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# THE DEVELOPMENT OF ORPHANAGE DATABASE SYSTEM FOR PEKAYA PAHANG: AN OVERVIEW

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### *Abstract*

This study is to shift the old manual system in the Persatuan Kebajikan Anak Yatim Pahang (PEKAYA) pertaining their data management into a web-based system. The new system will help the user to capture, manage and keep the information of the orphanage centres and may be accessible at any time and location. The current problem of insufficient centralized information had created numbers of issues especially pertaining any allocation of budget and tracking the orphanage centres and members. The system is also aimed to be used to help management department of welfare society's to manage the information of orphan welfare which includes personal information, particular activity for orphan, and contribution information from government, non-government organization and personals. Prototype methodology is used during the development of the system. The feedback form the first testing provide a satisfactory results among the users of the system and next phases of testing should will be conduct later.

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## **1. Introduction**

In approaching the industrial revolution 4.0, the stand alone system may has put information as obsolete and user are more demanding for real time data for instance decision making. In today's IT scenario, an organization's success greatly depends on its ability to get accurate and timely data on its operations of varied nature and to manage this data effectively to guide its activities. Paper-based processes involve the handling of physical document(s), photocopying, archiving, and retrieving physical document(s) from a file cabinet (Kissell, 2013). Kissell (2013) notes that filing systems require a large amount of physical space and spawn inefficiencies in searching for previously filed papers. Hence the deployment of ICT to replace the paper-based process will result a better transparency, visibility, resilience, adaptability, dialogue, adaptability and decision-making for organization (Nair & Anbuudayasankar, 2016).

As information is demanded regardless of time and place, the web-based database system will be the best choice. The same web-based system is also being used by other countries for non-profit organization such as for education purpose, health sector for blood donor database and community issues (Hasan et al., 2019). The web-based databased system eliminates the issue of compatibility, software installation, special hardware and operating system, high cost for maintenance and the worries for system updates. As the data is kept in a cloud service, it can be remotely accessed from any location. However, the only challenge of this type of database system is the internet connection. As long as the user is connected to the internet, they will be able to access the system. Apart of that, in the situation of large files, more powerful internet connection may be required (Speedbased software, n.d.).

### **1.1. Persatuan Anak Yatim Pahang (PEKAYA)**

Persatuan Anak Yatim Pahang or PEKAYA was established on July 2001 as a non-governmental organization in Pahang. With the purpose to provide the assistance, community service and facilities that are deemed appropriate from time to time for orphans and the disadvantaged throughout the state of Pahang, PEKAYA is administered by a bi-annually elected committee. The first objective of PEJAYA is to establish friendly relationships and coordinate activities, programs and activities with the joint houses. Secondly, they are to produce balanced, quality orphans and excellent human capital. Apart of that, PEKAYA is committed to transform housing infrastructures of its members to be more convenient, safe and conducive, and finally they are to formulate holistic strategies and plans for the welfare of orphans. Currently there are eleven welfare houses registered in PEKAYA throughout the state of Pahang with registered 305 number of occupants.

### **1.2. The Project for Sistem Maklumat Anak Yatim (MAYA) Pahang**

The project was initiated by the Treasurer of PEKAYA, who are also the Senior General Manager of Pusat Kutipan Zakat Pahang (PKZ), YH Dato' Haji Halidan bin Md Daud, due to the need for centralized database and easy access for information. With the support of Yayasan Tenaga Nasional, a team consist of three Accounting lecturers and one Islamic studies lecturer were gathered and start the plan for the system. The initial name proposed was Orphanage and Welfare Information System, after the first conceptual

design were presented, the name of the system were changed to Sistem Maklumat Anak Yatim (MAYA) Pahang as suggested by PEKAYA.

The system is meant to be the centralized database which will be used by all PEKAYA members. It comprises of four main modules which are the information about the occupants, the house or the assets, the administration and finally the external stakeholders whom received the any poverty assistance or as such. As all data will be updated based on each house, PEKAYA is the party who only can access as the viewer and may be able to extract appropriate information. This is important to meet the objectives of PEKAYA, among others to provide training or academic support to the occupants, to distribute helps to those in needs.

## **2. Problem Statement**

Since the establishment of PEKAYA in 2001, all records regarding the orphanage or welfare houses were kept in separate manual file by each individual houses. The manual record keeping system has created several numbers of problems and this section is to discuss the issues which has motivate the project.

### **2.1. The Need for web-based information management system**

The requirement for digital data and information is among the important reason for this project. The current trend for computerized and digital system requires PEKAYA to be at par with the industry. Manual processes have less applicable to feed the current information requirement. As currently information is required regardless of time and place a real time database system is a must.

### **2.2. The need to centralize the records**

The second reason to develop this system is to centralize the information for all registered orphanage centre in Pahang. Currently there are 11 registered centres which maintaining a manual paper based or stand alone, non-network systems. The issue of delays and effort to gather the information were seen as critical. A cloud based system is among the most popular recent days and it is the plan to have such system for PEKAYA.

### **2.3. Lack of proper standard data management among orphanage centres**

Currently, as all information is kept separately, there is an issue of data structure standardization. Some information may not be available in certain centres. This lack of standardization created incomplete and incompatible of information for comparison between centres. Hence, with the creation of the new system, all user will have single interface type and will collect and keep same type of data.

### **2.4. Scattered area for information storage and data security.**

Finally, all information is kept in each centre's location, retrieving information is very challenging and costly. The manual keeping of files may create the issue of data safety and security. Apart of that, manual record keeping without a backup is very risky. Hence, the new system will use single location for data storage with secured user password.

### **3. Purpose of the Study**

The main objective of this study is to develop a centralized online orphanage database system for PEKAYA Pahang in order to keep and update the information of the PEKAYA members' houses and their occupants. The system is targeted to manage other related information pertaining all houses registered under PEKAYA and disseminate the appropriate information to external parties through PEKAYA webpage. The scope of the study is to develop a multi-user system that manageable by several competence operators in the same time. The result is expected as an added value for information and knowledge and skill transfer to stakeholders.

### **4. Research Methods**

MAYA system was developed based on the framework proposed by Masi et al. (2012). This study utilized interview during system analysis and prototype approach for system development.

#### **4.1. Interview and discussion**

During the first stage of the project, a discussion session was conducted to gather the initial idea and plan of the system. Once the system developer was recognized, few interview sessions were carried out to gather the user requirement. One of the houses was chosen as the pilot project and known as Rumah Kebajikan Permata Camar in Tanjung Lumpur, Kuantan. In order to gather the user requirement, two of the Permata Camar's highest management, YH Dato Halidan and Tuan Haji Abdul Rahman were interviewed.

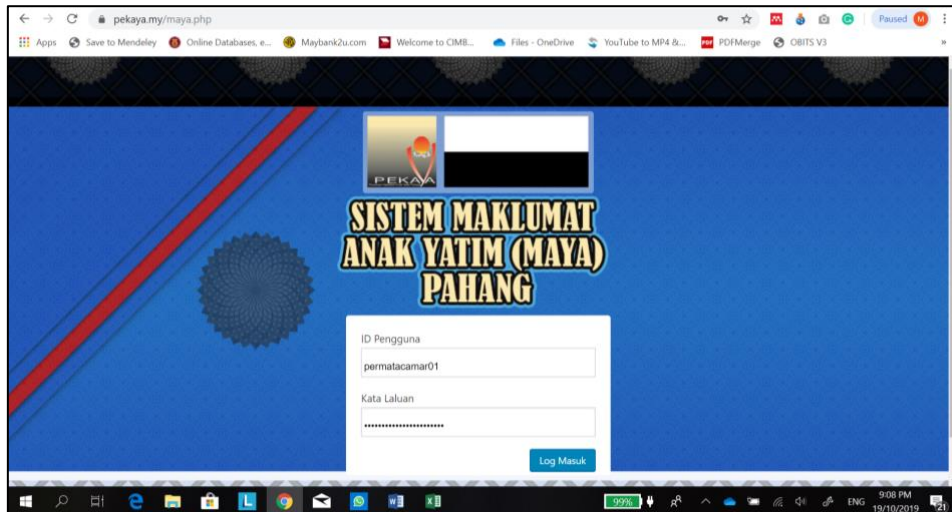
The next level is to design the concept of the system before the development process is done. The summary of the requirements was presented in excel form and feedback were gathered for improvement. It is finalized that the system will contain modules for the occupants, administration, assets, alumni and any recipients of poverty projects either directly from Pusat Kutipan Zakat, or through the school schemes. A thorough discussion were carried out to finalize and approve the conceptual design of the system.

#### **4.2. Prototype approach for system confirmation**

Once the conceptual design was approved, the appointed programmer began the programming process. Once 75% of the system is completed, it was presented to PEKAYA representative for view and comments. This prototype approach is most appropriate for unknown new system developed for unfamiliar user which did not have a clear view of what they are expected (Romney & Steinbart, 2018). Hence, as this is the first system developed for PEKAYA, the prototype approach has produced much clearer view and comments for improvement.

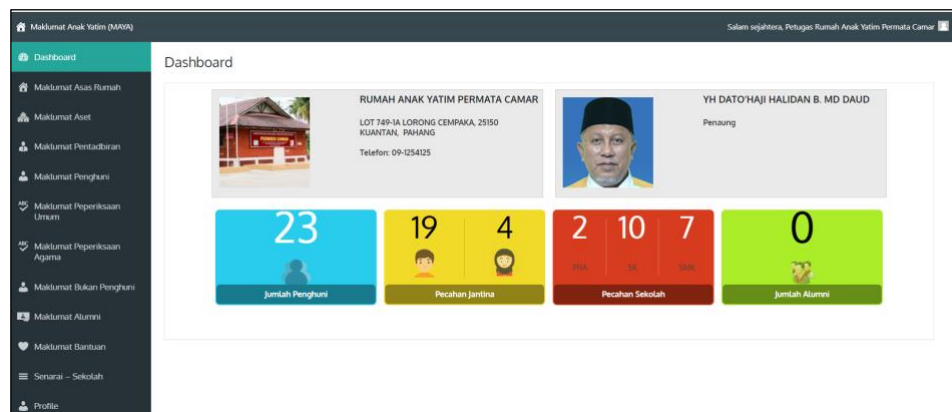
### **5. Findings**

This section will discuss the MAYA system which currently is 95% completed, during the preparation of this paper. The acquired universal resource locator (URL) for the webpage is known as <https://pekaya.my/> and the system is part of this webpage, <https://pekaya.my/maya/> which only can be accessed by the registered user. Figure 01 display the front page of the webpage.



**Figure 01.** Sistem Maklumat Anak Yatim (MAYA) Pahang

Based on the requirement of PEKAYA, Maya system is divided into several parts based on the function. The main objective is the system is to be the centralized online database, hence the form is divided into the type of information to be keyed in. As discussed earlier, the main focus is on the occupants' information, hence the detail section for the occupants covers the personal and family background, their education performance record and also their performance during their stay in the welfare centres. The next section is for the background of the staffs and also the information about the house. There is also the section for alumni and external beneficiary for any assistance from the welfare centres. Figure 02 shows the content of the system for each house.



**Figure 02.** The content of MAYA Pahang

As this study utilized prototype approach in developing the system, the feedback we gathered during the pilot testing and prototype presentation. Among the respond received were this system is useful to keep all the information and may ease PEKAYA effort in distributing assistance to those in needs. Another respond was on the presentation of the system. The initial color was less colourful however after receiving the feedback, the color had been changed. Hence, currently the system is in the finishing stage and it is another milestone to be achieved once the system is ready in end of October rather than the initial plan to be at the end of this year.

## 6. Conclusion

The project is to develop an online orphanage database system for all houses registered under Persatuan Anak Yatim Pahang or PEKAYA. The system which eventually was named as Sistem Maklumat Anak Yatim (MAYA) Pahang is meant to be a medium for all registered houses under PEKAYA to upload and keep their information for easy access and safety purposes. With the support and funding from Yayasan Canselor Uniten, the system is almost completed and currently is only on the stage of final testing before the user acceptance test and hand over to PEKAYA.

Utilising interview as data collection method during system analysis, the next level of the development utilized prototyping as the best development approach. It is seen the prototyping approach assist so much of the development process as it provides real time example of the system and user proved their comments based on the almost finished goods.

The advantage of developing such centralized web-based database system will reduce the issues of data redundancy and timeliness of data availability as the system will be updated on real-time basis. This will provide lesser time required for planning and decision making pertaining the issues of the orphanage and welfares houses in Pahang. However, these advantages will only be enjoyed if the users accept and fully utilized the system. Apart of that, this system is only limited to keep the data of the houses and it is not part of its function to have any analytic function to serve other requirement.

As this project is focussing only on the development of one system specifically for PEKAYA, the method and findings may not reflect other requirement and function. It may be perceived as and reference for any similar situation and requirement. On the other hand, this project may had developed some system development management skills among the team members. Finally, this project may increase the awareness for green initiatives and paperless environment as the system will be fully online and this will remove the issue of storage and information safety.

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