Development of an Online Assessment System

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The staff at the Information Technology Centre (ITC) is responsible for assessing a large percentage of the students of the University of Peradeniya in the subject of introductory computing. Additionally, the ITC conducts recruitment tests that aid in the employment of staff to various categories and levels of the University system. Such tests include a wide variety of subjects such as basic computer literacy, more advanced computing principles, IQ and general knowledge. Therefore, the number of assessments conducted by the ITC in a given year is very large. When considering the large number of participants undertaking some of these assessments, the burden on the limitted staff at the ITC is immense. This paper investigates the design and development of an online assessment system to enhance the efficiency of the staff at the ITC when conducting such tests.

The online assessment system consists of three different front ends: the teacher interface for entering questions, the teacher interface for managing tests and the test-taker interface for the actual assessments. The interface for entering questions allows entering, modifying and deleting questions to a common question bank. These questions are classified according to category and difficulty level. The interface for managing tests can be used to automatically or manually select test questions for a particular assessment based on the categories and difficulty levels. It also allows managing the test takers and storing their final marks into a Microsoft Excel file. The test-taker interface is a simple web interface where the correct answer for each question can be selected before finally submitting the test.

The online testing system has been used in many tests at the ITC and attempts have been made to correct any identified limitations. This system of conducting online tests has increased the reliability and functionality since it has made test generation to suit the intended audience, it is very convenient and very efficient in processing results as grading is fully automated. The reliability of the testing system has been very good apart from hardware and networking-related technical issues that may temporarily exist in general purpose networked computer systems. Overall, it has proved to be of great value to the Information Technology Centre of the University of Peradeniya in order to help the staff members conduct a large number of tests in a very efficient manner.