

|  |  |
|--|--|
| Title  | Computerized Tutorial Testing System   |
| All Authors  | Myint Myint Thein, Yee Mon Win and Nwe Ni Win  |
| Publication Type   | Local Publication  |
| Publisher<br>(Journal name,<br>issue no., page no<br>etc.) | Dagon University Research Journal 2011, Vol. 3   |
| Abstract   | This paper is a software project that is tends to test the student's learning capability. The system consists of three question types such as true/false, fill in the blanks and multiple choices. This system helps first year through adult students' independently master basic skills in their courses. When the student submits the answers, they can see their score and right answers. This system provides to support for any paper of any subject by changing the questions of the respective papers. |
| Keywords   |  |
| Citation   |  |
| Issue Date   | 2011   |

## Computerized Tutorial Testing System

Myint Myint Thein<sup>1</sup>, Yee Mon Win<sup>2</sup> and Nwe Ni Win<sup>3</sup>

### Abstract

This paper is a software project that is tends to test the student's learning capability. The system consists of three question types such as true/false, fill in the blanks and multiple choices. This system helps first year through adult students' independently master basic skills in their courses. When the student submits the answers, they can see their score and right answers. This system provides to support for any paper of any subject by changing the questions of the respective papers.

### Introduction

This paper introduces the computerized tutorial testing system which has been developed the tutorial test for Computer Science Courses. The system software helps teaching reports that show objective measurement progress.

The students develop skill through tutorials that are challenging but not frustrating. This achievement promotes confidence. This new confidence improves attitude and provides motivation to develop additional, more challenging skills. Skills are presented in a life-oriented context and move the student from lower order thinking skill to higher order thinking skills.

Computerized tutorials are useful in many ways: they provide for self-paced, independent learning, allow for remediation, and provide for a means of distance and a synchronous education. Computerized teaching tools can be expensive to purchase or develop in addition to the cost of acquisition and maintenance of equipment. Before instructors adopt computer-based learning as a teaching tool, the effectiveness of this teaching modality must be documented. In addition, students must find the best approach for initiating computers as learning tools to make a successful transition from traditional learning to technology-enhanced learning. Potentially, computer-based education can increase effectiveness and efficiency in the education of students, while increasing students interest and learning retention. When students are involved and interested in a subject, their learning most likely will increase. Computerized tutorials can be used as efficient learning tools or as an adjunct to traditional classroom instruction.

### Teacher Console

- Set both multiple questions for each class and subject.
- Assign questions from the above collection.
- Delete or edit any question.
- View the results immediately for objective type questions.
- Viewing the marks of each student of the particular class.

---

<sup>1</sup> Lecturer (Head), Department of Computer Studies, Dagon University

<sup>2</sup> Lecturer, Department of Computer Studies, Dagon University

<sup>3</sup> Assistant Lecturer, Department of Computer Studies, Dagon University

## Student Console

- View questions by entering the Roll No. and Class.
- View the results immediately for objective type questions.
- View the whole progress report after completing their tutorial testing.

## System Components

The tutorial testing system is designed for both instructors and students for courses in computer science. The tutorial test contains first year and second year courses. When the students access the tutorial testing, the students may insert roll-no, name, class, department, university.

When the students fill their facts, they must choose their module name, such as CS-2101 or CS-2102 and etc. and question types such as true/false, fill in the blank and multiple choices. It saves time as it allows number of students to give the tutorial test at a time and displays the results as the test gets over, so no need to wait for the result. Administrator has a privilege to create, modify and delete the test papers and its particular questions. User can register, login and give the test with his specific id (Name and Roll no.), and can see the results as well. After they finish their tutorial test, they can see their score of individual test, question types and their total marks.

## Software System Attributes

**Usability:** The links are provided for each form. The user is facilitated to view and make entries in the forms. Validations are provided in each field to avoid inconsistent or invalid entry in the databases. Reports screen contains text boxes and check boxes, so that reports can be produced.

**Security:** Application will allow only valid users to access the system. Access to any application resource will depend upon user's designation. There are two types of users namely Administrator and Student. Security is based upon the individual user name and rolls number.

**Maintainability:** The installation and operation manual of testing management system will be provided to the user.

**Availability:** System will be available around the clock except for the time required for the backup of data.

**Portability:** The application is developed in Visual Basic programming 6.0 and MS Access 2003. It would be portable to Window XP operating system provided.

## System Design

Data flow diagrams are used to describe how the system transforms information. They define how information is processed and stored and identify how the information flows through the processes. DFD consist of four major components: entities, processes, data stores and data flow. The purpose of data flow diagrams is to provide a bridge between users and systems developers.

The Context Diagram which is the Topmost DFD (level 0) has one process only and shows the inputs and outputs of the system.

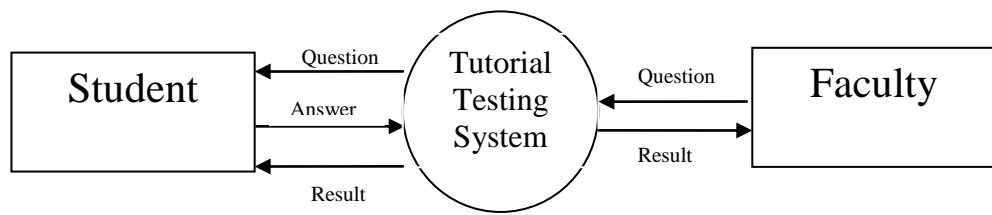


Figure 1. Data Flow Diagram Level – 0

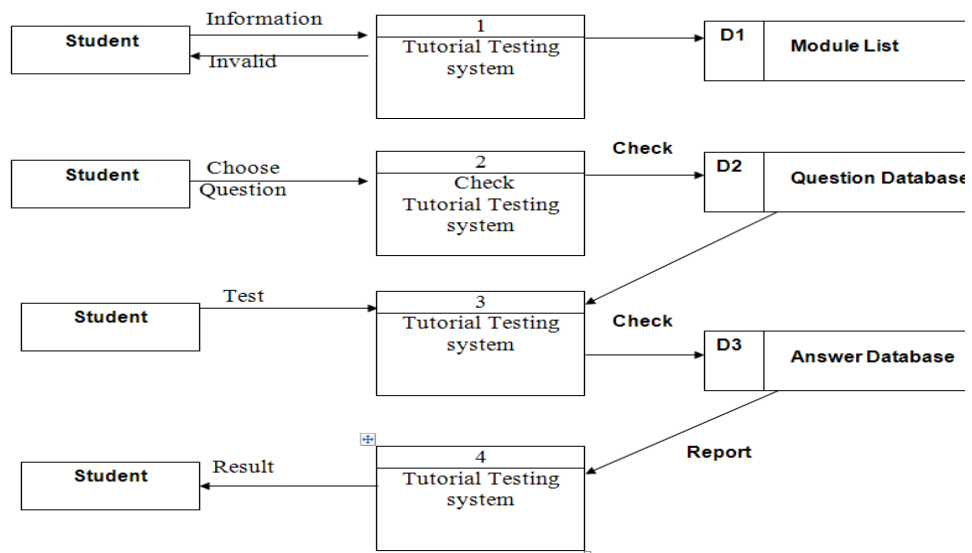


Figure 2. Data Flow Diagram Level 1

An entity-relationship (ER) diagram is a specialized graphic that illustrates the interrelationships between entities in a database. ER diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities. Diamonds are normally used to represent relationships and ovals are used to represent attributes. An entity is a piece of data-an object or concept about which data is stored. A relationship is how the data is shared between entities. There are three types of relationships between entities: one-to-one, one-to-many and many-to-many.

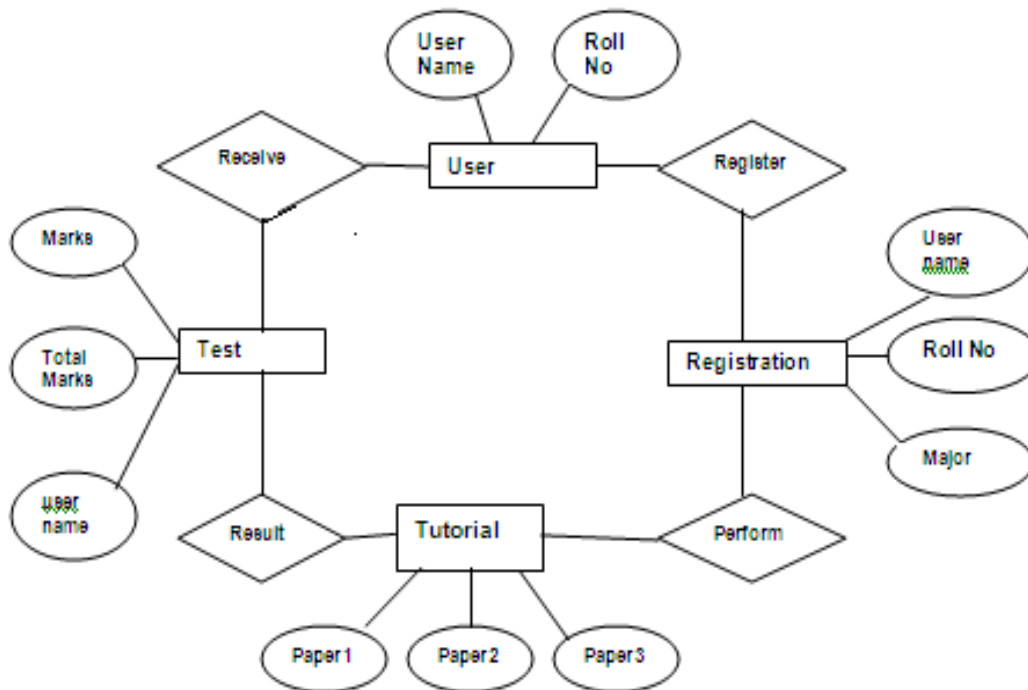


Figure 3. Entity-Relationship Diagram

### Comparing the existing system and proposed system

**Effort:** The proposed system will be ease of work and the effort required will be comparatively less than the existing system.

**Time:** Also the time required generating a report or for doing record finding and updating will take less time than the existing system.

**Labor:** In the existing system the number of staff required for completing the work is more while the new system will require quite less number of staff.

### Discussion

The current system is very time consuming. It is very difficult to analyze the tutorial testing manually. Results are not precise as calculation and evaluations are done manually. The chances of paper leakage are more in current system as compared to proposed system. Result processing takes more time as it is done manually.

The computerized tutorial test system has following features: in comparison to the present system the proposed system will be less time consuming and is more efficient.

Analysis will be very easy in proposed system as it is automated. Result will be very precise and accurate and will be declared in very short span of time .The proposed system is very secure as no chances of leakage of question paper as it is dependent on the administrator only. The logs of appeared candidates and their marks are stored and can be backup for future use.

## Screen Design

Project

WELCOME TO

Tutorial Testing For Computer Science

PRESENTED BY Daw Myint Myint Thein

Daw Yi Mon Win

Daw Nwe Ni Win

Exit Next>>

Figure 4. Next>> button links the Main Form and Exit button for leaving the program.

Tutorial Testing

File 1st Year 2nd Year

Tutorial Testing For Computer Science

Roll No : Cs-15

Name : Ma Aye Aye Win

Class : 1st Year

Department: Computer Science

University : Dagon University

True or False : 2.00

Fill in the blank : 3.00

Multiple choice : 4.00

Total Mark : 9.00

Insert

Total

Save

Report

Student Record

Figure 5. Insert button is to fill new data; Total button is to know the total mark. Save button is to store added data and Report button is to view your keeping data, after answering the questions.

Paper2

DAGON UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE

Second Year B.Sc Module No. Cs-2102

Software Design I

Choose the type of question do you want to answer.

TRUE / FALSE

FILL IN THE BLANK

MULTIPLE CHOICE

Back

Figure 6. Showing question types that can be chosen students desired questions.

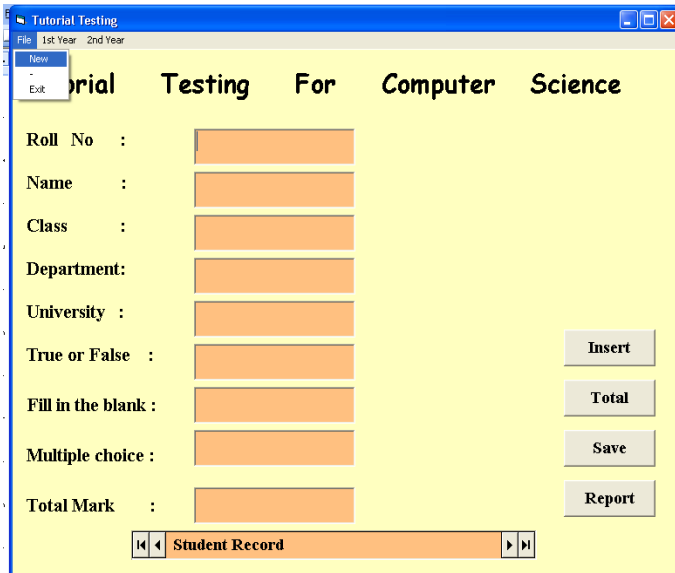


Figure 7. Showing the register form, user must fill the register form.

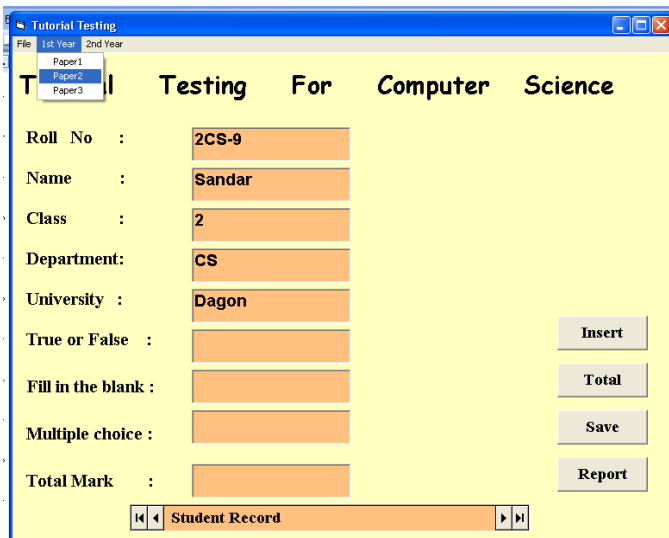


Figure 8. User chooses the desired paper for test.

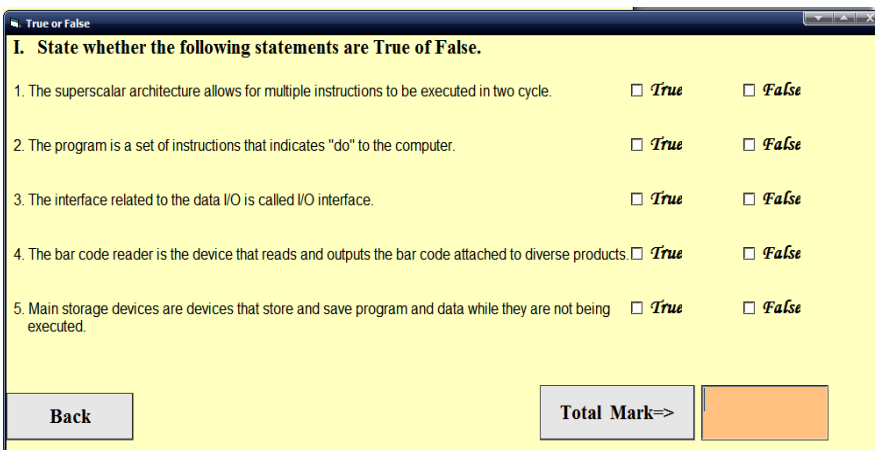


Figure 9. TRUE/FALSE question types. Back button for going back previous form. Total Mark button shows total marks of TRUE/FALSE question. Notice that user must answer all question.

**I. State whether the following statements are True or False.**

- Design is a creative process requiring insight and flair on the part of the designer.  True  False
- Design quality metrics may be used to assess if a design is a 'good' design.  True  False
- Complexity measures can only provide an indicator to the adaptability of a component.  True  False
- An adaptability design should have a low level of traceability.  True  False
- Coupling is a measure of the dependene of components.  True  False

Back Total Mark=> 3

Figure 10. User can see the marks.

**II. Fill in the blank with the suitable words or phases.**

- Artificial intelligence is used in \_\_\_\_\_ generation. Test
- The manipulation of Binary information is done by logic circuits called \_\_\_\_\_. Test
- The input-output relationship of the binary variable for each gate can be represented in tabular form called a \_\_\_\_\_. Test
- The storage units are divided into \_\_\_\_\_ and main storage unit depending on their functions. Test
- EPROM can be erased with \_\_\_\_\_ and rewritten. Test

Back Total Mark=>

Figure 11. FILL IN THE BLANKS question type

**III. Choose the appropriate words to each sentence.**

- The fully-fledged operating system was born in the  1960s  1970s  1980s
- The highest directory of the hierarchical structure is called a  root-directory  sub-directory  top-directory
- Macos is the OS developed by  IBM  Apple  Window Computer for its own product.
- Personal Digital Assistants(PDA)  Computer Aided Instruction(CAI)  
 Graphical User Interface(GUI) is used as a multimedia system interface.
- The dual system is a system in which each device is  seperated  duplicated  diversed

Back Total Mark=>

Figure 12. This form shows MULTIPLE CHOICE question type.



**Tutorial Testing For Computer Science**

Roll No : 2CS-9

Name : Sandar

Class : 2

Department: CS

University : Dagon

True or False : 3

Fill in the blank : 4

Multiple choice : 2

Total Mark : 9

Insert

Total

Save

Report

Student Record

Figure 13. This form shows the individual student record.

**Tutorial Testing For Computer Science**

| Roll No | Name          | Class    | Department       | University       | Total Mark |
|---------|---------------|----------|------------------|------------------|------------|
| Cs-2    | Ma Ei Ei Phyo | 2nd Year | Computer Science | Dagon University | 4          |
| Cs-3    | Ma Moe Moe    | 1st Year | Computer Science | Dagon University | 5          |
| Cs-4    | Mg Khin Zaw   | 1st Year | Computer Science | Dagon University | 2          |
| Cs-5    | Mg Min Thu    | 2nd Year | Computer Science | Dagon University | 2          |
| Cs-7    | Ma Phyu Phyu  | 2nd Year | Computer Science | Dagon University | 3          |
| Cs-10   | Mg Thaw Zin   | 1st Year | Computer Science | Dagon University | 5          |
| Cs-13   | Yu Yu         | 2nd Year | Computer Science | Dagon University | 4          |
| Cs-12   | Ma Soe Thida  | 1st Year | Computer Science | Dagon University | 3          |
| Cs-13   | Mg Thiha      | 1st Year | Computer Science | Dagon University | 2          |

Figure 14. This form shows the tutorial test report for all students.

## Conclusion

Unlike other programs which use a drill and practice approach, the system tests automatically adopt to each students progress. Immediate feedback is provided to the student for each answer. Correct answers move the student forward through the lesson while incorrect answers lead the student to supplemental information and an explanation of the error. A mastery test at the end of each lesson verifies performance before allowing the student to proceed to the next lesson. It saves time as it allows number of students to give the test at a time and displays the results as the test gets over, so no need to wait for the result. It is automatically generated by the software. Administrator has a privilege to create, modify and delete the test papers and its particular questions. User can register, login and give the test with his specific id, and can see the results as well.. The system is operated at a high level of efficiency and all the teachers and user associated with the system understands its advantage. The system was intended to solve as requirement specification.

### **References**

- Jaiswal, S., Bhavnani, N. and Sharma, R. "10. Project online exam", India International Institute of Management.
- Indoria, V., Sharma, P. and Soni, A. "14. Project online examination System", India International Institute of Management.
- Khanal, S. (2010). "What is Data Flow Diagram and what are its symbols", August 17, 2010.