

Information System Design for Tadarus Madrasah Ibtidaiyah (MI) Darul Ulum Kintap Webbased

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Article Info

Article history:

Received October 1, 2020

Revised March 22, 2021

Accepted April 25, 2021

Keywords:

Madrasah
Tadarus
Santri Achievement
Al Qur'an
Students

ABSTRACT

A madrasah is a place of study or formal school equivalent to elementary school, but at madrasah there will be more to learn about Islam, especially learning to read the Koran. Madrasah Ibtidaiyah (MI) Kintap uses the at-tanzil method in the process of learning the Qur'an, with the aim that students can understand more quickly about tajwid and the law of reading the Quran. MI Darul Ulum Kintap will provide a notebook of the achievements of the students so that parents can monitor the extent to which the students have learned. The problem that exists in recording the student's achievement using a notebook is the negligence of the students in maintaining the achievement record book so that it can make it difficult for parents and teachers to monitor the learning process of the students. To overcome this problem, the authors take advantage of technological developments by building a system that can be used to access data on student achievement in real-time. This research also adds a feature to register new students, so that parents can register their children online. In this research, data analysis uses the method waterfall. The results of the research that has been carried out are that all features or functions of the system built have run well according to their function by testing the functionality of the system using the method black-box.

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1. INTRODUCTION

A madrasah is a place of learning or a formal school equivalent to an elementary school. Madrasahs have several categories, namely madrasah Ibtidaiyah, Tsanawiyah, Aliyah, Mu'allimin, Mu'allimat and Diniyah. In Tanah Laut, 62 madrasahs have been established, one of which is Madrasah Ibtidaiyah (MI) Darul Ulum which is located in Desa Bukit Mulia, Kintap, Tanah Laut. MI Darul Ulum was founded in 2015.

The method of learning the Al Qur'an (tadarus) used at MI Darul Ulum is the At Tanzil method. The At-Tanzil method is expected to be able to make students fluent in reading Al-Qur'an [1]. Learning using this method is by introducing the laws of reciting recitation more quickly so that students will more quickly understand the rules of reading Al-Qur'an.

The recitation assessment at MI Darul Ulum uses 4 categories, namely precise, fast, accurate, and correct. The giving of Kaji scores to the students is done by recording the results of the Koran achievement into the students' achievement cards. The problem that occurs in recording scores using the students' achievement cards is the negligence of the students in keeping the book, so that they often lose their students' achievement cards. Another problem is the registration of students who are still using the registration form.

This resulted in poorly coordinated registration form data management and registration forms were often lost or damaged.

In previous research [2], it has succeeded in building an Android-based Islamic religious monitoring application for elementary school students that can be used to monitor the field of child worship carried out by teachers and parents. Subsequent research was carried out by Salisa Kurnia Sari, D Remawati, and B Widada who are students of the informatics systems study program, Universitas STIMIK Sinar Nusantara has succeeded in building a web-based and SMS-based student learning information monitoring and evaluation system at Sidit Nurul Istiqlal Klaten. Applications made have a feature to be able to monitor the teaching and learning process based on the results of learning evaluation. The system will display information on student test results for subjects and classes taught by the teacher and disseminate test scores by sending valuable information to parents or guardians [3].

Another research was conducted by Rara Sri, Artati Rejeki, and Jeffri Alfa Razaq by building an evaluation system design and monitoring the learning process in the study program. In this design, the study program and quality assurance institution can find out the learning activities that are being carried out following the learning plan that has been made [4]. Research [5] has succeeded in building an information system for monitoring evaluation reports (money) at the regional secretariat of Central Bangka Regency. The purpose of building this system is to improve quality and control for monitoring and evaluation and to assist each regional work unit, especially in presenting accountability in the form of reports on the physical realization of the use of regional funding sources quickly and accurately to the regional secretary of Central Bangka Regency. Research conducted by Satya Wacana Christian University (SWCU FTI) students with the title of monitoring the value of the teaching and learning process in study programs using a web service has a feature of being able to control student scores with an integrated system between the client system and the BTSI (Information System and Technology Bureau) database.

Based on previous studies, this research will develop a Web-based Darul Ulum Kintap Tadarus Information System (MI) with a feature of monitoring student achievement that can be carried out by parents or guardians of students in real-time. The features contained in the Tadarus Madrasah Ibtidaiyah (MI) Darul Ulum Kintap Information System will be built on a web basis. In the research carried out, a feature for registering was also added so that parents or guardians of students can register their children online.

2. LITERATUR REVIEW

2.1. Information System Tadarus

A system is a system that brings together the needs of a daily transaction processor that supports the managerial functions of the organization's operations with the strategic activities of an organization to be able to provide certain outsiders with the information needed for decision making. Tadarus is an interactive activity with the Koran, both with reading it, understanding it, listening to it, transcribe it, memorize it and learn it. All activities related to the Alqur'an are aimed at practicing Alqur'an [6].

Information systems as representations for some kind of imaginative world. Production planners, for instance, may develop simulation models to identify possible demand and supply outcomes under different conditions [7]. The uncertainty of information plays an important role in practical applications, so how to capture the uncertainty of information systems becomes more and more popular. Uncertainty measures can Supply new viewpoints for processing information systems, and they can help us in disclosing the Substantive characteristics of information [8].

Tadarus is an activity of interaction with the Al-Qur'an, either by reading it, understanding it, understanding it, listening to it, memorizing it, memorizing it, and studying it. All activities related to the Alqur'an aim to practice the Alqur'an [6]. Qur'an is the holy book that Allah SWT revealed to the Prophet Muhammad as a guide for his people. Qur'an is a holy book that is full of blessings, as light, guidance, healing, and as a reminder. Qur'an was revealed to be scattered about the verses, even though just reading will get a big reward, especially if it is read according to the principles of recitation.

The tadarus information system is a system built with features to be able to monitor or monitor the performance of the students' recitation by the parents or guardians of the students. In the tadarus information system, there is also a registration feature so that parents or guardians of students who will register their children can register online. The development method used in the development of tadarus information systems is the method waterfall.

2.2. Black-box Testing

Black box testing assesses a system solely from the outside, without the operator or tester knowing what is happening within the system to generate responses to test actions. A black box refers to a system whose behavior has to be observed entirely by inputs and outputs. If the evaluation is performed by a third party (as a part of a certification process, for instance), manufacturers may not provide a white box system, or the certification test plan may specify the system under test as an operational device [9].

Testing using black-box testing, namely by testing the system in terms of functional specifications without testing the design and program code. This test is carried out to determine whether the functions, input, and output of the system are following what is needed.

Testing with black-box testing is done by trying all the functions in the application. How to do tests using black-box testing must be made with correct cases and wrong cases, for example, the case of the process login the test cases that are made are:

1. If the user enters the username and password the correct.
2. If the user enters the username and password wrong, for example, the username is correct but the password is wrong, or vice versa or both are wrong [10].

3. RESEARCH METHOD

3.1. Development System

The method used to develop the Web-based Tadarus Ibtidiyah Darul Ulum Kintap Information System is by using the method waterfall. Requirements analysis in the method waterfall is the process of collecting the required data intensively to be able to specify software requirements to understand the software needed by the user [8]. The steps contained in the method waterfall can be seen in Figure 1 below:

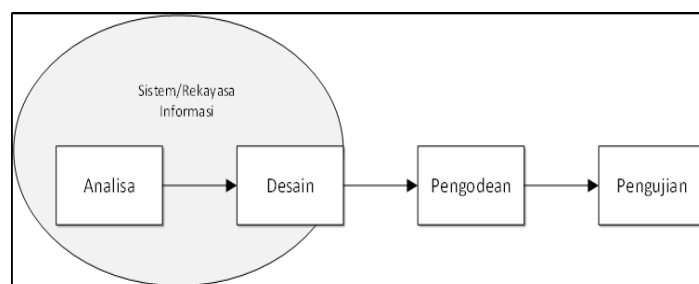


Figure 1. Development Method Waterfall

The stages are carried out in the design and implementation of the Waste Bank Application, namely:

1. Software Requirements Analysis

Analyze software requirements by collecting data on software requirements so that the software can run following the company's business processes. Data collection was carried out by interviewing the principal and teachers at MI Darul Ulum Kintap. The system flow that is built is that the admin can manage all the data contained in the system, teachers can add data on their achievement the students, raise the juz of the students, and look at the santri data, while the parents of the santri can monitor the achievements obtained by the students. Software requirements, a key factor in any software development, are not properly tested until a working system is available to demonstrate to the end-users [11].

2. System Design

After the system analysis is carried out, the stages have entered a design for the development of a web-based tadarus madrasah ibtidaiyah (MI) information system using an Entity Relationship Diagram (ERD) as a database design, and DFD as a system development design and a flowchart as a system flow.

3. Coding

The coding stage is carried out after the analysis and design are complete. The coding of the program uses an application sublime text with the programming languages PHP, HTML, CSS, and Javascript. PHP is the de facto standard language in web development, other than websites, more web applications are developed using PHP language too. The need for modelizing PHP code has increased [12].

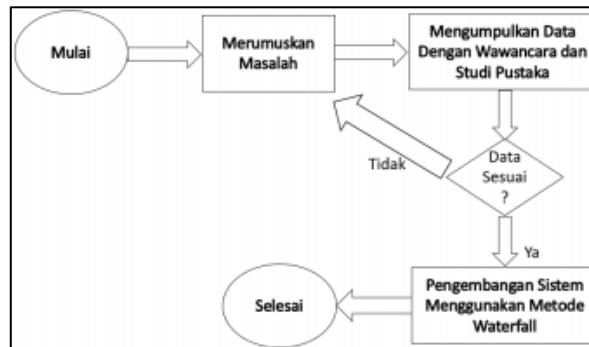
4. Testing

A black box method is used to provide gradients, where the model is nonsmooth [13]. The last stage to be carried out is system testing to determine the success of the applications that have been built. An examination is carried out using the method black-box.

3.2. Research Framework

3.3.

The following are the research framework of Government Elementary School Tadarus Information Systems (MI) Kintap Darul Ulum Web-Based, which can be seen in the following.



Gambar 2. Research Framework

Explanation research framework on Information Systems Tadarus Government Elementary School (MI) based Darul Ulum Kintap web-based can be seen in the following table:

Table 1. Research Framework Research

No	Framework	Explanation
1.	Formulating the problem	The first stage is to formulate a problem regarding the case raised, namely the Tadarus Madrasah Ibtidaiyah Information System (MI) Darul Ulum Kintap
2.	The data collection a. Interview method b. Library method	The second stage is to collect data. There are two methods used in data collection, namely: a. Interview method, the author conducts interviews with sources related to the issues to be raised. The interviewees were Ustadz Fauzan as the head of the foundation who also served as the head of the MI Darul Ulum madrasah, and Mrs. Meynita as a teacher at MI Darul Ulum. Process Interviews are conducted at Madrasahs and also through social media (WhatsApp). One of the questions that were asked when conducting interviews was 1) what were the obstacles experienced during using the achievement record book to document the student achievement? 2) how to monitor the student achievement if the student achievement record book stored by the students was missing? b. Library method, the author searches for articles and appropriate readings to support the process of making the Final Project Report.
3.	System development The	The author uses the method waterfall to build a system.

3.4. Data Collection Methods

There are several methods for collecting data on the based Darul Ulum Tadarus Madrasah Information System (MI) Web- as follows:

3.4.1. Interview Th

The method used by the author in describing and collecting data is by interviewing MI Darul Ulum teachers which provides an assessment of the students' Al Qur' achievement. From the results of the interviews that have been obtained by the author, the authors conclude these data into the information on Tadarus Madrasah Ibtidaiyah Darul Ulum.

3.4.2. Library

Methods The literature study method was carried out by the author by reading books, journals, articles, and sites on the internet related to the applications the author built. So that it can support in making applications and reports.

4. RESULTS AND DISCUSSION (10 PT)

4.1. System Analysis System

The analysis describes the flow of the proposed system to provide an overview of the system solutions that will be applied. The following is a discussion of the proposed system analysis.

4.1.1. Proposed System Analysis

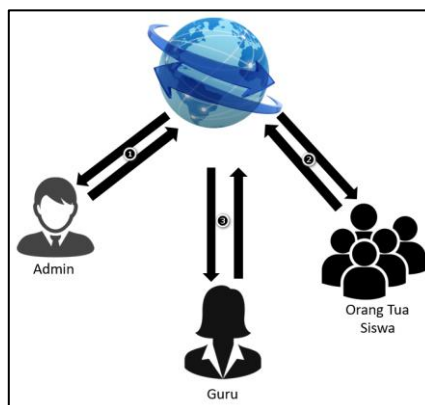


Figure 3. Proposed System Analysis

Explanation of Figure 3 below:

1. The committee (Admin) will upload registration information through the Tadarus information system which can be accessed by the public or parents of students who wish to register their children.
2. Parents of students can register their children online and complete registration data online. After their child is registered and declared accepted at the madrasah, parents can also monitor the child's achievement through the system that has been built.
3. The teacher will provide an online assessment of the students which can be accessed by each parent of the student.

4.2. System Design

Entity Relationship Diagram (ERD) is a design database contained in the web-based Tadarus Madrasah Ibtidaiyah Information System (MI) Darul Ulum Kintap, which can be seen in Figure 3 below.

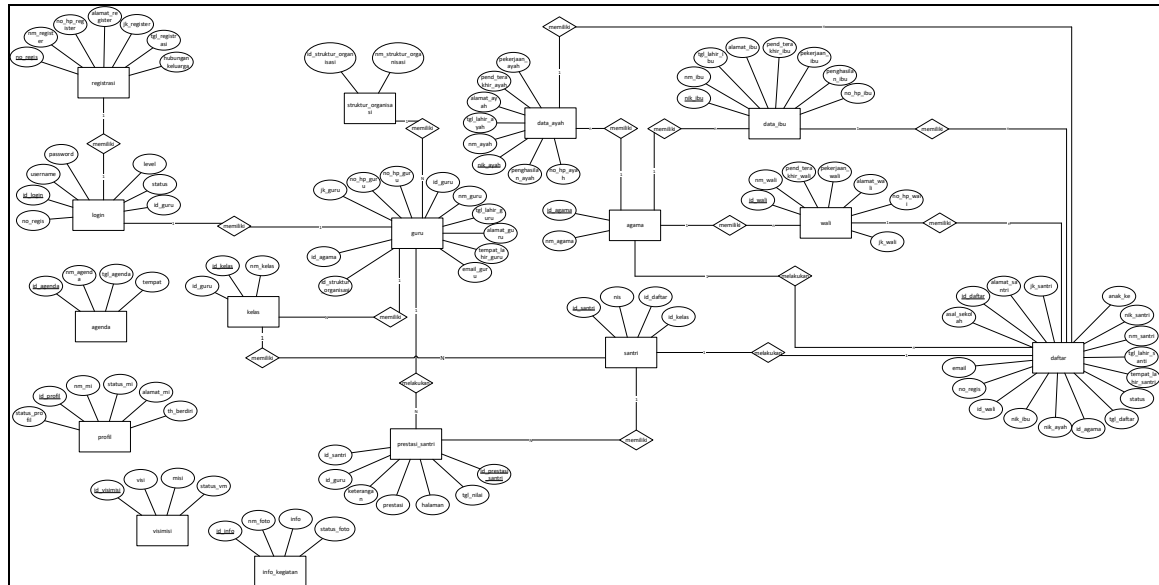


Figure 4. Entity Relationship Diagram

Figure 4 is a context diagram, a context diagram is a diagram showing the core system or core model. The context diagram will present the entire system work, both input and output to be produced by the system. In the Based Tadarus Ibtidaiyah Information System (MI) Darul Ulum Kintap Web- 4 users have different access rights, namely, the admin can manage all the data contained in the system, the teacher can view the student data and add data on student achievement and increase the juz of students, parents can see student achievement data and student data, while free users can view general information contained in the system.

4.3. Context Diagram

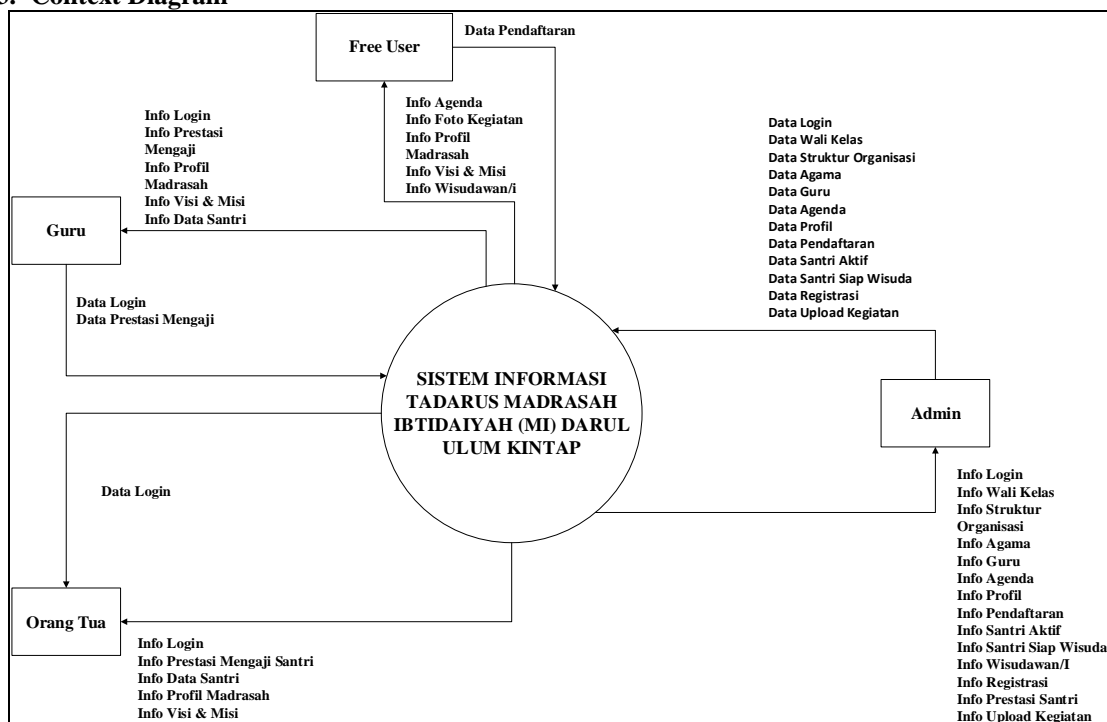


Figure 5 Context Diagram

Figure 5 is a context diagram, a context diagram is a diagram showing the core system or core model. The context diagram will present the entire system work, both input and output to be produced by the system. In the web-based Tadarus Ibtidaiyah Information System (MI) Darul Ulum Kintap 4 users have different access

rights, namely, the admin can manage all the data contained in the system, the teacher can view the student data and add data on student achievement and increase the juz of students, parents can see student achievement data and student data, while free users can view general information contained in the system.

4.4. Implementation

4.4.1. Home Page Free User



Figure 6. Home Page Free User

Figure 6 is a page Home free user on the web-based information system tadarus madrasah ibtidaiyah (MI) darul ulum kintap. This page can be seen by all users without having an account.

4.4.2. Login Page



Figure 7. Login Page

Figure 7 is a login page on the web-based tadarus information system for madrasah ibtidaiyah (MI) darul ulum kintap. Application users can log in with an existing account to view the data contained in the system.

4.4.3. Registration Page

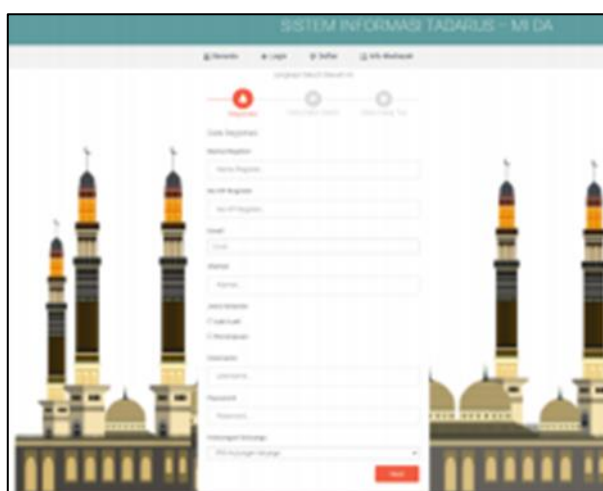


Figure 8. Registration Page

Figure 8 is a list page on the web-based madrasah tadarus information system ibtdaiyah (MI) darul ulum kintap. This page is used to register new students. There is no need to have an account to access the user list page.

4.4.4. Page Capital Adds Students Achievements

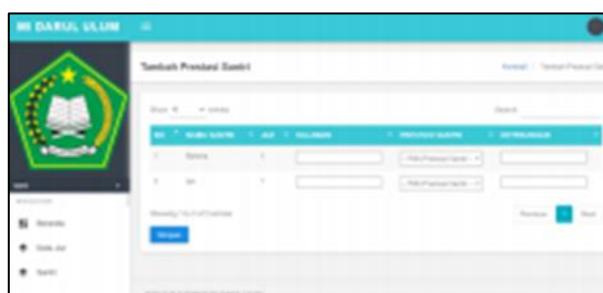


Figure 9. Page Capital Adds Students Achievements

Figure 9 is a page of capital added to the achievements of students in the web-based information system of madrasah ibtdaiyah (MI) darul ulum kintap. This page is on the teacher's account, and the results of the input of student achievements can be seen by the parents or guardians of the students.

4.5. Testing

Testing the system testing in this study was carried out with a black-box (functionality) as indicated in table 2. According to the test in table 2 all the test results were successfully carried out, thus it can be said that the system functions properly according to the requirements.

Table 2. Black-box Testing

No	Menu	Function	Ket.
1.	<i>Log in and log out.</i>	<i>Username and password are input correctly, then it will enter the page home (main). Logout</i>	Valid Valid

3.	Manage data Religion	Show data Add data Change data Delete data	Valid Valid Valid Valid
4.	Manage data Agenda	Show data Add data Change data Delete data	Valid Valid Valid Valid
5.	Manage homeroom	data Show data Add data Change data Delete Data	Valid Valid Valid Valid
6.	Manage data organizational structure	Show data Add data Change data Delete data	Valid Valid Valid Valid
7.	Manage madrasah profile	data Show data Change data	Valid Valid
8.	Manage registration	data Show data Add data Change data Delete data Details of data registration confirmation	Valid Valid Valid Valid Valid Valid
9.	Manage the data active students	Shown data Add Data change data	Valid Valid Valid

5. CONCLUSION

Based on the results of the discussion, it can be concluded that Tadarus Information systems Government Elementary School (MI) Kintap Darul Ulum web-Based is a system designed To monitor children's achievement during the Koran study, the system will provide the students' Kaji achievement at each meeting given by their respective teachers. Parents will be able to monitor the extent to which the child has learned the Koran, and how the child is progressing in real-time.

The web-based Tadarus Madrasah Ibtidaiyah (MI) Information System for Darul Ulum Kintap was built using the PHP programming language. Database design in this information system uses Entity-Relationship Diagram (ERD), while the design for system development uses Data Flow Diagrams (DFD) and Flowcharts. And interface design on the web-based Tadarus Madrasah Ibtidaiyah Information System (MI) Darul Ulum Kintap using the Balsamiq application. Testing on the web-based information system tadarus madrasah ibtidaiyah (MI) and ulum Kintap using black-box testing. The results obtained from the tests carried out are that the system can run properly according to its function.

ACKNOWLEDGEMENTS

Alhamdulillah, I pray to Allah SWT, for all the grace and gifts of health so that this final task can be completed. I would also like to thank my parents who have supported me morally and significantly in demanding a diploma 3 education to completion. Not forgetting also I thank the father of the lecturer who has helped and guides in completing this final task and has provided very useful knowledge until I get the degree of association.

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