

SYSTEM DESIGN OF NAUTICAL APPROVAL INFORMATION AT MARITIME DEPARTMENT

Aprizawati¹, Robyansyah², Zusniati³, Adelia Fitriyani⁴
^{1,2,3}Maritime Department, ⁴Informatics Engineering Department,
Politeknik Negeri Bengkalis, Indonesia
aprizawati@polbeng.ac.id¹, robyansyah@polbeng.ac.id², zusniati@polbeng.ac.id³,
adelia@polbeng.ac.id⁴

Abstract

The aim of this reseach is to solve the annually problems during approval submitted for Nautical Study Program. The problems are submitting files which are needs more and long time, more papers, unstrucrtural, and lost files. One of the things that happens with every audit and approval process is the creation of files that take time and include a lot of paperwork every time. This does not align with the government's goal of creating an efficient, contemporary, and environmentally friendly system without relying heavily on paper records. The "paperless" or "tanpa kertas" concept has become increasingly popular in efforts to reduce environmental pollution and increase efficiency. The method is by using waterfall method which is used Programming Tools in PHP Native, Phpmysql (Database), Testing Platform Web Browser. Due to this, in order to implement more effective and efficient work practices, a creative idea was developed to design and develop a nautical information approval system that could be used anywhere and anything. The result of this result is not only can using papers with digital solutions reduce eye strain, but it also speeds up processes, increases accessibility, and reduces daytime stress.

Keywords : System, Design, Approval

1. INTRODUCTION

Generally, the purpose of developing an information system for a learning project is to address existing problems, increase efficiency, and provide more accurate and timely information so that the learning process can be improved and become higher quality. As technology continues to advance, it has a significant impact on meeting information needs in a timely, accurate, and efficient manner. Many people use internet connections as one of their main solutions to obtain information quickly and easily (Febriya & Parsnando, 2020). In the current digital era, information systems are one of the necessities that humans cannot live without. They are used to increase the accessibility of data that is being collected in a timely and accurate manner. A collection of organizational processes that, when followed, will yield information to support or analyze data is known as an information system. (Syarif, 2009).

The development of the information system is currently quite quick, and there are not many people who use it to make work easier. Web-based information systems are among the simplest to create. Web-based information systems can be used to interface with data in order to give information to support a certain argument, in addition to simply displaying information. When creating a web as a medium fo monitoring information, the goal of monitoring itself is to determine if a system can accurately display data or not, as well as the effectiveness of system maintenance that has already been completed.

Maritime Department, especially Nautical Program, conducts audits, surveillance, and approvals every five years. One of the things that is observed in every audit and approval process is the submitted files that keep track of time and generates a lot of papers every time. This does not align with the government's goals. This starts with an effort to create an efficient, modern, and environmentally friendly system without relying heavily on paper (Paperless). The "paperless" or

"tanpa kertas" concept has become increasingly popular in efforts to reduce environmental pollution and increase efficiency. Not only can using papers with digital solutions reduce eye strain, but it also speeds up processes, increases accessibility, and reduces daytime stress.

As a result, in order to increase productivity and efficiency, researchers are eager to conduct research by developing a system of information approval for nautical that can be used anywhere and at any time.

2. REVIEW OF LITERATURE

The process of identifying what must be done (the aim) and the amount of disparities between what must be done and what is truly required is known as needs analysis. According to Burton and Merrill, need analysis is "a systematic process in determining target, identifying inequality between target and reals, and establishing priorities acts." LAN-RI, 2006. One method used in education to identify what should be taught is an examination of needs.

Design and construction is the process of developing and putting into use a system or application that does not currently exist within a particular organization or object. Thus, the analysis utilized to develop a system or enhance an agency's current system is known as design and construction. (Maulani and others, 2018)

Design is a series of actions to translate the results of a system analysis into a programming language that offers a thorough explanation of how the system's components are assembled, according to Pressman, who was quoted by Buchari et al. in the E-Journal of Informatics Engineering Vol. 6 No. 1 (2015)[1].(Ya Asrori et al, 2014)

In the E-Journal of Informatics Engineering Vol. 11 No. 1 (2017), Taufan cited Pressman as saying that "building or development is the activity of creating a new system or replacing or improving an existing system as a whole."(D.P; 2022)

In ICIT Journal Vol. 4 No. 2 (2018:157), Maulani et al. state that "design and construction is creating and making an application or system that does not yet exist in an agency or object." This statement is cited in eISSN 2962-794X (Online). The components of an information system include people, information technology, and work procedures that work together to gather, process, analyze, and disseminate information with the goal of achieving a specific objective (Mulyanto, 2009).

As quoted in the online version of e-ISSN 2962-794X Information systems are typically referred to as instruments that facilitate the use or processing of data in a company, institution, or organization. Information systems are employed methodically to expedite data processing for a variety of uses, especially in decision-making. Software that can help with data analysis or administration is commonly referred to as an information system. Converting unprocessed data into information that an agency or organization can use is the main goal of an information system. An organization can make perceptive decisions by using the outcomes of data processing into information (Algonz, 2022).

Erwan Arbie defines an information system as a system that supports managerial functions, operational support and assistance, and daily transaction processing within an organization while making it easier to provide the required reports. The term "Nautical Approval" describes the formal authorization or permit needed for many facets of nautical engineering education and practice, especially for those who have completed nautical engineering study programs and engage in shipping-related activities. Professional certification, sailing permits, and the acknowledgement of competence by pertinent authorities, including countries and international marine organizations, are frequently linked to this.

Here are some common aspects of nautical approval:

1. Professional Certification:
 - a. Professional Diploma (ANT):
 - b. Graduates of nautical study programs typically receive a professional diploma as a "Nautical Expert Level" (ANT), for example, ANT III or ANT IV. This diploma serves as proof of competence and meets government-set standards.
 - c. Certificate of Approval:
 - d. Some nautical training institutions also have certifications approved by the government or relevant authorities, such as SMK Baruna Dukuhwaru.
2. Sailing License:
 - a. Sailing License (Sea Passport):
 - b. To work on merchant vessels, nautical graduates need a sailing license or sea passport issued by the shipping authority.
 - c. Ship Operating License:
 - d. Nautical graduates also require a permit to operate a vessel, which is usually related to their rank or position.
3. Competency Recognition:
 - a. Study Program Accreditation:
 - b. Nautical study programs must also be accredited by the National Accreditation Board for Higher Education (BAN-PT) to ensure educational quality and meet national standards.
 - c. Training Certification:
 - d. Training undertaken by prospective or graduate nautical students, such as specialized training in navigation, also requires certification by an authorized institution.
3. Approvals from Authorities:
 - a. Maritime Affairs and Shipping Directorate
 - b. Several nautical-related approvals are released by Maritime Affairs and Shipping Directorate for example, regarding the extension of training certifications.
 - c. International Maritime Organization (IMO):
 - d. Several nautical standards and regulations are also established by the IMO, and IMO approval is required for some aspects.

Among the laws issued by The Directorate General of Sea Transportation and the Ministry of Transportation, the law that addresses nautical approval is The 2008 Law No. 17 on Shipping. This law also regulates various other aspects related to shipping, such as Ports, shipping security and safety, water transportation, and marine environmental preservation.

Some laws governing shipping include:

1. Law No. 17 of 2008:

This law serves as the primary legal basis for regulating all matters related to shipping in Indonesia, including nautical approval. Nautical Approval: In the context of shipping, nautical approval (or nautical approval) refers to approval or permission granted by the relevant authorities to conduct certain nautical activities, such as sailing, operating ships, or other activities related to safety and security at sea.
2. Law No. 66 of 2024:

This law is the third amendment to Law No. 17 of 2008, thus making Law No. Law No. 17 of 2008 remains the primary legal basis.

3. Law No. 21 of 1992:

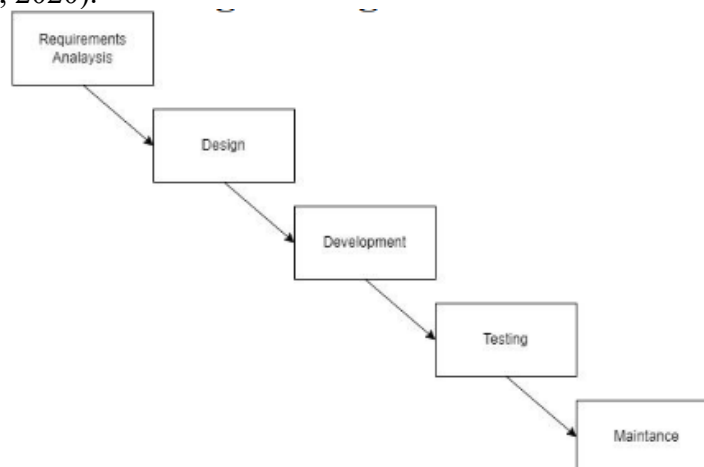
This law also regulates aspects of shipping, but focuses more on safety, security, and order on board, as well as the captain's obligations.

Facilities and infrastructure standards, educator and education personnel standards, management standards, financing standards, graduate competency standards, content standards, process standards, and assessment standards are the eight nautical approval checklist standards that will be incorporated into the information system. A more thorough explanation of these eight standards may be found below:

1. Infrastructure and Facilities Standards: covers the state of the infrastructure, tools, and facilities—such as classrooms, labs, and simulators—that aid in the learning process.
2. Standards for Teachers and Education Staff: highlights the credentials, skills, and background of teachers and other education staff, including support staff and instructors.
3. Guidelines for Management: includes quality processes, methods, and policies pertaining to educational programs, as well as the management, organization, and administration of the institution.
4. Financing Standards: Describes the program's funding sources, such as tuition, overhead, and investment expenses.
5. Graduate Competency Standards: Establishes the knowledge, abilities, attitudes, and behavioral standards that graduates must have in compliance with the provisions of STCW (the Standards of Training, Certification, and Watchkeeping for Seafarers).
6. Information Standards: Establishes the instructional plans, curriculum, syllabus, and information pertinent to the maritime industry.
7. Process Standards: Describes the methods of instruction, homework, assessments, and strategies employed in the learning process.
8. Assessment Standards: Provides information about the assessment system, including evaluations of the learning process, institutional assessments, and student assessment techniques.

4. METHOD

The Unified Modeling Language (UML), a standard language for describing software in diagram form, was the system design strategy utilized to create this system. Software systems can be defined, built, documented, and visualized using UML (Audrilia & Budiman, 2020).



Sketch 1. Metode Waterfall

Source : Sommerville, Ian, 2011

1. Requirements' Analysis

System developers must interact with one another at this point in order to comprehend consumer expectations for the software as well as its constraints. Usually, in-person surveys, conversations, or direct interviews are used to get this data. (Marjun & E. B. Pratama, 2022).

2. Design

Interface representations, data structures, program design, and coding methods are all part of this process, which consists of a number of processes devoted to the design and development of software applications. (Saumi and Achyani, n.d.)

3. Progress

Following the completion of the system requirements analysis and design phases, the coding step necessitates transforming the design stage into an information system application. In 2020, Kurniawan et al.

4. Examining

The created sales information system is currently being tested. If the system performs as expected, it can be implemented. This system is expected to help increase sales and workshop promotions (Sudianto et al., 2020).

5. Maintenance

This is the last stage in the method of waterfall. At this stage, developing software is implemented and maintained. This maintenance includes fixing errors or bugs that may not have been detected in previous stages (Aceng Abdul Wahid, 2020).

Focus on this web also used Programming Tools in PHP Native, Phpmysql (Database), Testing Platform Web Browser. PHP Native, MySQL, and a web browser are used to create and manage dynamic web applications.

PHP Native processes data and logic on the server side, MySQL serves as a database management system for storing data, and a web browser is used to display the results to the user and interact with the website. Explanation of each tool. PHP Native: Used to execute code on the server side. Processes form input, manages sessions, and interacts directly with the database. Plays a role in converting static pages into dynamic ones, displaying content based on the situation, and managing user access rights.

MySQL: A database management system used to store, manage, and access data in a structured manner. It acts as the "brain" of data storage, for example, to store user data or product information. PHP interacts with MySQL to retrieve, add, modify, or delete that data.

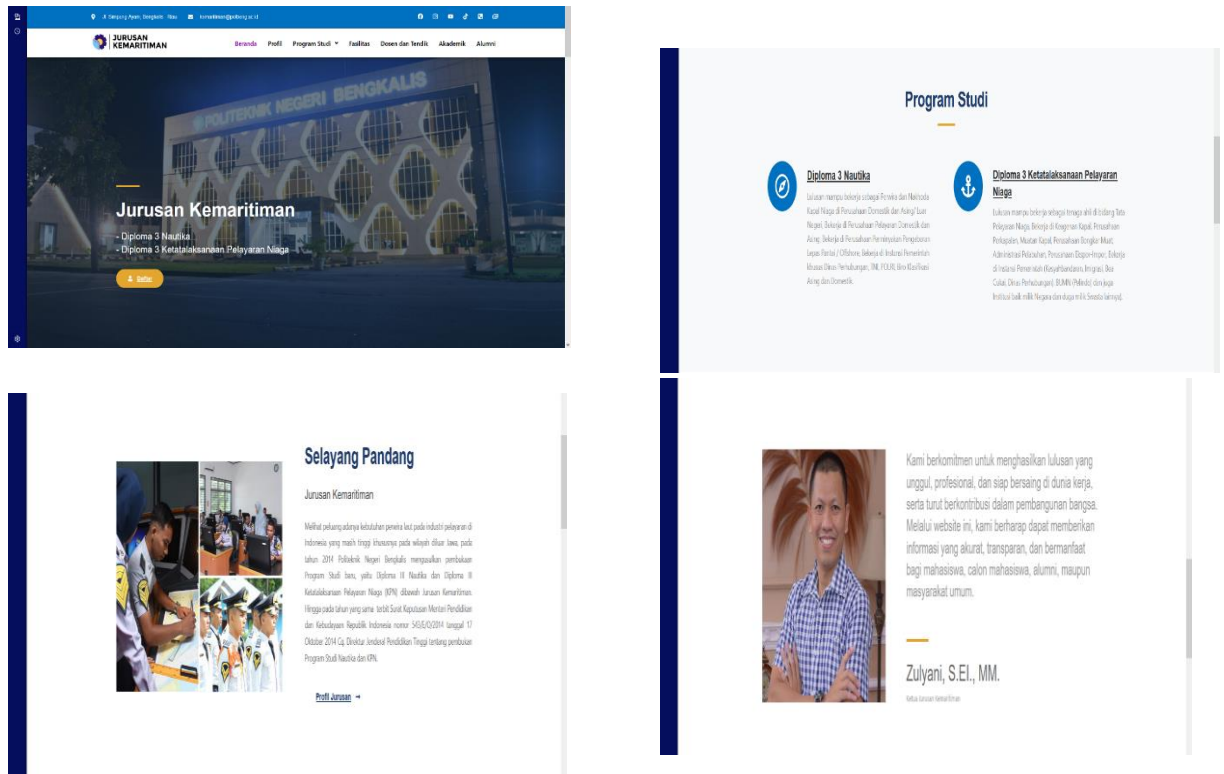
Web Browser: It acts as a client to display web pages that have been processed by the server. It sends requests to the server, such as when a user clicks a link or fills out a form. It interacts directly with the user, allowing them to view content and interact with the web application.

Combination: When a user accesses a website, the browser sends a request. The web server receives the request and executes a PHP script. The PHP script then communicates with MySQL to retrieve or store the necessary data. The results are sent back to the browser to be displayed to the user as a dynamic page.

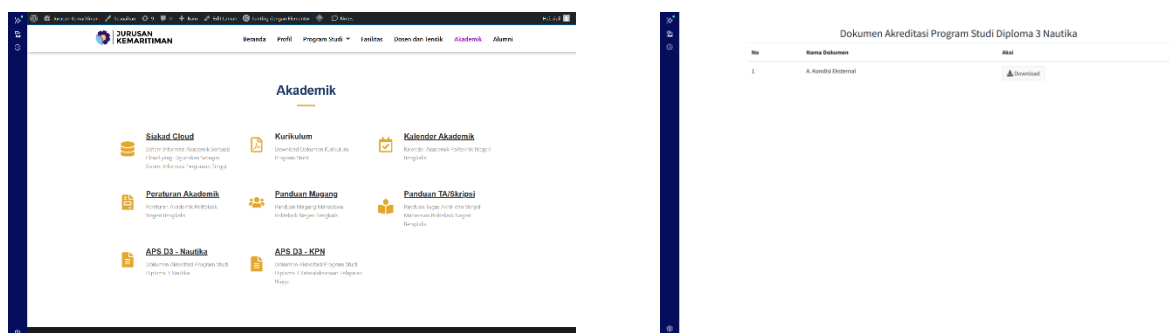
5. RESULT & DISCUSSION

After doing the plan based on the method, the system has built as the following picture:

a. Website of Maritime Department

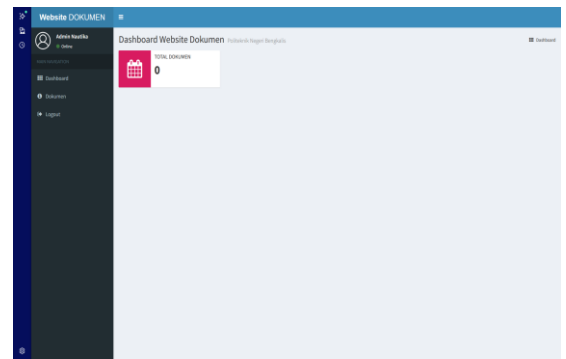
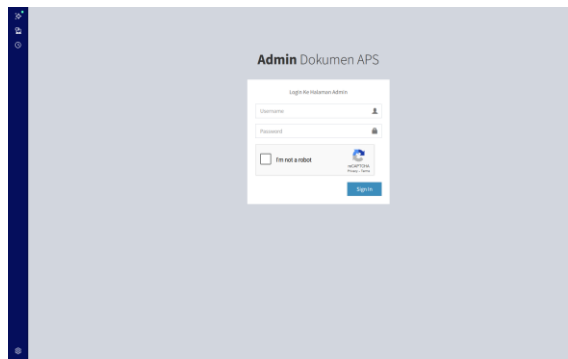


B. Access Approval Documents Through The Academic Menu

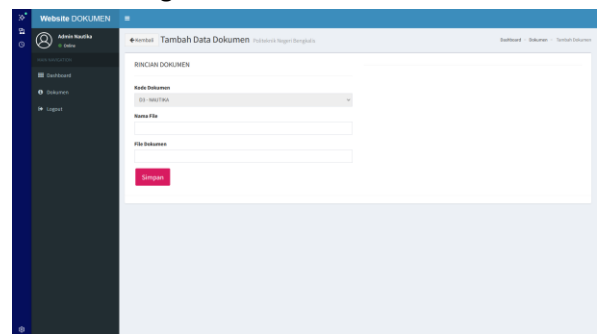
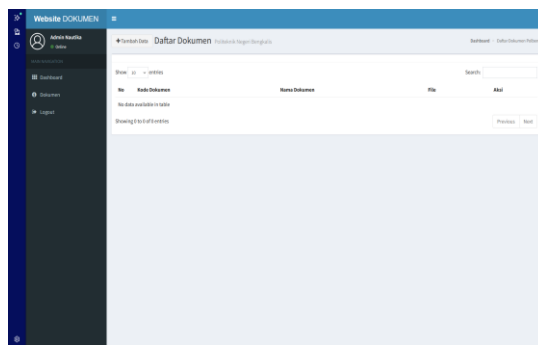


c. Admin Page Upload Study Program Accreditation Documents

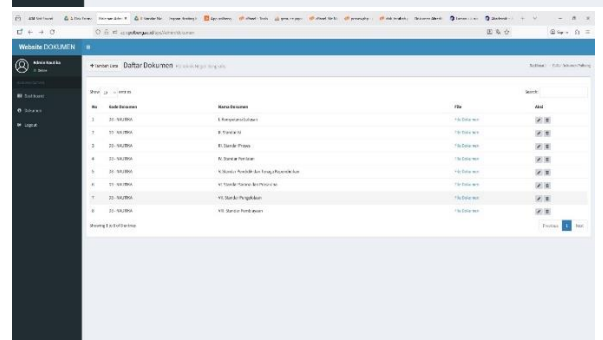
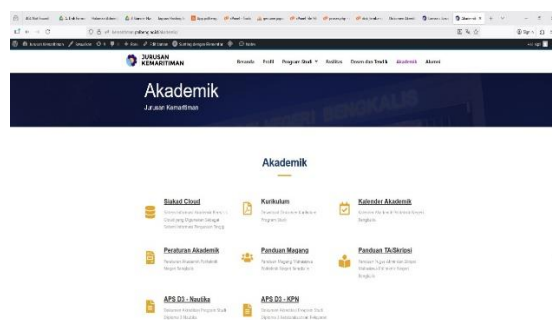
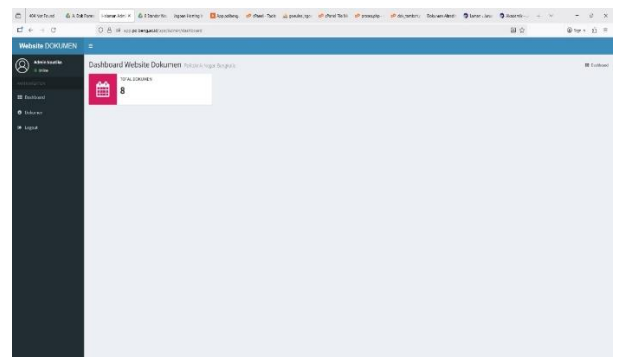
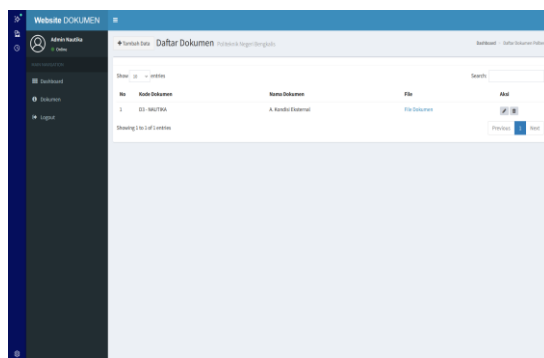
<https://aps.polbeng.ac.id/aps/Admin>



d.Document Dashboard Page



e. Document Additional Page



Dokumen Akreditasi Program Studi Diploma 3 Nautika

No	Nama Dokumen	Aksi
1.	1. Kelempahan Subur	 Download
2.	2. Standar	 Download
3.	3. Standar Proses	 Download
4.	4. Standar Penilaian	 Download
5.	5. Standar Penilaian dan Tenaga Kependidikan	 Download
6.	6. Standar Sarana dan Prasarana	 Download
7.	7. Standar Pengelolaan	 Download
8.	8. Standar Peningkatan	 Download

Based on the result, it shows that the process of system design for renewal approval is easier and more practical to do. It serves automatically when we need to search the data. It also spends short time and be more effective and efficient to access.

f. CONCLUSION

The purpose of developing an information system for a learning project is to address existing problems, increase efficiency, and provide more accurate and timely information so that the learning process can be improved and become higher quality. As technology continues to advance, it has a significant impact on meeting information needs in a timely, accurate, and efficient manner. In this System Design of Nautical Approval Information, the researcher made it to make the process of approval would be sappllicable. All the files can be accessed easily wherever and whenever needed.

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