

## Article 8

### **Web-Based Application of the Internship Management System**

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#### **Abstract**

*Placement of students in the industry or organization related to their study field is compulsory in order to fulfill the requirement of Ministry of Higher Education policy. It became one of the courses that must be fulfilled by students in order to finish their study at university or other institutions. Increment on the number of students in universities caused the management of internship program become uncontrolled. At UiTM Perlis, students who have been using the manual system in conducting internship have caused many problems. The main problem exists in UiTM Perlis is the manual management in internship program which involves a lot of paper, time-consuming and poor management between academician and industry as well as students. Thus, an internship management system using case-based in web environment is developed to solve the problem that occurred among students, coordinator and employer. The system will help in reducing the workload to the three users mentioned previously. Based on the system, the requirements from the industry will be matched with the qualification from the students. Therefore, the placement for the students will be easily generated by the system. Two methods of testing were conducted namely heuristic evaluation and user acceptance test. The results proved that the systematic online industrial training application system achieved very good level of performance in terms of user interface satisfaction, usefulness and ease of use and its usability by users.*

**Keywords:** *Easy-match industrial training system, internship, online application system, systematic management, user-friendly website*

#### **Introduction**

Internship referred to the placement of students in the industry or organization related to their study field and this is one of the courses that must be fulfilled by students in order to finish their study at university or other institutions. Stirling, Kerr, and Macpherson (2014) defined the internship as a program which student need to go through it within six months or a year. It is a working experience that student needs to work in an organization with supervision from the supervisor for their achievement throughout the internship program. Whereas management is the process of doing thing together that organized informally (Carpenter, Bauer, &Berrin, 2012).

During recent years, the number of students in universities increased and caused the management of internship program become uncontrolled. In UiTM Perlis, the students that involved in internship need to manage their documents and search the organization manually. They had to create their resume and submit to the organization in conventional way such as through email, post or by hand. They have to wait for the feedback from the organization either the application is accepted or not. Then after receiving an offer letter, the coordinator needs to be notified by the student and proceed with the acceptance letter to the organization. The process consumes ample of time just to ensure the students secure their placement in an

organization for the internship. Besides, the coordinator had to face the problem in dealing with the documentation since a student needs several files that contain important information to be kept by the coordinator. As for the employer, they got affected by the manual system use in managing internship because do not have precise information about UiTM Perlis' internship program, and also do not know much about student's qualification that had applied to their organization (FazeeraSyuhada, 2017).

In this paper, a systematic online industrial training application system was developed to facilitate student, coordinator and employer in the industry or organization. The manual system used in universities had been transformed into the automation system. The system able to list out all the organization that registered in the system which offered an internship in their organization. A suitable searching technique used in this system search and recommend the best organization to the user. The system eased the students to find the organization easily by giving a recommendation which organization suitable for them based on their qualifications. This system had already been implemented at other universities and the majority agreed that the system succeeds to overcome the problem. Prospective employers need to register with the application system and provide with the required information regarding the background of organization. The students also need to register with the system and provide qualification details and achievement. As registered employers, they can select qualified students to undergo internship at their respective organization after the student submits an application letter to their organization.

### **Related Works**

#### *i. Industrial Training System- Universiti Teknologi Malaysia (UTM)*

In UTM, the internship management system is used by the entire faculty in UTM. UTM uses an online system in managing the industrial training courses (ITS-UTM, 2017). The system consists of for registered users, which are the system administrator, industrial training committee, lecturer and also students.

#### *ii. Industrial Training System University Malaysia Sarawak*

The Industrial Training System is developed for the Faculty of Resource Science and Technology in UNIMAS in handling the internship courses. The purpose of developing this system is to solve the problem where when the number of students applied to this courses increase, but the number of organizations that open for internship in this course is less due to the difficulty of registering (UNIMAS, 2017). This system focuses on management and works especially for the coordinator. The target user of this system also targeted to the students, coordinator and also for the employer.

#### *iii. FTK Industrial Training System Universiti Teknikal Malaysia Melaka*

The FTK industrial training system is a system that developed by Universiti Teknikal Malaysia (UTeM) and it is based on latest technology where the goal is making the management becomes easier, quicker and efficient. The system is designed for an administrator, students and industry to help student in Faculty of Engineering Technology to a better management in a work placement for industrial training (UTeM, 2017). This system will provide four processes which are registration process, confirmation and announcement. However, this system is not a standalone website, but the system is attached to the official portal of their university.

## Application System Development

The construction process of the system has applied System Development Life Cycle (SDLC) methodology. Internship Management System (IMS) development is continued with the third phase of methodology which is system design. Adobe Dreamweaver CC 2014 and XAMPP are the software used in the development. The interface of the system that shows the was clearly shown in this chapter by the screenshot of the entire interface. Figure 1 shows the interface of coordinator view for student and her placement details.

| INTERN ID | ORGANIZATION ID | NAME           | STATUS | UPDATE                 |
|-----------|-----------------|----------------|--------|------------------------|
| 33        | 53              | LENOVO INC     | ACCEPT | <a href="#">UPDATE</a> |
| 35        | 55              | INSTAGRAM INC  | REJECT | <a href="#">UPDATE</a> |
| 46        | 54              | FACEBOOK INC   | ACCEPT | <a href="#">UPDATE</a> |
| 70        | 57              | WAU ANIMATION  |        | <a href="#">UPDATE</a> |
| 71        | 74              | CYBER SECURITY |        | <a href="#">UPDATE</a> |

Figure 1: Coordinator view for student and placement details

## Testing and Finding

There were two different testing was conducted which are usability testing and heuristics evaluation in order to determine the effectiveness of the system and to study the interaction of users and their responses towards the IMS.

Before conducting the test, the target users were identified. For this study, final year students from Information Technology, Data Communication and Networking and Netcentric program as well as a few selected organizations were involved. All the students will have their internship for the following semester.

### Usability test

All the respondents need to complete ten tasks and interact with the system based on the given instruction. IMS system is tested on the design, content, recommender features and interactivity. A questionnaire is provided to the respondents to let them to rate and comments the system after they have completed all the tasks. The questionnaire is used for future enhancement of the system. Table 1 and Table 2 exhibit the tasks given to the students and organizations.

Table 1: Usability testing task for student

| Task    | Instruction                                 |
|---------|---|
| Task 1  | Register for the first user                 |
| Task 2  | Log in to the system                        |
| Task 3  | Fill the resume form                        |
| Task 4  | View the profile                            |
| Task 5  | Update user profile                         |
| Task 6  | View the recommendation of the organization |
| Task 7  | Choose the organization                     |
| Task 8  | Update student placement                    |
| Task 9  | Print complete resume                       |
| Task 10 | Download any document                       |

Table 2: Usability testing task for organization

| Task   | Instruction              |
|--------|--------------------------|
| Task 1 | Register organization    |
| Task 2 | View organization detail |

Based on the analysis, the majority of the respondents successfully accomplished the tasks. They managed to understand the flow of the system without any guideline given to the respondents. However, there are some parts of the system that need to be improved so the system will be more usable and efficient. For example, the system do not have back button for certain parts of the system that has caused difficulty for the user.

As for the organizations, all the respondents accomplished the task successfully. They managed to understand the flow of the system without any guidelines. Their tasks are only to register and view the organization, and no other complicated process. Therefore, the respondents were satisfied towards the system. From the analysis, it can be concluded that the users are able to complete the task given successfully. The system is easy to navigate, fast loading and easy to understand.

### ***Heuristic evaluation***

Expert Reviews is conducted by the three internship coordinators. During the testing, the experts are given a questionnaire after they have completed reviewing the system. The questionnaire is on the usability of the system and is divided into three different parts which are user interface satisfaction, usefulness and ease of use and in terms of the system usability. The result of the testing is analyzed and evaluated.

Based on the observation, the experts are satisfied with the system with some suggestions to the system to be more effective to the user. As for the user interface, all the experts were satisfied rated the interface as 'very good'. However, the login interface for coordinator does not meet their expectation. The interface said to be cluttered and confused them to click the log in button. On the other hand, all of the experts rate for 'very good' and 'excellent' for the usefulness and ease of use the system. They were able to complete the entire tasks in a few minutes and satisfied with the functions exist in the system. Besides, the experts agreed that the system is much related to the internship management system.

Figure 2 exhibits the findings from the expert review in the graph. Overall, the system is good but there were a few processes that need to be added to the system in order to have a complete process of internship management system. From the results, the refinement of the system has been done in order to achieve user satisfaction.

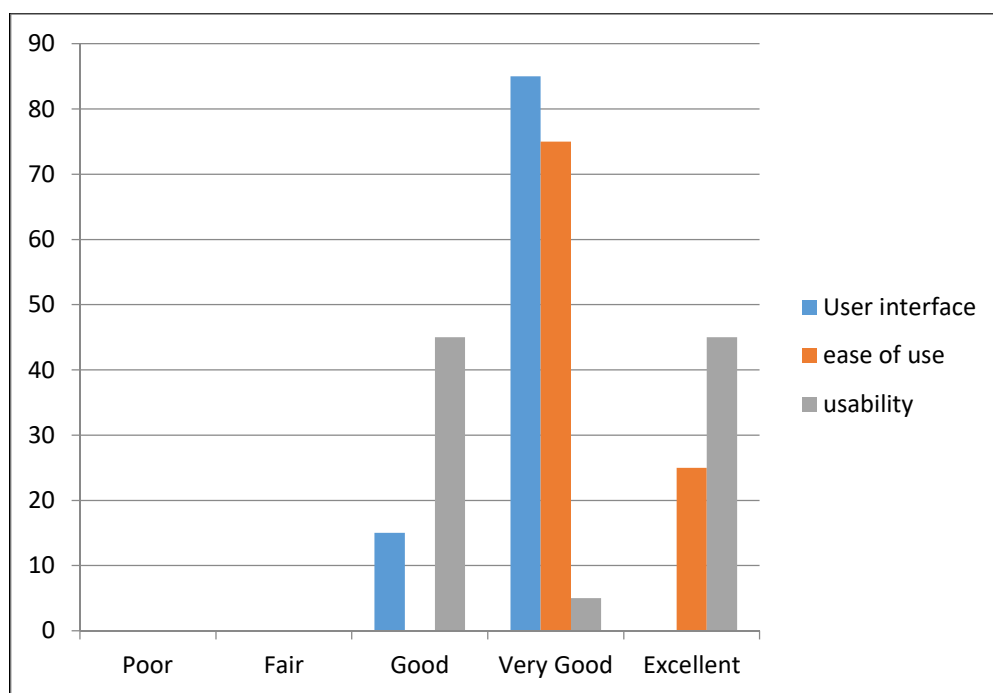


Figure 2: Results from expert review

## Conclusion

The web based application of the Internship Management System (IMS) is a recommender system which can guide students to find the best organization that suits their qualification. The recommender is developed by using case based approach which is the best approach to obtain the result of the best recommended organization. The website had been successfully developed and has received many positive feedbacks from the user during the testing phase. It can be concluded that the system is user friendly because most of the users are able to use the system smoothly in a short time. Besides, the interface design included the buttons and the forms are very simple that make the user feel connected to the system. Apart from that, all the criteria that have been included in this recommender system are based on the provided criteria by the students into the system. The placement for the student is recommended based on allowance, qualification and also preferred location. This system can give a lot of benefits to the coordinator, organization and student in handling the internship program.

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