

**THE EFFECTIVENESS STUDY ON APPLYING MULTIMEDIA ELEMENT  
INTO A WEB-BASED ACADEMIC GRADING SYSTEM**

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**THE EFFECTIVENESS STUDY ON APPLYING MULTIMEDIA ELEMENT  
INTO A WEB-BASED ACADEMIC GRADING SYSTEM**

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By

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## ABSTRAK

Setiap institusi pendidikan tinggi pasti akan mempunyai sistem pemarkahan sendiri. Hal ini kerana fakta bahawa setiap pensyarah harus menilai prestasi pelajar mereka dengan mengumpulkan tanda-tanda yang diterima oleh mahasiswa sesuai dengan peruntukan yang diberikan. Di antara kriteria penilaian yang tentu saja kerja seperti kuiz, ujian, tugas, projek dan ujian akhir secara berasingan. Sebuah sistem penilaian berasaskan web akademik telah dibangunkan untuk Unit Pemeriksaan Kolej Antarabangsa Teknologi dan Profesional, Perlis. Hal ini dapat dilihat sampai operasi seharian dan mengurangkan masa dan kos operasi juga. Sebelum pembangunan sistem, kajian telah dilakukan untuk mengetahui bagaimana sistem memberikan manfaat bagi kolej. Soalan kajian telah disiapkan untuk menentukan kajian keberkesanan pelaksanaan elemen multimedia dari sistem membandingkan cara manual yang akan diedarkan kepada pengguna sistem. Pengguna akan dilaksanakan untuk memuat maklum balas daripada sistem dan memahami kemampuan sistem untuk menguruskan banyak data dari masa ke masa. Bahasa pengaturcaraan yang digunakan dalam pembangunan *Web-Based Academic Grading System* ialah PHP dan pengurusan database MySQL.

## **ABSTRACT**

Every institution of higher learning would certainly have the own marking system. This is so because every lecturer will have to assess their students' performance by accumulating the marks earned by the students according to the allocations given. Among the criteria of assessment are coursing work such as quizzes, tests, assignments, and projects, whereas final exams are assessed separately. A web-based academic grading system has been developed for Examination Unit in Kolej Antarabangsa Teknologi dan Profesional, Perlis. These standalone system runs on the unit's to smooth up the daily operation and reduce the time and operation cost as well. Prior to the system development, a study has been done to understand how the system gives the benefit for the college. Questionnaire has been prepared to determine the effectiveness study on applying a multimedia element of the system compared the manual way that will be distributed to system's users. The user will be implemented to take the feedback of the system and understand the system's capability to manage a lot of data from time to time. The programming language used in the development of Web-Based Academic Grading System is used in PHP and MySQL database management.

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.0 Background Study**

Currently, there are many higher education institutions in the government sector and private sector offering a range of courses at diploma level graduate students in the country. Academic system implemented by educational institutions are basically involving the subjects of management by the academic administration, delivery of lectures to the students' knowledge and assessment process, students in the class. The assessment process undertaken to obtain information about the level of understanding and appreciation of students in certain disciplines.

Typically, the assessment of students in a class of students involved in achievement of the tasks given by the lecturer. Each task is assigned to students will be graded by the lecturers and the total score for all the work done to determine students' grade student in the class. The calculation of student scores and grades are usually based on a marking scheme that has been determined in advance by the administration of academic and lecturer.

The contents of  
the thesis is for  
internal user  
only



## References

- Perdana College (2010). *Academic Grading System*. Retrieved 27 November 2010, from [http://www.perdanacollege.com/academic/poli\\_grade.html](http://www.perdanacollege.com/academic/poli_grade.html)
- Netsity.(2010). Web based Application. Retrieved, Jan 11, 2011 from <http://www.netsity.com/webbasedapplication.htm>
- CASEMaker Inc. (2000). *What is Rapid Application Development?* Retrieved 26 January 2010, from [http://www.casemaker.com/download/products/totem/rad\\_wp.pdf](http://www.casemaker.com/download/products/totem/rad_wp.pdf)
- Mochal, T. (2001). *Examining the life cycle of a RAD project*. Retrieved 10 February 2010, from [http://articles.techrepublic.com.com/5100-10878\\_11-5035295.html](http://articles.techrepublic.com.com/5100-10878_11-5035295.html)
- Officeware (1998), *Rapid application Development, A Structured Approach to Programming Modern Business Applications*, Retrieved 28 January 2010, from <http://www.oware.com/Subpages/radmethodology.htm>
- JS (2009), JS Consulting Group Inc *Rapid Application Development*. Retrieved 25 January 2010, from <http://www.jsigroup.com/rapid-application-development.html>
- Wikipedia Encyclopedia (2009). Rapid Application Development, Retrieved, Jan 10, 2011 from [http://en.wikipedia.org/wiki/Rapid\\_application\\_development](http://en.wikipedia.org/wiki/Rapid_application_development)
- Ambler, Scott William (2004). *The Object Primer: Agile Model Driven Development with UML 2*. Cambridge University Press. ISBN 0-521-54018-6.

Chonoles, Michael Jesse; James A. Schardt (2003). *UML 2 for Dummies*. Wiley Publishing. ISBN 0-7645-2614-6.

Alan Dennis et.al. (2002), *System Analysis and Design An Object Oriented Approach With UML*, McGraw Hill.

David Flanagan (2011), *JavaScript: The Definitive Guide, Sixth Edition*, O'Reilly Media. ISBN 10: 0-596-80552-7

Vikram Vaswani. (2003), *MySQL (TM): The Complete Reference*, McGraw-Hill

Lerdorf, R., Tatroe, K., & MacIntyre, P. (2006), *Programming PHP*, O'Reilly

Ruvalcaba, Z., Pizzi, M., (2004), *Book Review: Macromedia Dreamweaver MX 2004*, SAMS, ISBN: 0-672-32361-0

**APPENDIX A**  
**QUESTIONNAIRE**