



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2004/2005 – 2nd Year Examination – Semester 4

IT4302 -Rapid Application Development

PART 2 - Structured Question Paper

14th August, 2005

(ONE HOUR)

To be completed by the candidate

BIT Examination Index No: _____

Important Instructions:

- The duration of the paper is **1 (One) hour**.
- The medium of instruction and questions is English.
- This paper has **3 questions** and **10 pages**.
- **Answer question 1 (60% marks) and any one of the other questions (40% marks each) only.**
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.

Questions Answered

Indicate by a cross (x), (e.g.

x

) the numbers of the questions answered.

To be completed by the candidate by marking a cross (x).	1	2	3
To be completed by the examiners:			

Based on the following case study answer question 1.

1)

InfoTech Agency

InfoTech Agency is a famous bookshop which sells technical books, CDs, tapes and videos imported directly from international publishers. It also manages a library of these items at a special 3-tiered subscription rate for its customers. Library members receive special discounts whenever they purchase any item from InfoTech Agency. Operations of the library and bookshop are integrated together.

The library is set up along conventional lines. There are restrictions on the number of items which can be borrowed depending on the level of subscription. Levels A,B and C are allowed 3,2 and 1 items respectively. Library items should be returned within seven days but they can be extended for another week if there is no reservation by another member of the library.

Library items include books, CDs, tapes and videos. They can be categorized as permanent reference items (PR) or lending items. PR items can be used inside the library but are not allowed to be borrowed. There can be more than one copy available for any item.

In order to borrow a library item or to buy, a customer selects it and takes it to the entrance counter which handles both lending and selling operations. However, there is a separate counter for the cashier. Library members have a special card with a photo of the member. The person at the counter first checks the library card for membership status. Subsequently he will check for overdue books and whether he has already reached the borrowing limit. If there is no problem, then the member can leave with his loan items and that information will be recorded. On the other hand, if a person wants to buy some items, the clerk issues an invoice to the customer and the relevant amount should be paid to the cashier before items are issued. The customer can claim a special discount if he posses a library card of the InfoTech Agency library.

When a member returns borrowed items, the clerk checks whether the items are reserved items. If so, he will take necessary steps to inform the person who has reserved it. If there is a fine to be paid due to damage or items being overdue, the member should settle it to reactivate his membership status.

By giving details of library items and the membership card to the clerk at the counter, anyone can reserve them if such item is not available in the library at the time. It is possible to have more than one reservation for a single lending item.

- (a) Identify five possible classes and write down the code to create instances to three of the classes identified.

(09 marks)

ANSWER IN THIS BOX

- (b) Write down lines of code to open a database connection, in order to implement the system given in the case study. Since MS SQL server 2000 is used as the backend, *sqlconnection* must be used. (The following are variable names: *myCon* as connection, Database is *InforTec*, *strUsername* for user name and password is *strPassword*; server name is *bitserver*.)

(12 marks)

ANSWER IN THIS BOX

- (c) Modify the above code to accommodate Structured Exception Handling (without using *SqlException*). While correct user names and passwords are entered, the application should allow navigating to a menu form (*frmMenu*). When Wrong passwords are entered, application must generate an error.

(15 marks)

ANSWER IN THIS BOX*Continued...*

- (12 marks)**

ANSWER IN THIS BOX

Continued...

- (e) Define parameter queries and modify the query below to make it a parameterized query by inserting place holders and named parameters.

Select * from publishers where Au_Lname = “Stevens”

(12 marks)

<u>ANSWER IN THIS BOX</u>

- 2) (a) (i) Describe Namespace and Namepolution.
(ii) Write down and justify the importance of Namespace to prevent Namepolution

(10 marks)

ANSWER IN THIS BOX

Namespace

Namepolution

- (b) Write down Namespaces for windows forms and a listbox of a form with the declaration.

(10 marks)

ANSWER IN THIS BOX

- (c) Where should one place *Imports* statement and why is it important in Visual .net?

(10 marks)

ANSWER IN THIS BOX

- (d) Describe the following:

- (i) MSIL
- (ii) CLR

(10 marks)

ANSWER IN THIS BOX

MSIL

Continued...

CLR

- 3) (a) Two forms have been created: *frmMyForm* and *frmNextForm*. To the *frmMyForm*, a button has been added. Once the button is clicked, *frmNextForm* should appear after closing the *frmMyForm*. Write down the lines of code in the button click event. The background colour (backcolor) of the form should change from the default color to Red.

(12 marks)

ANSWER IN THIS BOX

(b) Describe the following functions:

- (i) Len()
- (ii) Mid()
- (iii) Right()
- (iv) nstr()

(10 marks)

ANSWER IN THIS BOX

Len()

Mid()

Right()

nstr()

(c) Using the functions given in (b) and the declarations given below write the code to do the following:

Dim strX as String
strX = "Left Right"

- (i) Find the position of the space.
- (ii) Find the length of the string.
- (iii) Separate Right from left.

(12 marks)

ANSWER IN THIS BOX

Continued...

Index No:

- (d) (i) Declare a three dimensional Array.
(ii) Declare a jagged array with 3 nested levels.

(06 marks)

<u>ANSWER IN THIS BOX</u>
