Strengthening and Transferring Skills within An Independent Management of Information Systems for Employee Recruitment in Muhammadiyah School

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Abstract. The recruitment process of employees and teachers in the Primary and Secondary Education Council (Dikdasmen) of Sleman has been through a long episode. It has entered the IX batch process with a registration pattern of two to three times yearly. The problem in Dikdasmen of Muhammadiyah Regional Leadership (PDM) Sleman is that an information system is needed to create a quick and efficient registration process for employee and teacher candidates. PDM Sleman is a Muhammadiyah assembly of which the function is to fulfill the human resource needs of every Muhammadiyah school in Sleman area. Regarding the teacher and employee recruitment, challenges are found during the online recruitment process including the information system for the data entry process, arrangement of registrant needs, and recruitment status management. The current problem is that the existing recruitment information system still depends on the ongoing hosting pattern. It will be turned off and archived on the local server periodically. The solution offered is purchasing a domain, and hosting, installing, and setting up a recruitment information system with complete management features. PDM Sleman admin should be able to independently manage the system. The expected target is an independence in controlling recruitment information system with website menu features that can be both operated from upstream (registration process) to downstream (verification/selection process and result announcement).

Keywords: recruitment; skill; teacher

1 Introduction

The Primary and Secondary Education Council (Dikdasmen) of Sleman Muhammadiyah Regional Leadership (PDM) is a Muhammadiyah assembly responsible for fulfilling human resource needs of every Muhammadiyah school in the respected area, including the necessity for recruiting teachers and employees. The activity starts by collecting data on the needs for teachers and employees of each school. Subsequently, the data collection results are disseminated as job vacancy information. The information contains the requirements for prospective applicants, the test administration, and details of the stages that future applicants will go through. The goal of the information system is to ensure that all information related to the vacancy is conveyed clearly and the quality of service is well maintained.

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As of 2023, Sleman has 79 elementary schools, 25 junior high schools, 6 senior high schools, and 17 vocational high schools making a total of 127 schools operating here. Muhammadiyah schools are directed to be superior, competitive and independent according to the vision of PDM Sleman Dikdasmen. Challenges such as abundant applicants, overlapping agendas, and quality maintenance of the recruitment process arise and must be overcome. One of the tips is procuring an online recruitment information system (known as SI) for the management process from data entry formation, registration file upload, recruitment status to the announcement of recruitment result. The current problem is that Sirekruitmen, the name of the online recruitment system, is still seasonally simplified to be hosted. This causes the dependence on the PDM Sleman Education and Development in carrying out this annual routine task [1].

In detail, the problems in the existing information system for recruitment process are [2]:

1) Adding options to the menu is still hardcoded.
2) Running text to facilitate the registration period is also still going through the hardcoded process.
3) It is necessary to hide or show the registration period in 'Registration' menu.
4) It is necessary to show a more comprehensive recapitulation menu in the form of both display and export files.
5) Skills in uploading to a virtual private server via cPanel for the hosting process insert are needed.

The recruitment information system uses free, open-source software built with the Laravel framework [3] as shown in Figure 1, which can be used for the information system of employee registrant management in Sleman [4]. This system contains various types of management some of which are registration process management, member management, and display management. In its menu, SI Sirekruitmen has features to meet the needs of registration management resources. In this case, a registration process feature is used for online employee recruitment [5]. SI Sirekruitmen also has registrant recapitulation reporting. The selection results can be exported and processed using Excel. For architectural drawings, the technology used is shown in Figure 2 [6].
The solution to solve the existing problems is to work on several items as follows:

1) Purchasing hosting with enough resources to access hundreds of examinees simultaneously without complaints of slow processing and access to the information system recruitment.

2) Installing and setting up *Sirekruitmen* accompanied by providing training for selected *Dikdasmen* members so that they can independently operate the system.

3) *Sirekruitmen* setting consists of:
   1. A menu set for the main table data settings such as status, place of birth, etc
   2. User-level menus as admin, registrant, and employee
   3. A file upload menu for registrants
   4. A registrant card print menu
   5. A file completeness verification check menu
   6. A participant recap menu.

2 Methodology

The implementation of the information system would start in the beginning of January 2023 as the recruitment process began around this time. The question type data were registered by referring to the *Dikdasmen* data collection results from Muhammadiyah schools in Sleman. The data were then matched with the available question bank in MyKlas Moodle. As the vacancy information and applicant data collection process ran, the recruitment information system was migrated to the new hosting, and the trial test would begin. The expectation was that no obstacles would arise on the day of the exam. Along with preparing and implementing exams using the system, training for *Dikdasmen* members was carried out. Training activities would deal with relevant issues. At the end of the training stage, new admin candidates were asked to simulate each step and complete the operational use of the
recruitment information system for this selection trial. The method prepared is shown in Figure 3 [1].

![Figure 3. Website development waterfall method.](image)

In Figure 3, the process of website development goes through the following stages [1]:

1) Requirements Definition: At this stage, the author used primary data collection methods like interviews and observations, and secondary data collection using literature studies from articles, books, or Internet sources. All data were analyzed and used as reference material at the design stage. User and system needs were figured out at this first stage.

2) System and Software Design: At the design stage, several diagrams were made such as use case diagram used to visually model the interaction between actors and systems, flow chart and sequence diagram used to model application flows and application business processes, and user interface design and class diagram as a reference for program code implementation [7].

3) Implementation and Unit Testing: At this stage, a program code implementation based on the design made in the previous step was carried out. The author carried out system development using the Laravel framework and PHP [8].

4) Operation and Maintenance: At the last stage, testing was conducted using functional tests with a black box testing approach. At this stage, bug fixes were administered on features/menus with errors and on user accommodations to add features needed for website perfection [9].

3 Results and Discussion

Based on the planned implementation method, some improvements to the features in the recruitment information system were performed following the request from the Dikdasmen web admin. The details of the improvement are elaborated as follows.

3.1 The Process of Adding Option Menu

The result of improving the menu feature is completed by changing irrelevant codes and later allowing the admin to add necessary items. This is shown in Figure 4, Figure 5 and Figure 6.
3.2 Additional Feature to Change the Registration Period

The next improvement is to provide a feature to change the running text information for admins as shown in Figure 7, so that admins can adjust the text whenever necessary. This process must go through source code by programmers.
3.3 Added Menu to Show or Hide Registration Period

The menu feature is used when the registration period is over, and it will close the registration form display for registrants, as shown in Figure 8.
3.4 Testing

After the need for features is accomplished, information system trial is conducted for batch IX acceptance. Figure 9 is a poster of the stages during the recruitment of prospective employees.

![Poster of the IX batch employee recruitment.](image)

**Fig. 9.** Poster of the IX batch employee recruitment.

Figure 10 below is a recapitulation display of participants per instalment, and everything goes well and smoothly. All processes have been archived in the database and can be used as a material to evaluate the implementation.

![Recapitulation of the number of participants per batch.](image)

**Fig. 10.** Recapitulation of the number of participants per batch.
3.5 Hosting

In Figure 11 and Figure 12, features available from hosting rentals in the form of VPS and cPanel which are used to upload source code and database are shown [10]. Previously, it also requires a process to purchase domains for public access [11].

Fig. 11. cPanel view for uploading source code and database.

Fig. 12. File upload results to online server.

Figure 13 shows the number of visitors and the amount of bandwidth within the registration period. Overall, the server works well, and there are no complaints of slow access.
4 Conclusion

The information system implementation for the recruitment process has been successfully carried out. Below is the summary during the implementation.

1) Necessary features which require source code changes by the programmer have been linked to the database.

2) The features of changing the running text and uploading the registration file have been successfully created, which is completed by the programmer’s source code change.

3) A menu feature to show and hide registration period has been added by providing comments on the source code.

4) Upload to hosting feature has also been successfully accomplished, and the server shows good speed access.

References


