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Design of Academic Information System and New Student Admission System (PPDB) Based on Website at SMP Swasta Delisha with Prototype Model Approach

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ABSTRACT

Advances in information technology have encouraged educational institutions to adopt digital systems to improve operational efficiency and service quality. SMP Swasta Delisha currently does not have a website-based system, so the New Student Admissions (PPDB) process and information delivery are still done manually. This manual approach leads to inefficiencies and increases the risk of administrative errors. This study aims to design and develop a website-based information system that includes online registration features, school profile information, and important announcements. The system development uses the Prototype Model method, which is iterative and flexible, allowing the system to be built according to user needs through direct feedback. The results of this study are expected to help SMP Swasta Delisha in improving the efficiency of the PPDB process, expanding the reach of information, and providing better services to prospective students and the wider community.

INTRODUCTION

The advancement of information technology has had a significant impact on various aspects of life, including the education sector. This development opens up opportunities for educational institutions to adopt technology to improve service quality and operational efficiency. One relevant implementation is the application of a website-based system as a supporting medium in various activities, including data management and administrative processes (Agustian & Salsabila, 2021). Until now, SMP Swasta Delisha does not have an official website that can support these various needs. The absence of a website results in the process of accepting new students (PPDB) still being done manually as well as the delivery of information. This not only takes longer but also increases the risk of administrative errors, data loss, or unwanted document duplication.

Manual PPDB activities often involve collecting physical documents, manual data recording, and inefficient file storage. This condition not only makes it difficult for schools but also prospective students and their parents, who have to spend extra time to register in person. In addition, this manual process can cause long queues and inconvenience for all parties involved (Arif et al., 2017). In addition to the PPDB process, the absence of a website also hampers the delivery of information about the school profile to the wider community. Important information such as vision, mission, superior programs, school facilities, and student achievements is often difficult to access because it is only delivered verbally or through print media that has limited reach. In today's digital era, fast and easy access to information is a basic need that must be met by every educational institution.

Suboptimal management of school information can also affect the image of SMP Swasta Delisha in the eyes of the public. Educational institutions that have not utilized information technology optimally tend to be considered less up-to-date. This can have an impact on the attractiveness of the school to prospective students, especially amidst increasingly tight competition with other schools that are more modern in managing administration and information (Irawan et al., 2016)

On the other hand, prospective students and their parents need convenience in accessing school information and registering without having to come directly to the location. A website-based system can be an efficient solution by providing an online registration feature that allows the PPDB process to be carried out anytime and anywhere. Thus, this system can help reduce the time and energy that must be spent by prospective students and schools (Isro' Mukti et al., 2018).

The implementation of a website-based system can also increase transparency in the PPDB process. Prospective students and parents can monitor the registration status in real time, thereby reducing the potential

for uncertainty. In addition, digital data storage can minimize the risk of document loss or damage and facilitate data retrieval in the future (Christian et al., 2018). This study aims to design and develop a website-based academic and admission information system for SMP Swasta Delisha using the Prototype Model approach

METHOD

This study focuses on the design of information systems and the process of accepting new students (PPDB) at SMP Swasta Delisha, which is based on the website. The main objective of this study is to create a system that can simplify the process of accepting new students by utilizing web technology and make it easier for students to get information and make it easier for educators to convey information.

System Development Method (Prototype Model)

The prototype model system development method is an approach used in software development where a prototype or initial model of the system is built to gather feedback from users. This prototype serves as an early version of the application or system that is still in the development stage by only including basic or essential features. After the prototype is completed, users will test the system and provide feedback that is very important for further development. The prototype will then be refined and updated based on user input until it reaches the final system that is ready to be implemented. This approach is often used when the system requirements are not completely clear at the beginning or when changes in requirements occur frequently during development (Zailani et al., 2020)

The Prototype Model method aims to speed up the development process by producing early versions that can be tested and validated more quickly. This allows developers to work more closely with users and ensure that the system being developed is more in line with their needs. This method also allows for continuous iteration and improvement, which provides room for more effective system improvement and quality enhancement. Unlike traditional development models such as waterfall, which are more rigid in following the sequence of stages, the Prototype Model allows for more flexible and adaptive development to changes in user needs that occur during the development process (Purnomo, 2017).

Prototype Model Stages (Putra Pratama Hendrico & Utami, 2022):

1. Planning
   One of the main advantages of the prototype model is its ability to speed up the development process. Because prototypes are created quickly and can be tested directly by users, developers can get feedback immediately. With rapid iteration, developers can find errors and fix them faster without waiting for the entire system to be built.
2. Building a prototype after the initial requirements are collected
   The next stage is prototyping. At this stage, developers create an initial version of the system by adding features that have been identified in the planning stage. Prototypes are built quickly, using technology or tools that allow the creation of the system more efficiently, although they may not be complete or perfect. The purpose of this prototype is to produce a model that can be tested by users and provides a functional picture of the system to be developed. At this stage, developers focus on creating basic interfaces and functionality and avoid too much technical detail.
3. User evaluation of the prototype after the prototype is completed
   The prototype is handed over to the user for testing. At this stage, the user tests the functionality of the system, interacts with the interface that has been created, and provides feedback on aspects of the existing system. This evaluation helps developers to find out whether the basic features of the system are in accordance with user expectations. Users can provide input on problems they encounter, missing features, or suggestions for improving the interface and user experience. User feedback is crucial in determining whether the prototype that has been built is on the right track.
4. User evaluation of the prototype after the prototype is completed
   The prototype is handed over to the user for testing. At this stage, the user tests the functionality of the system, interacts with the interface that has been created, and provides feedback on aspects of the existing system. This evaluation helps developers to find out whether the basic features of the system are in accordance with user expectations. Users can provide input on problems they encounter, missing features,

or suggestions for improving the interface and user experience. User feedback is crucial in determining whether the prototype that has been built is on the right track.

5. Coding the system and repairing and refining the prototype
   Based on the feedback provided by users at the evaluation stage, developers make improvements and refinements to the prototype. At this stage, changes can be made to fix problems found during the evaluation, add new features, or improve the functionality of the system. This iteration can include improving the user interface, improving system performance, or adjusting features to better suit user needs. This improvement can be done several times, depending on how many changes are needed. This improvement process takes place iteratively, and each new version of the prototype will be retested by users to get further feedback.
6. Final system evaluation
   Once the final system is completed, the final stage is a comprehensive evaluation of the entire system. This evaluation is done to ensure that the system is working as expected and that users can access and use the system easily. Users can verify whether the system that has been built meets all their needs and functions properly. The final feedback from users at this stage can be used to make minor improvements if necessary before the system is fully implemented in the work environment.

RESULTS AND DISCUSSION

The results of the study indicate that the developed system has been integrated with various important features, such as online registration, student data management, and academic information. In addition, this system is designed with a user-friendly display to make it easier for all parties to access the information needed. Security features are also implemented to maintain the confidentiality of student and school data, thereby increasing user trust in the system. Tables and figures are presented in the middle, as shown below, and cited in the manuscript.

Website Design Result View

The appearance of the design results of the SMP Swasta Delisha website is designed with a simple, informative, and easy-to-use interface, including several main features such as the home page, school profile, online new student registration (PPDB), announcements, and contacts. Responsive design allows the website to be accessed well through various devices, both computers and smartphones. The online PPDB feature is the main part that makes it easier for prospective students to register without having to come directly to the school, while the announcement page and school profile present important information in a complete and structured manner. This appearance is expected to improve service efficiency and support the digitalization of administration in the SMP Swasta Delisha environment.

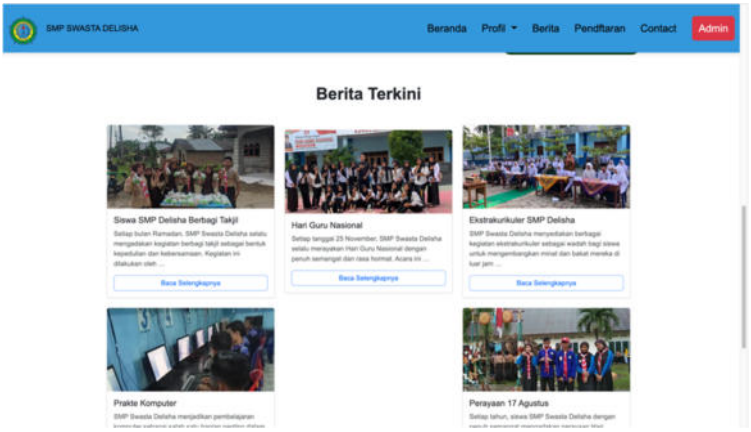

Figure 1. Home Page

The homepage of the SMP Swasta Delisha website is designed as the main face that provides a comprehensive overview of the school. As soon as visitors open this page, they will be greeted with a display

of school images that show the beautiful school environment and available facilities. This image aims to provide a positive first impression for prospective students, parents, and the community who want to know more about the school. In addition to the main image, this page also displays the latest news about school activities, student achievements, and important academic information. This news is arranged in an easy-to-read format, with interesting titles and short summaries before users access the details. With this news section, visitors can stay connected with the latest developments at SMP Swasta Delisha.

Figure 2. News page

The News page on the SMP Swasta Delisha website serves as an information center for all parents, students, teachers, and the general public regarding various school activities. Through this page, every visitor can find out the latest developments that occur at the school, ranging from academic activities, extracurricular activities, and competitions to special events involving students and educators. With a neat and attractive appearance, the news is presented in an easy-to-read format and is equipped with documentation images of each activity. Each published news item will include an informative title, a short summary, and a link to read more. The latest news will always be displayed at the top, so visitors can easily find out the latest information. In addition, there is a category feature that allows users to search for news based on the type of activity, such as academic, extracurricular, or important announcements. With this feature, parents and students can quickly find the information they need.

Figure 3. Vision Mission Page

The Vision and Mission page on the SMP Swasta Delisha website is designed to provide clear information about the direction and goals of the school. This page can be accessed by all parties, including

parents of students, prospective students, educators, and the general public. With a simple yet elegant appearance, this page presents the school's vision prominently at the top so that every visitor can immediately understand the ideals that SMP Swasta Delisah wants to achieve.

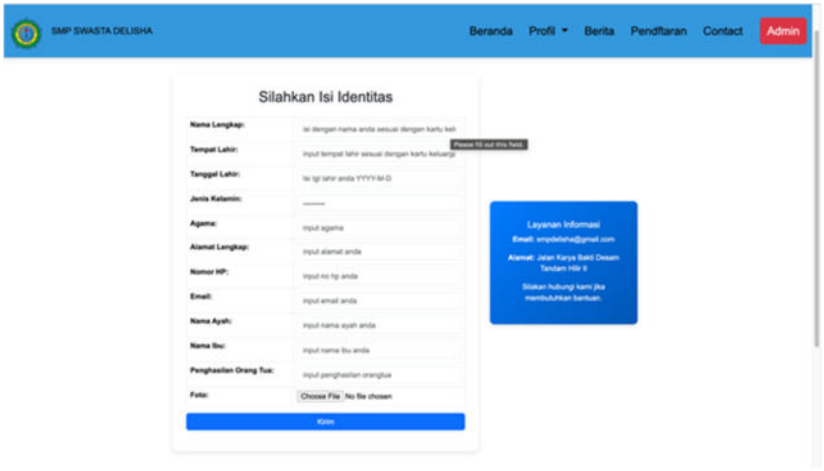

Figure 4. Registration Page

The New Student Registration page on the SMP Swasta Delisha website is designed to make it easier for prospective students and parents to obtain information and carry out the registration process online. With a user-friendly and informative display, this page provides a complete guide to the registration procedure and requirements that must be met. To facilitate the registration process, an online form is available that can be filled out directly by prospective students or parents. This form includes the student's personal data, parent information, and uploads of required documents. After the form is submitted, the system will provide an automatic notification as confirmation that the data has been received. In addition, prospective students can also print proof of their registration through the system available on the website. With the New Student Registration page, SMP Swasta Delisha strives to provide convenience for prospective students to register without having to come directly to school. This system not only saves time but also increases efficiency in managing registration data. With a more transparent and modern process, SMP Swasta Delisha is ready to welcome new students who want to join and develop together in a quality educational environment.

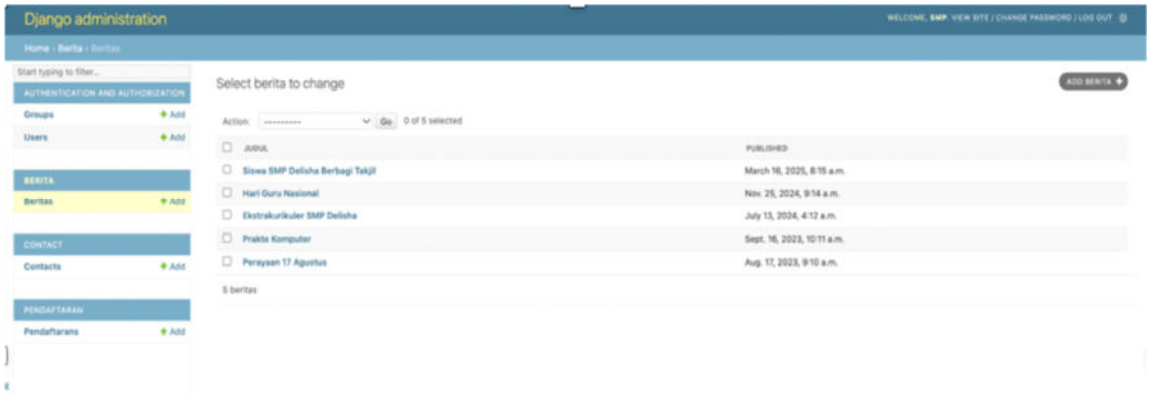

Figure 5. Login page

The Admin Login page on the SMP Swasta Delisha website is specifically designed to provide access to the school administration for managing various data and information contained in the system. This page can only be accessed by users who have official access rights, such as administrative staff, teachers, or school management. With a strict security system, only users who have valid credentials can log in and manage school

data. On this page, there is a login form consisting of username and password columns. After the user enters the correct credentials, the system will verify the information before granting access to the admin dashboard. If there is an error in entering the username or password, the system will display an error message and provide the option to reset the password via registered email. The admin dashboard allows users to manage various important features, such as adding or editing school news, updating new student registration information, managing student data, and accessing academic reports. All of these features are designed to be easy to use with a responsive and user-friendly interface so that school administration can run more efficiently.

CONCLUSION

The development of the SMP Swasta Delisha website has resulted in a functional prototype equipped with core features such as online registration, school news management, and secure admin access. This system facilitates more efficient and transparent administrative processes, particularly in new student admissions. Based on system testing and user feedback, the website prototype aligns well with user expectations in terms of usability and information accessibility. Further development is recommended to include academic record integration and performance analytics to enhance the platform's functionality and impact.

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