Use Case Scenario Representation: A Case Study of Graduation Audit System

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ABSTRACT

Graduation auditing is one of the crucial activities in higher learning institute. In some higher learning institute, the graduation audit process is not clearly defined and varied according to faculty, which will give a huge impact on the reputation of higher learning institute. Therefore, specific software needed by the higher learning institute to simplify the graduation audit process, track graduation requirement for all students, tailor academic plans for specific students, generate a list of requirements a student has fulfilled and track student progress toward completion of graduation requirement. The case study looks into the process of graduation audit system being designed and developed using object oriented approach. 10 people from various faculties in University Industry Selangor had been interviewed to gather requirement. User acceptance testing was conducted upon completion of Graduation Audit System prototype. This testing has shown that the system was widely accepted by most of the users.

INTRODUCTION

Software engineering is widely practiced by software developers and system analyst. System and software requirement documents play a crucial role in software engineering in that they must both communicate requirements to the clients in an understandable manner and define requirements in precise detail for system developers (Nicolás & Toval, 2009). To ensure the success of software development the requirements gathered from the users must be analyzed by using modeling language such as the UML (Unified Modeling Language). Use case is one of the diagrams defined in the UML to analyze user requirements from user.

Graduation auditing is one of the crucial activities in higher learning institute. Therefore, specific software is needed to process the graduation audit, to track graduation requirements, and to generate a student list that has completed graduation requirement. However, manual process in handling graduation auditing leads to poor data integrity and time consuming.

There are wide variety of techniques and methods used to represent use case scenario. Most of them are text based instead of graphical representation. Graphical representation will promote better understanding than text based representation. Therefore, the most appropriate use case scenario representation can be identified by analyzing the available approaches. This could help in understanding user requirement in much more efficient way. Thus, three objectives had been set in this project. The requirements from potential users were gathered then the design of requirements gathered using object oriented approach was developed. Finally, the graduation audit system was designed.
METHODOLOGY

Rational Unified Process or also known as RUP is being used as the methodology for this project. RUP process will emphasize more on inception phase (phase in gathering and designing requirement). The following is the major phases in this project and explanation about it.

Figure 1 shows the domain analysis of graduation audit in higher learning institution. This domain analysis shows the important aspects need to be considered in developing graduation audit system. Meanwhile, Figure 2 shows an example of one use case scenario for login module that being designed using object oriented approach. This use case scenario helps in understanding the functionality of system.

![Figure 1: Domain Analysis for Graduation Audit System](image1)

Phase 1: Inception-Interview questions used in order to gather requirement from user. 10 people include students, assistant registrar and head of program is being interviewed.

Phase 2: Elaboration-Requirement designed using Object Oriented Approach. Unified Modeling Language (UML) used in order to practice object oriented design.

Phase 3: Construction-Object oriented PHP used as the programming language to develop the graduation audit system.

Phase 4: Transition- User acceptance testing used in order to evaluate the performance of system.

RESULTS AND DISCUSSION

Based on the requirement gathered from users, the system is designed and prototype is developed using object oriented PHP. An evaluation of system performance has been tested using user acceptance testing. Users were exposed to the system and test whether the system solved the graduation audit problem or not. Figure 3 shows the example screenshot of graduation audit system which was developed using object oriented PHP. Almost all of the users involved in the testing process satisfied with the functionality of the system as a tool to track the progress towards completion of their study.
CONCLUSION

The three objectives of project have been achieved. The requirements from potential users were gathered in phase 1. The design of requirements gathered using object oriented approach was developed during phase 2. Finally, the graduation audit system was designed during phase 3.

The user acceptance testing used in order to evaluate the performance of system has been done but it is a kind of test case and not as a comprehensive acceptance test. Even though almost all of the users involved in the testing process satisfied with the functionality of the system the proper test can also be done using the comprehensive test such as Technology Acceptance Model (TAM). Appropriate object oriented design help developers in developing successful application.

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REFERENCES