UNIVERSITI SAINS MALAYSIA

First Semester Examination
Academic Session 2003/2004

September/October 2003

CIT504 – Analysis, Design and Management of Information Systems

Duration : 3 hours

INSTRUCTION TO CANDIDATE:

- Please ensure that this examination paper contains **FOUR** questions in **FOUR** printed pages before you start the examination.

- Answer **ALL** questions.

- You can choose to answer either in Bahasa Malaysia or English.

ENGLISH VERSION OF THE QUESTION PAPER

1. (a) List and briefly describe the main principles, concepts and guidelines in each of the process, tools and notation you have studied in your OOA&D course.

(20/100)

(b) The most important idea in the Unified Process (UP) is 'iterative development'. Draw an appropriate diagram to illustrate and describe the practice of 'iterative development' in a software development lifecycle.

(20/100)

(c) Explain the functions of the sequence diagram below and draw a corresponding collaboration diagram.
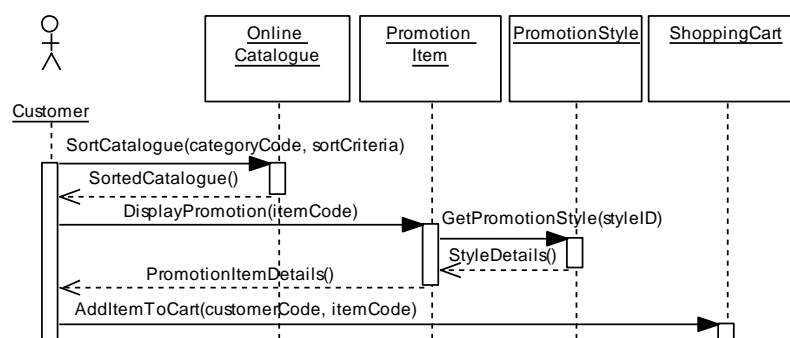
(20/100)

(d) (i) Draw the main class diagram(s) and interaction diagrams for specifying the high level user and system requirements of a point-of-sales system.

(30/100)

(ii) Briefly explain each of the point-of-sales UML diagrams and its main roles in the entire point-of-sales system.

(10/100)

2. (a) A critical & fundamental job of a systems analyst/designer in an OOA&D process is the skillful assignment of responsibilities to software objects and components. Describe the tasks involved.

(20/100)

(b) List **three (3)** design patterns and explain in detail one of those listed.

(20/100)

(c) In a 'Rent Diving Equipment' use case, there could be two scenarios: 'Rent diving equipment to an existing customer' and 'Rent diving equipment to a new customer'. Write general descriptions for the two scenarios and draw the necessary sequence diagrams to document them.

(20/100)

(d) (i) Describe the syntax of a statechart diagram.

(10/100)

(ii) Draw and briefly explain the key components of a statechart diagram for an eOrders system incorporated with Inventory Control capabilities.

(30/100)

3. (a) (i) Describe briefly the **five (5)** steps in an ethical analysis?

(ii) How is the Internet challenging the protection of individual privacy?

(iii) What is the most common cause of system quality problems?

(30/100)

(b) (i) Discuss some of the ways that knowledge management provides organizations with strategic advantage. How strategic are knowledge management systems in terms of enhancing company performance (profits, etc.)?

(ii) How much can the use of artificial intelligence change the management process? Explain.

(30/100)

(c) (i) As a manager or user of information systems, what should you need to know to participate in the design and use of a DSS or an ESS? Why? Explain.

(ii) If business organizations used DSS, GDSS, and ESS more widely, would they make better decisions? Explain.

(20/100)

(d) (i) What is the traditional systems lifecycle? Describe each of its steps and its advantages and disadvantages for system building.

(ii) What are Web services? How can they help firms build and enhance their information systems? Explain.

(20/100)

4. (a) (i)   Why is there such a high failure rate among enterprise resource planning (ERP) and business process reengineering (BPR) projects? Explain.

         (ii) Why are customer relationship management (CRM) and supply chain management systems (SCM) often difficult to implement? Explain.

         (iii) Describe project management techniques which can be used to control project risk.

(30/100)

    (b) Ain Medicare Sdn. Bhd. is a small but highly regarded manufacturing company located in Kota Baru, Kelantan. The company has a network system in place, linking many of its business operations. While the firm feels that its security is adequate, the recent addition of a Website has been an open invitation to hackers. The management of this company requested a risk assessment report, in which risks assessment are performed and their effects to the firm are identified. Assume that you are the company IT manager. Describe how you would prepare the intended report as well as recommending several security steps that can be performed.

         (Hints: You can identify several potential exposures with the existence of the Website. You should also identify potential threats to the company, and estimate the loss. Then, you should also give your suggestions or recommendations to increase the security measures to secure the company digital knowledge or information.)

(50/100)

    (c) Descibe briefly the **five (5)** major dimensions to consider when building an international information system.

(20/100)

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