The Development of Competition Activity Management System for Universities

Hamidon Katan and Nurfatihah Bahar
Universitiy Kuala Lumpur Malaysian Institute of Information Technology,
Kuala Lumpur, Malaysia, hamidon@unikl.edu.my

Abstract: The Competition Activity Management System (CAMS) for universities is an online web application primarily used for the lecturers to fill the data of their competition activities. Currently, lecturers and students do not have any dedicated online platform to update their competition activities within their college system. Therefore, the demand for the specific online web application for them to key in and track their activities is timely. CAMS is an online web application will help to track and extracting data of lecturer's competition activities to solve the problem of data compilation faced currently. CAMS is capable to store, manage, update and report the activities. Rapid Application Development (RAD) is used as the system development methodology. The system's interface is developed using PHP language and the system's database was created using MySQL database. The system's features include add new data, update the data, view graph information and digital dashboard as part of reporting feature for better presentation.

Key words: Management information system, competition activity, data compilation, web application, digital dashboard, development

INTRODUCTION

University Kuala Lumpur Malaysian Institute of Information Technology (UniKL MIIT) campus involves in a few famous of competition that provide for a student and also a lecturer. There have five famous category competition in UniKL MIIT include three for MyRa (Malaysia Research Assessment Instrument) and another two more on UniKL. Two categories competition that is very close in UniKL is 'Made in UniKL' and 'Eureka'. This two categories actually organized by UniKL MSI that will be carried out in each year organized by innovation competition. Mostly, the competition by students will be used FYP to compete and also as a giving an appreciation for the best FYP students for the whole UniKL.

Research and development activities in UniKL are managed by Centre of Research and Innovation (CoRI). At MIIT level, the records of these activities are managed by the Research and Innovation (R&I) section. Management competition activity in UniKL MIIT is under Centre of Research and Innovation (CoRI).

Therefore, this system is developed for competition management activity in UniKL MIIT in which will help lecturers in filling and updating the information regarding the competition activities. Furthermore, this system to help admin to get data directly from lecturers. This system is to make a database that the admin can trace participants of lecturer and students by only using a system and admin directly get the data by click the new or updating from the lecturer. Generally, this system will keep the data and the admin can thoroughly get the full report of competition participants.

Literature review: This section summarises the literature related to this research. It starts off with the concept of management information system, ICT management system that links the competition management system activities with the information system types and digital dashboard that is the current trend in decision making at university college management levels.

Management information system: MIS are defined as integrated user machine systems for input and output of data, processing of information and support of operations. The major purpose of an information system is to convert data into information. System uses computer hardware and software, manual procedures, models or analysis, planning, control and decision making database. Information is essential to the efficient operation of organisations. Information is defined as processed data or raw data that has undergone through a value addition process (El-Ebiary *et al.*, 2016).

Corresponding Author: Hamidon Katan, Universitiy Kuala Lumpur, Malaysian Institute of Information Technology,
Kuala Lumpur, Malaysia, hamidon@unikl.edu.my

Management information system as the users of the system were satisfied with the management information systems implemented as the systems had succeeded in improving the productivity and performance of duties. The system also reduced administrative errors and aided in decision-making procedures (El-Ebiary *et al.*, 2016). Managing information about client requirements effectively can contribute to improve the quality of built facilities and their related services (Jallow *et al.*, 2014). Information systems based on the successful model to determine the evaluation system used to measure six dimensions: system quality, information quality, personal influence, organizational the impact of user satisfaction and system usage, etc. and relative to the general information system has its unique composition of the description (Chen and Lin, 2012). An Education Management Information System (EMIS) has as a function to collect and analyze management indicators related to the education sector and aims to support the processes of strategic planning, resource assignation, monitoring, policy formulation and decision making in Institutions of Higher Education (IHE) (Echeverria *et al.*, 2012). Managing information about client requirements effectively can contribute to improve the quality of built facilities and their related services (Jallow *et al.*, 2014).

Competition management system: Competitions potentially contribute to the student's success in their career paths and result in creative innovation in the profession. The objective competitions for student is competitions serve as a doorway to student success in their careers, since, participation in any competition requires student more developing a relevant idea, analyzing concepts, working individually and in teams, expressing ideas in written or multimedia form for expert-level peer reviews. By participating in and winning a competition, students demonstrate their potential to explore real world challenges and identify possible solutions (Gupta, 2015).

This competition management software can realize the competition information is established, draw, record collection and treatment, technical data and medals, breaking the record, the flat integrated statistic, record album, released to radio and television game information audit, big screen and upload the data processing center and other functions (Ji and Chen, 2012). The system provides a friendly interface, using a variety of techniques, safe and reliable support for competition, support and screen and television that information is transmitted and each division front end data centralized reporting, complete each division information summary (Table 1).

Digital dashboard: Dashboard is often single page, real-time user interface, an easy to read, showing a graphical presentation of the current status (snapshot) and historical trends of an organization's or computer appliances key performance indicators to enable instantaneous and informed decisions to be made at a glance in management information systems definition. In other terms that can be use is "dashboard" is another name for "progress report" or "report". Often, the "dashboard" is displayed on a web page that is linked to a database which allows the report to be constantly updated. Now a days, the management of any up-to-date enterprise requires a real-time information system which should allow the quick and continuous display of the data which is critical in order to monitor the company in the current economic context. The performance dashboard developed on the level of the enterprise encloses global, aggregate information which describes the evolution of the enterprise strategic orientation (Dragomirescu and Solomon, 2013). Digital also known as an executive dashboard that is a visual representation, that gives executives a quick and easy way to view their company's performance in real-time. These systems including, among others, email system, Customer Relationship Management (CRM) system, website analytics program and accounting software. One of the benefit of executive dashboard is ongoing improvements. One of Peter Drucker's most famous quotes is "if you can't measure it, you can't improve it." Executive dashboards allow organizations to measure the performance throughout its organization and thus improve it.

MATERIALS AND METHODS

Methodology is used to guide the management of the project so, that, the project can be completed within the assigned, according to the schedule and achieve the project objectives. There are a several methods of project methodology that are used to guide the multiple step approaches for developing system. Methodology is asset of recommended practices, sometimes as accompanied by training materials, formal educational programs, worksheets and diagramming tool. It documented a set of procedures and guidelines for one or more phases of the software life cycle such as analysis or design.

Research methods may be understood as all those methods/techniques that are used for conduction of research. Research methods or techniques refer to the methods the researchers use in performing research operations. In other words, all those methods which are used by the researcher during the course of studying his

Table 1: Testing for competition activity management system in UniKL MIIT

Test case names	Input test data	Preconditions	Results
Login from admin	Insert email and password	Verify email and password	Successful lon in
Login from user	Insert email and password	Verify email and password	Successful lon in
Menu dashboad for admin	Click dashboard button	Enter button verifies dashboard menu page	Dashboard menu page appears
Menu dashboad for user	Click dashboard button	Enter button verifies dashboard menu page	Enter button verify dashboard menu page
User add competition data	User add competition data	Enter button add competition page	Add competition page appears

Fig. 1: Rapid application development methodology model
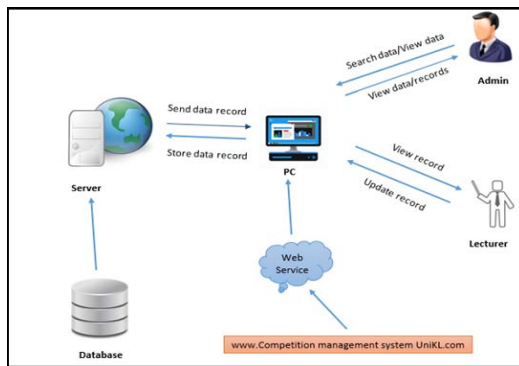

Fig. 2: The system architecture for competition activity management development in UniKL MIIT system

research problem are termed as research methods. Since, the object of research, particularly the applied research, it to arrive at a solution for a given problem, the available data and the unknown aspects of the problem have to be related to each other to make a solution possible. This researcher is part of a broader research effort aimed at specifying a better approach to managing client requirements information in construction. The methodology that will be selected to develop this system is Rapid Application Development (RAD) methodology model. Figure 1 shows rapid application development methodology model for this project.

The system architecture: Figure 2 shows the overall process for competition activity management development in UniKL MIIT system. It's started when user key in the new and update through the system. All the key in data activity will directly processed and saved into the system data directory inside the database system. After user have been save the data, the system will automatically save to the user account and sent to admin to view the data.

RESULTS AND DISCUSSION

Project testing: System testing is the final testing process to verify the applications to be directly delivered to user. The system testing has several types such as usability testing, acceptance testing, functional testing, non-functional testing, structural testing and web testing. This project used functionality testing to verify the system's input-output behavior. Thus, the functionality testing to test the entire requirements stated inside this project development for final system implementation. This project consist of two system user which are system admin and the user (UniKL MIIT lecturers). For the admin page, admin can login into the system page by enter the email and password. Admin able to edit, delete and view details of competition activity.

The result from functionality testing shows that competition activity management in UniKL MIIT system are ready for deployment and fulfill the system specification and requirements.

CONCLUSION

The objectives of this project were achieved by fulfilling the requirements of UniKL MIIT research and innovation section. The system enables the section administrator to collect lecturer's competition records and extract them in graphical format, for the purpose to the management of UniKL MIIT. This development is to enhance the regular usage, productivity and competition management system in CORI through the development of web-based system. Based on the overall result, it can be concluded that the competition management system has achieved its objectives and requirement.

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