UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2008/2009 – 2nd Year Examination – Semester 4

IT4103: Programming II
PART 2 - Structured Question Paper

15th August, 2009
(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 **2 questions** and **6 pages**.

- **Answer all 2 questions. Questions do not carry equal marks.**

- **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 (✗), (e.g. ☒) the numbers of the questions answered.

	Question Numbers		
	1	2	
To be completed by the candidate by marking a cross (✗).			
To be completed by the examiners:			

1) **Write descriptions on the following and introduce required segments of code when necessary.**

a) Assume that there is a database, having the name **Sales,** which is created by using Microsoft Access, having one table in it, with the name **Customer**. The Customer table has three fields namely, Customer Id, Customer Name and Address. Write a Java program to show the database connectivity using the Sales database. It is not required to consider the creation of an Interface to show the data.

(30 Marks)

ANSWER IN THIS BOX

b) Write an introductory paragraph on the sorting method called Quick Sort. Use the necessary segment of codes in Java to show the implementation of Quick Sort.　　　**(30 marks)**

ANSWER IN THIS BOX

Continued:

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2) Consider the following scenario:

The word 'queue' is used in Britain to denote a line. A line of persons at the Cinema is an example to show a queue in real life. The first person to join the line is the first to buy a ticket. The last person to join the line is the last to buy a ticket.

One can see the following behaviour in a line at a Cinema.

- Spectators joining the rear end of the line.
- After taking a ticket leaving the line.
- Whenever required, the ticket issuer calling the spectator who is at the front end of the line.
- A situation where there are no spectators in the line.
- A situation where there are spectators in the line.

After considering the above scenario, one has to identify a suitable data structure which can be used to implement the above mentioned behaviour as functions in a computer environment.

Do the following:

a) Write the name of the data structure which can be used in a computer environment to manipulate data having similar behaviour as the above scenario. **(02 Marks)**

<u>**ANSWER IN THIS BOX**</u>

b) Implement the identified data structure using Java programming language following Object Oriented concepts.   **(38 Marks)**

<u>**ANSWER IN THIS BOX**</u>

Continued:

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