


Integrating Yayasan Islam Kelantan B40 Students' Information Using Cloud-Based Platform (YIKBSI)

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Abstract: Most of the students in Yayasan Islam Kelantan (YIK) fall under the category B40 family. Managing the information of all students are quite challenging. Moreover, it is harder to fetch the information when needed if the information is stored manually in documents or on the papers. Regrettably, all the B40 students' information in YIK is stored manually and can only be accessed by the officer. Thus, it makes it harder for the organization to fetch the information since not anyone can access the information. If the officer-in-charge is on a break, no one can access the information. The lack of record management in YIK has caused several problems. This project aims to develop a cloud-based management system for Yayasan Islam Kelantan using cloud platform. The system will be developed using Hypertext Preprocessor (PHP) as the main language and will be deployed on Microsoft Azure. The methodology that will be used throughout this project is Rapid Application Development (RAD) method. The system was tested based on user acceptance evaluation and system functionality. Thirty-three targeted users have shared their feedback on the system and the results shows that most of the respondents find the system to be useful and helpful in sending and storing the information. In conclusion, the system has achieved its objectives as to provide a cloud-based platform for YIK to store their information. For future work recommendation, the system can be implemented with a graphic report feature, disability friendly features as well as search engine that will show better search results.

Keywords: Cloud Computing, B40, YIKBSI



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1. INTRODUCTION

Yayasan Islam Kelantan was established in 1973, following the proposal that was submitted to the State Government to establish a special department that are responsible for the operation of religious schools in Kelantan especially to the B40 group. Until now, Yayasan Islam Kelantan is responsible to administer and manage 93 religious secondary schools in Kelantan and the finance for management and development of the schools under their administration (Yayasan Islam Kelantan, 2021).

Along with the rapid growth of Yayasan Islam Kelantan in the past few years, it become very hard for the organization to manage the information of their students manually. Some of the

information has gone missing while others are inaccurate. Thus, the aim of this project is to improve Yayasan Islam Kelantan B40 students' information and to tackle the issues that have arisen inside the organization due to lack of systems in managing the information. All the relevant information will be gathered during the interview.

According to Borhanuddin Ahmad (Personal Communication, April 19, 2021), one of the officers in Kelantan State Secretary Office, in his recent sharing session, he claimed that it is hard to compile all the information regarding B40 students of religious schools under Yayasan Islam Kelantan due to inadequate resources to properly manage all the information. As state by (Mahama, 2017), in an organization where it depends on paperwork and have a poor management of the records, costly duplication of the records would occur frequently. Duplication and misplaced information are huge issues and need to be resolved.

Ineffective ways of retrieving and accessing records also occurred. Referring to (Akuffo & Adams, 2016) the high volumes of records and some files would be misplaced or lost it would lead to slow retrieval and effect the efficiency of the staff. Poor records management also led to severe space problem. The records would keep on increasing each day and needed and unneeded files are stored in the same space. In return, these would lead to the issues of lacking space since the records would clog up the organization space.

Therefore, to solve these problems, it is wise to develop a systematic cloud-based system that will make it easier to store and retrieve the information and allows the organization to edit the information that are no longer needed. Using cloud computing is the better solution since it facilitates fast delivery of information, cost saving and provide huge space to store information (Kibe, 2019). Cloud computing is the ability to deliver on-demand services over the internet where the organization or the user pay the provider when they use the services (Borse & Gokhale, 2019). On a simpler term, cloud computing can be referred as controlling and preserving the files over the internet instead of keeping it in hardware (Karim & Soomro, 2020). The organizations do not have to think about wasting space to store all the information and the data can also be accesses and searched easily on the web without the need to be presented at the specific location.

2. METHOD & MATERIAL

2.1. The methodology

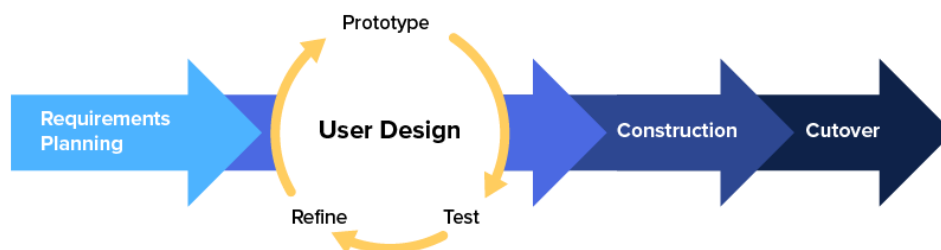


Figure 1. Rapid Application Development

Rapid Application Development, sometimes known as RAD, is a methodology designed to enhance software quality, accelerate development, and overcome the shortcomings of traditional life cycle approaches (Delima et al., 2017). It was chosen for this project. RAD uses iterative method where all the processes are run repetitively. Thus, it let the developer to be more flexible in making adjustment

on the prototype before the implementation phase (Shuhaimi et al., 2020). The RAD approach was hence chosen for this project due to its versatility. Additionally, it is appropriate for this project since it places a strong emphasis on engaging users directly, ensuring that their needs and expectations are well-defined (Nalendra, 2021). Figure 1 shows the stages consist in RAD method.

The project development of the system will follow the Rapid Application Development (RAD). This methodology ensures that the development of the system is according to the steps and methods. Based on figure 1, the methodology consists of Requirement Planning, System Design & Development and lastly Cutover.

In Requirements Planning, the system was design for student, teacher, and staff of Yayasan Islam Kelantan as they were the target users This phase is crucial to know the planning so that the development will be done according to plan.

In the second phase, System design and Development is a process where all of the information has been identified and need to move to the next process which is to develop the system.

The third phase inside this methodology is Cutover. In this phase, the development of the system has been completed and it will then be tested to the target users to see either the system is functional or not. This phase also can determine that the system could have new changes to improve the functionality the system. In addition, the system will be evaluated using a questionnaire for the user to determine whether it can enhance the data on Yayasan Islam Kelantan B40 students.

2.2. YIKSBI Cloud Computing

YIKSBI is designed to collect and stored information of B40's students. There are three users of the system which are students, teachers, and staff YIK. For students and teachers, they need to register their account first before getting to use the system. To ensure security, accounts that are newly registered will not be able to use the system instantly. For teachers, their accounts are going to be approved by the staff. As for students, their schoolteachers will authenticate their account first. This is to ensure that the system is only used by the students and teachers from YIK.

Once authenticated, students can fill in their information in the B40 application form. They need to attach required files with their application before submitting. Staff YIK is responsible in reviewing the application form to ensure that only eligible students can be grouped into B40 students.

Teachers on the other hand can view all registered students in their school. They are also responsible in making sure only active students are in the system. They need to delete the graduated students from the system to avoid inaccurate data.

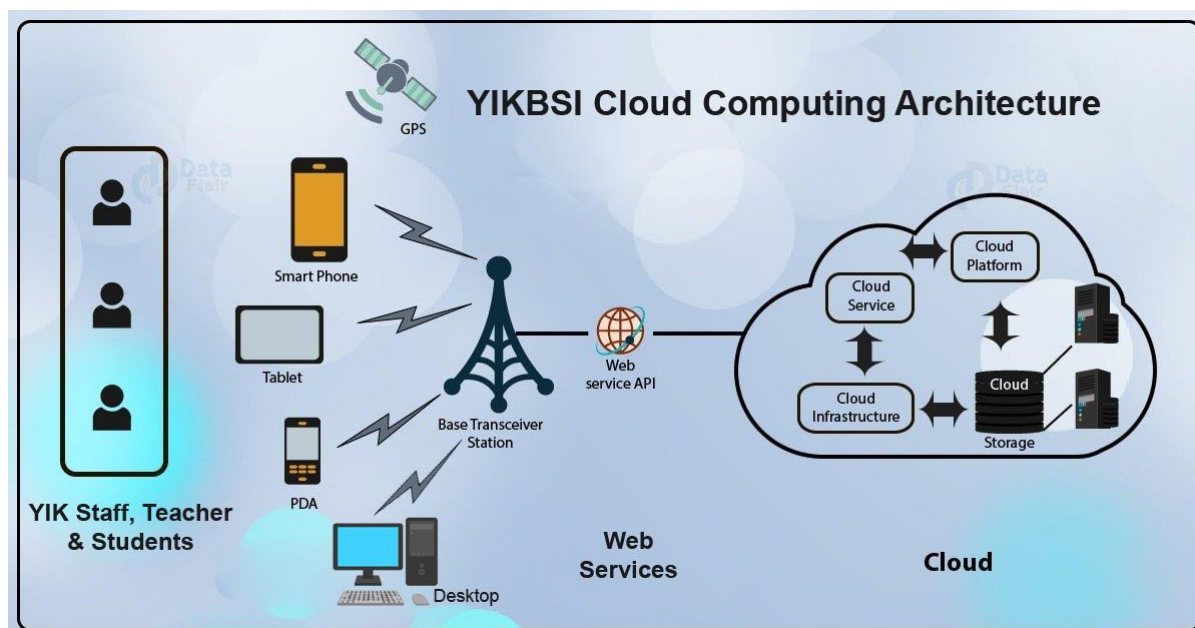


Figure 2. YKBSI Cloud Computing Architecture

Based on the figure 2 above. It shows that the YIKBSI cloud computing architecture that integrates YIK staffs, teachers and students to use desktop computers, laptops, PDAs, tablets, smart phones which connected through web services and access the cloud computing services for YIK.

2.3. The Questionnaire

The evaluation of the prototype was conducted online. The users were asked to use the system and their feedback will be collected through a set of questionnaires. Eight questions are asked to the users once they finish using the system. The questionnaires will help in evaluating the system in term of its user acceptance testing as well as system functionality. The questions that were asked are as follows:

- Is the system easy to learn?
- Is it easy to interact with the system?
- Is the system clear and understandable?
- Is the system easy to use?
- Does the system enable user to view all the details clearly and easily?
- Is receiving email enhance system efficiency?
- Are the system helps in reducing time sending / collecting the information?
- Is the system useful

All the questions were asked in Malay language as the users who participated in the evaluation are students and the system also used Malay language.

3. FINDINGS AND DISCUSSION

The prototype of this project is a web-based system. This project will use several computing languages such as Hyper Text Markup Language (HTML), Hyper Text Pre-processor (PHP), JavaScript as well as CSS. This prototype is also designed to be a responsive website which allowed users to use the website on any type of devices. MySQL will be used as the database for this prototype.

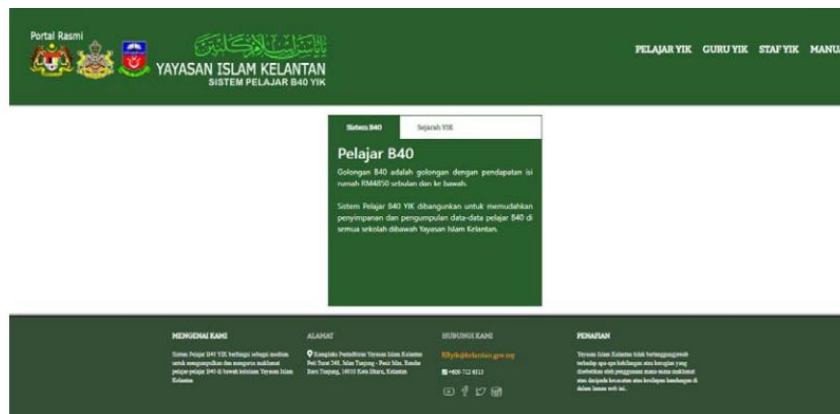


Figure 3.1. Main Page

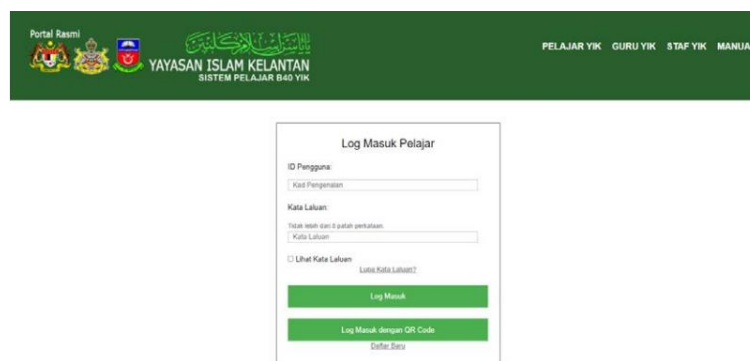


Figure 3.2a. Login Page

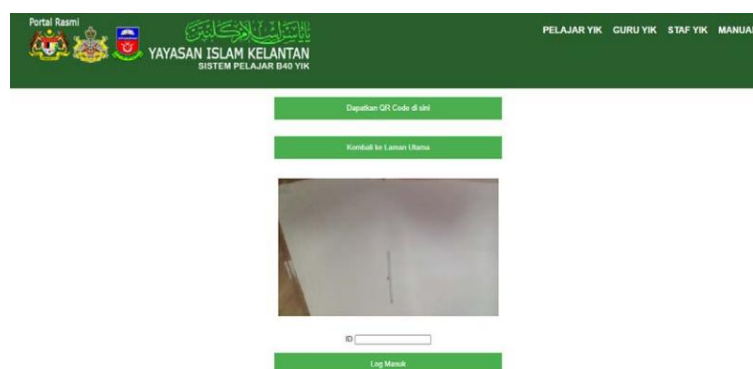


Figure 3.2b. Login Page with QR code

Figure 3.1 show the main page of the website from desktop perspective. Users can click on the button at the top of the page to navigate through the website. Figure 3.2a and figure 3.2b shows the login page for user. If the users do not want to key using ID, they can choose to log in the system using QR code. The rest of the screenshots shows the main functionality of the system from student's perspective.

Main functionality of the system for students and staff. Students can apply, view, and edit their application as well as see the progress of their application (figure 3.3). From the staff view (figure 3.4), staff can print out the list of students' application that has been accepted or rejected.

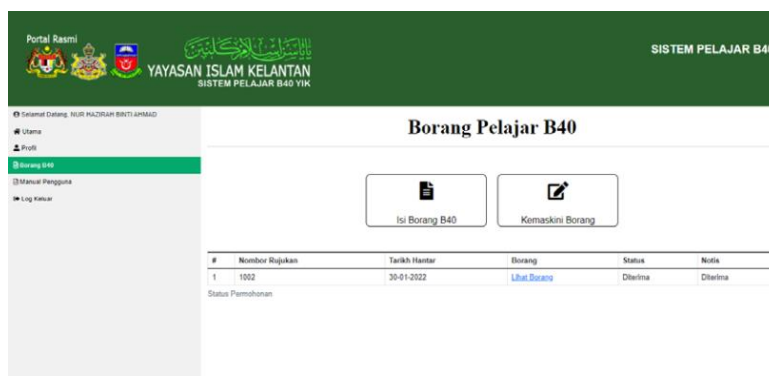


Figure 3.3. Student view



Figure 3.4. Staff view

The results of the evaluation from questionnaire, it turned out to be positive for user acceptance and system functionality. The findings from the evaluation shows that the system is well designed, and the information provided in the system is useful for the user. Thus, this system can help the teacher and staff of YIK in keeping the information securely. It also will be helpful for students to send in their information.

5. CONCLUSION

In conclusion, the YIKBSI system that has been developed has successfully achieved all the objectives that have been outlined. This cloud management system that has been deployed on Microsoft Azure has greatly helped YIK staff in managing B40 student records more effectively. The problems encountered when handling student records manually have been eliminated. The targeted system users are also very satisfied with this YIKBSI system because this system is very user-friendly and can save them time since they no longer must fill in many forms.

However, this system still needs some further improvements. This system is cloud based but it has still not been indexed by Google. Users need to click on the link given to use the system. The indexing process will be processed as the developer applies for it. The system uses Malay language only. The English version will be available after several months of deployment.

There are a few suggestions for future system enhancement. It is recommended to have a version of disability friendly in the user interface design to make the system more approachable for

everyone. The summary report also needs to be available where user can view a summary of the students who have registered, approved, and declined by the system and view a graphical report of the result to help decision making.

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