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Designing a Website-Based Digital Library Information System at SMK Negeri 1 Tanjung Pura

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ABSTRACT

This research aims to design a website-based Digital Library Information System for SMK Negeri 1 Tanjung Pura to improve the management and accessibility of learning resources for students and faculty. The current library system at the school is still manual, which limits the efficiency and effectiveness of accessing books, articles, and other educational materials. The proposed system is designed to provide a user-friendly interface for searching, borrowing, and managing digital library resources. Using web development technologies such as HTML, CSS, JavaScript, and PHP, the system integrates a database to store and retrieve information on available resources. This system is expected to enhance the library's services by enabling online access to resources, improving the efficiency of administrative tasks, and supporting a more effective learning environment. The system's design considers usability, security, and scalability to ensure its long-term viability and relevance in the educational context of SMK Negeri 1 Tanjung Pura.

Keywords: Digital Library, Information System, Website-based,Web Development, Educational Technology

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1. INTRODUCTION

A Digital Library Information System is a system designed to store, manage, and access various educational resources in digital formats, such as books, journals, articles, and other learning materials. At SMK Negeri 1 Tanjung Pura, the current library management system is still largely manual, which makes the process of cataloging, borrowing, and accessing materials inefficient. The traditional method of managing library resources results in delays, human errors, and difficulties in tracking the availability of books and other learning materials. Additionally, with the growing number of students and staff, it becomes increasingly challenging to provide fast and reliable access to library resources.

SMK Negeri 1 Tanjung Pura, as an educational institution, has a responsibility to support effective teaching and learning processes by providing students and faculty with easy access to educational resources. However, due to the limitations of the current manual library system, there is a need to develop a more efficient and user-friendly solution.

The existing library system at SMK Negeri 1 Tanjung Pura is often prone to issues such as data loss, slow processing time, and difficulties in retrieving information. For example, if a teacher or student needs to access a specific book or reference, they must physically search through records, which is time-consuming and often unreliable. Additionally, maintaining the accuracy and completeness of records has been a challenge due to the lack of a centralized and digital system.

To address these challenges, it is essential to build an online Digital Library Information System that can streamline the management and accessibility of resources. The proposed system will provide a web-based platform for searching, borrowing, and managing digital resources in a more effective and timely manner. This system will be designed to allow real-time updates and easy retrieval of data, thus improving the overall performance of the library.

The proposed Digital Library Information System will use a SQL-based database, which is commonly used for managing relational databases. SQL allows for fast, efficient, and secure data retrieval, ensuring that library staff and users can access information quickly and accurately. By

implementing this system, SMK Negeri 1 Tanjung Pura can enhance the efficiency of library operations, provide better service to students and teachers, and support an improved learning environment.

2. RESEARCH METHOD

a. A use case diagram is a modeling technique for representing the behavior of an information system to be developed. A use case describes a series of scenarios or steps in a sequence, which involve an interaction between a user (actor) and the system. Below is the Use Case Model for the design of the Digital Library Information System based on a Website at SMK Negeri 1 Tanjung Pura to be developed. The use case diagram design below illustrates the activities of the actors in the system. In the use case diagram, the admin can first log in to the system. After logging in, the admin can view the dashboard and the list of books. Then, the admin can add book data to the system as needed. On the other hand, students can also log in to the system first. After logging in, students can view the dashboard and the list of books. Additionally, students can recommend books that are not yet available in the system, so that the admin or library staff can quickly add them based on the student's recommendation.

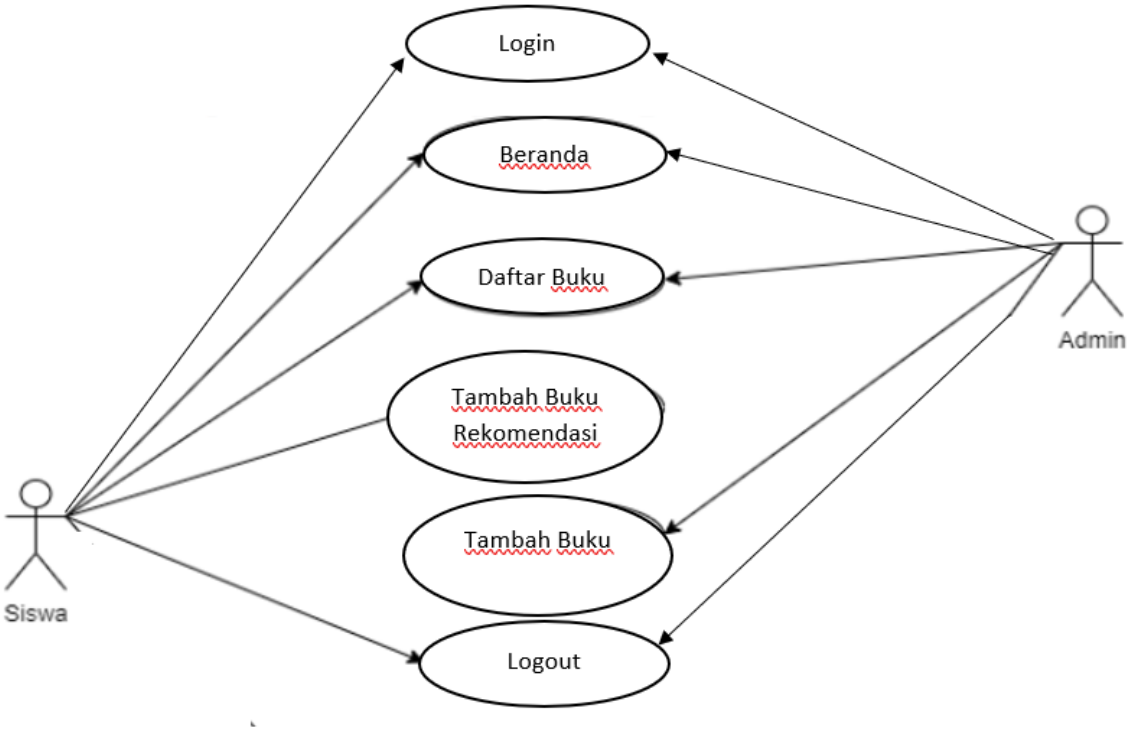

Fig 1. Use Case Diagram

b. An Activity Diagram illustrates an activity or the various workflows within a system being designed. It shows how each flow starts from possible events and how they end. Activity diagrams can also represent parallel processes that may occur during multiple executions .

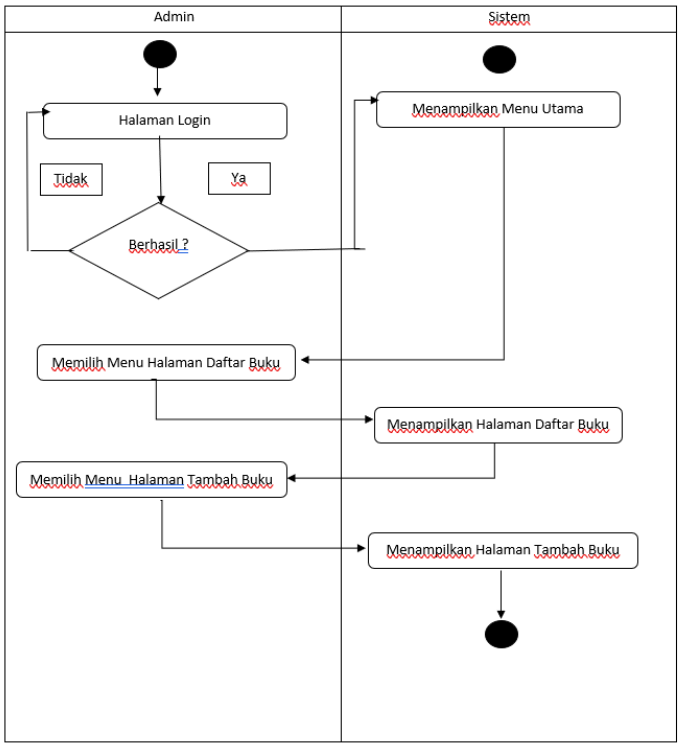

Fig 2. Acitivity Diagram Admin

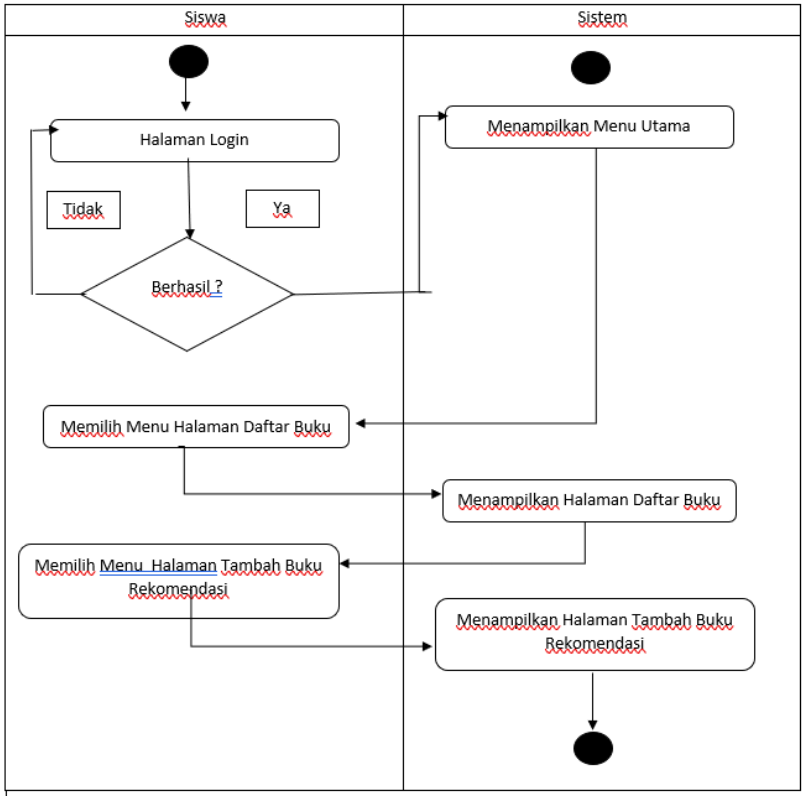

Fig 3. Acitivity Diagram Student

Figure 2 and Figure 3 explain the activity diagram for the official travel order information system. The initial process is for the admin to log in, view the book list, and add book data. Meanwhile, students can

also log in, view the book list, and add data on the books they want to recommend so that the books are immediately available in the library.

3. RESULTS AND DISCUSSION (10 PT)

System implementation is the application of user needs based on plans that have been previously made into code, resulting in an application that is relevant and able to meet user needs. System implementation is carried out using a website with the PHP, Javascript, HMTL and CSS programming languages. The following is a display of the application that has been created.

a. Login Page Display

Figure 4 is the admin login form that the admin uses to log in by entering the username and password. If the data does not match, a notification will appear that the username and password are incorrect.

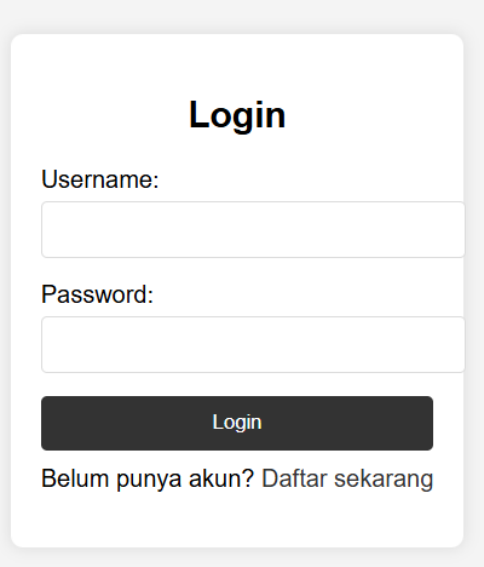

Fig 4. Form Login

b. Home Page View

The Digital Library home page displays about the digital library, displays the book list and add book menus. This homepage display is made simply to make it easier for users.

Fig 5. Home

c. Book List Page View

The Book List page in the Digital Library displays a list of books in the digital library

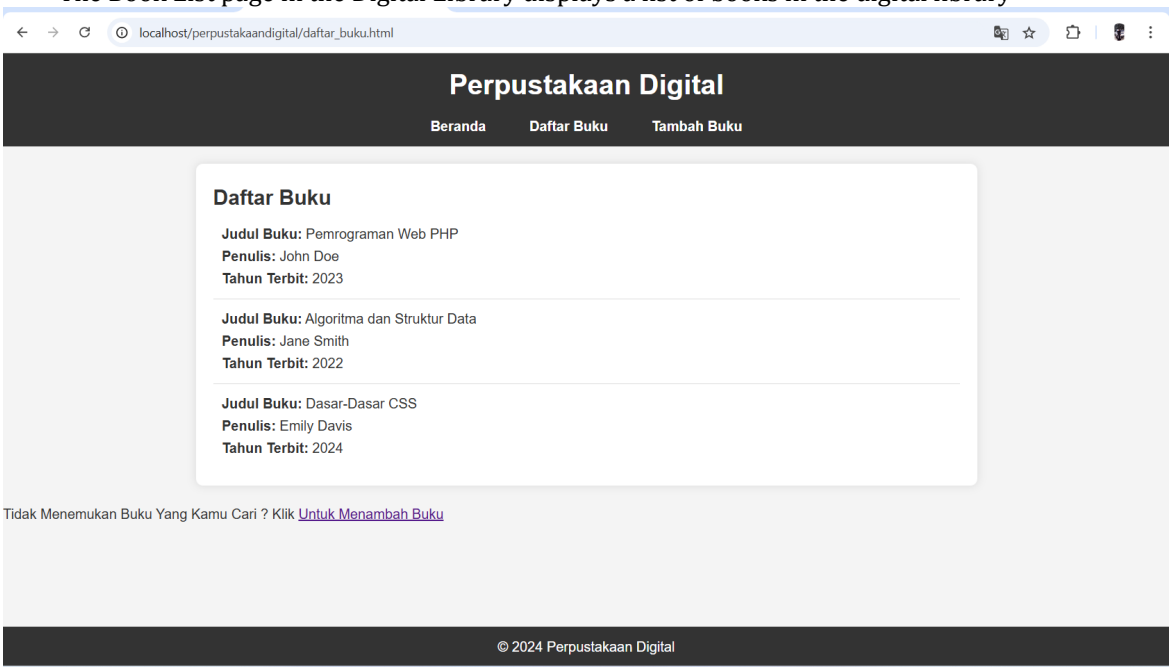

Fig 6. Book List

d. Add Book Page For Admin
Digital Library Add Book page for Admin, can add books, in the form of book title, author, year of publication, and book image.

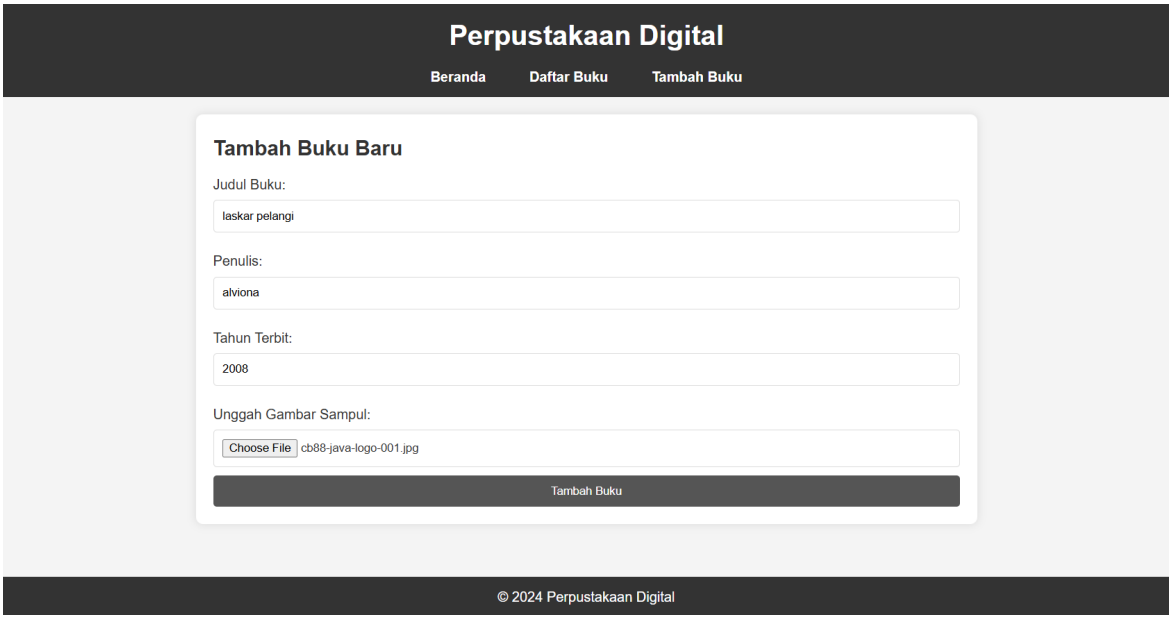

Fig 7. Add Book Admin

e. Process Book Admin
In the image below, the notification that if we add a book will display the information, the book has been successfully added to the digital library, more details can be seen in image 8.

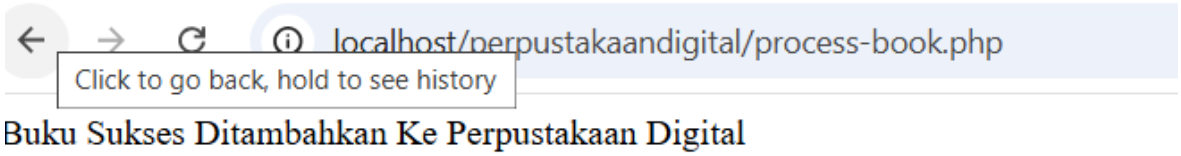

Fig 8. Process book Admin

f. Add Book Page For Student
Digital Library Add Book Page for Students, can add books to recommend that books that don't exist be updated immediately, add book displays a menu in the form of book title, author, year of publication, and book image.

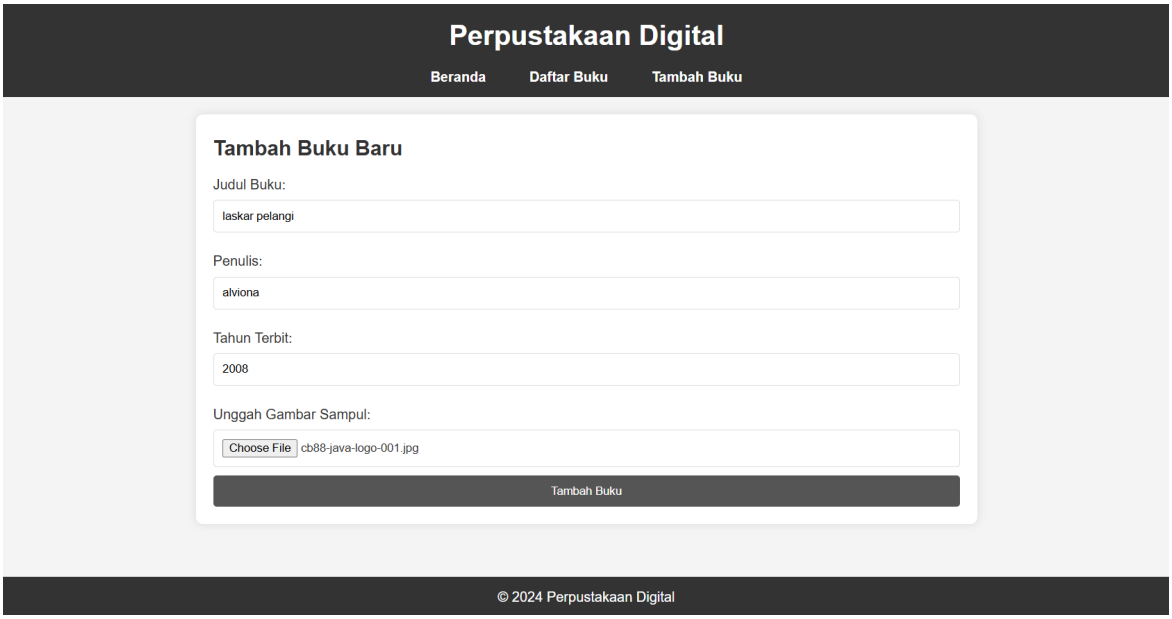

Fig 9. Add Book Student

g. Process Book Student
In the image below, the notification that if we add a book will display a description, thank you, the book you are looking for will be added soon, more details can be seen in image 10.

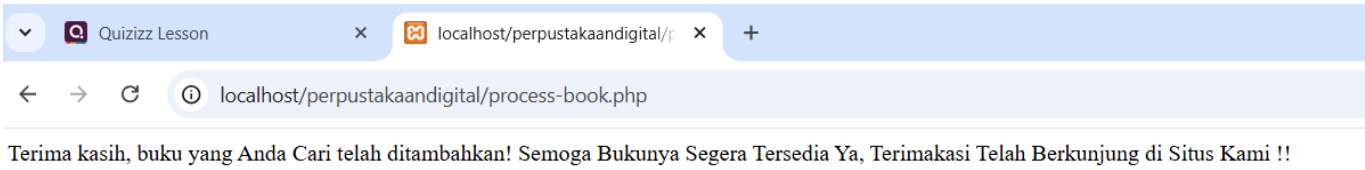

Fig 10. Process book Student

4. CONCLUSION

This research has succeeded in designing a digital library information system. By developing several features such as logging in, viewing book lists and adding book data. Each feature has been tested with valid results. The existence of a digital-based library information system at SMK Negeri 1 Tanjung Pura can help students and to access various information and reference sources that can be used for learning activities and teaching materials.

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