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The Tahfizh Qur'an Learning Outcomes Monitoring System

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Abstract

Both formally and informally, the area of education is currently growing. The state of formal education has greatly improved, both in terms of quantity and quality. To enhance religious understanding, Tahfizh Qur'an education, for example, is growing more popular, but it still mostly entails manual labor without the use of computers. The system of informal education is always changing. Currently, the Rumah Qur'an Al-Azhar Al-Syarif records Tahfidz Qur'an activities by noting them in the student learning outcomes book; in the event that the student forgets the book, the recording will be noted on paper. Teachers will find it challenging to keep an eye on their students' academic progress as a result. An online application called the Tahfidz Qur'an Monitoring System was developed to facilitate management's analysis and assessment of student data.

Using the SDLC system development process, a Tahfizh Qur'an learning outcome monitoring system was designed and created.

The study's results show that the Tahfizh Qur'an Learning Outcomes Monitoring System works perfectly. Rumah Tahfidz will benefit from having it installed at Rumah Qur'an Al-Azhar Al-Sharif because it will make it easier and faster to keep track of and record learning outcomes in Tahfidz Qur'an activities.

Keywords: Monitoring system, information, development, Tahfidz Qur'an.

1 Introduction

The advancement of technology, particularly in the information domain, yields substantial advantages for society. We can increase our productivity at work thanks to the complexity of computer technology[1][2]. A website is an information technology breakthrough that may assist with any individual's wants and demands for information through online media. Information can even be disseminated anywhere as long as it is connected to the internet network[3][4][5].

Institutions of higher learning, in particular, require information systems. Formal and informal schooling are both expanding at the moment [6]. Numerous improvements have been made to formal education, both in terms of quantity and quality [7]. Informal education is still evolving gradually. One example is Tahfizh Qur'an education, which is now gaining traction with the goal of bolstering religious knowledge. On the service side, however, it still mostly relies on manual labor without the use of computer technology[7]. Web-based information systems were created to make management's job easier while processing student data and assessing it [3][8].

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Teachers and the community may manage student data and keep an eye on tahfidz activities by using a computerized system at Rumah Qur'an Al-Azhar Al-Syarif, thanks to its web-based monitoring system. One of the Tahfizh Qur'an social organizations, Rumah Qur'an Al-Azhar Al-Sharif, has an annual rise in its student body. The number of students at Rumah Qur'an Al-Azhar Al-Syarif directly correlates with the amount of data that needs to be processed, particularly in relation to the process of monitoring student activities, such as daily, midterm, and final results evaluation (student reports)[9].

According to the findings of the headmaster's interviews, the Tahfidz Qur'an activities at Rumah Qur'an Al-Azhar Al-Syarif are currently monitored by recording in the student learning outcomes book. In the event that the student forgets to bring the book, the recording is made on paper. Naturally, this will make it more challenging for educators to keep track of their students' academic progress. Because of these issues, Rumah Qur'an Al-Azhar Al-Syarif needs a web-based monitoring system to make it simpler for instructors to keep an eye on tahfidz activities, evaluate learning results, gather student data, and tell students, parents, and the community about learning outcomes [10], in order for the parents of the children to keep an eye on their learning progress as well. Additionally, the Rumah Qur'an Al-Azhar Al-Syarif may benefit from this as a way to draw in more potential students and encourage them to study there.

2 Methodology

The research object of the Tahfidz Qur'an Study Result Monitoring System is “Rumah Qur'an Al-Azhar Al-Syarif” which is located at Jalan Pramuka No.10 RT.09 RW.01 Pemurus Village, Banjarmasin City[10].

This research employs the method of applied research, in which an issue is thoroughly and methodically investigated with the intention of using the results right away for a particular goal. The applied researcher will analyze fundamental research results for use in a particular field's practical applications[11]. The process of creating or updating the system, as well as the models and procedures used to construct the system, are all included in the SDLC (Software Development Live Cycle) approach of system development [12][13]. The following phases make up the SDLC process:

Figure 1: The SDLC Process[14]

Based on Figure 1, the following are the stages of the SDLC[15].

1. Requirement collection and analysis
   At this stage, the Rumah Qur'an Al-Azhar Al-Syarif is used to gather all preliminary data, starting with the learning method, data on students and teachers, and samples of reports on learning accomplishments that have been put into practice[2][4].

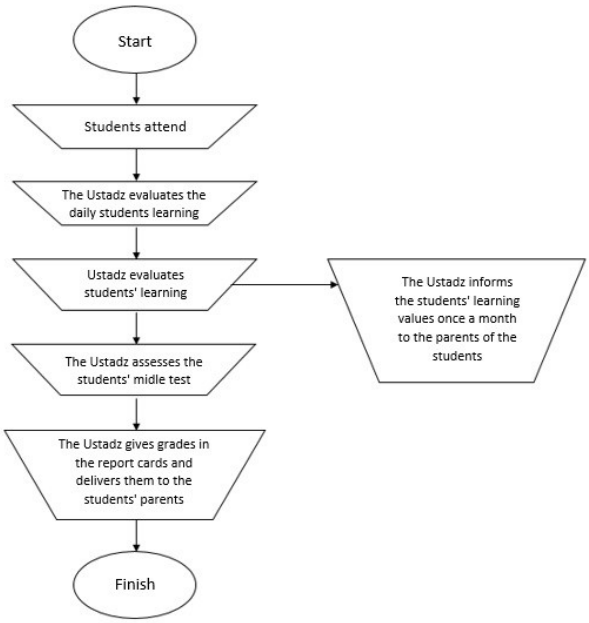
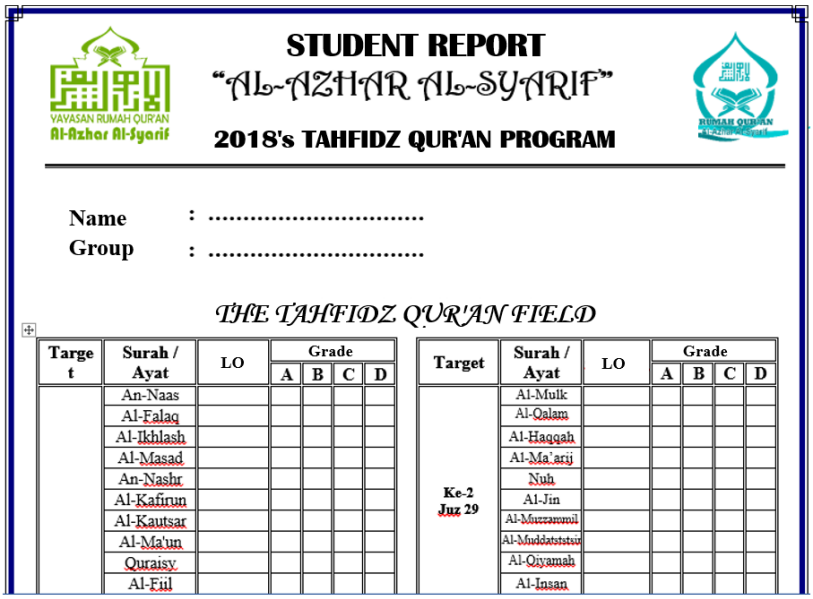


Figure 2: Manual Operation Flowchart

According to Figure 2, the system that has been put into place for recording student information, daily scores, progress, midterm examinations, and the final report on the learning outcomes of Tahfizh Qur'an is still manual. An illustration of a tahfidz activity assessment form used in Rumah Qur'an Al-Azhar Al-Syarif is shown below.



STUDENT REPORT
"AL-AZHAR AL-SYARIF"
2018's TAHFIDZ QUR'AN PROGRAM

Name : .....
Group : .....

THE TAHFIDZ QUR'AN FIELD

Target	Surah / Ayat	LO	Grade				Target	Surah / Ayat	LO	Grade			
			A	B	C	D				A	B	C	D
	An-Naas						Ke-2 Juz 29	Al-Mulk					
	Al-Falaq							Al-Qalam					
	Al-Ikhlash							Al-Haqqah					
	Al-Masad							Al-Ma'arij					
	An-Nashr							Nuh					
	Al-Kafirun							Al-Jin					
	Al-Kautsar							Al-Muzzammil					
	Al-Ma'un							Al-Muddatstsir					
	Quraisy							Al-Qiyamah					
	Al-Fiil							Al-Insan					

Figure 3: A Tahfidz Activity Assessment Sheet

An example of a final report on student learning outcomes that the instructor must manually complete is shown in Figure 3. Because it requires a lot of time to fill out the value data for each kid, this is viewed as less successful.

The Monitoring System for Tahfidz Qur'an Learning Outcomes suggested in this study is depicted in a flowchart in Figure 4 below.

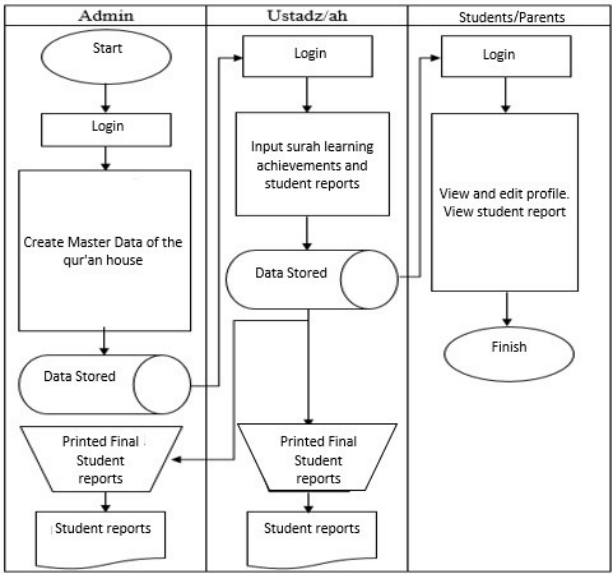


Figure 4: Proposed System Flowchart

Figure 4 illustrates how the system will be created using a security system with different user access privileges for administrators, teachers, students, and parents of students. It seeks to protect data stored in the system and can provide access to data based on each user's needs.

2. Feasibility study

There are mainly five types of feasibilities checks[13]:

- **Economic:** The system ware independently created cheaply, and Rumah Qur'an Al-Azhar Al-Syarif will use the findings.
- **Legal:** While creating systems with tools and programming languages that adhere to license regulations.
- **Operation feasibility:** The system had created to fulfil the functional needs of administrative users, educators, learners, and parents of young children interested in learning outcomes development.
- **Technical:** The system ware created as a web-based application; thus, in order to use it, only a computer or mobile device with an operating system and a web browser connected to the internet is needed.
- **Schedule:** Schedule of research activities by the stages of the SDLC carried out for seven month

3. Design

At this stage there are 3 types of design, namely data flow diagrams, normalization, and user interface design. The 3 types of design are as follows.

a. Data Flow Diagram

The following Figure 5 is a context diagram of the proposed system.

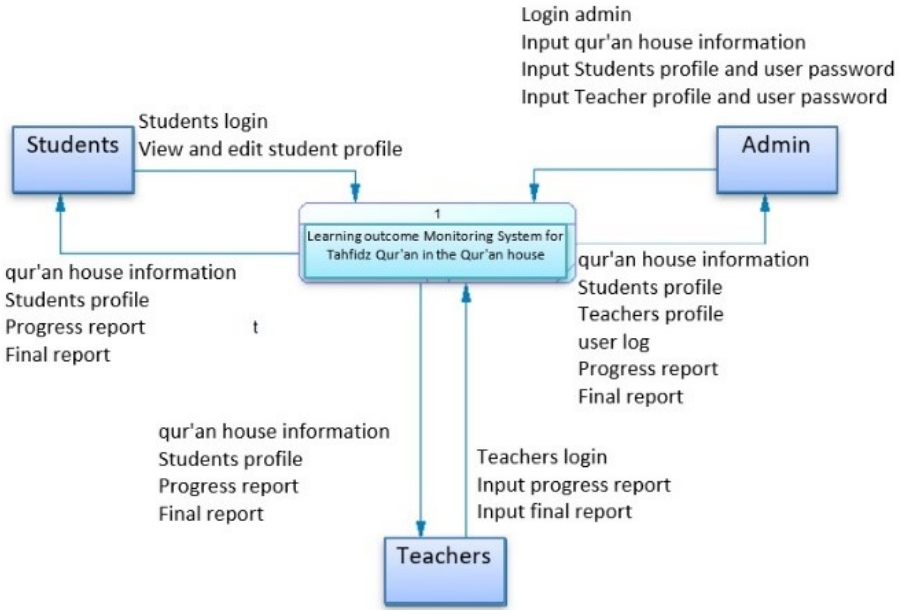


Figure 5: Konteks Diagram

A context diagram is a visual representation of a process that shows the range of a system[15]. The highest level of DFD (data flow diagram) includes this context diagram, which depicts a system's inputs and outputs. A context diagram only shows one process at a time. There are three external entities in this DFD: administration, students, and teachers

The following is level 0 of the data flow diagram.

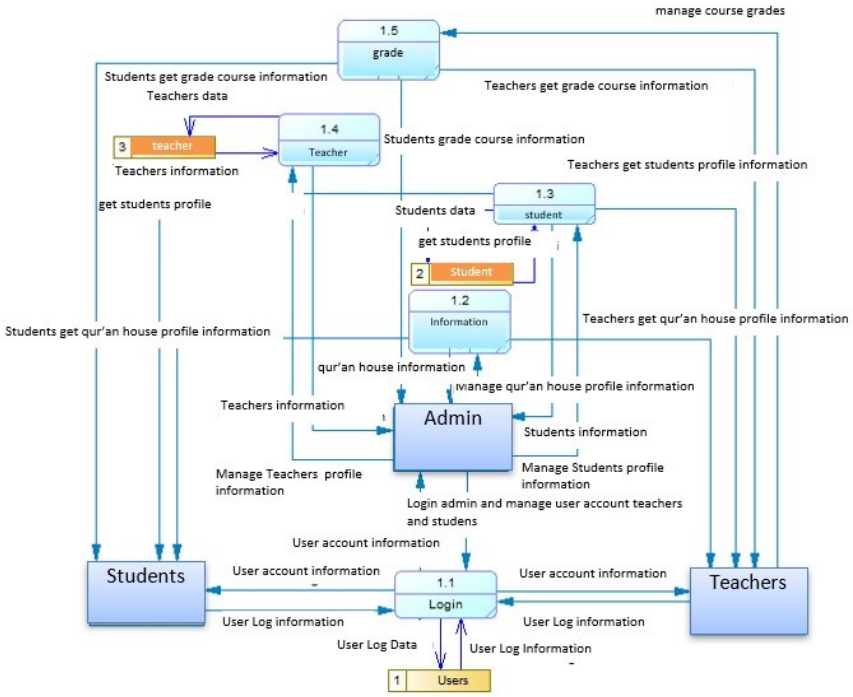


Figure 6: The first level of a data flow diagram

The first level of a data flow diagram system developed by Rumah Qur'an Al-Azhar Al-Syarif is depicted in Figure 6. It is a logical illustration of data or a process that shows where it comes from, where it leaves the system, where it is kept, what processes produce the data, and how the stored data interacts with the procedures applied to it.

b. Database Design

Normal tables, which do not have abnormalities in each table, are required for the database design process[16]. This standardization is carried out to make data search and querying easier[17].

Figure 7 below is the database design used in building the system.

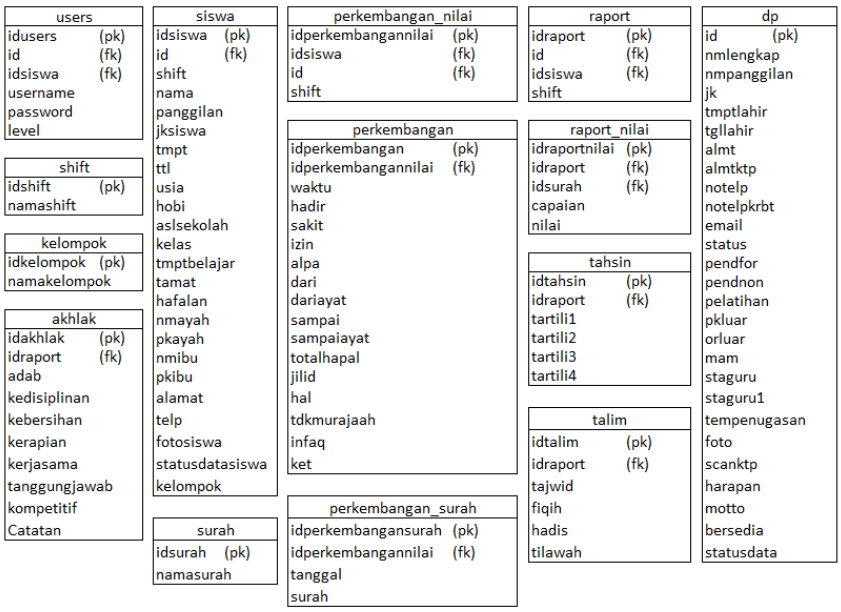


Figure 7: Database Design

c. User Interface Design

The suggested system's UI is depicted in the following figure.

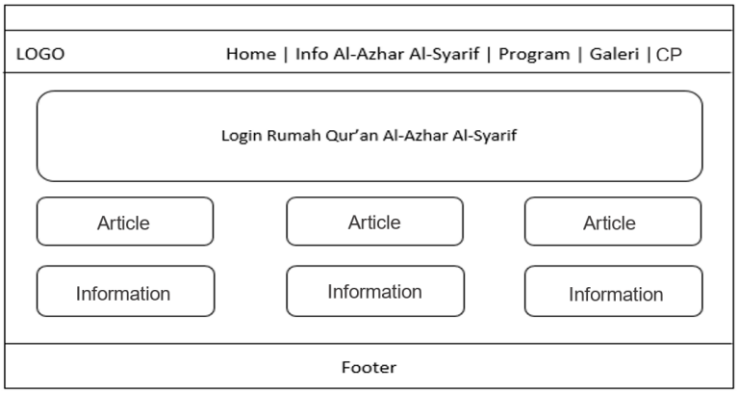


Figure 8: Front end

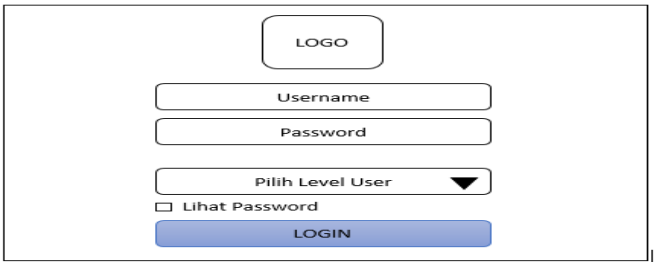


Figure 9: User Login

d. Coding

At this stage, the system had been developed using HTML, PHP, and Javascript [18] programming languages, together with the MySQL database management system [17]. At the same time, the tools used are the browser, XAMPP, and sublime text.

e. Testing

Black box testing, a sort of test, consists just of functionally reviewing the software and keeping track of how it performs using test data. Black box testing evaluates a product's usability and performance solely from the outside (via its interface) [7]. Having merely knowledge of the input and output without knowledge of the specifics of the process.

Boundary value analysis, a kind of black box testing used in this work, focuses on externally and internally finding software flaws [13].

f. Instalation/ Deployment

At this stage the system is installed on a predetermined hosting, starting from hosting selection, domain name, entering the database and file system until it can be accessed on the page https://www.rq-azharsyarif.com

g. Maintenance

Maintenance stages can be done by backing up system files and databases

3 Result and Discussion

The Monitoring System for Tahfizh Qur'an Learning Outcome at Rumah Qur'an Al-Azhar Al-Syarif is a consequence of this applied research. The system is used by dividing up the user admin, instructor, and student/parent access permissions. The data that is handled begins with general data, which is information that is accessible to all groups; instructor data; data on students who participate in the Qur'an Tahfizh program; and learning milestones entered by each teacher for each student who is being directed.

The stages in the implementation began with the socialization and training of the Monitoring System for Tahfizh Qur'an Learning Outcome at Rumah Qur'an Al-Azhar Al-Syarif head, teachers, students/parents of students. In the socialization, the team explained the functions and benefits of Monitoring System for Tahfizh Qur'an Learning Outcome, both general information and data management that recorded learning achievements at the Rumah Qur'an Al-Azhar Al-Syarif.

At the training stage, the team conducts training for the admin assigned to manage the database. The teachers are trained to manage the data of guided students starting from daily, progress, mid-test, until the final report on learning outcomes. while for students/parents, students can only see information on the progress of learning outcomes that are being carried out until the final report.

The user interface of the Monitoring System for Tahfizh Qur'an Learning Outcome can be seen by opening the page https://www.rq-azharsyarif.com.

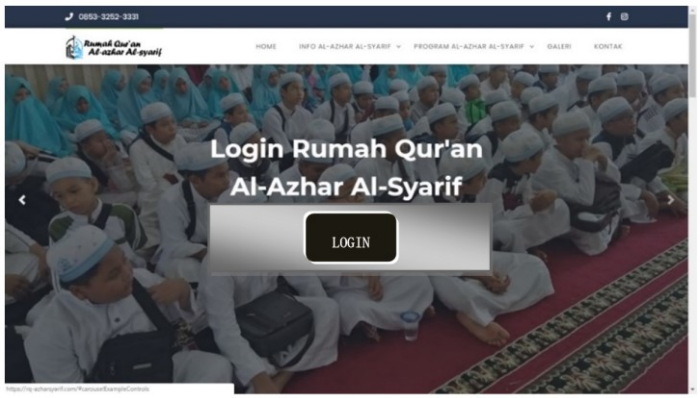


Figure 10: Main Page

Information such as program details, a photo gallery, and contact details are all displayed on the home page of Rumah Qur'an Al-Azhar Al-Syarif. The username and password must be entered on the login screen for the system manager to log in.

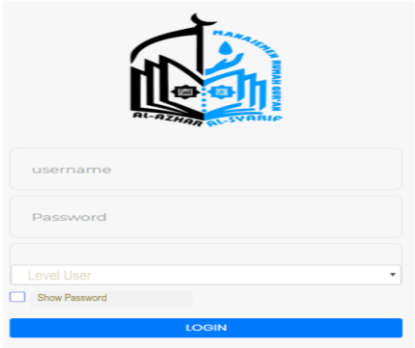


Figure 11: Login Page

The test subjects in this study were divided into 5 test groups using the blackbox testing method, as follows:

a. Login
b. Monitoring of the learning process of students.
c. Daily assessments.
d. Midterm assessments.
e. Evaluation of final results (student reports).

To make sure that each tested group's functionality is operating effectively, system testing is done.

Based on the outcomes of tests conducted on 5 test groups using a total of 21 planned test scenarios, the outcome is that the system is fully functional.

4 Conclusion

Data management concerns were found, notably in the academic assessment of the Qur'an, which evaluates students' academic progress and includes daily assessments, student evaluations, and final results (student report cards). Therefore, a web-based information system is urgently needed by Rumah Qur'an Al-Azhar Al-Syarif to improve the cleric's access to student assessment and data.

The Rumah Qur'an Al-Azhar Al-Syarif hosts the Monitoring System for Tahfizh Qur'an Learning Outcome, designed and developed using the SDLC system development technique. It may viewed at https://www.rq-azharsyarif.com.

The device is fully functional according to the findings of testing conducted on five test groups using 21 specified test scenarios.

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