Web-Based Data Information System for Students and Teachers at Al-Qur'an Education Parks in Kasihan, Bantul

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Abstract

Al-Qur'an Kindergarten (TKA) and Al-Qur'an Education Park (TPA) are non-formal religious education institutions emphasizing studying Islamic values. The development of society necessitates institutions that hold TKA/TPA-related information promptly and correctly. Currently, technology is required to aid an institution in maintaining data and providing TKA/TPA-related information. The data information system aims to provide data for the TKA/TPA coordination agency and ensure the implementation of the administrative order to assure the operational and development sustainability of the IT-based TKA/TPA operating regions. This research intends to develop a web-based information system that can handle the data of students and teachers to reduce the number of errors due to manual data management. A web-based application system for student and teacher data information in TPA in Kasihan was developed utilizing the CodeIgniter framework, the Hypertext Preprocessor (PHP) programming language, the MySQL database, the SDLC method, and the Prototype model. Due to its superiority, the website was selected as the application's foundation since it is lightweight and could be accessed rapidly using a web browser and an internet or intranet connection to the server. This study has produced a web-based application constructed successfully and could be utilized as a data information system for TPA students and teachers in Bantul.

Keywords: CodeIgniter, Information System, Web

1. Introduction

Almost every element of human existence has been altered by the rapid advancement of information technology, notably in education and academic pursuits. In its current development, information technology facilitates and accelerates several educational activities. The impact of technology can be felt in daily life. This technology can be applied to process data efficiently and offer information.

An early introduction to the Qur'an is one of the purposes of Islamic religious education. One may even say that the teachings of the Qur'an are the first and initial teachings of Islamic education. Qur'an learning in Indonesia is a non-formal education that spawned Al-Qur'an Kindergartens (TKA) and Al-Qur'an Education Parks (TPA) located across Indonesia, including in the Kasihan area of Bantul. With the creation of the Coordinating Board for Kindergartens and Al-Qur'an Education Parks (BADKO TKA-TPA) in Kasihan, it attempts to teach the Qur'an and religious fundamentals more practically and effectively.

BADKO TKA-TPA is an institution in Kasihan that provides non-formal Islamic religious education. It has utilized computers as a full administrative solution in

tandem with its development, followed by a rise in technological and informational advances. However, the bookkeeping system of BADKO TKA-TPA in Kasihan is still manual, and mistakes frequently occur, resulting in data shifts that cause reporting delays. It is extremely time-consuming since the report requires revisions, which might be damaging.

BADKO TKA-TPA believes using technology, such as a web-based application, can facilitate administrative completion. This technology can make it easier for everyone to use because it updates more quickly, does not require installation, and is compatible with several operating systems and platforms. BADKO TKA-TPA has selected the website as the application's foundation due to its excellence. The website has various benefits, such as being lightweight and easily accessible through a web browser and internet or intranet connection to the server.

After seeing the need for an information system application program, it is very important to develop the system, one of which is using the SDLC method with the Prototype model. The information system itself is a series of formal procedures where data is collected, processed into information, and distributed to users. The added value of Information Systems is to improve quality and reduce production and service costs, improve efficiency, improve decision making capabilities, and increase the sharing of knowledge[1].

SDLC (System Development Life Cycle) is the process of developing or changing a software system using models and methodologies that people use to develop previous software systems, in a way that has been well tested. This method is a system development cycle in software. There are several stages in it, namely: System Planning, System Analyst, Design, Implementation, Testing, and Maintenance[2]. While the Prototyping model is the process of creating a simple software model that allows the user to have a basic picture of the program as well as perform initial testing[3].

In a research journal and making applications entitled "Design and implementation of management information systems at TPA Pulogadung District", this study explained that in order to improve the quality of religious education and the teaching and learning process TPA needs to design a management information system so that it can provide information quickly and precise both regarding management processes and information about finance and accounting, report data that will be arranged systematically and accurately as well as about the process of implementation and teaching and learning processes at the TPA[4].

The data information system aims to generate information for the TKA/TPA coordinating body as well as guarantee the implementation of administrative procedures that will guarantee the continuity of operations and the development of IT-based TKA/TPA operating areas. Research on "Design and Development of Online-Based Scientific Publication Management Applications in the SISFO Journal". In his research, he concluded that to make it a management process in a scientific publication system, an online-based scientific publication management application is needed that is able to manage scientific publication activities to create better management and publication and increase ease of access[5].

The research entitled "Software Design to Assist Data Processing Administration of Tpa/Tpsa Padang City" states that in order to improve data processing in order to produce information that is right on target, efficient and effective, and so that in the activity of making reports there are no data recording errors and do not require time longer, it is necessary to take advantage of computerized technology by using a web-based information system with a database so that all data is stored in the database. So that admins and operators can report all data and problems that occur[6].

While the research entitled "Analysis and Design of Savings and Loans Information Systems at LKM Gerembeng Bali" explained that computer technology is currently needed, especially in the field of administration as well as financial institutions to support the smooth running of all transactions carried out, so that they can provide transaction services quickly and accurately. . The information system is designed using the Java programming language and MySQL as the database[7].

Therefore, developing a web-based system for student and teacher data information was crucial after recognizing its importance for BADKO TKA-TPA in Kasihan. This application system is anticipated to aid in the data processing.

2. Method

MySQL served as an application database for the student and teacher data information system. The application development employed the CodeIgniter framework, while the programming language utilized PHP. When the TPA/TKA coordinating body logged in to the application, they could view, save, edit, and delete the required data. Figure 1 depicts the architecture of the system.
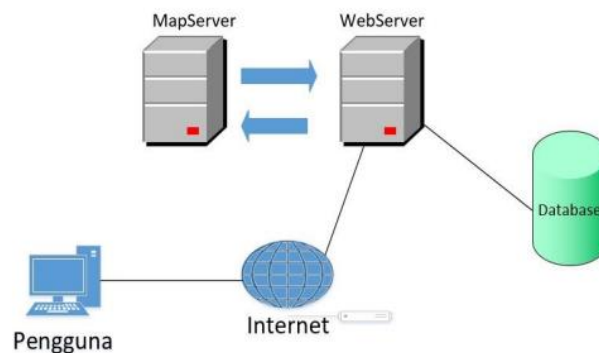
Figure 1 Architecture

MySQL (My Structure Query Language) is a type of database server that is open source and very popular and widely used to build web applications that use databases as data management. MySQL can be run on various platforms[8]. PHP is a Server Side Scripting language for creating dynamic web pages. PHP merges with HTML. Because PHP is server side scripting, the server is in charge of executing PHP commands and the results will be sent to the browser in HTML format[9].

Meanwhile, CodeIgniter is a PHP framework that can help speed up developers in developing PHP-based web applications compared to writing all the program code from scratch[10].

3. Results

Figure 3.1 depicts the homepage display, with three menus: home, list of TKA-TPA, and log-in. The home menu included a map displaying the location of each TKA-TPA in Kasihan District, as well as information containing the names of the mosques, images of the mosques, the names of the TKA-TPA, the number of students, the number of teachers, and the schedule for the TKA-TPA as a popup. In addition to tables and charts for TKA-TPA data, there was information on the number of students and teachers. A detail button in the information popup directed users to the user details page. To access the TKA-TPA data list page, the TKA-TPA list menu should be clicked.
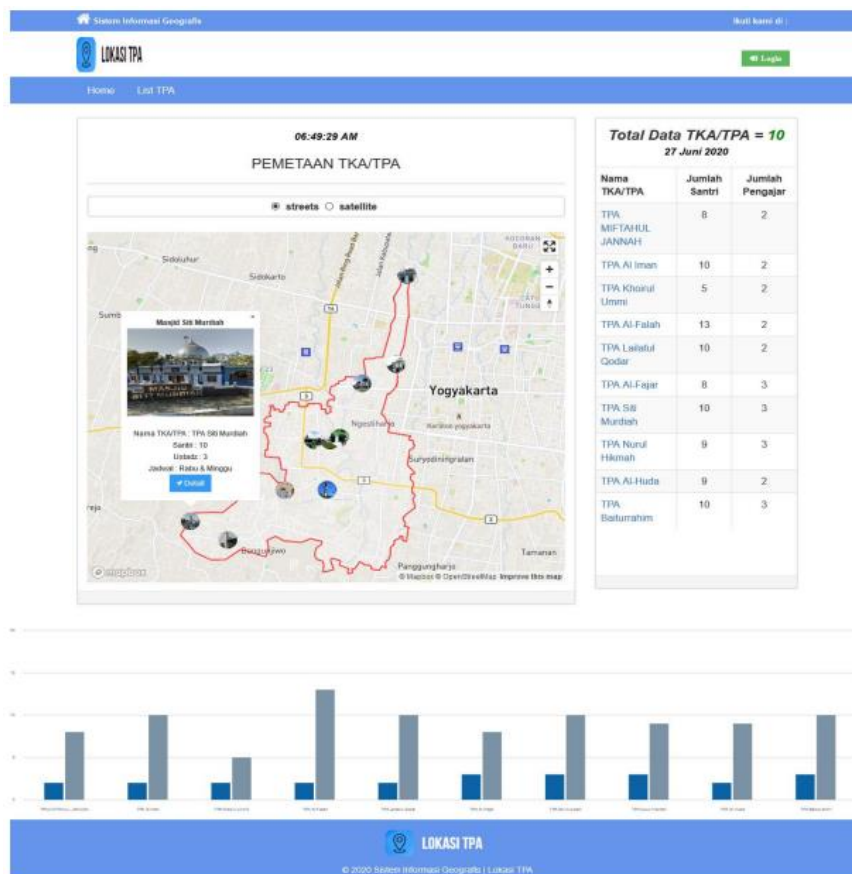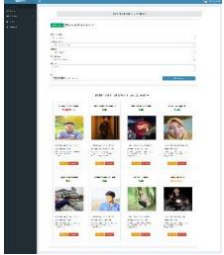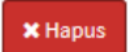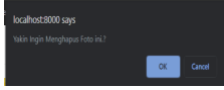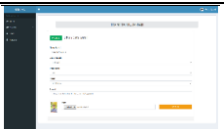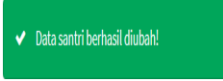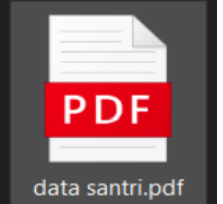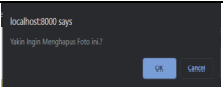
Figure 2 Homepage Display

Testing was conducted using the Black Box method, which involved observing the execution results and assessing the application's functionality. The following Table 1 describes the testing.

Table 1 Testing Table

No	Scenario	Scenario Object	Expected Results	Testing Results	Conclusion
1	Clicking add student data	+Tambah Data	The application displays the add data page and student list.		Succeed
2	Clicking delete student data	✖ Hapus	The application displays a clear data popup.		Succeed
3	Clicking edit student data	✏ Ubah	The application displays the student data		Succeed

No	Scenario	Scenario Object	Expected Results	Testing Results	Conclusion
			edit page.		
4	Clicking save student data	Simpan	The application displays a success alert.	Data santri berhasil diubah!	Succeed
5	Clicking student data details	Detail	The application displays the student data detail page.		Succeed
6	Clicking the print all data button	Print Semua Data	The application prints all student data in pdf format.	data santri.pdf	Succeed
7	Clicking the print button	Print	The application prints student data based on TPA in pdf format.	Santri TPA MIFTAHUL JANNAH.pdf	Succeed
8	Clicking add teacher data	Tambah Data	The application displays the add data page and the list of teachers.		Succeed
9	Clicking delete teacher data	Hapus	The application displays a clear data popup.	localhost:8000 says Yakin Ingin Menghapus Foto ini.?	Succeed
10	Clicking edit teacher data	Ubah	The application displays the teacher data edit page.		Succeed
11	Clicking save teacher data	Simpan	The application displays the teacher data save page.	Data Pengajar Berhasil Ditambahkan!	Succeed
12	Clicking teacher data details	Detail	The application displays the teacher data detail page.		Succeed

No	Scenario	Scenario Object	Expected Results	Testing Results	Conclusion
13	Clicking the print all data button	🖶 Print Semua Data	The application prints all teacher data in pdf format.	PDF — Data Pengajar.pdf	Succeed
14	Clicking the print button	🖶 Print	The application prints teacher data based on TPA in pdf format.	PDF — Data Pengajar TPA MIFTAHUL.pdf	Succeed

4. Conclusion

From the results of the tests that have been carried out, it can be concluded that the Santri and Teacher Data Information System Application in the Kasihan Al Qur'an Education Park, Bantul, namely the web-based Santri and Teacher Data Information System Application using the CodeIgniter Framework, has been completed. The application contains features such as student data, teacher data, TKA-TPA data, TKA-TPA photo data, and TKA-TPA details. The Sertaa application has been successfully tested using the Black Box testing method.

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