The Development of Students Industrial Training Information System (FBM-STIS)

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Abstract

Student Industrial Training Information System (FBM-STIS) purposely developed for final year students from Faculty of Business and Management (FBM), Puncak Alam Campus who searching for industrial placement that fit with their studied background. It is aim to increase the accuracy and efficiency of the industrial placement process. The manual process required 107 days to complete and due to this long process, its increase the workload of administrative staff, workflow inefficiency and lead to poor record management. Through FBM-STIS, students need to fill up the internship application via online and this is in-line with Industrial Revolution 4.0 (IR 4.0) emerged worldwide. This system allowed students to request and check the status of the Application Letter (AL), dan Conformation Letter (CL) online without visiting FBM - Industrial Training Unit (FBM-ITU) counter physically. Hence, FBM-STIS also help internship coordinator to manage and monitor the application process online because of the easy access of the system; FBM-STIS can be accessed anytime and anywhere.

Keywords: Technology, FBM-STIS, IR4.0, Industrial Training, Gen Z

1. Introduction

Student Industrial Training Information System (FBM-STIS) was developed by Faculty of Business and Management, Universiti Teknologi MARA (UiTM) Puncak Alam Campus with the aims to enhance operation efficiency and to shorten the time needed to complete the overall industrial training application process. The introduction of this system is in-line with the government’s initiative to embrace Industrial Revolution 4.0 (IR 4.0) that manifests itself in the way data changes, technology is automated and digitized, and what we now call the internet of things (IoT) (Morrar, Arman & Mousa, 2017). Generation Z define by Ciliers, 2017, as a group of people who considered as digital natives who demand instant information and communication. Whilst, the introduction of this system is best to equip their needs. The fast spread of mobile devices and wireless networks within university campuses make it suitable for the implementation of any online educational & management system. It will enable university students to access needed materials and information more conveniently (Ahmad & Love, 2013). The objective of this paper is to enlighten the development of FBM-STIS that focus on industrial placement application process in order to fit with technology changes and demand from customers (student). From FBM-STIS, internship coordinator can monitor the placement application online and make the monitoring process easier.
1.1 Student Industrial Training Information System (FBM-STIS)

FBM-STIS is a system that has been developed specifically for FBM undergraduate Semester 5 students who will undergo Industrial Training Program in Semester 6 for 24 weeks (Industrial Training Guidebook, 2020). Students are free to undergo this program in government or private sector organizations that will be given an exposure to a student in a conducive working environment, change of experience and knowledge to teaching in a more innovative and creative approach (Mat et. al, 2010). The exposure to the real working environment will lead to a positive result of students’ personal and professional development (Jaafar et al., 2017) and this becomes the main reason why it is compulsory for students to undergo this training program. At the end of each internship program, faculty will receive students’ evaluation from the company that will help to guide the faculty to improve the character and professional skills among trainees (Jaafar et al., 2017) as well as increase their capability to get employment (Ganapathy & Easwaran, 2020). Thus, students also gain benefits by exposure to the latest knowledge in an increasingly competitive world (Mat et. al, 2010).

2. System Development Methodology

To implement the current study, the flow of the study was divided into five phases – Initial Phase, Planning Phase, Quantitative Phase, Design and Development Phase and Qualitative Phase, as shown in Fig. 1.

![Research Methodology Diagram](image)

Figure 1: Research Methodology

In the current study, the Waterfall Model was adapted as the system development methodology, whereby the details of the system functionalities and its structures are described using the Unified Modeling Languages (UML), through which the Use Case view and logical view of the system are modeled (Lucienne, 2009).

2.1 Use Case Diagram

Figure 2 depicts the Use Cases Model for STIS that illustrates the system’s functions, its surroundings, and the relationships between the actors and the use cases. Each use case begins when the system verifies authorized users. Therefore, users or actors need to have user IDs and passwords before accessing the system.

2.1.1 Use Case for Staff: Unit Coordinator

![Use Case for Staff: Unit Coordinator](image)

Figure 2 Use Case for Staff: Unit Coordinator
Industrial Training Coordinator is responsible to verify the information filled up by the students and approve the application. Meanwhile, internship administrator also responsible to verify the application and insert the data of company information in FBM-STIS. The coordinator will log in FBM-STIS via https://fbmis.uitm.edu.my/stis/staf_login.

2.1.2 Use Case for Student

![Use Case for Student](image)

The client in this study is FBM students, who are required to do online registration by login FBM-STIS via https://fbmis.uitm.edu.my/stis/stud_login and fill up the information in Internship Placement Form (IPF) section. After the approval given by internship coordinator, students need to print the Application Letter (AL) and submit the application to respective company. Once students received acceptance letter from the organization, they need to upload the information in STIS - Internship Training Information Form (ITI) section and waiting the approval from internship coordinator. Once students get approval from internship coordinator, they need to download Conformation Letter (CL) and send to respective company. The CL that submits by student shows that the student agreed to undergo internship training at their place for 24 weeks. This is explained as illustrated in Figure 3.

2.1.3 FBM-STIS ER-Diagram

![FBM-STIS ER-Diagram](image)

The ER-Diagram acts as a data dictionary that describes all the possible data structures and relationships that control the input and output of the data system. The UML class diagram is used to describe the classes involved in realising the functionalities of the system, as shown in Figure 4. The diagram also shows the interrelationships between the
candidate classes. The candidate classes for the purpose of the system are Student Course Program, Student File, Company File, Internship File and Staff File. Staff who involve in the system were Internship Administrator and Internship Coordinator.

3. Result

This section shown the result of the development of FBM-STIS; 1) how this system succeed to reduce the long process of industrial training application form and 2) the system function from the perspective of administrative and students.

3.1 Flow Chart manual processes and FBM-STIS

![Flow Chart manual processes and FBM-STIS](image)

The industrial training application process used manual system beforehand, which required high customers’ contact and eventually created stress for both parties; students and administration staff. Furthermore, the process required 107 days to be completed where students had to go to FBM-ITU for submission and collection of related documents. The frequent visit of students at FBM-ITU also required administration staff to entertain them and leave the workstation that made some of the processes to be ineffective every day. The result of these processes led to unsatisfactory work management and many mistakes were made whilst preparing the related documents. Meanwhile, with implementation of FBM-STIS several steps have been eliminated to increase efficiency thus lead to the result where students only need 40 days to complete the whole process of internship application. It is shown, FBM-STIS is not only reduced the long process of application but increase the accuracy of the data storage. Figure 5 show the flow chart manual processes and FBM-STIS.
3.2 The interface of Industrial Training Coordinator

![Image of the interface of Industrial Training Coordinator]

The “home” page shows the table of each FBM program that applied for industrial training inside and outside of Klang Valley. Based on the previous semester, the numbers of FBM students who undergo industrial training are 1000+. This table helps coordinator in terms of monitoring the numbers of application. The interface also had shown the list of Internship Placement Form (IPF), Internship Training Information Form (ITI), list of companies and list of forms as illustrated in Figure 6.

3.3 Internship Placement Form (IPF) interface

Students need to fill up and submit IPF. The first screening will be conducted by FBM-ITU staff where the staff will review the information and submit it to Coordinator for approval. Coordinator will check either the application can be approved, need to be updated or being rejected. If approved, a notification will be sent to students email and students need to print Application Letter (AL) by themselves as shown in Figure 7 and Figure 8.
3.4 Internship Training Information Form (ITI) interface

Students need to fill up the information in ITI and submit for approval. The staff of FBM-ITU will review the application and check either the applicants meet the faculty standard of requirement and/or the company chosen was not blacklisted. ITI form required students to attached company acceptance letter and/or company reply letter. The coordinator will approve once the information completed and meet faculty standard of requirement. The notification of approval will be sent through email and students need to print Confirmation Letter by themselves as illustrated in Figure 9 and Figure 10 below.
4. Conclusion

As mention earlier, the manual process of internship application involved at the early stage where its lead to the inefficiency and increase of workload of administrative staff. This system is not only beneficial to internship coordinator and administrative staff but also to the students where they do not need to go to FBM-ITU for internship placement application process. To complete this process, students are required to registered FBM-STIS via https://fbmis.uitm.edu.my/stis/stud_login where they can fill up and view the application progress online. FBM-STIS has been tested and shown positive result in term of reducing the long process of placement application from 107 days to 40 days. To add, this system also helps to reduce the workload of administrative staff by reducing the frontline contact with the students and numbers of documentation prepared because the easy access of the system. However more evaluation regarding the functionality of the system will be done to ensure it meets user expectation. The information download from this system are more systematic compared with manual process that have been implemented before where internship coordinator can retrieve the information based on student program and semester and shared with the respective lecturer. Other than that, students and respective company information are safely keep in the database and can be retrieved by administrator for future references.

References


