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Testbanking System For The University

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ABSTRACT

Background: The study utilized a descriptive research design employing analysis, application and developmental approaches considering that the end goal of this study was to develop a running test banking system for the university. Object-oriented approach was also used in the system analysis and design phases to specifically illustrate the functionalities of the system. Object-oriented modeling tools were also used to illustrate the system design. Objective: This study aimed to develop a Test Banking system for the university. Specifically, this seeks to achieve the following objectives: (1) document the design of the system in terms of input, process and output; (2) implement the design specifications, and (3) prepare a user manual. Results: The university test banking system is an automated information system that is aimed at storing bankable test items based on the results of the item analyses made by faculty members after midterm and final examination period. The system allows the user to store bankable items and retrieve them in the form of a framed questionnaire. To use the system, the user logs onto the system by entering his/her username and password. A data entry form will appear on screen. This is where the teacher enters bankable test items which could be in the form of an introspective or associative thinking stems; namely, concept recall, discrimination, sequencing, analysis, synthesis, application comprehension, or evaluation. The data entered herein will then be stored in the database for future use. As soon as there are test items enough to frame up a questionnaire, the teacher could retrieve these and generate a set of summative test questions for a particular examination period specifically Midterm and Final examinations. The system includes a feature that allows teachers to create a test questionnaire in a Microsoft Word file format, wherein the user could select or deselect test items using keywords, and then print the said questionnaire for reproduction purposes. Conclusion: Based on the foregoing findings, the following conclusions were drawn: (1) Test items could be reused using a test bank. The technical specifications of the test banking system could be expressed in terms of object-oriented models as use-case diagram, class diagram and sequence diagram. (2) A test bank is not only an effective way of storing analyzed test items; it is also an effective mechanism to generate test questions.

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The Problem:

Some of the university, had for a long time made use of traditional assessment strategies which are administered on paper and which test items, in most cases, have been taken from text books or actual lessons in the classroom. Some teachers took them from previous examinations; not considering, whether the test items are too difficult or just too easy for the examinees to answer. Ideally, test items should be subjected to item analysis to make sure that they are neither too hard nor too simple to tickle the minds and to test the degree of understanding the learner has acquired. Merrell & Tymms (2007)

supports this idea by stating that:

Traditional group assessments, administered on paper, tend to be limited in the range of item difficulties that can be included and yet frequently they are considered to be a suitable method for assessing children with wide range of abilities. Typically, they will have a few questions that are very difficult and a few questions that are very easy for the majority of the target group. This means that a child of low ability can find the experience damaging to their self-esteem and yet a gifted child will only be challenged by a small number, if any, of the questions. The amount of information provided about

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the children at these extremes of the population is limited and their scores have higher margins of error - a point that is often missed by proprietary tests.

A test item is a question that is included on a test. It may come in the form of multiple choice, matching, identification, true or false, or an essay. Each question usually covers material described by the objective. In some of the university setup, test items are represented by eight (8) test stems: namely, concept recall, analysis, synthesis, application, evaluation, discrimination, sequencing, and comprehension.

The faculty members of the university are required to do item analysis after midterm and final examination. They are required to submit the results of the analysis at the end of each term specifically at the end of every semester. Item analysis is a process of choosing the best items from a pool of items based on the results of the examination. As Coombre & Hubley, (1998) fittingly described, it is a procedure whereby test items are examined based on the results of the examination. On the same note, it is a procedure whereby test items and the extent to which they are used discriminate between high-achieving and low-achieving students.

As soon as item analysis is done, bankable and non-bankable items are identified. The item analysis efforts of the academic units have been going on for several years. However, some of the university does not have a mechanism to store test articles which are considered bankable on the basis of item analysis. It is thus, necessary to come up with a test bank to keep those items for future use.

Notably, a Test Banking system is a program designed to provide test questions which are computer generated. It facilitates the systematic storage, updating and retrieval of equivalent test forms from a computerized test bank. Its outstanding feature is that a test form can be generated within minutes in contrast to the manual assembly of items which takes up a lot of time to finish.

The practice of some of the academic community to subject test questions to item analysis after midterm and final examination period, coupled with the availability of analyzed test items in the university's academic units, notwithstanding, the absence of a test bank to store them, prompted the researcher to develop a Test Banking system for the university.

This is aimed at providing instructor's means by which bankable test questions could be stored for future testing activities. Through the use of the testbank, instructors select questions, which can be objective—multiple-choice, true-false, fill-in-the-blank, or matching—or essay, or one or all of the test stems currently being used in the university set up. The computer can print several versions of a test, randomly scrambling the order of the questions every time a questionnaire is generated.

Conceptual Framework Of The Study:

This system development effort was anchored on the concept that an important aspect of testing strategy is the development of test banks that contain reusable items. Test banks are most important in lower-level courses, primarily because more students take standard examinations during the first year level. Also, lower-level courses are more likely to have large enrollments that make ready-to-generate questions more attractive (Sevenair & Burkett, 2007). The flow of the study is presented in Figure 1, the IPO (Input-Process-Output) Diagram of the Study.

The first box in the IPO Diagram contains the input requirements. These are needed to produce the required output which is the Test Banking system for the University. As can be seen in the figure, the system development effort requires resources namely; personal computer (PC), Visual Basic which will be used as programming software, MS Access for the databases, object-oriented modeling tools to illustrate the technical specifications, and test bank characteristics/attributes for data definition and item-analyzed samples for system testing.

The second box in the diagram presents the process box. This contains ways and means through which the inputs and technical specifications could be represented, processed, and converted to desired outputs. For this study, the data and technical specifications are illustrated using object-oriented models in the form of use case diagrams, class diagrams, and sequence diagrams for purposes of paper documentation. In like manner data representations and technical specifications on the soft side (program) are represented using codes, reports, modules, databases, and forms.

The third and last box represents the desired output which is the objective of the study, the Test Banking System for the university. After the system design has been implemented and the desired output has been produced, the user manual was developed.

Statement Of Purpose And Objectives:

This study aimed to develop a Test Banking system for the university. Specifically, this seeks to achieve the following objectives.

1. Document the design of the system in terms of input, process and output;
2. Implement the design specifications, and
3. Prepare a user manual.

Assumptions:

The study was conducted with the following assumptions:

1. Test items had already undergone item analysis. It has been reviewed, and were deemed good and bankable;
2. Test items should have been classified by academic unit, subject area, course code, and course title;

3. The system will be installed in the academic units of the University, and
4. The banking of analyzed test items will be done by person/s designated by the Assistant Dean of the academic unit concerned.

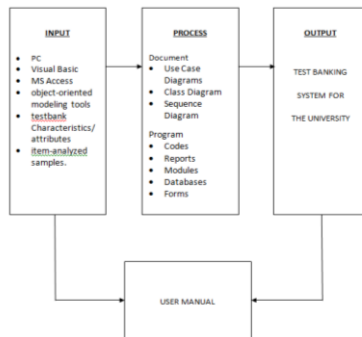


Fig. 1: IPO Diagram of the System.

Method:

The study utilized a descriptive research design employing analysis, application and developmental approaches considering that the end goal of this study was to develop a running test banking system for the university. Object-oriented approach was also used in the system analysis and design phases to specifically illustrate the functionalities of the system. Object-oriented modeling tools were also used to illustrate the system design.

Data gathering was done using direct interview method, coupled with observation and documentary analysis as supplementary tools for research. The study interpreted the data gathered through pictorial representations and depicted the system design by means of use-case diagrams, class diagram and sequence diagrams.

The participants of the study were the selected faculty members of the university. Purposive sampling was applied to choose the respondents of the study because the information needed for the study should have come from those who have actual experience of the scenarios involved in the analyzed test item generation and Test Banking, thereof. The study utilized use-case, class and sequence diagrams as tools for data analysis.

A use-case diagram is a behavioral diagram that uses a graphical notation for representing the relationships between a set of use cases or scenarios. This emphasizes the written description of system behavior regarding a business task or requirement (Wikipedia, 2006).

A class diagram is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, and the relationships between the classes (Wikipedia, 2006).

A sequence diagram shows, as parallel vertical lines, different processes or objects that live simultaneously, and, as horizontal arrows, the

messages exchanged between them, in the order in which they occur (Wikipedia, 2006).

RESULTS AND DISCUSSION

This section presents the results of the study, the system models and the suggested hardware and software specifications for the implementation of the system.

Overview of the University TestBanking System:

The university test banking system is an automated information system that is aimed at storing bankable test items based on the results of the item analyses made by faculty members after midterm and final examination period. The system allows the user to store bankable items and retrieve them in the form of a framed questionnaire.

To use the system, the user logs onto the system by entering his/her username and password. A data entry form will appear on screen. This is where the teacher enters bankable test items which could be in the form of an introspective or associative thinking stems; namely, concept recall, discrimination, sequencing, analysis, synthesis, application comprehension, or evaluation. The data entered herein will then be stored in the database for future use.

As soon as there are test items enough to frame up a questionnaire, the teacher could retrieve these and generate a set of summative test questions for a particular examination period specifically Midterm and Final examinations. The system includes a feature that allows teachers to create a test questionnaire in a Microsoft Word file format, wherein the user could select or deselect test items using keywords, and then print the said questionnaire for reproduction purposes.

Use case model of the test banking system:

A use case diagram is a graphical model that summarizes the information about the actors and the uses of the system. This shows the various user roles and how they will use the system. It shows the events involved in the system. Here, the system is viewed as a whole; thus, all of the major uses of the system are identified.

Figure 2 presents the use-case model of the test banking system. The scenarios enclosed by the circle in the broken line format represent the automation boundary. The automation boundary denotes the limit between the environment where the actor resides and the internal functions of the automated system. The directed arrows, also in broken line format, emanating from one use case to another show the dependencies between the processes involved in the system.

Use case specifications:

To illustrate the processes involved in the system, use case specifications are presented below

to show an expanded version of the use-case diagram. Use cases 1-3 depict the flow of events inside each scenario in the use case diagram.

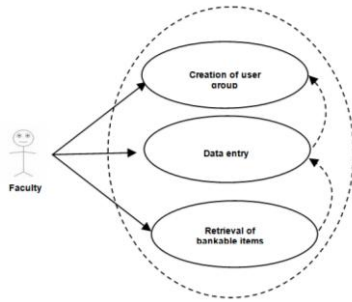
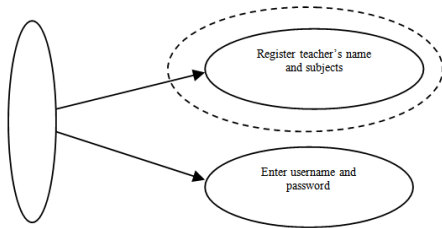
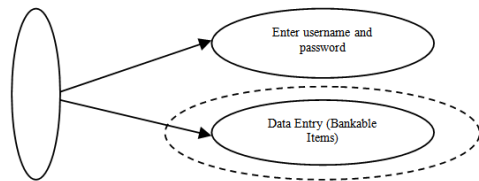


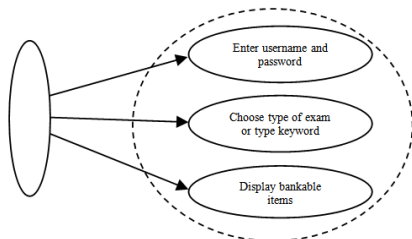
Fig. 2: Use Case Diagram of the System.



Use Case 1: Creation of User Group.



Use Case 2: Data Entry.



Use Case 3: Retrieval of Bankable Items.

Class diagram of the test banking system:

A class diagram is a graphical model that shows all the classes of the objects in the system (Shelly, et.al., 2005). It describes the classes that make up a system and the relationship between them. The classes are defined in terms of their names, attributes, and behavior. Figure 3 presents the class diagram of the test banking system of the University. Class descriptions follow in the succeeding pages.

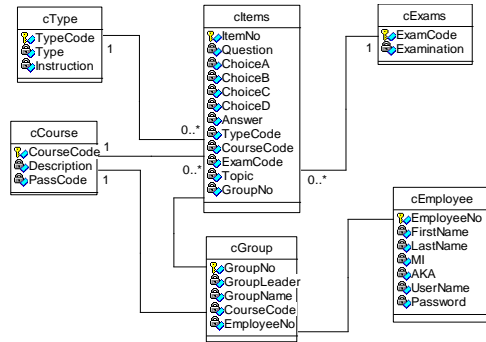


Fig. 3: Class Diagram of the Test Banking System.

Class descriptions:

Class description helps readers to understand easily about the classes because this includes the description and emphases of the attributes and methods. The following presentation shows the class description for each of the classes identified in the class diagram for each of the test banking system. The identified classes are defined with their respective attributes and services. The class components of the diagram are explained and a textual representations of the attributes contained in the classes are presented.

Sequence Diagrams:

A sequence diagram is a model describing how groups of objects collaborate in some behavior over time. The diagram captures the behavior of a single use case (Satzinger, et.al., 2000). It shows the messages that passed between the objects in the use case. Figures 4, 5 and 6 present the sequence diagrams of the test banking system as a result of the analysis phase.

In these diagrams, the researchers identified which objects collaborated and what interactions are necessary. Objects are listed at the top of the diagram, and beneath them is a line representing time. The dotted lines extending downwards indicate the timeline, where time flows from top to bottom. The arrows represent messages (stimuli) from an actor or object to other objects. Arrows between the time lines indicate events triggered from one object to another. Actors are considered as objects too, and for many sequence diagrams an actor is the prime source of events, say by actions they take on a keyboard.

System screen shots:

Presented in this section are the sample screen shots which are found in the actual Testbanking System of the University. These are illustrated in this section so that the users would have a grasp of what the system looks like and the environment with which it runs.

Class Description: CType represents the type of test that is defined in the system:

Attribute(s):

TypeCode	- A text assigned to the type code - Maximum of 7 characters
Type	- A text assigned to the type of test - Maximum of 25 characters
Instruction	- A string refers to the instruction for the type of test.

Class Description: CItems represents the test items:

Attribute(s):

ItemNo	- A unique number assigned to every test item.
Questions	- A string refers to the test item question
ChoiceA	- A string refers to the answer(A)
ChoiceB	- A string refers to the answer(B)
ChoiceC	- A string refers to the answer(C)
ChoiceD	- A string refers to the answer(D)
Answer	- A text refers to the correct answer assigned to the test item question
TypeCode	- A text assigned to the type code. - Maximum of 7 characters
CourseCode	- A text assigned to the course code. - Maximum of 7 characters
ExamCode	- A text refers to the exam code - Maximum of 2 characters
Topic	- A text assigned to the course code. - Maximum of 20 characters
GroupNo	- A number assigned for the group number - Uses long integer

Class Description: CExams represents the type of exams defined in the system:

Attribute(s):

ExamCode	- A text refers to the code for the examination -Maximum of 2 characters
Examination	-A text refers to the type of examination -Maximum of 50 characters

Class Description: CCourses represents the different courses:

Attribute(s):

CourseCode	- A text assigned to the course code -Maximum of 7 characters
Description	- A text assigned to the course description -Maximum of 50 characters
PassCode	- A text assigned to the pass code -Maximum of 10 characters

Class Description: CEmployees represents that employee in the system:

Attribute(s):

EmployeeNo	- A text uniquely assigned to employee - Maximum of 10 characters
FirstName	- A text assigned to the first name of the employee -Maximum of 50 characters
LastName	- A text assigned to the last name of the employee - Maximum of 50 characters
MI	- A text assigned to the middle name of the employee - Maximum of 50 characters
AKA	- A text assigned to the alias of the employee - Maximum of 10 characters
UserName	- A text assigned to the user name of the employee - Maximum of 10 characters
Password	- A text assigned to the password of the employee - Maximum of 10 characters

Class Description: CGroup represents the grouping of members in the system:

Attribute(s):

GroupNo	- A number uniquely assigned to each group
GroupLeader	- A text assigned to the name of the group leader - Maximum of 9 characters
GroupName	- A text assigned to the name of the group - Maximum of 25 characters
CourseCode	- A text assigned to the course code - Maximum of 7 characters

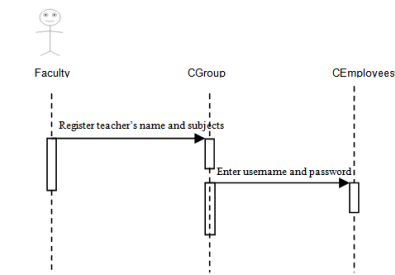


Fig. 4: Creation of user group.

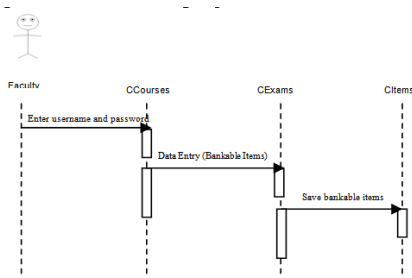


Fig. 5: Data Entry.

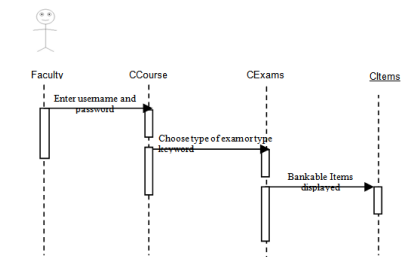


Fig. 6: Retrieval of bankable items.

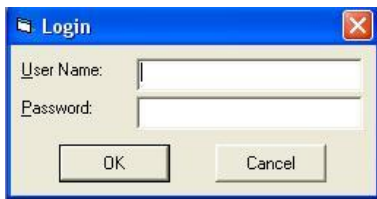


Illustration 1: Login Form.

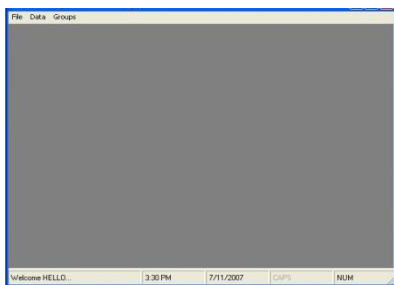


Illustration 2: Main Form.

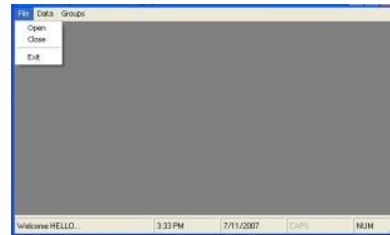


Illustration 3: File submenus.

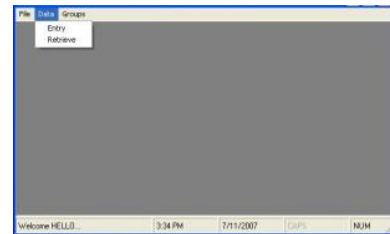


Illustration 4: Data submenus.

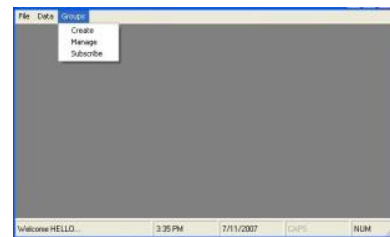


Illustration 5: Groups submenus.

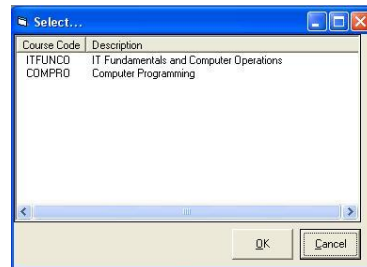


Illustration 6: Select Subjects Form.

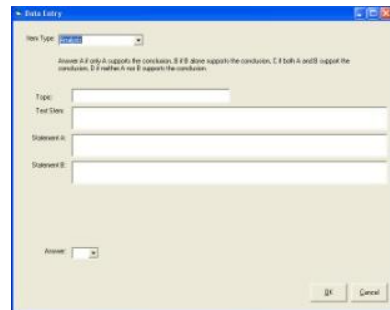


Illustration 7: Data Entry Form.

User manual:

The succeeding pages outline the steps that will be followed by the user in the use of the University Test Banking System.

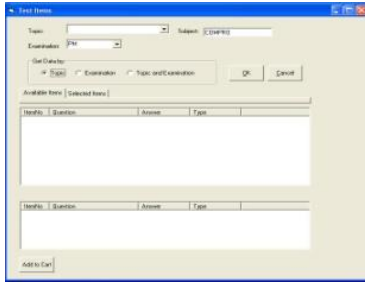


Illustration 8: Retrieve Test.

Testbanking basics:

Opening a program:

When you open the Testbanking program, you will be asked to login as shown in Illustration 9. If you are a moderator use ADMIN as the username and password, if not, use the username and password assigned to you and then click OK.

Select the desired examination period as shown in Illustration 10 and click “OK” button; the main screen is displayed as shown in Illustration 11.

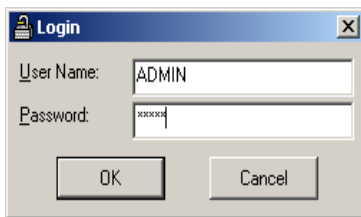


Illustration 9: Login Screen.

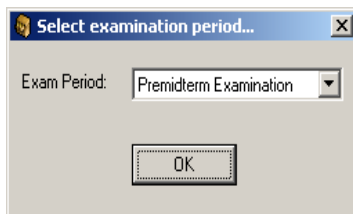


Illustration 10: Examination Period Screen.




Illustration 11: Main Screen.

Course group management:

For every course, one should be assigned as the course group moderator. For security purposes, only the moderator can create the course group account.

To create course group:

1. Login as moderator using the ADMIN username and password.

2. Click the **create course group**  icon on the toolbar or choose **Create** from the **Groups** menu; the screen is displayed as shown in Illustration 12.

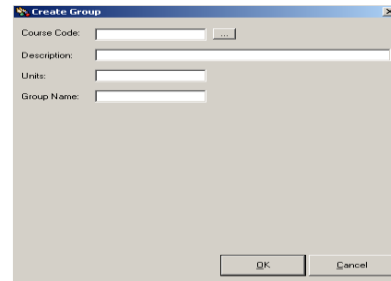



Illustration 12: Create Group Screen.

3. Click the **search button**  to view courses. Double click the **course** you want to create a group.


4. Type the desired **group name** on the text field provided and click OK button.

5. To log off, go to **File** menu and click **Log Off ADMIN**.

To bank test items and retrieve test items to/from a particular course group, you must join the course group.

To join a course group:

1. Login as user using the assigned username and password.

2. Click the **join course group**  icon on the toolbar or choose **Subscription** on **Groups** menu; the screen is displayed as shown in Illustration 13.

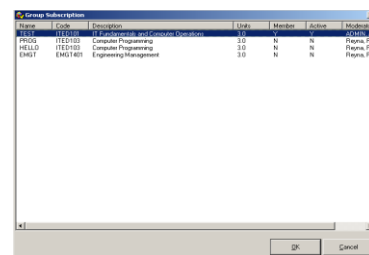


Illustration 13: Group Subscription Screen.


3. Double click on the **course group** you wish to join.

4. Click **YES** button to complete the subscription and then click OK.

Managing a course group allow the moderator to make user an active member of the course group. If a user is granted as an active member, the user

can bank test items and retrieve test items to/from the system.

To manage a course group:

1. Login as moderator using the ADMIN username and password.
2. Click the **manage course group**  icon or choose **Manage** from the **Groups** menu; the screen is displayed as shown in Illustration 14.
- 3.

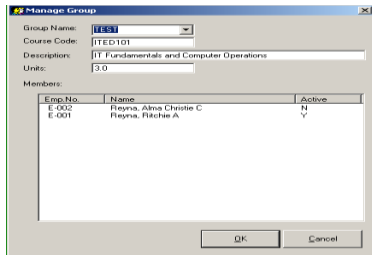



Illustration 14: Manage Group Screen.


4. Select the **course group** from the **group name** combo box, all members of the group will appear in the list. 
5. Double click the name of the member and choose **YES** to activate the status of the member and **NO** if not.
6. Click OK to complete the process. Click OK to close the window.

Banking And Retrieving Test Items:

Data entry:

A user can bank test items as soon as he/she is an active member of the course group.

To bank test items:

1. Login as user using the assigned username and password.
2. Click the **open course group**  icon in the toolbar or choose Open Course Group from the File menu; the screen is displayed as shown in Illustration 15.

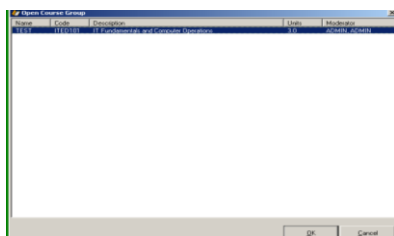



Illustration 15: Open Course Group Screen.

Note: Only the course group(s) where you are a member or moderator will appear in the list.

3. Select the desired **course group** and click OK. Click **YES** button to complete the process.

4. To enter data or test items click the **enter data**  icon in the toolbar or choose **Entry** from the data menu; the screen is displayed as shown in Illustration 16.

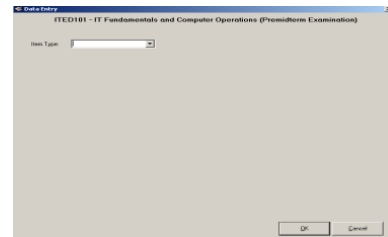


Illustration 16: Screen for choosing the item type.

5. Choose an **item type** from the list box and click OK. The **data entry** form is displayed as shown in Illustration 17.

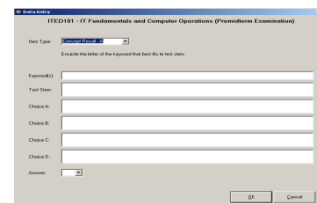



Illustration 17: Data Entry Screen.

6. Enter all the required data and click OK. Press Cancel to exit.

To retrieve: bankable items:

1. Click the **retrieve data**  icon in the toolbar or choose **Retrieval** from the **Data menu**; the retrieve form is displayed as shown in Illustration 18.

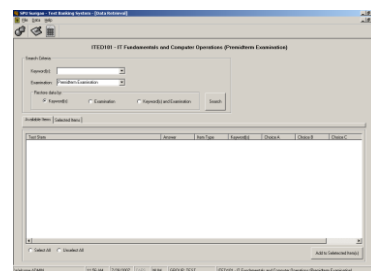


Illustration 18: Retrieve Form.

2. Select a **search criteria** from the frame (choose BY EXAMINATION) and click the **search** button. Retrieved item(s) will be displayed in the available items list as shown in Illustration 19.

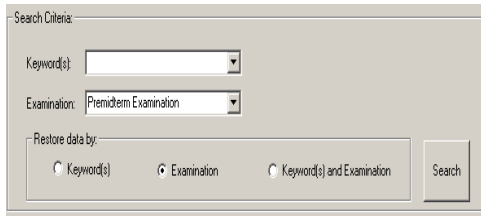
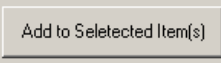
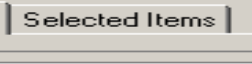


Illustration 19: Sample Retrieved Data.

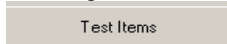
3. Select item(s) by checking the **checkbox** for the item(s).
4. Click **add to selected item(s)** to choose the desired item(s). 
5. To view selected items select the **selected items** strip in the tabstrip. 

The selected items are displayed as shown below. A sample is shown below.

Test Item	Answer	Item Type	Keyword(s)	Choice A	Choice B	Choice C
<input checked="" type="checkbox"/> The slope of a line that is perpendicular to the x-axis	B	CONFE-A	Slope	A. Zero	B. Infinity	C. One
<input checked="" type="checkbox"/> _____ Species richness determines the stability of an ecosystem.	Diversity	CONFE-I	Diversity			
<input checked="" type="checkbox"/> _____ A coefficient of correlation that is used to determine customer reactions. That process is called:	Promotion	CONFE-I	Promotion			
<input checked="" type="checkbox"/> When McDonald's considered adding pizza to their menu, the company	B	CONFE-A	Marketing	A. promotion	B. test marketing	C. outsourcing
<input checked="" type="checkbox"/> Calcium comes easier than credit marriage.	C	DSDMA	calcium	A. It is easier to...	B. It takes time...	C. We have no...
<input checked="" type="checkbox"/> The hull does not store food for the direct use of the plant or the seed th...	D	DSDMA	Food	A. Food in the...	B. Food in stem...	C. Food in dat...
<input checked="" type="checkbox"/> _____ The difference between the highest frequency...	Bandwidth	CONF-E	Bandwidth			
<input checked="" type="checkbox"/> _____	C	SONCE-A	Paper	A. calculator	B. add	C. paper
<input checked="" type="checkbox"/> _____ In lower mammalian extant, what event follows?	A	SONCE-A	reception	A. reception	B. ovulation	C. secretary
<input checked="" type="checkbox"/> _____	A	SONCE-I	reception			
<input checked="" type="checkbox"/> What is the final stage in the life cycle of a but...	pupa	SONCE-I	pupa			
<input checked="" type="checkbox"/> The area of a rectangular lot is 150 sq. m ft	A. The length of...	ANLYS	area of a recta...	A. A alone sup...	B. B alone sup...	C. Both A and...
<input checked="" type="checkbox"/> The seed contains a diploid embryo and a triploid endosperm.	C	ANLYS	embryo	A. A alone sup...	B. B alone sup...	C. Both A and...
<input checked="" type="checkbox"/> Pfund Snails, Morogolo Larvae, Chagroyly Nymphs	C	SYNTHA	organisms	A. mangrove st...	B. marine saps...	C. freshwater o...
<input checked="" type="checkbox"/> A diagram showing the internal registers of a processor.	A	CONFE-A	Programming M...	A. programming...	B. register design	C. flag register

6. To finalize work, click **save** button to complete data retrieval. 

7. To view/print test items in a test instrument press **test items**. A sample of the test question that will be generated from this action is shown below.



8.

ITED101 - IT Fundamentals and Computer Operations
Premidterm Examination

Name: _____ Course-Year: _____ Score: _____

CONCEPT RECALL [Associative]: Encircle the letter of the keyword that best fits to test stem.

1. The slope of a line that is perpendicular to the x-axis.

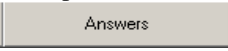
A. Zero	C. One
B. Infinity	D. One-half
2. When McDonald's considered adding pizza to their menu, the company made pizza available in some of their markets to determine customer reactions. That process is called:

A. promotion	C. outsourcing
B. test marketing	D. concept testing
3. A diagram showing the internal registers of a processor.

A. programming model	C. flag register
B. register design	D. memory map

CONCEPT RECALL [Introspective]: Write key word that uniquely fits the test stem.

4. _____ Species richness determines the stability of an ecosystem and describes its ability to maintain a steady state.

9. To view/print the answers, click the **answers** button. 

Summary:

The study aimed to develop a Test Banking System for the University. Specifically, it aimed to document the system in terms of its design and technical specifications; to develop a running system, and to test the performance of the system. To be able to reach the end goal of the study, it was assumed that the test items that will be stored in the system had already undergone item analysis, were reviewed, and were deemed good and bankable. Furthermore, the test items should have been classified by academic unit, examination period, subject area, course code, and course title; and the test banking system will be installed in all the academic units where banking of test items will be done by designated person/s in the said units.

The study utilized a descriptive research design employing the applied developmental approach. Object-oriented approach was also used in the analysis and design phases to specifically illustrate the functionalities and the desired performance of the system which was developed under this study. Object-oriented modeling tools were particularly utilized to illustrate the system design.

In addition, data were gathered using direct interview method, coupled with observation and documentary analysis as supplementary tools for research. The study interpreted the data gathered through pictorial representations and depicted the system design by means of use-case diagrams, class diagram and sequence diagrams.

Findings:

Based on the results of the study, the following findings are revealed:

1. Analyzed test items are found compiled in the academic units of the University in hard copies. These test items were chosen as good and bankable and could be utilized for future generation of examination papers. However, these were not banked, because the University does not have a mechanism to store the said test items for its intended purpose. The researchers, thus, thought of conducting a study to design and develop a computer-based test banking system. In relation to this the technical specifications of the system has been documented and presented using object-oriented modeling tools.
2. The design derived from the analysis phase was implemented and a test banking system was developed.
3. A user manual was prepared to guide the users in the utilization of the system.

Conclusions:

Based on the foregoing findings, the following conclusions were drawn:

1. Test items could be reused using a test bank. The technical specifications of the test banking system could be expressed in terms of object-oriented models as use-case diagram, class diagram and sequence diagram
2. A test bank is not only an effective way of storing analyzed test items; it is also an effective mechanism to generate test questions.

Recommendations:

The following recommendations are hereby forwarded for the implementation of the system:

1. Pilot testing be done to evaluate the performance of the system.
2. The University, through the Office of the Vice President for Academic Affairs, facilitates the orientation of the faculty members on the use of the Test Banking System as soon as pilot testing has been done.
3. For the system to run properly and effectively, the researchers recommend the following hardware specifications:

Hardware Component	Specification
Computer	Intel Board PC
Processor	Intel Core i5 – 4460 Quad Core 3.2 Ghz up to 3.4 Ghz
Motherboard	Asus Motherboard H81 Intel Chipset
Video Card	Built in
Sound Card	Built in
Monitor	AOC 5En 15-inch, colored
Memory	4 GB Kingston Memory DDR3
Keyboard	A4 Tech USB
Mouse	A4 Tech USB
Hard Disk	1 TB Hard Disk Drive 7200rpm SATA
UPS	APC BX650Li Back-UPS

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