



Integrity and Security in Assessment and Testing Policy and Procedures – Computer Based Testing for EIT

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Purpose:	The purpose of this document is to set out the methods of computer based testing used by the EIT to test for integrity and security in processes of assessment.
Scope:	This document is relevant for all EIT students and staff involved with assessment.
Overview (optional):	
Essential Supporting Documents:	
Related Documents:	<ul style="list-style-type: none">- The EIT Ethics Statement- Academic Honesty Policy- Student Code of Conduct- Academic Integrity and Plagiarism Detection Policy and Software Guidelines- Student Consultation Policy

Introduction

There are a number of methods to ensure integrity and security of the assessment and testing systems. Due to the various time zones the students find themselves, it would be difficult to have one set of examination questions for each unit. Instead a bank of questions will be set up and these will be randomly selected for when the student logs in to undertake his or her test.

There are two levels of testing.



The first one is to do a preliminary test at the conclusion of each course checking for the knowledge level of the course. This will be using the VCE software (detailed below) which provides a bank of questions. At the conclusion of each unit comprising the Master degree (and indeed, the Vocational Graduate Diploma), a 90 minute examination will be conducted using the VCE software detailed below. The student can be located at any convenient location.

A final, wider ranging examination will be conducted on all the units for the Master degree in a highly secure testing centre from Drake International. It will be used to conduct a final examination of the materials. This will be for a 3 hour period and occur at the end of the Master degree course. Drake International have testing locations at cities throughout the world. The methodology will be to use the VCE Testing software to serve up the relevant questions.

Due to the use of computer-based testing facilities, there is need for a thorough set of policies and procedures to detect and minimise any potential for plagiarism or academic misconduct.

Description of Package – VCE Testing System

Taken from the readme.txt file included with the software package

1. WHAT IS VCE TESTING SYSTEM?

VCE Testing System is a software solution that allows you to create, manage and give tests (exams, quizzes) over a network. It includes three applications:

- VCE Exam Designer allows you to create and edit question banks (files with the .vce extension).
- VCE Server is a server application that is used to store and manage exam banks, student lists and exams results. A computer where VCE Server is running plays a role of a testing server.
- VCE Client is an application that allows students to connect to a testing server, choose a test and take it.

2. SYSTEM REQUIREMENTS

In order to run VCE Testing System, your system must meet these specifications:

- An IBM PC or compatible that meets the minimum hardware requirements for your version of Microsoft Windows.
- Microsoft Windows 2000/XP or later version.

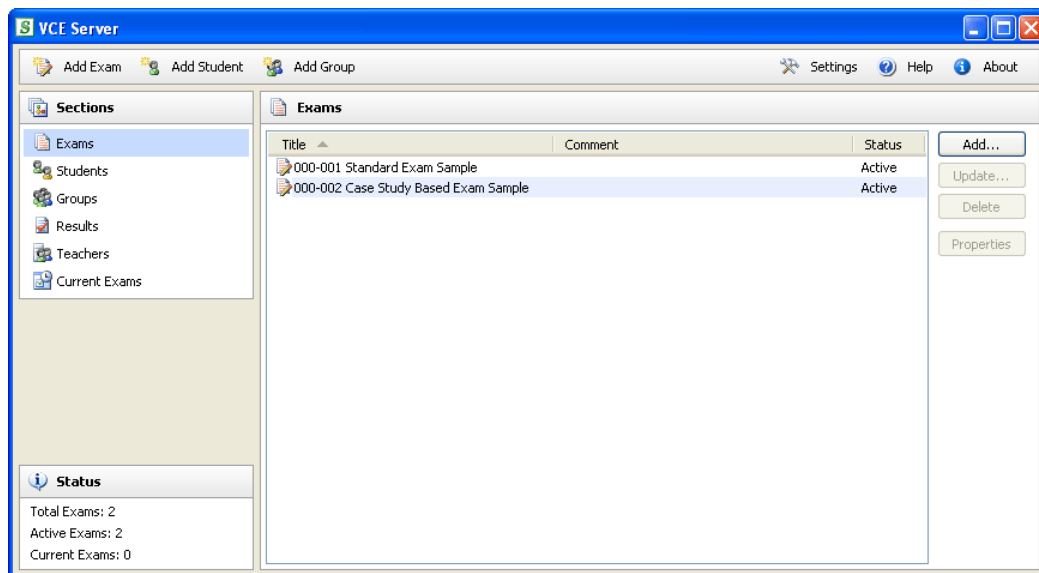
- A mouse or other pointing device.
- For printed output, a Windows-supported printer that can print bitmaps. (This includes most of the laser, dot matrix and ink jet printers that Windows supports.)

We have selected this package as it allows our exam designers maximum flexibility in their exam format, while giving us the security features required, along with the reliability that is required in a distributed computing environment.

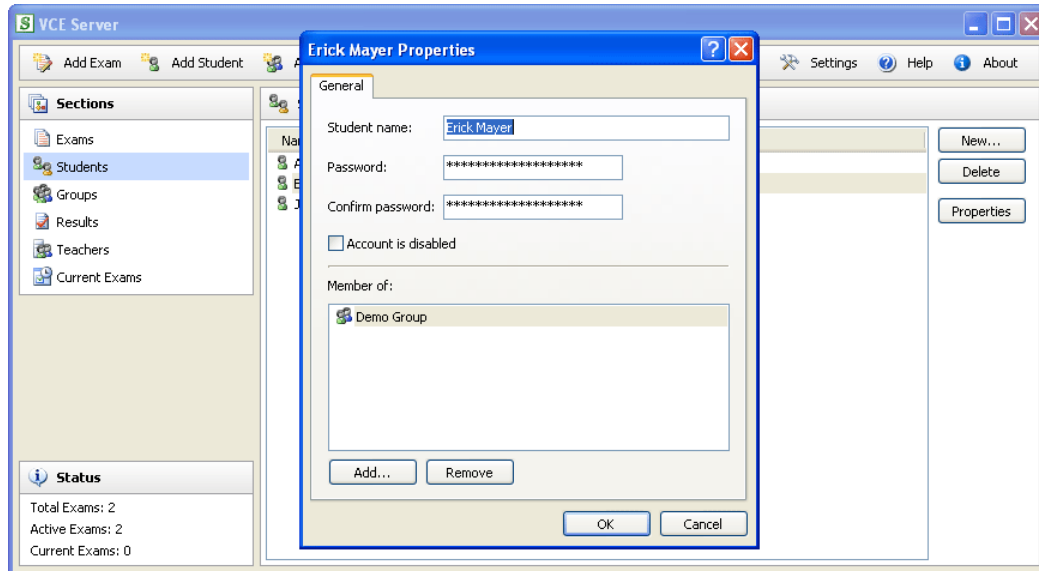
Example of Use – VCE Testing System

VCE Testing System is a client/server based package in which the exams, results and other information necessary is contained within the server package, while the student will install the client part of the system on their local computer to allow them to connect to the test server over the Internet.

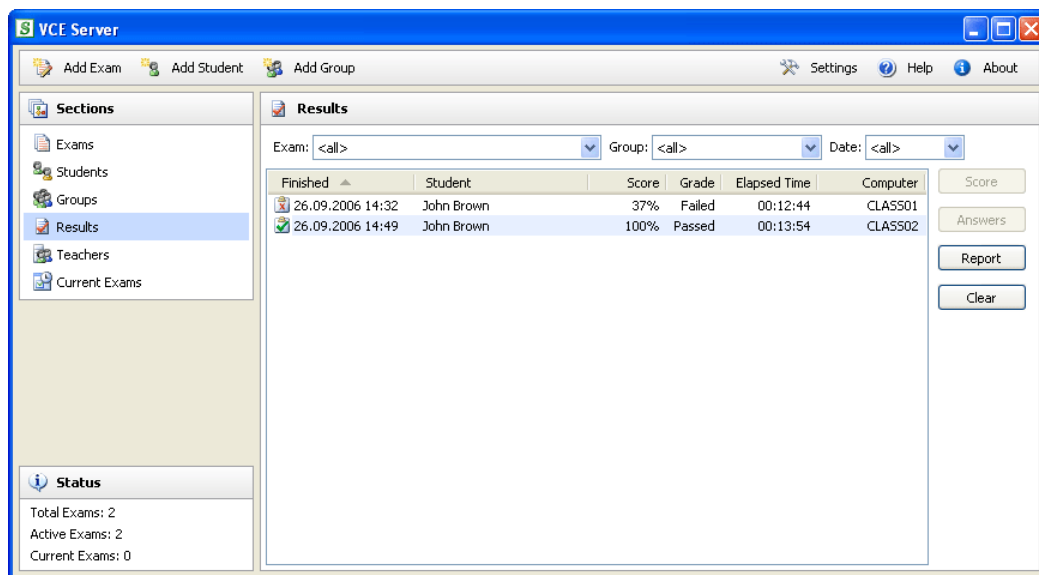
Typically, the server will show a list of exams as below –



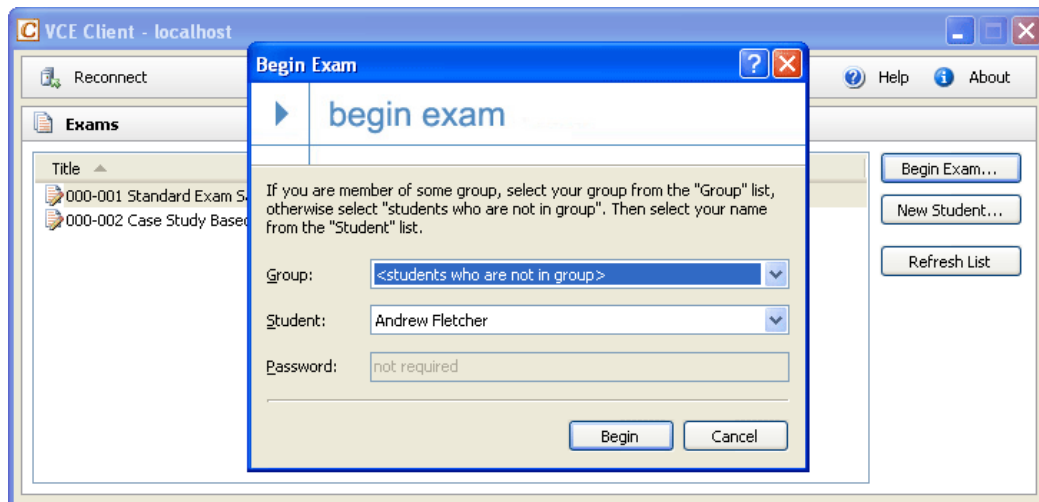
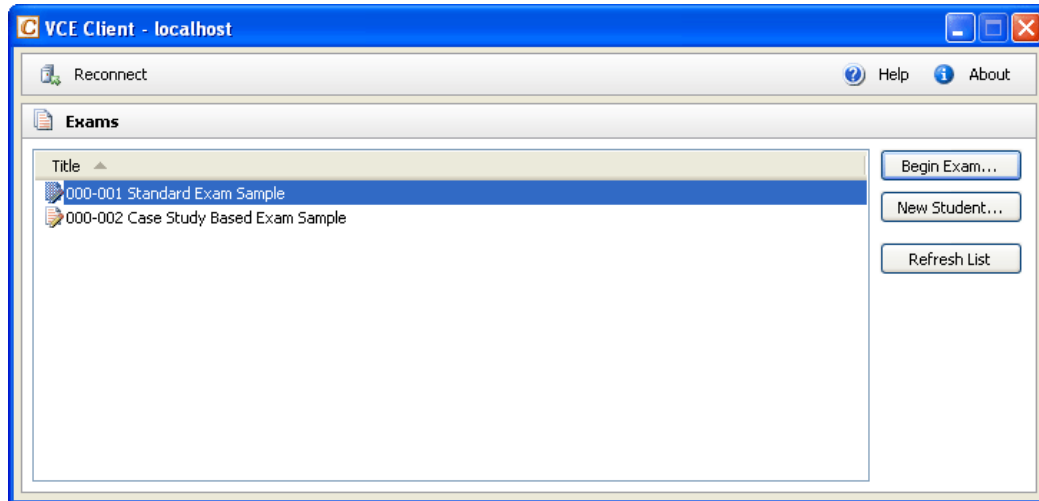
A list of students, each with their own password, can then be set up and assigned to a group to allow them to only access certain exams.



The server also acts as the repository for the results of all exams undertaken on the server, and will show the time, score, computer ID and other information.



The student will use VCE Client to access the exam, and get it running as shown below –



The exam will then consist of a number of questions much like the traditional sit-down exam. An example of a question is shown below –

Standard Exam Sample - VCE Client

Mark Time Remaining: 1:59:32

Item 4 of 5 Exhibit Calculator

You are a database developer for an online bookstore. You are creating a Microsoft SQL Server 2000 database that will store information about books, orders and customers. Each customer can place several orders and each order can contain a number of books. You create four tables: **Customers**, **Orders**, **OrderDetails** and **Books**. Their descriptions are shown in the following table:

Table	Description
Customers	Information about customers
Orders	Customer's orders
OrderItems	Ordered books
Books	Information about books

The database diagram is shown in the exhibit. Click the **Exhibit** button.

You need to calculate the cost of the certain order. Which script should you use? (Select the best choice.)

A. `SELECT OrderCost FROM OrderDetails AS od
INNER JOIN Books AS b ON b.BookID = od.BookID
GROUP BY SUM(b.Price) AS OrderCost`

B. `SELECT SUM(b.Price * b.Quantity) FROM OrderDetails AS od
INNER JOIN Books AS b ON b.BookID = od.BookID
WHERE od.OrderID = 1003`

C. `SELECT SUM(b.Price) FROM OrderDetails AS od
INNER JOIN Books AS b ON b.BookID = od.BookID
HAVING od.OrderID = 1003`

D. `SELECT b.Price FROM OrderDetails AS od
INNER JOIN Books AS b ON b.BookID = od.BookID
WHERE (od.OrderID = 1003) and (SUM(b.Price)>0)`

Select the best choice.

Previous Next Review End Exam

Risk Assessment

1. Unauthorised access to the testing server

There is a risk that students will attempt to gain unauthorised access to the exam server, whether to gain access to the exam answers, or to attempt to change their results. To mitigate this, the exam server (running VCE Exam Server) will be tightly controlled on a private network, with limited accessibility from the outside world. Only connections to the exam suite will be allowed with the use of strict filtering rules in place at the boundary router of the private network. No other external connections will be allowed to the testing server, where all exams, student accounts, teacher accounts and results are stored. This includes restrictions on email (incoming and outgoing), web (HTTP) access, telnet/SSH access and finally RDP/VNC access. These policies will allow only physical access (using a keyboard, mouse and screen) to the testing server. These policies can be enforced by using both the server's operating system, as well as the filtering and traffic monitoring facilities of the Cisco networking hardware in use within the network.

2. Impersonation of students

A potential risk is that students will ask someone else to do the exam for them. To mitigate this risk, each student within the VCE testing system will be assigned a password, known only to that user. As the individual student connects to the exam server, the IP address of the client computer will be logged. The logging of the



student's IP address will allow the detection of people other than the nominated student doing the exam, as they will have a different IP address and computer name from the student that is authorised to take the exam. If a different IP address/computer name is logged from the students nominated one, the moderator can then either investigate further, forcibly disconnect the student or impersonator from the exam or inform the disciplinary board of the students actions.

3. Students creating accounts

A risk within the VCE Testing System is that the client can be used to create student accounts on the server package. While this is a highly useful feature for teachers, this is a potential opening for students to abuse the system. To negate this risk, a feature within the VCE Testing Server allows the system to require the use of an authorised teacher account when creating new student accounts from the client.

4. Unauthorised students taking exams

A possibility is that a student may take an exam that he or she is not entitled to sit. The VCE testing system allows the students to be grouped together by classification, and then exams can be restricted to students only within a certain group. This can be set from within the Exam Properties->Security box.

5. Unauthorised activity during examination

While students are in progress with their exams, the testing server will show all active connections and the progression of that student through the exam they are currently undertaking. This will allow the staff to closely monitor exactly what the student is doing at any point during the exam. If the staff has any suspicion about the legitimacy of the student, there is a reject feature available on the server to allow the staff to forcibly disconnect someone taking the exam.

6. Students sharing exam questions/answers

Another potential risk is the student recording the questions or answers, and then sharing them with other students doing the same exam. The VCE system allows the exam designer to create an unlimited number of questions, and then provide each student with a random number of questions from within that group provided by the exam designer. This will mean that each student cannot rely on the questions and/or answers provided by another student to be the true and correct ones that they will see in any given exam.