the documents needed so that the documents are stored properly, facilitating the search process and maintaining because often this document processing is still carried out Manually, difficulty in searching and disorganized in their storage. The design of this application uses software, namely the programming language used is PHP, bootstrap, XAMPP, MySQL, using the Unified Modeling Language (UML) method and testing using black box testing. The result of designing this application is a Website-based E-Document information system and is expected to help the work unit to find documents quickly and does not take a long time in searching and stored regularly. using the Unified Modeling Language (UML) method and testing using black box testing. The result of designing this application is a Website-based E-Document information system and it is hoped that it can help the work unit to find documents quickly and does not take a long time in searching and stored regularly. using the Unified Modeling Language (UML) method and testing using black box testing. The result of designing this application is a Website-based E-Document information system and is expected to help the work unit to find documents quickly and does not take a long time in searching and stored regularly.

Copyright © 2020 Jurnal Mantik.
All rights reserved.

1. Introduction

The National University Quality Assurance Agency (BPM) is an agency that has the function of maintaining and improving quality so that quality is always guaranteed as well as possible. BPM National University has a vision as an organization that has advantages over the quality management system and will always ensure that quality standards are met in management at the National University. Meanwhile, one of the missions of BPM is to develop and implement a Quality Assurance System in a sustainable manner. The Quality Assurance Agency is inseparable from important archives and documents. This document is important in obtaining accurate information for decision-making needs, planning, accreditation needs, and so on.

At the Quality Assurance Institute (LPM) at the Al-Kamal Institute of Science & Technology, LPM is one of the bodies formed to oversee the internal academic document process at universities and has an obligation to improve the quality of the University environment which monitors and evaluates activities that cover campus administration sustainably. The problem with this LPM is that the operational documents socialized at the University have not met the standard category and every organization in the University does not know the management documents and SPMI documents.

STIKOM Dinamika Bangsa already has an Institute for Research and Community Service (LPPM) which functions as an institution to manage research and community service. LPPM already has a website that



functions as a means of information and publication of every activity it carries out. But they still have problems because there is no control of research with education and community service. Also poor documentation and no monitoring system. Therefore, it is necessary to have a system that can monitor research and community service activities according to predetermined standards and can be developed sustainably in accordance with the standards to be used [2].

After making observations on the quality assurance system at STMIK Balikpapan. The quality assurance system is still carried out manually, for example, procedures and policies are still archived manually, then socialization is held only through meetings so that there is limited access for those who need it. The evaluation and monitoring of lectures is still done manually so that the results take a long and time consuming process. Therefore, STMIK Balikpapan needs information system support that can meet the needs of a quality assurance system. After looking at the above problems, therefore this study provides a suggestion to make a quality assurance information system design for STMIK Balikpapan in accordance with the needs of quality assurance at STMIK Balikpapan [3].

According to some of the conditions described above, the author can conclude that planning the E-Document application for the National University Quality Assurance Agency is necessary because in managing documents at the Quality Assurance Agency, several problems are still found, such as document loss, difficulty in finding documents, documents not stored. well and irregularly.

2. Research methods

2.1. Unified Modeling Language (UML)

Unified Modeling Language (UML) is a tool for object-based analysis and design (Adi Nugroho, 2005). Therefore, it is concluded that the Unified Modeling Language (UML) is a tool that helps in the form of graphics or images to build, document, change concepts.

2.2. Use Case Diagrams (Use Case Diagrams)

This use case diagram includes a Behavior Diagram. Use cases are made to find out the functions in this E-Document application and to find out who can use them. Then, in this diagram there are actors, actors are a system or people who will interact with the system created



Figure 1. Use Case Diagram of the Quality Assurance Agency E-Document Application

The first use case is Login, the actors in this use case are Admin and User. Its function is to enter the E-Document application according to the access rights of the actor. First the actor is asked to input a username and password, then the system checks whether the data is valid, if it is valid it will display the main page (dashboard).

The second use case is User, the actor in this use case is the user. Its function is to fill in data and upload documents needed by the units and faculties at the University. First, the actor will select the menus on the main page, then the system will display the selected menu page. After that, the actor will fill in the data (add, edit and delete data) and upload the required documents. When the actor has finished pressing the add and upload button, the data and document will be saved.

The third use case is Admin, the actor in this use case is Admin. Admin functions to manage the master user. First, the admin will select the master user menu and the system will display the selected page. After that, the admin can see the data and documents that have been uploaded by the user. Then, the admin can add and update data and recap reports on these data and documents.

2.3. Activity Diagrams

This activity diagram will show an activity in other activities in the system. Then it can also be interpreted as the design of a process from each sequence of its activities, grouping the views of the system, and also the menu design that will be displayed on the information system.

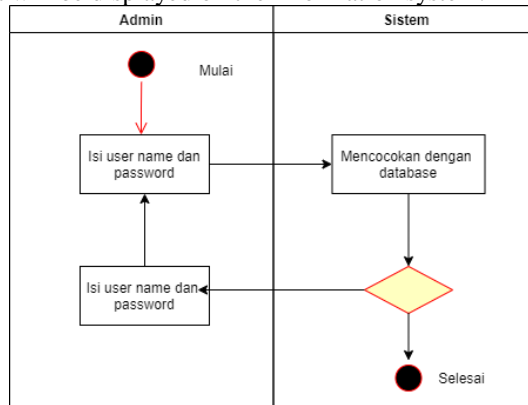


Figure 2. The E-Document Application login activity diagram

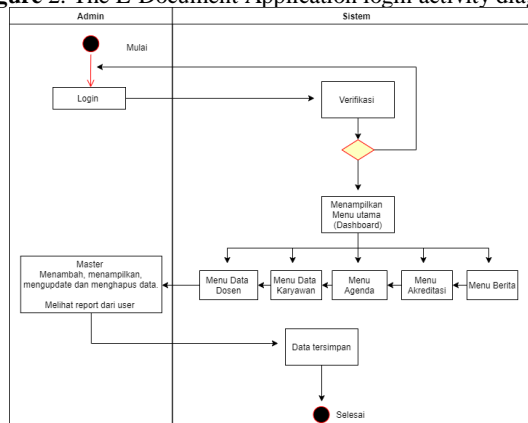


Figure 3. Activity diagram for E-Document Application users

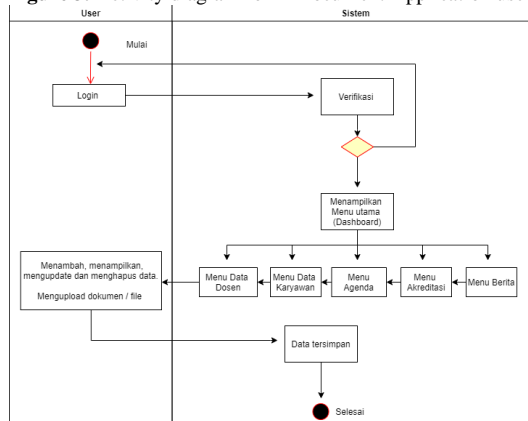


Figure 4. Activity diagram for the admin of the E-Document Application

2.4. Programming Language (Coding)

PHP (Personal Home Page) is a script language embedded in HTML for server side execution (Adi Nugroho, 2006). So it can be concluded that the PHP programming language is a script for creating HTML documents that are created using a text editor and then executed on a web server.

2.5. Testing (Testing)



The test that will be carried out on this system is Black Box Testing, which is where testing is focused on the functions of this E-Document application. The goal is to ensure that each part is in accordance with what is expected and in accordance with the flow. Ensure that any errors in the E-Document application can be handled immediately by the system.

2.6. System Design

The following is a series of systems in the Quality Assurance Agency e-document application at the National University:

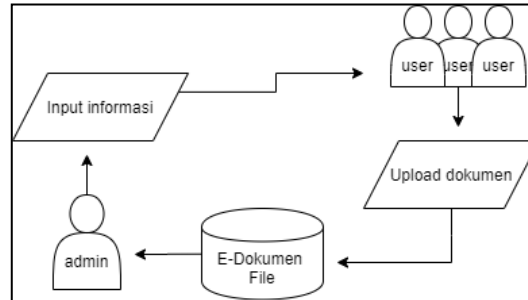


Figure 5. System Design

The picture above shows how the process will be carried out in the Quality Assurance Agency E-Document application. This system will involve the Admin (Quality Assurance Agency) and users (units and faculties at the National University). The admin here has access as the master user. After that, the user will input the required data and documents and save them in the database. The data and documents can be seen by the admin.

3. Results and Discussion

3.1. Implementation

The implementation here describes the system used in the Quality Assurance Agency E-Document Application, along with the system design:

1. Display on Login Page

This page will display this form which is used to login for admins of the Quality Assurance Agency, work units and faculties at the National University



Figure 6. Display on Login Page

2. Display On Main Page (Dashboard)

This display is the main page or dashboard on this website. This page is used by admin and user to add data, upload files to the lecturer data menu and employee data. Then the meeting agenda menu is used as a report on the activities that will be or have been implemented. The news menu is used to upload photos of activities that have been carried out. And finally there is the meditation file menu, this menu is used to upload accreditation files from each unit and faculty.

On the main admin page, there is a graphic of the completeness of document collection from each unit and faculty. And on the user's main page there is a feature for alerts or warnings on expired accreditation files. This commemoration is active during the last one year of the validity of the accreditation.



Figure 7. Admin Main Page Display (Dashboard)

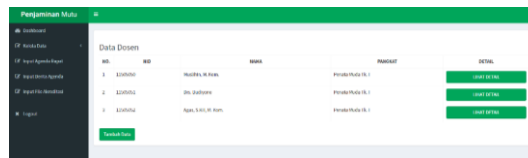


Figure 8. Display of the Main User Page (Dashboard)

3. Lecturer Data Menu Display

The display on this page is a display that will be used by the user to input the lecturers' data and documents. In this menu there are features add, edit, delete and upload data.

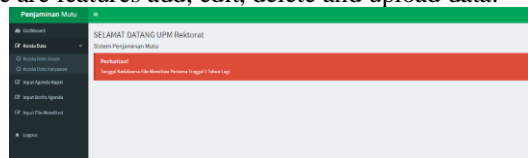


Figure 9. Display of Lecturer Data Menu

4. Employee Data Menu Display

The display on this page is the display used by the user to input data and documents from the lecturers. In this menu there are features add, edit, delete and upload data.

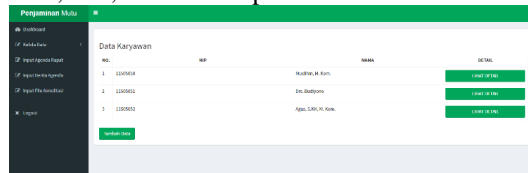


Figure 10. Display Employee Data Menu

5. Meeting Agenda Menu Display

The display on this page is used for units or faculties at the National University to schedule activities or meetings that will be held at these units and faculties.

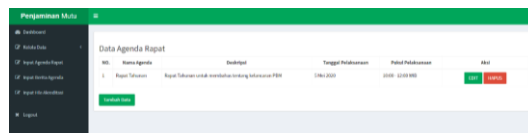


Figure 11. Display of the Meeting Agenda Menu

6. Accreditation Menu Display

This view is used by National University units and faculties to upload files, and the validity date of accreditation.

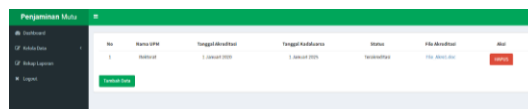


Figure 12. Display of Accreditation Menu

7. News Menu Display

This view is used as a report on activities that have been carried out in units or faculties at the National University in the form of uploading photos of these activities

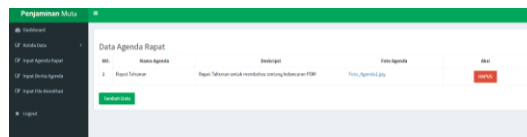


Figure 13. Display News Menu

8. Add Data Menu Display

This view is used for lecturers and employees at each unit or faculty at the National University to input data and upload the required documents.

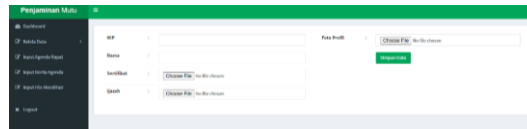


Figure 14. Display Menu Add Lecturer Data



Figure 15. Add Employee Menu Display

9. Display Filter and Searching Menu

This view is used for admins to view reports from that user. There are filter and searching features that make it easier for admins to search for documents or data from each unit and faculty at the National University.



Figure 16. Display of the Report Recap Menu

3.2. Testing

a) Black Box Testing

The test used on the system is to use Black Box Testing. Black box testing is testing software in terms of functional specifications without testing the design and program code (Saladin & Rosa, 2011). So, it can be concluded that this test is carried out to test the system by using what is exactly what is needed and expected. The following is the Black Box test on this E-Document Application:

No.	The scenario to be tested	Expected test results	Conclusion
1	Enter your username and password and click the login button	Display the main page (dashboard)	It works
2	Add data button	Displays data that must be filled in and uploaded	It works
3	Data edit button	Displays the data to be edited	It works
2	Add data button	Displays data that must be filled in and uploaded	It works
3	Data edit button	Displays the data to be edited	It works
4	Clear data button	Displays the data you want to delete and confirms the data is deleted	It works
5	Button view details	Displays detailed data that has been inputted	It works
6	Photo view button	Displays photos that have been uploaded	It works
7	Data upload button	Displays a page for uploading data	It works
8	Save data button	Save the data that has been inputted	It works
9	Menu buttons on the main page	Displays the menu page that was addressed or clicked	It works
10	Logout button	Displays the exit page of the application	It works

- b) Database Access Speed Testing
This speed test is carried out on a localhost scale.

No.	Tested page	Time earned
1	Login page	3.40 seconds
2	Lecturer data menu	1.70 seconds
3	Employee data menu	1.72 seconds
4	Meeting agenda menu	1.72 seconds
5	Accreditation menu	1.72 seconds
6	News menu	1.72 seconds
7	Add data button	2.57 seconds
8	Data edit button	2.50 seconds
9	Update button	3.90 seconds
10	Save data button	3.80 seconds

4. Conclusion

- a) The Quality Assurance Agency E-Document application is designed to assist and facilitate the search and collection of lecturer and employee data documents as well as activities and their results at the National University units and faculties so that it does not take time to search and these documents are stored properly, neatly and regularly as well as easily. accessed because it is based on an online website.
- b) This Quality Assurance Agency E-Document application provides features in the form of uploading documents, data, and also information about existing activities at the National University unit or faculty. Then there is an alert feature on the user's main page that is used as a warning of expiration of the accreditation that has been uploaded. This commemoration will be active one year after the validity of the accreditation.
- c) After testing the black box testing, it is expected that the user can use it properly and according to what is needed by the user.
- d) This website application can be developed better as needed so that this website can be used optimally and can also provide complete data & document collection for lecturers and employees.

5. Reference

- [1] K. I. Insaf, P. Joko, Darmin, "JAMU (Aplikasi Penjaminan Mutu) Studi Kasus Dokumen Mutu Pada Lembaga Penjamin Mutu Dan Kepatuhan Di Institut Sains Dan Teknologi Al – Kamal," vol. 3 no.2, Desember 2019.
- [2] K. Desi, Irawan, "Implementasi Sistem Informasi Penjaminan Mutu Pada LPPM STIKOM Dinamika Bangsa," vol.12 no.2, Oktober 2018.
- [3] S. Muhammad, Vidy, "Perancangan Sistem Informasi Badan Penjaminan Mutu Internal STMIK Balikpapan Berbasis Website Responsive," Sebatik, 18(1), pp. 10-16, 2017.
- [4] T.Rahmawati, "Perancangan Sistem Pengelolaan Dokumen Elektronik Di Bidang Akademik STMIK JENDRAL ACHMAD YANI Yogyakarta," vol.8 no.1, pp.21-31, 2015.
- [5] H. Fuadz, W.Andi, "Peningkatan Mutu Akreditasi Perguruan Tinggi Menggunakan Sistem Manajemen Dokumen Elektrik (Electronic Document Management System)," vol.4 no.2, Desember 2019.
- [6] A. Mahmood, I. T. Okumus, "Design and Implementation of an Electronic Document Management," vol.1, pp. 9-17, 2017.
- [7] S. Heri, A. Zaid, "Aplikasi Sistem Manajemen Dokumen Elektronik Berorientasi Standar Borang BAN PT," vol.8 no.1, 2017.
- [8] L. B. Mercurius, I. Budi, P. Deden, "Pemodelan Sistem Informasi Penjaminan Mutu Bagi Institusi Perguruan Tinggi Bersertifikasi ISO," vol.8 no.2, 2018.
- [9] S. Eny, N. D. Kadek I, "Rancang Bangun Sistem Informasi Unit Penjaminan Mutu (UJM) Teknik Informatika Di Universitas Negeri Surabaya," vol.5 no.1, 2016.
- [10] C. N. Wahyu, Yulianingsih, S. M. Sri, "Pengujian Black Box Testing Pada Aplikasi Action & Strategy Berbasis Android Dengan Teknologi Phonegap," vol.3 no.2, 2018.

