Chapter 28 “Latihan Industri” Monitoring System

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Abstract

An administration work is not the main task for lecturers but in some cases, they need to involved in monitoring large numbers of students, lecturers, and industry data as a part of completion the programme curriculum being offered. Due to the time constraint, a smart monitoring system is needed in order to solve the over-workload problem, the efficiency of the monitoring processes and data validity. “Latihan Industri” Monitoring System was designed with lots of features to represent data in both graphical and listing forms. Essentially, when involving management application system, security and data validity need to be managed very strictly. This system requires no log-in security processes due to the features offered by the TABLEAU software which will reduce the administrative tasks and consequently secure the validity of data to all system users. In addition, the concept of the dashboard offers the transition of data embodiment from the big data to a user-friendly representation, resulting in managing the processes efficiently. By using this system, the monitoring processes become easier, faster and effective which help all parties to manage the same data in the same community level.

Introduction

Nowadays, life is becoming very competitive and the use of technology is changing rapidly. Information technology (IT) has become an integrated part of businesses strategies and vision including the higher institution sectors. There is a need for technology that can assist businesses in reaching goals and able to compete in rougher market [1]. Business intelligence and analytics (BI&A) and the related field of big data analytics have become increasingly important in both academic and business communities over the past two decades [2]. Many decision processes were affected by the lack of fresh and reliable data available for the decision-maker. For example in the monitoring process involving many parties, the reliable sources are very important to make sure the monitoring process is more efficient. Business intelligent (BI) is one of the solutions to the highlighted issues. In a decision-support context, business intelligence systems (BIS) have emerged as a technological solution offering data integration and analytical capabilities to provide stakeholders at various organizational levels with valuable information for their decision-making [3,6]. The term BI can refer to various computerized methods and processes of turning data into information and then into knowledge [3,4], which is eventually used to enhance organizational decision-making [3,5].

In academic institutional like UiTM Pulau Pinang, industrial training is one of the criteria which need to be fulfilled by the final year diploma students’ in order to complete their studies. The enrollment of engineering students in UiTM Pulau Pinang reaches up to 600 students per semester to undertake the industrial training session to secure a place in the industry. “Unit Latihan Industri” is a one of the unit in the faculty which responsible for finding places in the industrial community that suit with the field of the programme offered. It also assists students to seek for the industrial training places within a short period of time. moreover, academic advisor also plays an important role to monitor their student to find their industrial training places. This process is very time-consuming and exhausting which involves real-time monitoring of data and many parties. To solve the problems arises, it is essential to put an effort to design a system which capable to be used by many parties such as students, academic advisors, and the head of the unit to monitor the students and data in the same database system. Thus BI is the best solution to the existing system to solve common fault in monitoring.

Product Description

The developed system is an online reporting system that simplifies all the data in a graphical form to ease the monitoring process involving students, academic advisors and the head of the unit. The information displayed includes the status of students who get places and their training location and the number of students who fail to find places for their training. The registration process started three months before the students began to undergo their industrial training. Within that time, all parties play an importance role to ensure all students get their places.
The reporting system is updated once a day automatically and able to be accessed by all parties in the monitoring process.

**Product features**

Figure 1 shows the main dashboard for monitoring purposes. The red box shows the number of students who have not yet obtained industrial training allocation while the green box indicates that the student already completed their process of finding industrial training places.

![Figure 1: “Latihan Indutri” main dashboard](image1.png)

The status of all students according to their academic advisor also listed at the bottom of the status box. The total number of students who success and fail to secure places for the training will be displayed to the user when the cursor is hovered on top of the graphic. It will help the academic advisor to instantly notice the number of students who did not complete the process and help their students to complete the process within given timeframe. Once the status is notified to the academic advisor, they can drill their students’ detail using the list in tab “Senarai Status LI” as shown in Figure 2.

![Figure 2: List of data](image2.png)

Figure 2 contains the important information such as contact number and email of their students which assists the academic advisor to contact them in order to complete the process. The status has been updated from time to time based on the registration process done by the students. The academic advisor can use the contact information
listed in the tab to help their students searching the industries for their training purposes. The drop-down list as shown in Figure 3 will help the users to display only selected data to be appeared on the screen. The drop-down features ease the users to view desired information according to the academic advisor, programme and their industrial training status.

![Figure 3: Drop-down list](image)

This reporting system also contains the distribution of location selected by students to undergo their training. This information will help the coordinator and lecturers to manage the visit accordingly. Figure 4 shows the students allocation using google map application to show the distribution of their training location.

**Novelty and uniqueness**

This product offers easy access to the desired information to all parties without going through the log-in process to use the system. However, the data is still secured and valid for the monitoring process. The dashboard is also easy to use and attractive as it is presentable in simple forms of colourful graphic and map. Moreover, this reporting management system can be accessed anywhere either through the smartphone or personal computer. The designed system is the pioneer of the monitoring system that employs Tableau visualisation application.

![Figure 4: Distribution of location in Map and table](image)

**Benefit to mankind**

This system is very beneficial to the coordinator, lecturers and academic advisor as it is able to reduce the time for them to review data in list or table to check the information. The designed system assists lecturers to monitor their students efficiently and consequently, it able to reduce the incorrect status. It also helps all parties to examine a large amount of the same data simultaneously. This reporting system supports the green technology campaign by the government which reduce the use of paper and lower the administration cost.
Conclusion

A good support system is crucial to ensure the decision-making process achieves its objectives. Generally, the main objective of the system is to facilitate all users has already achieved. Furthermore, many more features should be added in order to make the system more versatile. For example, upgrading the system to the internet of thing (IOT) features which will automatically notify the status to the users via twitter, facebook, Whatsapp and other social media. With this features, the latest status will be updated automatically to the end users without the need to log-in the reporting system which allow the monitoring process to be easier, faster and effective.

References


