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MOBILE WEB-BASED INFORMATION SYSTEM MTs MA'ARIF KEPUTRAN

Bagus Primayoga[1], Muhammad Muslihudin[2]
[1,2]Study Program of Information System, Bakti Nusantara Institute
[1,2]Jl. Wisma Rini No. 09 pringsewu Lampung
E-mail: bagusprimayoga16@gmail.com, muslihudin@ibnus.c.id

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Corresponding authors
* bagusprimayoga16@gmail.com

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Abstract

Information System is an information facility to provide or convey information that will provide news or activities in the form of information of course it is not an easy thing for an institution or organization if it does not have an information system, it cannot be said that it is advanced with the information systems that exist today. At Madrasah Tsanawiyah Ma'arif Keputran there are a number of problems in the form of an information system that still uses bulletin boards and needs to be updated. With the development of the era, website-based information systems will later be designed and developed to provide information related to activities in madrasas. As well as making it easier for the teacher council or interested people in this madrasa to search for or to collect student data online. As well as being able to store a file or document so that it becomes more secure and practical. The data collection method used by the author is the method of observation, interviews and literature review. The developer method used is the waterfall method. In the information system built by researchers using editor software in the form of Visual Studio Code, Appserv, and MySQL. The results of this study will be in the form of an information system that will make it easier for users to find a madrasah. Besides that, it also makes it easier for an operator to store information data.

INTRODUCTION

In this modern era, information technology is developing rapidly, in fact, almost all madrasas in Indonesia have an information system. MTs Ma'arif Keputran seeks to develop a mobile website-based information system, which has the goal that all information in the madrasa such as academic information, Madrasah activities and matters that wish to be informed can be easily consulted anytime and anywhere by interested parties such as other people, especially students, teachers or parents of MTs Ma'arif Keputran students. Previously MTs Ma'arif Keputran provided an information system still using

posters, banners and pamphlets. It is hoped that the development of this Information System will have a positive impact so that it can make it easier for this madrasa to provide information to the general public at large and become a positive value and attraction, so that madrasas are able to convey and provide competent information in accordance with their activities. Even being able to provide references or insights to the community, especially parents to be able to consider when they want to send their children to school.

Based on some of the studies above, they have the same advantages, namely that all systems used still use an application program in the form of PHP, then MySQL as the server, because it is in great demand by many users and its simplicity and ability to produce a web-based application. However, the weakness of some of the research above is that when the user inputs data using the Java program or Css program, it cannot be connected and cannot be displayed, resulting in an error. While the current research has advantages, namely a web-based information system that uses programs in the form of PHP and MySQL using Xampp as a server, so that the appearance of the website is more attractive and easier to use. However, there is a slight weakness in the form of a language that is difficult for users to understand when inputting data into the program.

For about 10 years MTs Ma'arif Keputran was established, this Madrasa did not have an adequate information system until now. one of which is a website-based information system that makes it difficult for various parties to find out more about this Madrasa. Therefore, with the development of a web-based information system at MTs Ma'arif Keputran, it is of course to be able to minimize the occurrence of data accumulation or loss of data so that it makes it easier especially for madrasa operators, and of course for the teacher council when they want to find some data, both student data and teacher data at the Madrasah. So that later it will be able to make a new breakthrough for the madrasa so that later it will not become a madrasa that is left behind from other madrasas out there regarding information technology and information systems.

Course it's not an easy thing for an institution or organization if it doesn't have an information system, it can't be said to be advanced. With information systems that exist today it is possible to be able to know things that we have never known. with many madrasas or schools in Indonesia with various existing information systems. Madrasah Tsanawiyah Ma'arif Keputran will develop a mobile website-based information system. Madrasah is an educational institution that studies Islamic religious education. Based on the rules of the KKM MTs Negeri 2 Pringsewu, all madrasas or school institutions must have a website-based information system related to the results of the trial that has been determined throughout the KKM in Pringsewu Regency.[5]

LITERATURE REVIEW

2.1. Information System

Information system is an organized combination of people, hardware, software, communication networks, and information resources that collect, modify, and disseminate information within an organization[1]. information system is a system that can be defined by collecting, processing, storing, analyzing and sharing information. From the above understanding it can be concluded that the concept of an information system is to collect information sources, use information systems to change and process information and disseminate information accurately[2][3].

An academic information system is a system that is adapted to the needs of information processing in tertiary institutions by using information technology such as computers in the form of hardware or software. Hardware is a computer (both a computer and a laptop), CD-ROM, hard disk, printer, etc. Even though software can operate hardware, the academic process can be managed with good and useful information. With the existence of an Academic Information System, it is able to support an educational institution to make it easier to provide information widely and accurately[4]–[8].

2.2. Mobile Web

A mobile mobile web network is a platform or website designed specifically for mobile devices and works on all mobile devices. The design uses a sub-standard protocol that resembles a desktop. Who is able to design a web application but the characteristics of the mobile web are different from the desktop web. The mobile web is able to provide an attractive and elegant appearance for an information system designed by an educational institution. With the existence of the mobile Web, it is able to make it easier for madrasa operators to input all data information which can then be accessed by users[9]–[12].

2.3. Visual Studio Code

Visual Studio Code is a source code editor developed by Microsoft products for Windows, Linux and MacOS. This includes support for debugging, embedded Git control, syntax highlighting, smart code completion, snippets, and code refactoring. Visual Studio Code is a lightweight software, so it can run a code editor in the form of JavaScript, Node.js, C++, Python, PHP and HTML. Visual Studio Code is also very well featured, with intellisense and autocompletion working well for JSON, CSS, HTML, {less} and Node js. Of the many programming languages that can be run, visual studio code is much loved and used by programmers to build project-based applications[13]–[15].

2.4. Xampp

XAMPP is a no-nonsense little Apache distribution that packs the most popular web development technologies into a single package. Its content, small size and portability make it an ideal tool for developing and testing PHP and MySQL applications. XAMPP is available for free download in two special packages, Full and Lite. While the full package download provides a variety of development tools, this article focuses on using XAMPP Lite, which includes the necessary techniques to meet competitive standards. As the name suggests, the Lite version is a small package that includes Apache HTTP Server, PHP, MySQL, phpMyAdmin, Openssl, and SQLite[16].

2.5. PHP dan My SQL

PHP is a scripting language or programming language that has a high difficulty level but is easy to understand. PHP is also built into HTML documents. Other than that, most of the PHP syntax is similar to C, Java, and Perl. With this PHP language it is possible to design networks that are very dynamic and work automatically. My SQL (Structured Query Language) is a database server program designed to send and receive data quickly with many users using basic SQL (Structured Query Language) commands. My SQL has two licenses namely Shareware and FreeSoftware. Free software licensed under the GNU/GPL (General Public License) is generally used. Oma SQL is

also a language that can combine multiple tables between databases[17][18]–[20].

2.6. Madrasah Tsanawiyah Ma'arif Keputran

Madrasah Tsanawiyah (MTs) Ma'arif Keputran is a Madrasa owned by the Al-Hidayah Keputran Pon-Pes Foundation which is located on the main road of Keputran Village, Sukoharjo District, Pringsewu Regency, Lampung. This madrasa was founded in 2010 until now for about 12 years. This Madrasah is widely known by the wider community, strategic location, religious, adequate facilities and available male and female dormitories. MTs Ma'arif Keputran has qualified and competent teaching staff so that students who wish to study at the madrasah can get the best and quality education. Apart from going to school, these students can simultaneously study at Islamic boarding schools.

RESEARCH METHOD

3.1. Data Collection

In the data collection method, the authors use the method of observation, interviews and document research.

Observation Method

The observation method is a data collection method that is carried out by direct observation accompanied by recording the state or behavior of an object. The author made direct observations at MTs Ma'arif Keputran to be able to know directly and clearly the academic data processing system which was done manually.

Interview Method

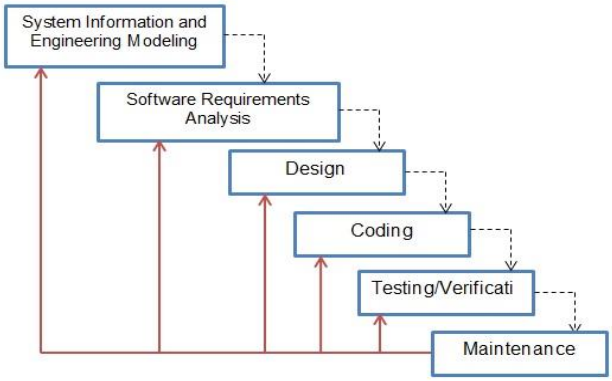
The interview method is a method that is carried out through a question and answer process or a direct interaction process with MTs Ma'arif Keputran Operators with the aim of obtaining detailed, clear and more complete sources of information.

Literature Study Method

Purwono (2012) literary research method is everything in which a researcher tries to collect relevant information in the form of an existing problem or topic. In order to facilitate the creation of an academic information system MTs Ma'arif Keputran mobile Web-based.

3.2. System Development Method

The waterfall system development approach is a sequential software development process in which a process can be seen as a process that continues to flow like a waterfall through the stages of planning, modeling, implementation (building) and testing. Below is a phase change in the waterfall method contained in Figure 1.



Picture 1 waterfalls [21], [22][23]

Following are the steps for implementing the waterfall method in software development:

1) System information and technical model
   At this point, the author is looking for information about the system requirements that will apply to the editing application. This need can be achieved through a step-by-step process, such as observation and interviews, with any source, relevant or not, and through processes, especially financial research.
2) System information and technical models
   At this point, the author is looking for information about the system requirements that will apply to the editing application. This need can be achieved through a step-by-step process, such as observation and interviews, with any source, relevant or not, and through processes, especially financial research.
3) Analysis of software requirements
   After studying some of the requirements that will be made, at least one of the systems has been completed, after the process is complete, a needs analysis is carried out, then it is improved and focused on software design or production, then interface design.
4) Design
   During the concept or design phase, the analyzed requirements are turned into a system blueprint by creating a use case design with two actors, an admin agent and a user agent.
5) Encryption
   Carrying out the coding stage of a web-based information system that will be built by design into program code or a computer-understandable language using the PHP and MYSQL framework programming languages.
6) Check/Verify
   Checking the correctness of the logic and functions of the system to be built or designed to see whether the resulting system is in accordance with the design and whether there are still errors and this is where the program process will identify vulnerabilities in the information system that has been developed.
7) Maintenance
   Software is created and transferred to users without changes. However, it is possible that the changes were caused by errors that occurred during testing but were not recognized, or the software had to be adapted to the environment. Therefore, at this point, the modified software should be

maintained more closely and the software should continue to function normally as designed. [18]

3.3. Data Analysis

Data analysis is one way to process data into various types of information so that the properties of the information become easy to understand and are also useful for finding solutions to problems. The problems studied in data analysis techniques are problems that really concern the research being carried out. The questions asked must also be thorough and really show that this is a problem that needs to be solved. Data analysis requires hard work and creativity to find ways to solve research problems. Each study has different characteristics and results. It cannot be generalized between studies. The techniques used are also different, so the focus of observation must be different. In this case the method used in this study uses several techniques, namely observation, interviews and case studies. Where observation is a method that researchers do by coming directly to a place that will be examined by researchers. Researchers conducted interviews using the question answer method or discussion between informants and respondents to obtain correct and accurate information about business processes, structure, history and systems at Madrasah Tsanawiyah Ma'arif Keputran.

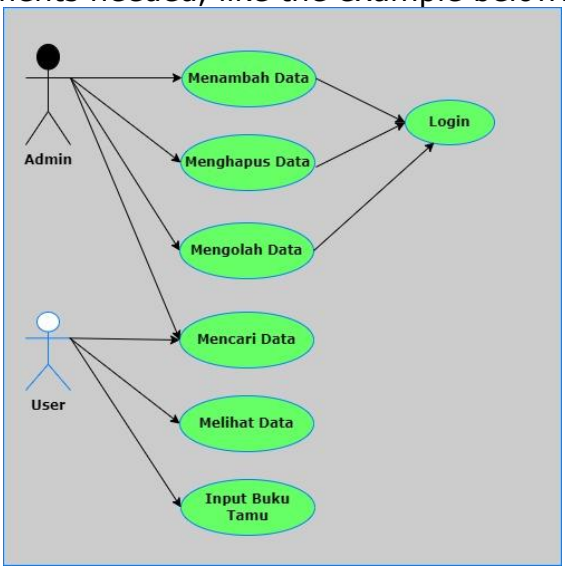
DISCUSSION

4.1. System Design

Use Case

It is a structural diagram that works by depicting typical interaction data between users and system administrators or system design with discrete systems through the system's usage history. (T. Bayu Kurniawan and Syarifuddin 2022).

Use case diagrams that will be used in system design can be very helpful when we develop system requirements and then communicate those requirements to customers and design test systems for all system functions. In a database application system, use case diagrams are very helpful for defining the requirements needed, like the example below:



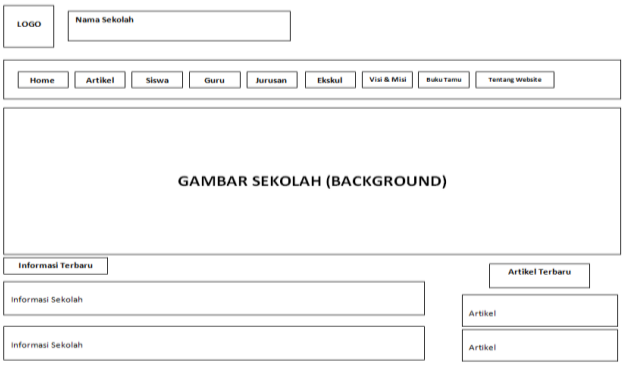
Picture 2. Use Case

In the picture above it is explained that data management is carried out entirely by the administrator and users can only log in and see some of the activities that exist with the facilities provided by the system.

4.2. Interface desig

Main Page (Home)

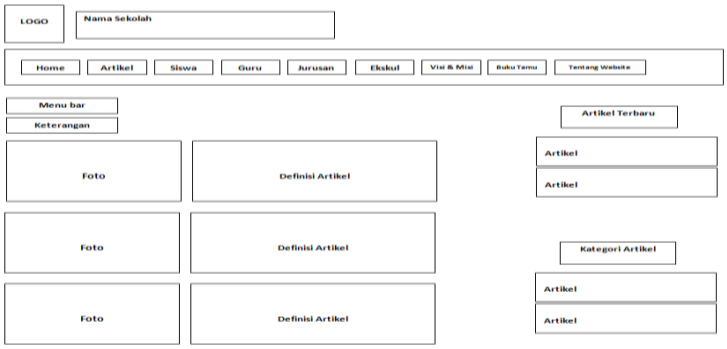
The main design on this page is a background for the main page of the madrasa, the madrasa logo and the name of the madrasa above the menu bar, as well as the latest information menu and the latest article menu under the background.



Picture 2. main page

Article Page

This article design contains several new articles. The article contains information about activities or information available at Madrasah Tsanawiyah Ma'arif Keputran.



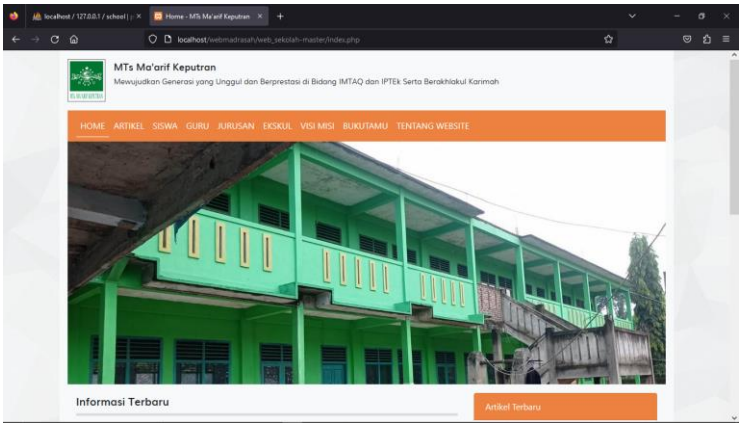
Picture 3. article page

4.3. System Implementation

System implementation is the stage where an information system is implemented and tested against the results of the analysis and design of the system created or implemented.

Main Page (Home)

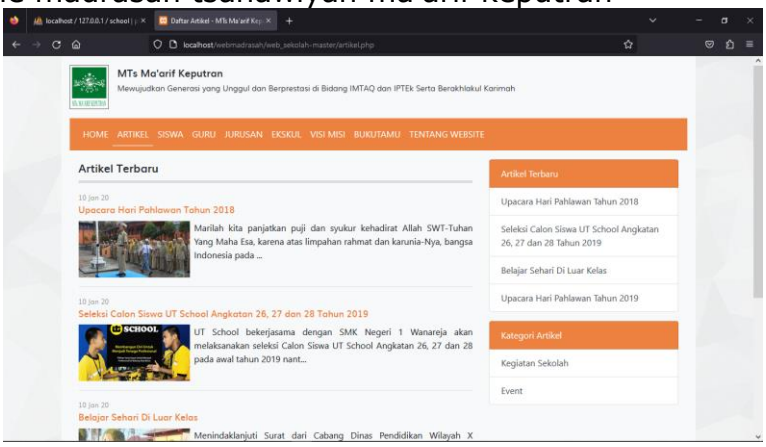
This view displays the main page of the MTs Ma'arif Keputran website. And for the latest information, there are some recommendations.



Picture 4. main page (home)

Article Page

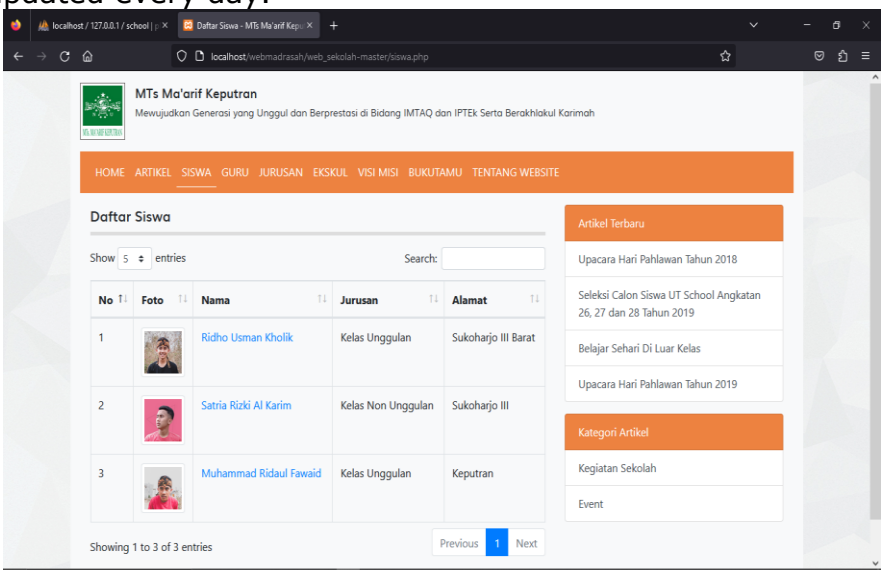
On this page a user will be presented with some of the latest articles from activities at the madrasah tsanawiyah ma'arif keputran



Picture 5. admin main page

Student Page

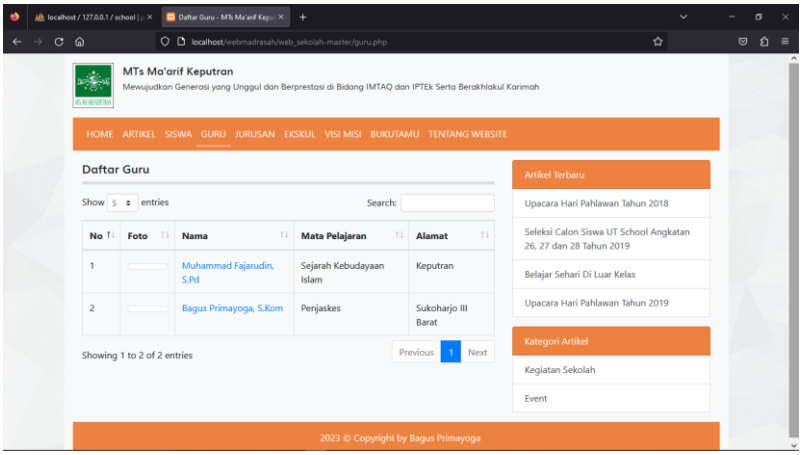
In addition, this page allows administrators to add information and delete student information so that this site is consistent with madrasah information which is updated every day.



Picture 6. student page

Teacher Page

This teacher page is like a student page where administrators can add and remove information about teachers who are active or no longer active. There may also be information on the topic.



Picture 7. teacher page

4.4. Analysis of Results

The MTs Ma'arif Keputran mobile web-based information system is designed to increase progress in the field of technology which is designed from the results of a system design approach. The results of this study will be in the form of an information system that helps users find madrasas easily. In addition, it facilitates operator data storage. This information system has several features such as madrasa information, teacher data, student data and information on madrasa activities. This system has significant advantages because an admin can always update the data in the madrasa. However, it also has weaknesses when an admin is logged in to update data, a server down will occur. For future development, more features will be added to the display menu on the main page.

No	Testing	Test Cases	Hope	Results
1	Main page	Displays a picture of the madrasa as well as a menubar of options	Shown with the desired image	Succeed
2	Article page	Displays several choices of articles available on the website	Displays articles that have been updated	Succeed
3	Student page	Add and delete student data	When added or deleted student data	Succeed
4	Teacher page	Admin adds educator data	Data entered and displayed on the teacher's dashboard page Data entered and displayed on the teacher's dashboard page	Succeed
5	Mission vision	Admin inputs the vision and mission	Enter data and appear on the vision and	Succeed

	page	into the website	mission dashboard page	
6	Guestbook page	Create guestbook bar column	Users fill in the guest book after visiting the website	Succeed
7	Page about the website	Enter the definition of the madrasa website	Appears on the dashboard page about the website and is read by the user	Succeed

CONCLUSION

Based on the data obtained as well as the discussion and analysis that has been carried out in the previous chapter, the following conclusions with the existence of an online information system, now Madrasah Tsanawiyah Ma'arif Keputran provides information services as a means of publication to be able to compete with other Madrasas, so that the promotion of learning is not limited by space and time. A mobile web-based information system for Madrasah Tsanawiyah Ma'arif Keputran which is designed in an attractive design and contains information on academic activities that can have a positive impact on education. Because this information system plays an important role in providing information so that it is able to receive good signals from the public to continue to develop this madrasah information system. With the existence of a Mobile Web-based Information System at Madrasah Tsanawiyah Ma'arif Keputran, it is hoped that in the future it will be able to provide good and relevant information. it is suggested to carry out further development to design this information system. So that later it can have the features that users want and also to make it easier for users to find or find out what information is in the Madrasah Tsanawiyah Ma'arif Keputran itself.

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