



## Digital System of Evaluation and Calculation

Aini Zuriyati Abdul Kadir<sup>1\*</sup>, Nurul Atikah Norodzi<sup>1</sup>, Nur Sukinah Aziz<sup>1</sup>, Nur Zahidah Mukhtar<sup>2</sup>

<sup>1</sup> Faculty of Computer, Media and Technology Management, University College TATI, MALAYSIA

<sup>2</sup> Faculty of Engineering Technology, University College TATI, MALAYSIA

\*Corresponding author: [aini@uctati.edu.my](mailto:aini@uctati.edu.my)

KEYWORDS	ABSTRACT
Digital system Evaluation Calculate	A digital system known as online system for evaluating Final Year Project poster presentation at University College TATI (UCTATI) is aims for a standard system that can be used during poster presentation. Previously the evaluation is done manually. Besides, the calculations of the marks being calculate manually by the examiner in order to get the result. The focus of this paper is mainly on the development of the system where the evaluation was done by selected examiner that examine the poster presentation and give marks. For this research, the analyzing of the system requirement is done by preparing open ended interview with appropriate person that responsible for the evaluation poster since the process previously was done manually. Meanwhile, the design was shown through flowcharts structure. The process of implementation was supported by ADDIE model. ADDIE model used to construct analysis, design, development, implementation and evaluation. The development of the system was using Adobe Dreamweaver as selected software. The back-end database is supported by MySQL which are built in XAMPP Control Panel v3.2.4. The result of the system has produced a prototype system that can calculate and evaluate automatically the marks of poster presentation that input by the examiners. This system will make the process of evaluation more easily, effectiveness and efficiency.

### 1.0 Introduction

University College TATI (UCTATI) formally has decided that Final Year Project (FYP) presentation for Degree and Diploma students will be done in one event. The event required students to present their FYP through a construction of poster. The marks will be given based on the presentation by the students. The secretariat of the event will determine the examiners from internal and external. The internal examiners are from UCTATI while external examiners are choosing from other universities. During the event, the examiner required to evaluate and give marks based on the rubrics produce by the secretariat. Previously the evaluation is done

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manually. However, the calculation of results process took longer times than expected. Due to this situation, the secretariat has decided to develop a system that easy for the examiners to evaluate and entering the marks.

The objective of this paper is to discuss the development of online evaluation system for FYP poster presentation. The study will begin by analyzing the system and identify the related problems. Open ended interview was done in order to gather all the information that related to the process being done before. The information was compiled by using appropriate design tools such as flowchart in order to views clear ideas of the system. At the development phase, prototype system was develop where selected software was used to write the code such as Microsoft Adobe Dreamweaver and PHP scripting is chosen. While the back end of the database was supported by XAMPP Control Panel v3.2.4 that include MySQL used as database. In order to support the system, ADDIE model is used during the development process. ADDIE model stands for analysis, design, development, implementation and evaluation. This method is chosen because the flow of the model can meet the expectation of the system.

The main aims and objectives of this study are to develop digital system that can calculate the result when input process is done. The objectives are:

- Identify the method to counting the marks input by the examiner.
- Identify suitable method to comply all the marks based on the categories.
- Develop appropriate method that can generate marks for final score of every students'

## 2.0 Related Work

In this section the study presents the literature review on the similar existing system. Different features of such systems were evaluated before designing and developing the novel approach. This literature review on technology has been a doubted in the development and design of this study.

Online project evaluation and supervision system (oPENS) for Final Year Project proposal at UITM Dungun, Terengganu has been proposed [1]. The systems manage the interaction between lecturers, students and course coordinator in arranging the FYP process at the stage of project's proposal preparation. Throughout this system all of the result will be submit to the coordinator and to view the students result. The elements that used in the system are evaluation and online monitoring of project progress report through online. User required viewing the homepage of oPENS and the needed for lecturer, students, admin and coordinator to login to the system. Lecturer, admin and coordinator can view the title and supervisor's name by inserted in the box that is shown in EFYPA (EE) CORNER. Then, admin will notify the students through this system by announcing the date of the presentation. By using this system, users can see the date and time easily and set the date of FYP reservation. The system also displays the administrator menu which the admin can manage a form and last date for project evaluation form FYP 2 and project evaluation form A & B. Then, admin can manage last date for project approval form and validation form for coordinator. The admin interface focus on updating the data in the system that are needed for coordinator. Meanwhile, the interface of supervisor will process the students who registered under the project group by using the same code. Lastly, the system will list the summary of students' results from supervisor as well as panel that includes all the FYP1 forms.

Online Final Year Project System for FICT has obtained at UTAR using AMP technologies [2]. This proposed system is a web portal to manage the related events of FYP in an effective, systematic and convenient way. The FYP event of web portal included a project title for student. The supervisor can manage appointment, add a title, reserve a presentation avenue and evaluate the students. Then, the admin of the system that is also FYP committee can maintain the title list, assign moderator, manage presentation venue reservation and review student's evaluation. Then followed by a screen that show the automatic overall calculation after all marks has been inserted in the system. In this interface, the screen has key assessment for panels to evaluate the marks,

scale of marks, marks, full marks which in a percentage. Then it also included as remarks box which the panels can write a comment beside the evaluation marks. The assessment of preliminary report is converted after the marks insert by the panels. The marks will automatically calculate and converted to the percentage. After insert all the marks panels click at submit button.

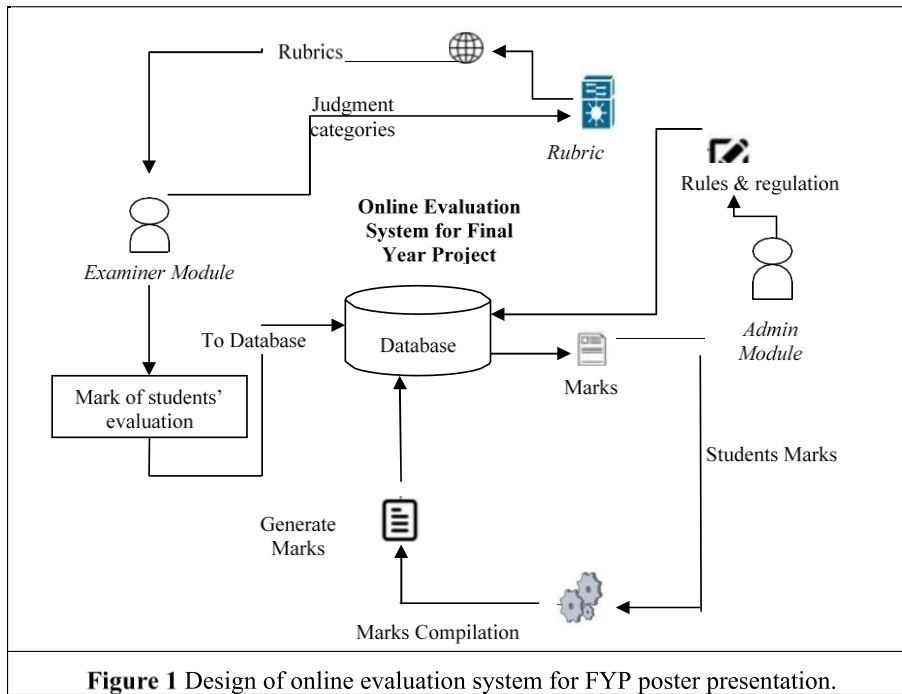
Final Year Project Evaluation system is a system that built for Degree's Student of Faculty Information and Computing, UniSZA [3]. This system is created to evaluate and calculate mark for FYP based on rubric. The FYP system of UniSZA involved admin who is head of department, supervisor, panels and students. The system used to evaluate final year project student assessment, to implement system with paperless concept and to test sum weighted method in final year project calculation of marks. Based on the framework of Final Year Project Evaluation System in UniSZA, admin can manage user who is supervisor and the rubric stated in the system of final year evaluation. The supervisor can manage assessment and view the rubrics that are updated by the admin in the system. Then, panels can view the rubric to evaluate the marks and manage the assessment. In this system, students can also login to view the result that has been evaluated by the panels.

### **3.0 Proposed Solution**

As mention previously, the research study is aiming on developing a system to evaluate final year project poster presentation. The system able to insert the marks input by examiners and compute to release overall result to the students as output. The evaluation calculation is done automatically. The system will calculate base on the categories stated in the system by referring to required rubric. The system basically consists of the following components:

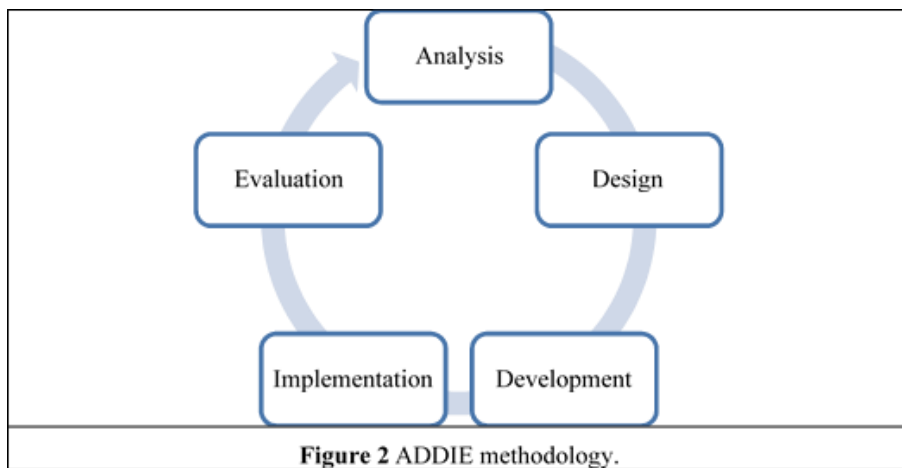
- Administration Module – Admin will add all the students who are taking final year project and involve in this event.
- Examiner Model – Provide a platform for all the examiners that are internal, external and public to input the marks based on the rubric.
- Rubric Module – The marks being input will be computed and generated based on categories that evaluate by examiners.

The design of online evaluation system is shown at Figure 1. Begin with administration that will add the rules and regulation. Meanwhile, the examiner will register in the system for them to login to the system and access the rules and regulations. The marks will be input by the examiner and kept into the database. Then the system will compile and generate all the marks. This will take a few second for the result to be release. When the process of generating the result finish, the secretariat able to access and announce the result.



#### 4.0 Methodology

This section presents the main research approach that innovates an online FYP evaluation poster presentation. The system was implemented based on the ADDIE model as shown in Figure 2. The ADDIE Model is a five-step instructional design and project management tool borrowed from the field of human performance technology (HPT) and is commonly used to develop, implement, and evaluate performance improvement services, as mentioned [4]. The core values and principles that govern the use of the ADDIE Model, which are analysis, design, development, implementation, and evaluation, are an expansion of basic ADDIE phases into a more detailed procedural guide [5]. The ADDIE model is one such instructional design model that has been used to develop curriculum in diverse fields such as library instruction [6] and online continuing education courses [7].



In this study, the ADDIE model was used to construct the system. At the analysis phase, an interview and questionnaire were conducted. The interview involved the secretariats of the event that will manage the system. The questionnaire was distributed to the person that involves directly

with the system. Besides that, the software and hardware are also being analyzed in order to ensure the development process can be done with small problems. At the analyses phase functional requirement regarding the system also being identify. Meanwhile, for second phase which is designing the system are shown in the flowchart that show the flow of the system. Third phase is the development of the system using appropriate application software. The software performance is important to ensure the application run effectively as required. The development will focus on how the examiner can input the marks and able to process the marks for each of the students. Fourth phase is implementing the system by testing the system using appropriate testing during the implementation. The fifth phase is evaluation of the system to ensure that the evaluation of the result working as the input marks being done and can access by the secretariats and examiners.

#### **4.1 Analysis based on ADDIE methodology: Interview and questionnaire**

The interview was done to gather all the related information regarding manual system of final year project poster presentation evaluation. The interview is prepared together with the questionnaire. The analytical approach for qualitative question was prepared for the person that controls the system manually. Fourteen questions were prepared for the interview. The contents of the questions are about manual system which was used previously. The analysis was divided into categories in understand the examiners that was selected to input and calculate the marks, the process of final result before the announcement of the marks being release and how students access their marks. In order to analyse the data, the understanding of what happened in the current system and what will be required in the new system are referring to the data being gathered. The result of analysis will be adapted to the design of digital online system of final year project poster presentation evaluation.

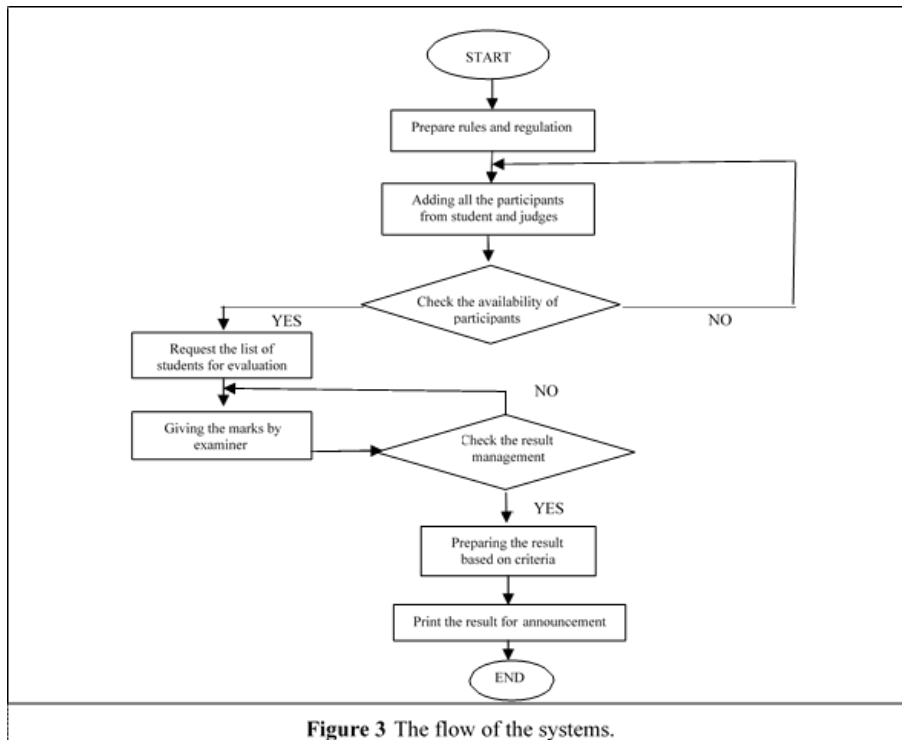
The identification of software and hardware for this analysis is identifiable in order to ensure the costing of the selected application software for development and hardware able to be used. The selected software is Adobe Dreamweaver and XAMPP Control Panel v3.2.4 to control MySQL as database of the system. Meanwhile, the hardware requirement for the development based on this research is using laptop with 14-sdk and having 4GB RAM. It has either AMD or Intel CORE 13 and above as the processor. The analysis has defined the functional requirement are as follow.

The functional requirement analysis was divided into five categories that are:

- Administration: Able to login, logout, view evaluation, assign selected panels and insert, update and delete the data students, panel and marks.
- Examiners: Able to login, logout and access evaluation form for input marks.
- Login interface: Admin and panels required to fulfil user name and password.
- View data: Result/ marks will be display and only authorized admin can view all the result.
- Evaluate marks: Result is calculated automatically. The evaluation based on to the rubric setting.

#### **4.2 Design the process of the system based on functional requirements**

Flowchart is diagrams that being choose to present a workflow or a process. The flowchart shows the steps approach to solve a task of the system as in Figure 3 basically from beginning to end.



### 4.3 Development of the system

As mention previously, the prototype system developed using Adobe Dreamweaver. HTML 5, Java Script, CCS and PHP are used to develop the system. Therefore, the system is responsive using any device such as desktop, smart phone or tablet. For database, the system used MySQL. The system starts with login page where the system can access by four users which are administration, internal panels, external panels and public panels. They required inserting username and password to fulfil the authorization towards the systems. Administration of the system can change the password. The page is shown at in Figure 4 where admin have to login and they also can change password as shown at Figure 5.





**Figure 5** Change password by

The function of Administration for this system is to register the lecturer that also known as internal and external examine, students who enter this event and staffs that was been selected as public examiner as shown in Figure 6.



**Figure 6** Registration of examiner done by

After the registration is done, all the examiners can enter the system using their username and password. At Figure 7 shows the main screen of evaluation form for examiners to input the marks of each student they evaluate. The students cannot access any information of system other than they are only allowed to register their name for evaluation. Meanwhile, the administration and examiner are able to view the list of the results as shown at Figure 8.

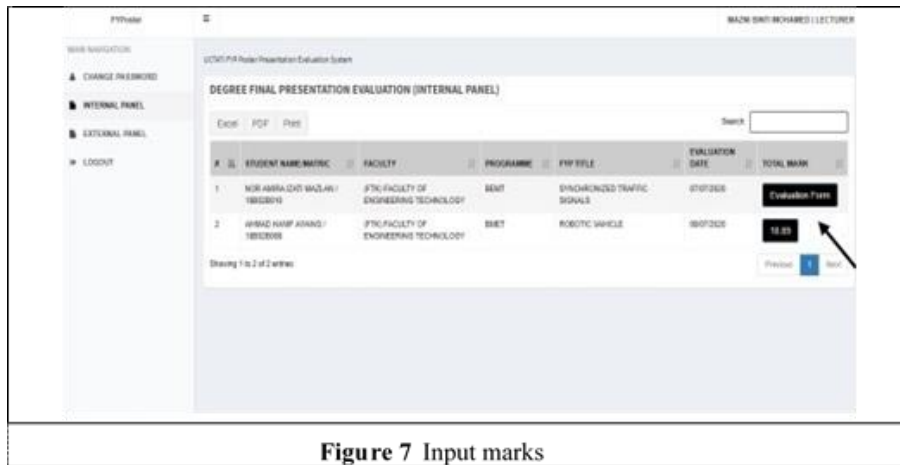


Figure 7 Input marks

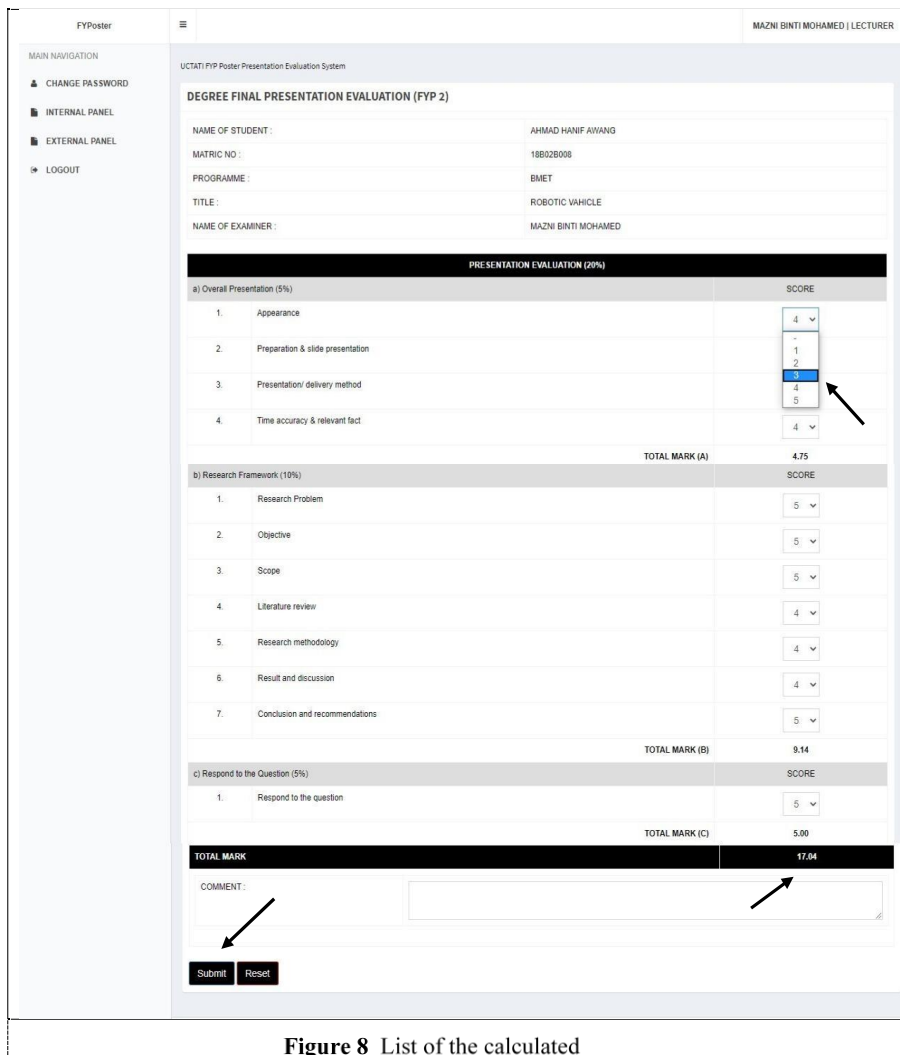


Figure 8 List of the calculated

This system also provided the secretariat to access marks by retrieve the categories of examiner as at Figure 9.

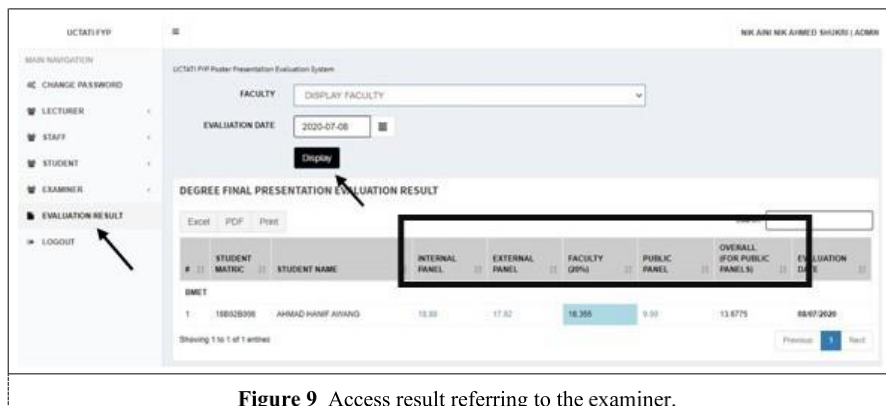


Figure 9 Access result referring to the examiner.

#### 4.4 Implementation of the system

In order to access system through online, the system required to be upload in web hosting. Therefore, registration of hosting and domain will be done. This also will easily make the user access the system through other devices such as desktop, smart phone or tablet. In other situation, the connection will allow user to access the system either from desktop or from their smart phone. After completing the implementation, evaluation of the system will be done.

#### 5.0 Conclusion

The development of online digital system evaluation for final year project poster presentation enable the management prepare the documentations that easy to access, paperless and organize. Furthermore, the development of the system will be more practical and able to save more time especially during the evaluation and calculation process. As time goes by, the system will be expanded to be wide use and might cover all the final year project processes. Therefore, the process of evaluation will become more effective and efficient when using the system.

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