

UNIVERSITY OF BOLTON

**SCHOOL OF BUSINESS & CREATIVE
TECHNOLOGIES**

SEMESTER 2 EXAMINATIONS 2010/2011

SYSTEMS ANALYSIS AND DESIGN

MODULE NO: CST2511

Date: Tuesday 31st May 2011

Time: 10:00 – 12:00

INSTRUCTIONS TO CANDIDATES:

There are **FOUR** questions on this paper.

Answer **ALL** questions. Please note questions do not carry equal marks.

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ANSWER ALL OF THE FOLLOWING QUESTIONS (The mark allocated is given at the end of each question)

Question 1

You have been asked to undertake a second investigation of systems analysis exercise for a local, private Education College, teaching 16 to 20 year old students. The first investigation did not provide a thorough analysis as was hoped, as the systems analysts did not have enough information. A post-project review highlighted that the main reason was that the analyst team did not use an industry method. This meant that a significant section of the resource distribution system did not feature in the results. This led to duplication of data which has a significant overhead for the college.

Describe in detail a commonly deployed systems analysis and design technique of your choice. Your answer should include:

- An overview of the technique
- Why you have chosen it; a description of the benefits
- The outcome you are likely to achieve
- Disadvantages of the method

[20 marks]

Question 2

Using the information in Appendix A complete the following tasks:

- a) Draw a Context Diagram for the system outlined in Appendix A.

[10 marks]

- b) Outline the key features of the Context Diagram (in (a) above) and the benefits of developing level 1 and 2 Data Flow Diagrams for the system in question.

[6 marks]

- c) Using the information provided in the above analysis and the context diagram in (a) draw a Level 1 Data Flow Diagram containing at least FOUR processes

[20 marks]

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Question 3

Using the information in Appendix A complete the following tasks:

Part A

Entity Descriptions for FOUR entities are included in the examination scenario in Appendix A. Using these Entity Descriptions draw a Logical Data Structure (LDS) for the four entities.

[16 marks]

Part B

With the aid of another LDS diagram, show how the entities defined in Part A can be restructured to minimise redundancy.

[10 marks]

Part C

Outline the advantages of using the technique of “*sampling*” of the forms used by the Academic Departments and the Central Admissions Department to provide information about the efficiency or inefficiency of the admissions process in the university.

[4 marks]

Question 4

Using the information in Appendix A complete the following tasks:

Part A

Name two inputs to Business Systems Options and why they are important to developing a system to meet the needs of the system under investigation.

[4 marks]

Part B

In the business system design scenario, discuss in detail the factors which are likely to determine the type of “Business Options” you present to the college management team.

[10 marks]

END OF QUESTIONS

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Appendix A

Examination Scenario

Please read this through carefully. You will need to answer questions 2, 3 and 4 based on information included in this scenario

After the initial analysis of a partly computerised college student admissions system the following information was obtained.

At the end of each day a manual system in each department collates the number of enquires for HND Courses in the main departments in the college; the details are entered into a folder in that department. There are six departments.

- Business
- Health and Beauty
- Motor Vehicle
- Electronic Engineering and Computing
- English Language and Literature
- Building

At the end of a full week the information is collated, photocopied and sent to the Central Admissions Department. This is done by reviewing all the information in each department's folder and an Admissions Officer enters it manually onto a spreadsheet which is kept by them. The Central Admissions Staff then send out an application form to each student on the following Monday morning. Students return their completed Application Form to the Central Admissions Department who make a note on their spreadsheet. The application form is then sent via the internal post to the Academic Department who then pass it to the course leader to judge whether an offer can be made.

If an applicant is deemed suitable an offer letter is then produced by the Central Admissions Department, these are then placed within an envelope and posted to the student. A copy of each offer letter is then sent to the Academic Department who keep a note in their folder.

On receipt of the completed Student Offer Acceptance Form, the Central Admissions Department makes a note on the student record on the central spreadsheet. Central Admissions also send a copy to the Academic Department and to the Fees Department within the Finance Office. Invoices to students are then produced and sent out within four weeks of the offer being accepted by the student.

Definitive information about all student applications is held in the Central Admissions Department and details are sent to the Academic Department so that they can keep their records up-to-date on the status of applications. Central Admissions also sent a copy to the Recruitment Office to ensure that marketing for courses takes place in a timely

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manner for under-recruiting courses. Courses which are full have a flag set against them on the central course database.

The Central Admissions Department sends a weekly update to the Head of each Department. From July onwards a weekly report is also sent to the Principal's Office and Estates offices detailing all latest recruitment information.

The Head of Recruitment checks to see if any courses have over or under-recruited as per targets. Over recruitment can adversely effect accommodation issues and under-recruitment affects income. The ideal is to hit expected targets. The Recruitment Office is also keen to reward their Schools Agents if they are able to recruit many students.

By the end of June, if any courses have under-recruited, a Recruitment Officer sends an email to the Academic Department so that they can ring up those people who enquired but did not complete and return an application form. Once an application has been received it is fast-tracked through the admissions process to give an offer to the student within five working days. The details of these applicants are noted and a special flag is set on the central spreadsheet.

A unique number is given for each agent identified in the Applicant Folder in each Academic Department. This is included in the weekly update to the Central Admissions Department.

Central admissions checks which agents who deal with the local schools who have been most successful and a bonus is given to those agencies. With regard to students enrolled from distant geographical areas, agents who turn applicants in enrolled students (more than 10 students in a four week period), those students get a discount of 10%.

The Enquiry Date, School Name and Address are added to the header of every Applicant Form whether they are "standard" or "fast-tracked" applicants. Each student name is then added to the Application Form with other details; the student's prior Academic Qualifications, Date of Birth, Address, Course Applied for, Date of Application and Date of Offer of a place.

Please note the payment of student invoices is not included in this exercise.

