

# Design of Website-Based Information System at Tidar Koe Kindergarten

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## ABSTRACT

Acceptance of new students at Tidar Koe Kindergarten still has several obstacles. Every year the school accepts prospective new students, but acceptance of new students is still carried out conventionally, namely using registration forms and making student reports, still using the main book as a medium for storing student data. The school website is one of them. Efforts to convey information to the public about the existence of these educational institutions. Institutional openness is needed to see current information developments. The waterfall method proposes an approach to systematic and coherent software development starting from the level of system progress, design, code, testing, and maintenance in the research process. The development of the Tidar Koe Kindergarten website is an answer to the need for an effective information system that can facilitate communication between the school and its stakeholders. The novelty of this research lies in its ability to design and develop a website tailored to the specific needs of Tidar Koe Kindergarten. Despite these research achievements, there are still several areas that require further research and development. Future research could focus on evaluating the website's effectiveness in terms of its impact on student enrollment and parent satisfaction.

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## ABSTRAK

Penerimaan siswa baru di TK Tidar Koe masih terdapat beberapa kendala, setiap tahunnya sekolah menerima calon siswa baru, penerimaan siswa baru masih dilakukan secara konvensional, yaitu menggunakan formulir pendaftaran dan membuat laporan siswa masih menggunakan buku induk sebagai media penyimpanan data siswa website sekolah adalah salah satunya Upaya penyampaian informasi kepada masyarakat tentang keberadaan lembaga pendidikan tersebut. Keterbukaan institusi diperlukan untuk melihat perkembangan informasi saat ini, metode waterfall ini mengusulkan sebuah pendekatan kepada pengembangan software yang sistematis dan runtut yang mulai dari tingkat kemajuan sistem, desain, kode, pengujian dan pemeliharaan pada proses penelitian. Pembangunan website TK Tidar Koe merupakan jawaban terhadap kebutuhan akan sistem informasi yang efektif dan dapat memudahkan komunikasi antara pihak sekolah dengan pemangku kepentingannya. Kebaruan penelitian ini terletak pada kemampuannya merancang dan mengembangkan website yang disesuaikan dengan kebutuhan spesifik TK Tidar Koe. Terlepas dari pencapaian penelitian ini, masih ada beberapa bidang yang memerlukan penelitian dan pengembangan lebih lanjut. Penelitian di masa depan dapat fokus pada evaluasi efektivitas situs web dalam hal dampaknya terhadap pendaftaran siswa dan kepuasan orang tua.

## I. Introduction

An important component of developing personal potential is education. The importance of education is a requirement for the progress of the nation. Technological advances have made education a more important component of our path to a bright future [1]. Every business and organization always tries to introduce its products to consumers, in the field of education, to explain the usefulness and value of products or services, as well as create attractive media so that consumers have the need to buy the company's products. Activities like this are called marketing [2]. In the world of marketing, Internet users are currently growing quite quickly. The development of information technology has made the Internet a major tool for data and information exchange. Its application extends to various fields, especially those that require fast data exchange with different locations. The internet has greatly influenced business. Many companies are successful in selling products and services using the internet. The internet poses new challenges for those who already exist and is also a challenge for anyone who wants to create a new brand [3].

Acceptance of new students at Tidar Koe Kindergarten still has several obstacles. Every year the school accepts prospective new students, but acceptance of new students is still carried out conventionally, namely using registration forms and making student reports, still using the main book as a medium for storing student data [4]. Nowadays, many schools and colleges use information systems to support every academic and non-academic process. Another way is to use a website. A website is a collection of web pages consisting of domains that contain various types of information. The school website is one of the efforts to convey information to the public about the existence of the educational institution. Institutional openness is needed to see current information developments [5].

School institutions in information delivery activities still need to interact and socialize in order to be better known by the wider community, namely by providing complete, detailed, and clear information regarding the school's profile. Until now, information delivery has mostly been carried out using manual methods, including conveying information by placing banners and via notice boards. It is felt that this kind of information dissemination still has many shortcomings, including the fact that the range of information dissemination is still not wide enough, the information content is limited, and the information updating process is less profitable both in terms of cost and time [6]. Bearing in mind the importance of information, educational actors need to be aware in this case, teaching and education staff always strive to update their competence. One way to develop your competence and quality is by using websites, because they are considered very interactive and dynamic media that can increase your insight as well as improve your existence [7].

The background of the system used is that the website created will adapt to the features and functions desired by Tidar Koe Kindergarten. Based on the results of interviews with the owner of Tidar Koe Kindergarten, researchers can conclude the design of the website that will be created for the school. Features that will be displayed to users in the design of the website include school contact information, vision and mission, infrastructure provided at the school, school profile, and new student registration services.

## II. Methodology

Based on the title of this article, several journals have been found that relate to the report that will be carried out, among others:

Research conducted by Sukrisna Andrianto & Hadion Wijoyo (2020) entitled Design of a Web-Based Student Information System at the Buddha Vihara Dharmaloka Sunday School in Pekanbaru. The aim of the research was to find out the system currently running in the student data collection process. Disadvantages of this research include the fact that it still uses recording student data manually using Microsoft Excel, experiencing problems if errors occur in writing, so it takes a long time to correct, and that the processing of Buddhist Sunday School data is inefficient. Meanwhile, in this research, the author has used a data base in designing the system to facilitate the process of collecting student data at Tidar Koe Kindergarten [8].

In research conducted by Muhammad Solahudin (2021) entitled Design and Development of a Website-based School Academic Information System (SIAS), researchers highlighted the importance of managing school academic data, such as student data, student grades, lesson schedules, assessments, recapitulation of learning outcomes, and development of learning progress. Meanwhile, the current research adds registration for new student admissions on the school website [9].

Previous research conducted by Riki Afriansyah, Sari Mubaroh, and Indah Riezky Pratiwi (2021) entitled Creating a School Website Portal for SMA Negeri 1 Sungailiat as an Information Medium discussed the importance of having a school website in disseminating information to the public. This research adds an online communication/chat bot feature so that it can make it easier for people to find out clearer and more detailed information without having to come to school [10].

#### *A. Research methods*

The method used in developing this software is the waterfall method. The stages contained in this method are analysis, design, coding, testing, and maintenance. Further explanation is as follows:

1. Software requirements analysis

Carrying out qualitative analysis from the information system to the existing new student admissions system at Tidar Koe Kindergarten. In order to know the shortcomings of the existing system and to understand what kind of software is needed by Tidar Koe, after analysis, it turned out that Tidar Koe Kindergarten does not yet have an official website, and student registration is still done manually.

2. Design

Create software program designs in the form of system designs, interface designs, and website program designs to explain the description of the program to be created. Then in the student registration system, we created an ERD (Enterprise Relationship Diagram). There is also an interface design plan, divided into two parts: the front end, which consists of the home page, profile, infrastructure, registration, etc., and the back end, which consists of the registrant page and admin page.

3. Coding

The coding process for creating a web using the Personal Home Programming (PHP) programming language, using the MySQL database and the Macromedia Dreamweaver MX 2004 editor.

4. Testing

This process will test the program code that has been created by focusing on the inside of the information system. The goal is to ensure that all statements have been tested and that the input used will produce the appropriate output. At this stage, testing is divided into two parts. After the program code and website design have been created, testing is carried out to ensure that the program code and design are running well.

5. Maintenance

This process is carried out after the information system has been used by users or consumers. Changes will be made if there are errors therefore, the information system must be adjusted again to accommodate changes in consumer needs. After testing programming and website design, the final process is maintenance after the program is implemented and adjusted to the user.

*B. Data collection technique*

The data collection techniques used for the Tidar Koe Kindergarten research were divided into three methods: observation, interviews, and literature study. A more specific explanation is as follows:

1. Observation

This technique is used to collect direct observation data on research objects. The activity carried out was to directly observe the process of activities taking place at the school carried out by students for the owner of Tidar Koe Kindergarten.

2. Data Collection Techniques Through Interviews

The second data collection technique used was interviews. Conduct questions and answers to obtain complete information from the owner of Tidar Koe Kindergarten regarding all activities at Tidar Koe Kindergarten, the school profile, and the procedures for accepting new students. This technique uses research instruments in the form of structured voice recordings and video interviews.

3. Data Collection Techniques Through Literature Study

In this method, a search is carried out for several journals related to this case design, then these journals are analyzed to become references or points of reference. This technique uses a research instrument in the form of an e-journal.

### III. Results

In the research process for the Tidar Koe Kindergarten school website system, the researchers used the waterfall method. Specifically, the development method of the approach used in descriptive-qualitative research. In this method, several stages are carried out, namely analysis, design, coding, testing, and maintenance, so that the Tidar Koe website system can run optimally.

In Figure 1, the waterfall model develops systematically from one stage to another in a waterfall-like model. This model proposes an approach to systematic and coherent software development that starts at the level of system progress throughout analysis, design, code, testing, and maintenance [11]. To design the Tidar Koe Kindergarten school website system, the first stage was to analyze the needs and views of related parties and user needs [12]. Then, in the second stage, create a design from the results of the previous analysis, in the

form of a website appearance design from the homepage, profile, infrastructure, registration, and so on. After that, it goes to the coding stage, where the software is tested thoroughly to ensure that all functions run correctly and appropriately. Finally, after the software is actively used, carry out regular checks to fix any bugs or problems that occur.

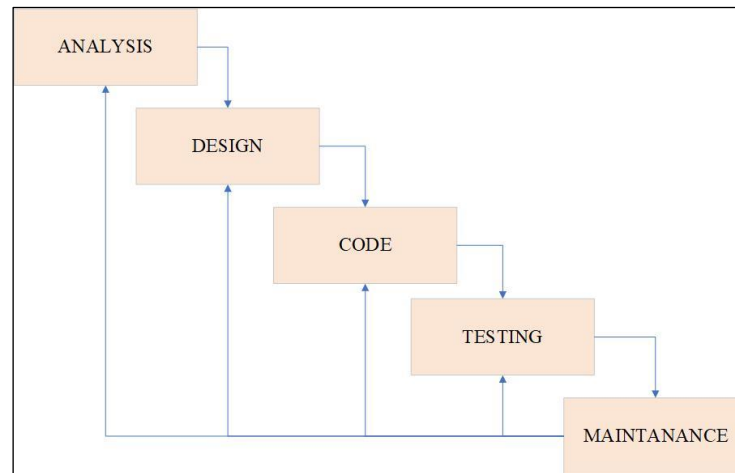


Figure 1. Waterfall model

#### IV. Discussion

After carrying out analysis and other implementation stages, the system model design and interface design are carried out as follows:

##### A. Use Case Design

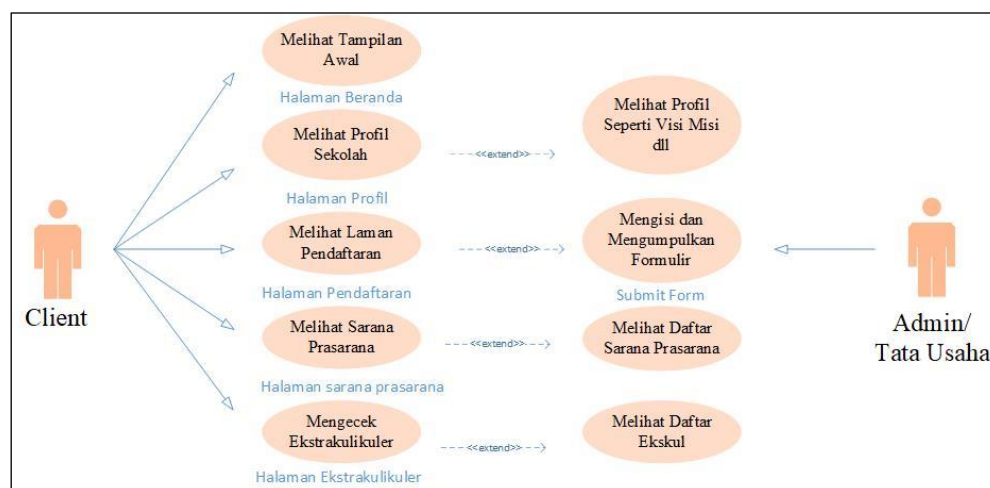


Figure 2. website display use case

In Figure 2 Use Case, the website display helps show how users interact with the website system. Users can see the homepage directly after clicking on the website page, apart from that, users can also see the school profile, registration page, existing infrastructure, and extracurricular activities. However, to register, the user must first register an account on the registration page.

## B. Diagram

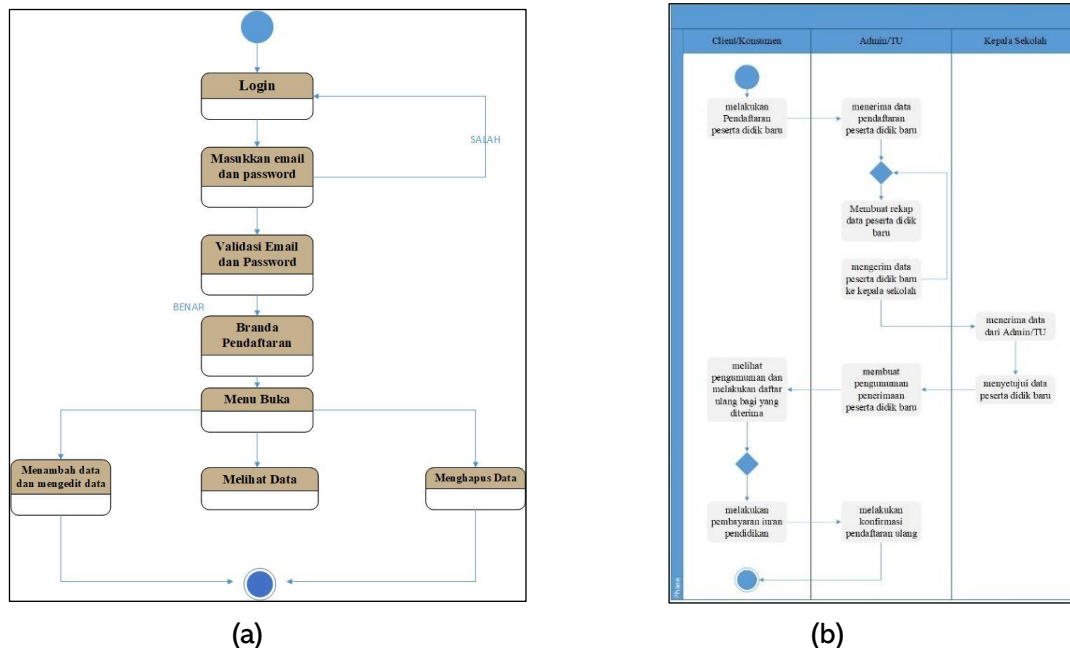


Figure 3. (a) state diagram, (b) activity diagram

The diagram explains the stages that the user will go through. This section is divided into two parts, namely:

Figure 3 (a) shows the state diagram of the website system. The figure depicts the state of the system and how it responds to events and circumstances that influence the course of the process. As in the state diagram above, you start by logging in by entering your email and password. If an error occurs or you want to create a new account, you will return to the login page. If you have reached the validation stage, the page will display the registration homepage, where users can open data, add data, edit data, view data, or delete data.

Figure 3 (b) shows the student registration activity diagram. In the figure, the activity diagram is a diagram that can model the processes that occur in a system developed from a use case that has a flow of activities [13]. A sequence of processes in a system that is described in a structured manner. Like the example of the activity diagram above, which is intended for users and administrators and is managed by TU and the school principal, Then the steps used to use UML activity from the user or client side are that first you have to log in, then the user registers, and after completion, the data goes to the admin and then is recapped, then sent to the principal, who then recaps whether the user (new students) fulfilled administration. then the data is sent again to the TU admin, then the TU admin makes an announcement about accepting new students, which is sent to the user's display, and then the user can see announce results and re-register, then make payment and re-register according to administration.

## C. User Interface

In the user interface section, Figure 4 explains the display that the user will see when opening the website. This section is divided into two parts, namely:

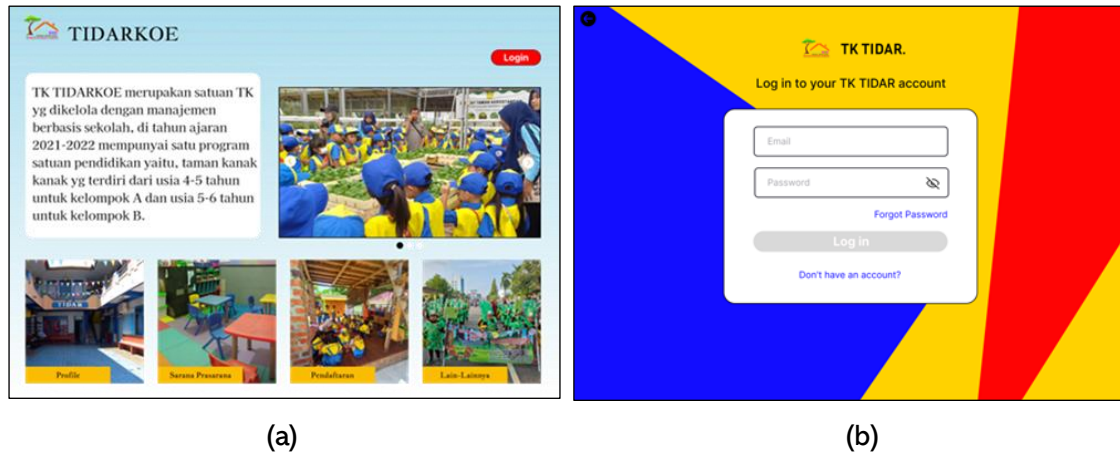


Figure 4. (a) website homepage display, (b) user login display

Figure 4 (a) shows the homepage displayed to the user. When clicking on the school website link, it will appear as in the image above. You can also click on other columns, such as profile, infrastructure, and so on. When you click on this column, information will appear according to the column you clicked on. This information is very important for finding out any information about the school.

Figure 4 (b) shows the user login display when the user clicks the login button on the home page of the website. On the registration page, the user must enter their email and password first if they already have an account. If they don't have an account, the user can register or create a new account to fill out the registration form. his son.



Figure 5. (a) the homepage display is logged in, (b) display of the child registration page

In the user interface section, Figure 5 explains the display that the user will see when opening the website. This section is divided into two parts, namely:

Figure 5 (a) shows the homepage displayed to the user. When clicking on the school website link, it will appear as in the image above. You can also click on other columns such as profile, infrastructure, registration, and so on. When you click on this column, information will appear according to the column you clicked on. This information is very important for finding out any information about the school. The difference in Figure 4 is that the

homepage display that has been logged in has a Q&A feature, a notification feature, and account settings.

Figure 5 (b) On the registration form page, the user can fill in the data requested by Tidar Koe kindergarten to fulfill the registration requirements.

### Conclusion

The development of a website for Tidar Koe Kindergarten is a response to the need for an effective information system that can facilitate communication between the school and its stakeholders. The existing manual system of information dissemination has been found to be inadequate, leading to inefficiencies and limitations in the school's ability to reach its target audience. This study has demonstrated the importance of having a website that can provide a platform for the school to showcase its profile, vision, and mission, as well as its facilities and services.

The novelty of this study lies in its ability to design and develop a website that is tailored to the specific needs of Tidar Koe Kindergarten. The website's features, such as online registration, a school profile, and facility information, have been found to be effective in enhancing the school's visibility and accessibility to its stakeholders. The impact of this study on the community is significant, as it provides a model for other educational institutions to follow in developing their own websites. Furthermore, the website has the potential to increase the school's reputation and competitiveness, ultimately leading to an improvement in the quality of education provided.

Despite the achievements of this study, there are still several areas that require further research and development. Future studies could focus on evaluating the effectiveness of the website in terms of its impact on student enrollment and parent satisfaction. Additionally, the website's features and functionality could be further enhanced to include online payment systems, student portals, and other interactive features. Furthermore, the study's findings could be generalized to other educational institutions, providing a framework for the development of websites that cater to the specific needs of different types of schools.

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