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World J. Adv. Tech. Sci.

WJAETS

World Journal of
Advanced
Engineering
Technology
and Sciences

World Journal Series
INDIA

(RESEARCH ARTICLE)

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Online field work practice management information system

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Abstract

Regulation of the Indonesia Minister of Education and Culture Number 3 of 2020 concerning the Freedom to Learn on an Independent Campus Policy, is a framework for preparing students to become tough graduates, relevant to the needs of the times. The implementation of vocational education, namely the existence of a training / apprenticeship period in the industrial world has similarities with the policy. Basically, both educational institutions and the industrial world need each other's. Information about the existence of a period of field work practice, both in the industrial world and in educational institutions today is very limited. This system was designed and built to bridge the information gap. This study uses the Rapid Application Development (RAD) method, which is a sequential and systematic software development method that emphasizes the development cycle in a short time. The RAD method consists of : Business Modeling, namely the process of modeling the flow of information on business functions; Data Modeling, namely the process of transforming a business model into a series of data object; Process Modeling, namely the process of translating data models into information flows in the implementation of business functions; Application Generation, namely the process of creating software using a programming language; and Testing and Turnover, which is a testing process to eliminate errors and return to the beginning of the development process. This information system provides 3 interfaces for 3 groups of users, namely: training administrators, prospective trainee and officers from industry with their own facilities.

Keywords: Field Work Practice; Management; Information System; RAD; Business

1. Introduction

Currently there are very rapid changes in various aspects of life due to the rapid development of science and technology. The way we work and work has changed, many jobs disappeared, while new types of jobs have emerged. Economic, social and cultural changes that occur at a high rate must be responded quickly and accurately by universities. Learning transformation is needed to equip and prepare higher education graduates in this very dynamic period, so that students become a superior generation, responsive and ready to face the challenges of their time. Today's students must be prepared to become true learners who are skilled, flexible and tenacious (agile learners). The keywords to ensure Indonesia's sustainable development are creativity and innovation.

The framework for preparing students to become graduates who are tough, relevant to the needs of the times, and ready to become leaders with a high national spirit is included in the Regulation of the Minister of Education and Culture No. 3 of 2020 [1] concerning the Policy for Free Learning – Independent Campus. This policy gives rights to students for 3 semesters of study outside their study program. Learning can take place anywhere, in villages, industries, workplaces, places of service, research centers, or in the community, not only in classrooms, libraries and laboratories. This policy opens wide opportunities for students to enrich and improve their insights and competencies in the real world in

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accordance with their wishes and aspirations. Through close interaction between universities and the world of work, and the real world.

Tertiary institutions can take the form of Academy, Polytechnic, College, Institute, or University as stated in the National Education System Act No. 20 of 2003, Chapter VI, Article 20, Part Four concerning Higher Education.[2]

Vocational education is a higher education diploma program that prepares students for jobs with certain applied skills up to applied undergraduate programs, as stated in Law on Higher Education No. 12 of 2012, Part Three, Paragraph 2, article 16.

Higher education institutions whose main function is to organize vocational education to prepare students for jobs with certain applied skills according to the needs of the industrial world are polytechnics.

The Freedom to Learn on an Independent Campus policy is basically in line with the implementation of vocational education at the Polytechnic in that there is a period of training / apprenticeship / Field Work Practice in the industrial world during their education period. The difference lies in the length of the training period, where previously it only lasted 1 semester, now it is 3 semesters. The logical consequence is the expansion of positions and training materials, from just job training to study and work training. Basically, both educational institutions and the industrial world need each other's training program. Educational institutions need training experience, while the industrial world needs it in the daily operations of companies, especially during busy times. Information about the existence of training between the industrial world and educational institutions is currently very limited. Due to this lack of information, there is an information gap between the demand for trainee by industry and their availability in educational institutions. This limited information is an obstacle for students, because students find it difficult to get training places, on the other hand the industrial world also has difficulty getting trainee because of a lack of information on the availability of candidates from educational institutions. The difficulties will be even more complex, because in the policy students need not only work apprenticeships, but work and also study apprenticeships, namely work apprenticeships and practical lectures for certain courses that must be followed in the industry.

The rapid development of information and communication technology today, especially internet-based technology, has brought rapid changes in various fields of human life. With this technology, almost all information can be obtained very easily because it can be accessed at any time from any point in the world using various media [3]. The information gap between the need for training places for students and the need for industry to get trainee can be answered by advances in information and communication technology.

To bridge the information gap between the needs of trainee, between industry and educational institutions, a web-based information system for management of field work practices was designed and built to support the independent learning policy for the independent campus. This information system will also provide facilities for prospective trainee, industrial personnel employees and trainee administrators to manage data and all needs related to the implementation of training. With the creation of this system, it will greatly assist the smooth implementation of the independent campus learning policy as instructed by the Ministry of Education, Culture, Research and Technology.

2. Material and methods

This research was conducted at several institutions that use and provides trainees including star hotels, travel agents, universities, banks, contractors and others in the Bali area. This study uses the Rapid Application Development (RAD) method, which is a sequential and systematic software development method that emphasizes the development cycle in a short time.[4]. This RAD model is a high-speed adaptation of the linear sequential model using a component-based construction approach.

The RAD method consists of:

- **Business modeling,** i.e. process of modeling the flow of information on business functions.
- **Data Modelling,** namely the process of transforming a business model into a series of data objects to support business functions.
- **Process Modeling,** namely the process of mapping the flow of information defined in the data modeling phase into the flow of information for the implementation of business functions.

- **Application Generation,** namely the process of creating software using a programming language, which can be executed by a computer. In this case, coding will be used using the PHP Triad program which consists of the PHP programming language, MySQL database, and Apache server [5,6,7].
- **Testing and Turnover,** namely the process of testing to eliminate errors and ensure the results are in accordance with what is needed and so on back to the beginning of the development cycle. In addition, this stage is also intended to get input so that the resulting system can be used easily by users later.

3. Results and discussion

A web-based information system for management of field work practices developed using the PHP Triad program consisting of PHP programming language, MySQL database and Apache server. Also used is software supporting Dreamweaver to help create the user interface [7-17]. The results of the coding are as follows:

3.1. Initial Implementation

The initial implementation is a display of the identity of this system and the system can be used by providing pathways for 3 (three) categories of users, namely: prospective trainee, employees from the personnel section (Officer) and training coordinators as shown in Figure 1.

Figure 1 Initial display of the system

After selecting the login according to the user category, the system will provide the main forms according to the user category, one of them as shown in Figures 2.

Figure 2 Main Form for Prospective Trainee

3.2. System Usage Cycle

The field work practice management information system is used by each category of users by utilizing the facilities available in each main user form.

3.2.1. Data Management of Prospective Trainee

The data processing facility for prospective trainee is carried out through the main form for prospective trainee and will be explained in the following stages.

New Data Input for Prospective Trainee

The new data input facility is used to enter new data for prospective trainee who wish to register themselves on the training seeker exchange in the industry. The forms and data to be inputted as prospective trainee can be seen in Figure 3.
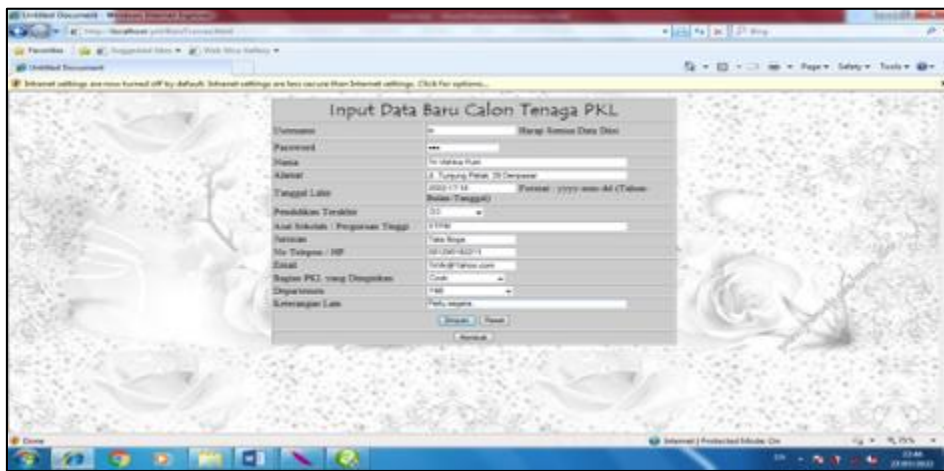
Figure 3 New Data Input for Prospective Trainee

See Data for Prospective Trainee

The facility to view data on trainee is a facility provided for prospective trainee to see that the data previously inputted has been included in the list of prospective trainee, it is also provided for individuals who wish to obtain information on prospective trainee who have registered. use of facilities. See trainee' data, which can be seen in Figure 4.

Figure 4 See Data for Prospective Trainee

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Edit Data for Prospective Trainee

Street vendor data editing facility is a facility provided for prospective trainee to edit/update the personal data of registered street vendor candidates. So that only the candidate can edit data, for the purpose of editing data, users must first enter a username and password.

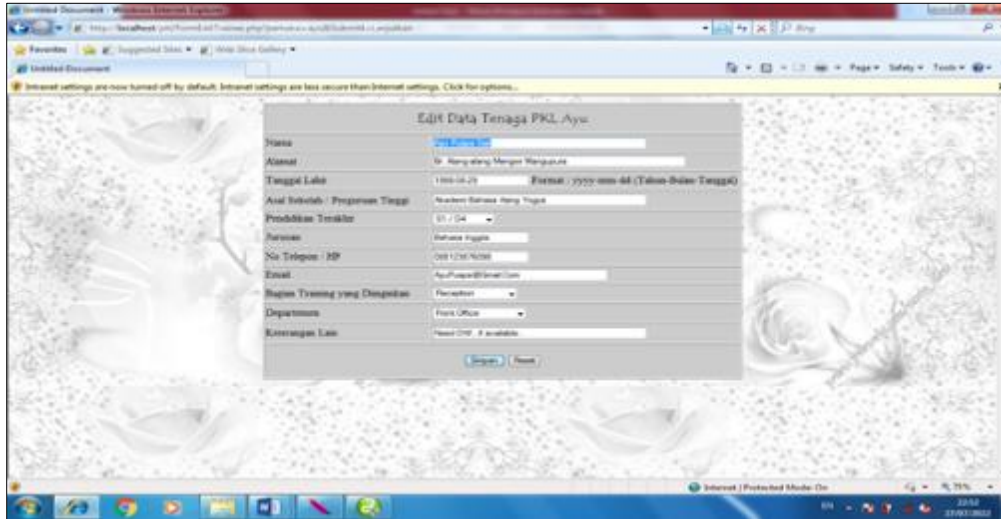After inputting the correct username and password, the data edit form can be displayed according to the candidate's username and password input. The data edit form can be seen in Figure 5.

Figure 5 Edit Data for Prospective Trainee

The edited data that has been successfully saved can be seen in Figure 6, compared to the data in Figure 4.

Figure 6 Results of Data Edit for Prospective Trainee

3.2.2. Management of Training Vacancy Data

Data management facilities for training vacancies are carried out by user HRD officers through the HRD officer main form. Facilities provided and operating system in the management of training vacancies are the same as the management of prospective trainees, namely : data input training vacancy, see training / vacancy data and edit training data, but adjusted to the needs of training data. As an example given here, the vacancy data input facility is used to enter new data on available vacancies at institutions that require trainee. The form of display and the data to be input as vacancy data can be seen in Figure 7.
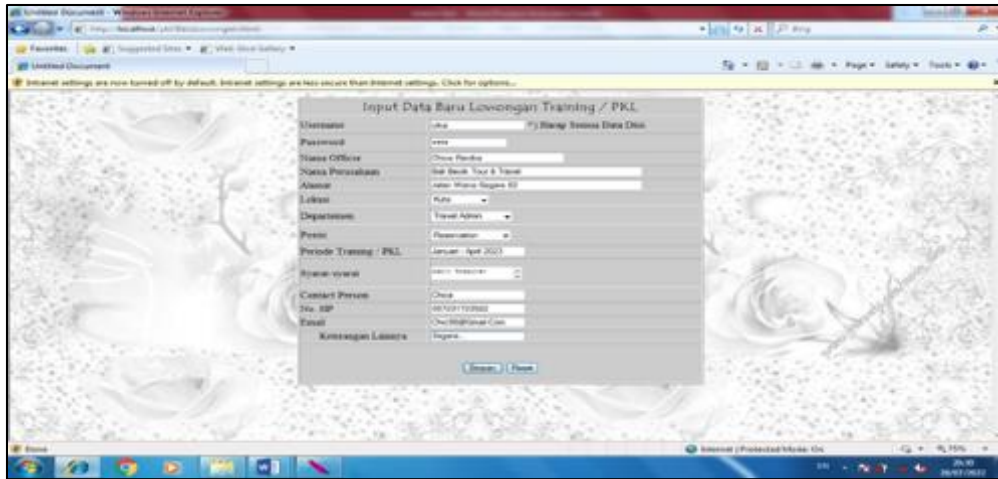
Figure 7 Data input for training vacancies/PKL

3.2.3. Get Information on Prospective Trainee and Training Information

View / Select Vacancies Information

In the trainee candidate main form and the training coordinator main form, the facilities for viewing and selecting available training vacancies are separated into two different facilities, but in fact the two facilities are interrelated, namely the "View Vacancies" facility is used to view overall vacancy information. The "Select Vacancies" facility is used to select only the required vacancy info, by first selecting certain sections, namely location, department and position, in this example for the Front Office department, the results obtained are shown in Figure 8.
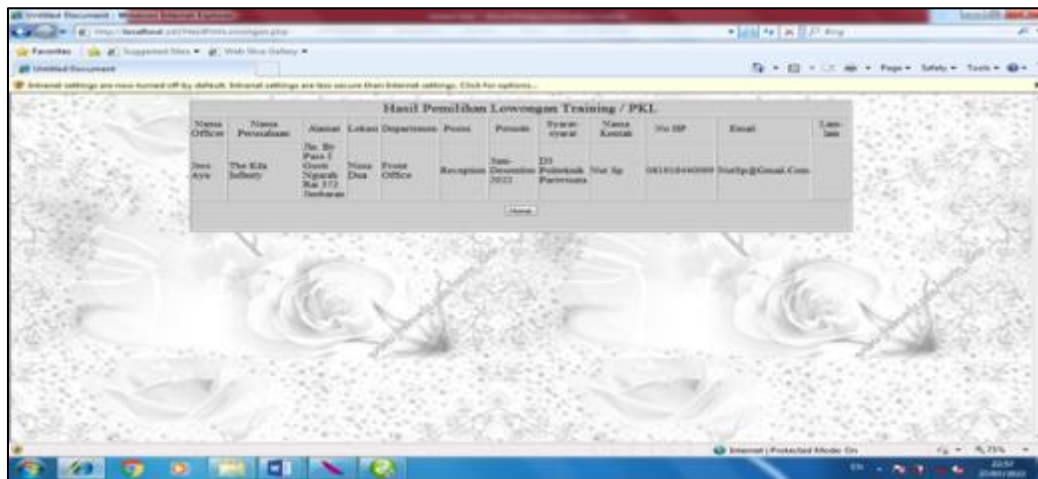

Figure 8 Results of Selecting Specific Vacancies Info

Viewing / Selecting Trainee Information

In the main facility of the HRD Officer main form of the Training coordinator, the facility to view and select available trainee information is separated into two different facilities, but in fact the two facilities are interrelated, namely the "See HRD Staff" facility is used to view HRD staff info as a whole (figure 6), while the "Select Workers" facility is used to select only the required workers, by first selecting certain sections, namely origin of university, education level, department or position, and the results are shown in Figure 9.

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Figure 9 The results of the selection of trainee' information

4. Conclusion

- The field work practice management information system was designed and built to bridge the need for prospective trainee who need training places and the industry that needs trainee.
- The field work practice management information system provides 3 interfaces for 3 user categories, namely: prospective trainee, officers from the human resources department and training coordinators, each of whom has the necessary facilities.
- The facilities provided for each category of users are data management, information exchange and data maintenance.

Compliance with ethical standards

Acknowledgments

We thank all those who have supported the idea, the process of making this article published, especially to all the authors and also Research and Service Centers at the Bali State Polytechnic.

Disclosure of conflict of interest

There is no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Directorate General of Higher Education, Ministry of Education and Culture, Free Learning-Free Campus Handbook

[2] Higher Education Law No. 12 of 2012

[3] G. Aragon, MJ Escalona, M. Lang and JR Hilera. (2012). An Analysis of Model-Driven Web Engineering Methodologies. International Journal of Innovative Computing, Information and Control, vol. 8, no.12, 1-10.

[4] P. Pressman. (2015). Software Engineering, 7th Edition. McGraw-Hill International Inc.146-152.

[5] William, Hugh E and David, Lane. (2012). Web Database Application with PHP and MySQL, O'Reilly and Associates Inc.

[6] S. Sutarman. Building Web Applications with PHP and MySQL. (2013). Graha Ilmu Publisher. Yogyakarta. 58-64

[7]   B. Nugroho. Exercise Create PHP and MySQL Web Applications with Dreamweaver MX (2014). 9th edition, Gava Media, Yogyakarta, 47-55.

[8]   HM Jogiyanto. Analysis and Design of Structured Information Systems Approach. (2013). Issue IV, Andi Offset, Yogyakarta 62-66.

[9]   A. Kadir. Introduction to Information Systems. (2012). Andi Offset, Yogyakarta, 47-55.

[10]   R. Jr. Mc.Leod. Management Information System. (2015). 10th Edition. Prentice- Hall International Inc,.

[11]   T. Sutabri, Management Information System. (2015). Andi Offset, Yogyakarta, 75-82.

[12]   S. Korth. Database System Concept. (2015). 6th Edition. McGraw-Hill International Inc.

[13]   User Guide and Reference. Version 1.9. Programming and Software Engineering Unit (PST), Institute for Informatics, Ludwig- Maximilians Universität. Munich, Germany.