NATIONAL SCHOOL OF BUSINESS MANAGEMENT
BSc (Hons) Software Engineering (PU) – 20.1/ 20.2
BSc (Hons) Computer Networks (PU) – 20.1/ 20.2
BSc (Hons) Computer Security (PU) – 20.1/ 20.2

Year 01 Semester 02 Examination
16th July 2021
SE103.3 - System Analysis and Design

Instructions to Candidates

1) Answer ALL questions.
2) Total Number of Pages 03
3) Time allocated for the examination is three (03) hours and 30 minutes (Including downloading and uploading time)
4) Weightage of Examination: 60% out of final grade
5) Download the paper, provide answers to the selected questions in a word document.
6) Please upload the document with answers (Answer Script) to the submission link before the submission link expires
7) Answer script should be uploaded in PDF Format
8) Under any circumstances E-mail submissions would not be taken into consideration for marking. Incomplete attempt would be counted as a MISSED ATTEMPT.
9) The Naming convention of the answer script – Module Code_Subject name_Index No
10) You must adhere to the online examination guidelines when submitting the answer script to N-Learn.
11) Your answers will be subjected to Turnitin similarity check, hence, direct copying and pasting from internet sources, friend's answers etc. will be penalized.

Read the below case study and answer the questions given below.

IFELONG READER library

LIFELONG READER is a large-scale library that provides book lending facilities to its members. Most of the members of the library are local people. The library is opened daily from 10.00am to 5.00pm.

LIFELONG READER manages their daily works manually using text editors and spreadsheets and wants to implement a computerized information system to support them. This decision is made as the staff members already use personal computers for their daily work and the library is financially stable. This system will include library membership management, book lending management, membership card printing, and book purchasing management from the suppliers as described below in more detail.

If new individual is willing to take the membership of LIFELONG READER, he fills a form with their personal details and credit card details, and hand it over to the receptionist at the front counter. The receptionist should record the details in the system. Each new member's details are added to the member file. The system then processes the membership card using the details in the member file. Receptionist can print and give the new member a membership card.

A member wishing to lend a book provides the title of the book they desire, their membership card, and a refundable payment – payment is always with the credit card used to open the member's account to the lending clerk. Then the lending clerk enter the details of the lending to the system and the book lending file will be updated. One member can lend up to two books at once. The member can return the book to the library within seven days. When a book is returned lending clerk update the member's record in the book lending file. If a lent book is overdue by a day an auto-generated reminder is sent to them via system. This continues every week until either the member returns the book, or the charges are equal to the cost of replacing the book.

When LIFELONG READER buys new books, purchasing manager handles the purchasing process. Request for Quotations are sent to suppliers. The local book suppliers send their quotations for the available books to LIFELONG READER, who decide whether to send them an order and payment. If an order is sent, then the supplier sends the requested books to the library. For each new book, a new stock record is placed in the stock file.

Question 01 **(25 marks)**

Answer following questions using only the details given in the case study.

1) Produce the context level data flow diagram for LIFELONG READER. (10 marks)
2) Produce the Level 0 data flow diagram for LIFELONG READER. (15 marks)

Question 02

Consider the following extra information about LIFELONG READER. Using this information create a class diagram. Include minimum two attributes and two methods for each class.

(25 marks)

"LIFELONG READER holds copies of a number of books. It may have up to ten copies of each book. The system should, for each book, hold the book title; no two books have the same title, author ID, ISBN number, and number of copies available. Each copy has a unique identifying number.
A member can lend any copy of a book that is not currently on loan. However, no member can have more than two copies on loan at once ".

Question 03

Following is some extra information about member registration management, and supplier management at LIFELONG READER. Using this information and the details given in the case study, create a use case diagram. **(25 marks)**

"When the receptionist registers a new member to the system, he can get help from the step-by-step guidance provided by the system. To process purchasing, the purchasing manager has to verify the availability of the suppliers."

Question 04:

Assume that you are the systems analyst who is working on the information systems development project of LIFELONG READER. **(25 marks)**

1) List the skills and knowledge that you should have to perform your job role efficiently in this project? (05 marks)
2) Your team will be working on this project based on the Waterfall methodology. Explain how your team will perform the tasks according to this methodology. (08 marks)
3) Assuming that the project should be completed within 3 months period and according to the project methodology that you follow create a GANTT chart. You can select the starting date, end date, tasks, task durations, and task dependencies as your preference. (12 marks)

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