

Article

School Digital Transformation: Design and Construction of New Student Admissions Website

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Abstract. Suwargi Buwana Djati Integrated MA is one of several schools located in Cirebon area. The purpose of this research is to develop a website for the New Learner Information System at Suwargi Buwana Djati Integrated MA. CodeIgniter framework, Visual Studio Code editor, and PhpMyAdmin database management systems are used as tools for the development of information systems . One of the system development methods used is the Waterfall model, which includes analysis , design , implementation , and testing. The results of this research is a website called the New Student Admission Management Information System at Suwargi Buwana Djati Integrated MA which can operate properly .

Keywords : Information System; New Learners; Website

1. Introduction

Technology that has become more primitive lately is widely directed by several organizations in management. An information system is a system consisting of media, technology, organized processes, and their human resources that work together as a certain combination to create an organized system (Milenia & Nugrahaningsih, 2022) . An efficient information system should allow users to easily access up-to-date information. Expanding the use of the role of information technology in education is very important and is being applied in various contexts to provide accurate, concise and correct information. So that it is easy to improve software knowledge. Modern technology has a negative impact on almost all areas of education, especially in the field of new student data collection.

Students are members of the general public who are committed to developing their potential through the educational process available in the fields of education, science, and other relevant fields (Hasbullah & Anam, 2019) . One of the processes used by institutions or organizations is called PPDB. PPDB must use assessments that have been carried out at the school concerned. Along with the development of increasingly advanced technology, the need for information is also increasing so that it can be accessed from anywhere and anytime as long as it is connected to the internet.

A relatively new school, the registration rate of MA Terpadu Suwargi Buwana Djati continues to increase. Sometimes school administrators now have difficulty entering new student data because until now, registration at MA Terpadu Suwargi Buwana Djati still uses a manual system. There are several files that must be considered carefully as a requirement to register as a new student. The data correction process is slow and causes several disruptions. Therefore, the number of committees required is also not small at all and can even have an overall impact on the costs that must be paid. New Student Admissions (PPDB) that do not use the information technology system they have is a separate problem. The first and most important problem is that administrative documents are complicated and time-consuming (Ramadhani et al., 2022) . The manual process includes physical filing, data entry, and filling out and verifying forms manually. This can take a lot of time and effort for school administration. Therefore, there is a higher risk of

Received: April 30, 2025;

Revised: May 15, 2025;

Accepted: July 01, 2025;

Online Available : July 04, 2025

Curr. Ver.: July 04, 2025



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human error in manual New Student Admissions (PPDB), such as data entry errors or misunderstandings . This can affect students' performance and goals in the selection process.

In today's digital era, communication and information technology is used in every aspect of everyday life. Utilizing a website *is* the only most appropriate method to utilize this technology to the fullest. A web page consists of web pages that are always connected and can be accessed via the internet. A website *can* be used to manage information, teach, create multimedia content , or launch *online applications*. which is fast, easy, and correct (Puspita et al., 2021) . Prospective new students and parents are increasingly looking for information *online* for reasons of practicality, such as the ease of using *smartphones*. or mobile device others connected to the internet and have an efficient duration management system (Afriyanto et al., 2019) . Utilizing information technology has become a primary means of assessing academic quality in any school and an important tool for fostering positive relationships with other schools. One of the primary ways to connect schools with other schools is through the New Student Admissions (PPDB) program which offers more choices. With the advancement of information technology, this has become a very realistic idea to practice , namely by providing PPDB facilities, or New Student Admissions is a web-based program. so that new data can be processed computerized

Based on the identification of the problems above, therefore it is necessary to have a system that is able to record information about the MA Terpadu Suwargi Buwana Djati school and facilitate the process of transferring student data who are new to entering the MA Terpadu Suwargi Buwana Djati School. The system refers to a group of related components that have a close relationship with each other. The information system developed in this research basis is a web page, and using its capabilities is able to help school administrators who are handling the process of recruiting new students. Thus, the work becomes more effective and efficient .

2. Literature Review

a. Design

Determining the data process required by the new system is system design. Design is a type of activity with the aim of designing a new system and solving some problems that arise in business and are solved by choosing the best alternative system. On the other hand, system development, also known as system architecture, refers to creating a new system or improving an existing system that functions well as a whole, including certain parts (Ningsih & Nurfauziah, 2020) .

b. Information Systems

The information system is a system located within an organization that supports operational functions and combines manipulative strategies with strategic planning of institutions to provide the necessary documents for external stakeholders (Rahmadani, 2018) . An information system is a group consisting of hardware and software and workers who work in a certain process and, by using cooperative methods, are ultimately responsible for producing a certain product (Ariza, 2024) . In general, an information system is referred to as software that can assist in data analysis or processing. The main purpose of the information system task is to convert unusable data into useful information. for institutions or organizations. Decision making in an organization can be done observatively with the results of data processing into information.

c. PHP

PHP is used to describe a language used to write scripts that create HTML documents quickly while running on *a web server* . A text editor or HTML editor is used to create HTML documents, and is also known to describe *server-side programming*. PHP, or *web development* in particular, uses the *Personal Home language*. Page , which is a *server-side programming language* . php , or *Personal Home Page* , created by Rasmus Lerdorf in 1994 and is a language used in research projects used to create dynamic and high-performance *web pages*. However, over time, PHP has evolved into a *highly compatible server programming language* and to develop dynamic *web* applications (Satria et al., 2023) . PHP offers flexibility with great sensitivity to utilization and integration. PHP has a variety of benefits for creating meaningful content, ranging from input validation and data entry. In addition, PHP can

also be used to develop more complex online applications, such as content management systems, discussion forums, e- commerce websites , and other platforms .

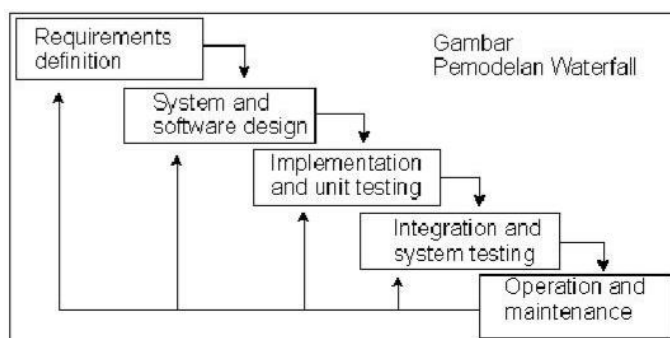
d. *Website*

A website consists of all web pages that are always connected and accessible via the internet. Websites *are* used to display information, teach lessons, manage content, and launch internet applications with speed and ease of use, and correctly (Puspita et al., 2021) . In addition, websites *allow* users to access content or information based on the time and place available. With a website , access to information can be obtained *online* using a PC, notebook , tablet, or smartphone . This provides flexibility for users to get the information they need without being limited by time or location. The integrity of a website *is* very important; this can be seen from a branding and competitive perspective. A website *that* is done using a safe and functional manner has the potential to increase the trust and confidence of visitors' perspectives on the business, organization, or individual using it. Positive results can be achieved with expert design, informative content, and responsiveness for users (Faradila & Soesanto, 2016) .

3. Methods

Currently, the new student admission system at Suwargi Buwana Djati Integrated MA School is mostly done manually. Where the person/guardian of the new student must come to Suwargi Buwana Djati Integrated MA School to register directly. Based on the results of a survey conducted with the administrative staff of Suwargi Buwana Djati Integrated MA School, the following problems have been identified: a. most of the data entry is manual. There can be a loss of student file registration. b. the registration application process takes quite a long time. Data registration complicates the supervision process and sometimes makes officers not pay attention to it, to handle problems that arise, the information system has the following requirements: a. can handle data transfers quickly and accurately. b. to facilitate data insertion, there are forms for entering, editing, and deleting data. c. can provide output that looks like a report that includes all information related to registration

In the process of designing a system, there are several processes or stages that must be carried out, namely in the *software system design method. device* In addition, it is also known as the Software Development Life Cycle (SDLC). *The term “Systems Development Life Cycle,”* or more commonly known as “SDLC,” refers to a general methodology used in the development of information systems. Model *Waterfall* is a technique often used to develop the main software viewpoint . , or also known as the conventional cycle model (Ariza, 2024) . This model uses a systematic approach derived from the system threshold requirements and continues through the analysis, design, coding , testing, verification, and maintenance phases . The model process *waterfall* shown in the illustration below.



Waterfall model process

Source: (Ariza, 2024)

The subjects in this study were new students of MA Terpadu Auwargi Buwana Djati using the *codeignite web development framework* . Data collection methods in this study were: (1) interview method; one example of this in the Data collection process was carried out by focusing on sources with their subjects who had important information in developing the New Student Information System (PPDB) at MA Terpadu Suwargi Buwana Djati. The principal as an organization, teachers and students as stakeholders in the school

environment, are subjects that require attention for the development and maintenance of an information system. (2) library research method ; collecting many references, such as journals, books, and other scientific articles was completed to raise awareness of the issues that had been identified. (3) observation; data collection was carried out by comparing the behavior observed in the classroom during the New Student Admissions (PPDB) process in a similar manner. This information is then used as input for the information system to be developed.

4. Results

The New Student Information System (PPDB) is a website that uses *Codeigniter* as a structure to encrypt source code written in PHP, uses *PhpMyAdmin* for database management , and uses *Visual Studio Code* as text. *editor* for writing source code. The general system depicted in the activity diagram below explains each step taken by a single actor in this case the student takes the steps of creating a registration account, biodata and academic results for a specified time, and ends with getting the results of the selection process from the student's parent organization.

Activity diagrams are used to describe how a system will generally behave if it is passed down from another actor, in this case, a parent. This diagram shows how parents will facilitate the process of registering new students, conducting recertification, providing information about potential students for selection, and determining who the new student actually is. The following activity diagram illustrates the entire process being carried out:



Figure 2 Activity process diagram

Home Page

The main menu for new students who will register is displayed on this page. There is a button to complete the registration and login if you have completed the registration. This section also provides information on whether the deadline for new student SPT has passed or not, and shows how long the deadline for SPT must be followed by students after they complete their studies at MA Terpadu Suwargi Buwana Djati. Important additional information included in this section is regarding the specific passport application process, such as the documents that need to be completed and the school account information that can be linked.



Figure 3. Main web page

Nama Lengkap *

Tanggal Lahir *

Jenis Kelamin *

Agama *

NIK *

E-mail *

No. HP *

Upload KK *

 Size limit: 10 MB

Upload Ijazah *

 Size limit: 10 MB

Figure 4 New student candidate interface page

Black Box Testing

Blackbox Testing is a procedure used to verify that the New Student Admissions Management Information System (PPDB) implemented is functioning properly and to understand the functionality and scope of the software .

Table 1 Blackbox Testing Page for New Students

No	Page	Process	Results
1	Home page	Showing page main home page New Students	In accordance
2	School Profile	Showing history as well as vision mission	In accordance

3	Major	Displays all majors available at the school	In accordance
4	Announcement	Showing information and results selection participant new students	In accordance
5	List	Showing page candidate student	In accordance

5. Conclusion

This new student admissions information system for MA Terpadu Suwargi Buwana Djati was developed leveraging the *CodeIgniter* framework , *Visual Studio code editor*, and data management system *PhpMyAdmin* . This system has succeeded in producing significant contributions towards the ongoing efforts of the school to improve teaching. Through systematic life cycle development, structured software produces a successful and integrated information system with integrity, effectively, and efficiently, the school is able to assist efficiently in processing student data.

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