Student Details:

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|  |  |  |
| **Name:** ###**CRN:** ### |  | **ID:** ### |
|  |  |  |

**Instructions:**

You must submit two separate copies **(one Word file and one PDF file)** using the Assignment Template on Blackboard via the allocated folder. These files **must not be in compressed format**.

It is your responsibility to check and make sure that you have uploaded both the correct files.

Zero mark will be given if you try to bypass the SafeAssign (e.g. misspell words, remove spaces between words, hide characters, use different character sets or languages other than English or any kind of manipulation).

Email submission will not be accepted.

You are advised to make your work clear and well-presented. This includes filling your information on the cover page.

You must use this template, failing which will result in zero mark.

You MUST show all your work, and text must not be converted into an image, unless specified otherwise by the question.

Late submission will result in ZERO mark.

The work should be your own, copying from students or other resources will result in ZERO mark.

Use **Times New Roman** font for all your answers.

***System Analysis and Design***

***IT243***

Assignment # 2

Deadline: Day 30/03/2021 @ 23:59

**[Total Mark for this Assignment is 5]**

# Question One

*Learning Outcome(s):*

*LO1: Describe the role of analysis and design in software development*

*LO3. Recognize software requirements and analysis to properly assess the problem faced by the client and suggest an appropriate solution*

***1 Mark***

There are three main application architectures in use today: server-based architectures, client-based architectures, and client-server architectures. Compare between them by highlighting advantages and disadvantages. Which one is considered the most common architecture?

# Question Two

***1 Mark***

*Learning Outcome(s):*

*LO1: Describe the role of analysis and design in software development*

*LO3. Recognize software requirements and analysis to properly assess the problem faced by the client and suggest an appropriate solution*

Suppose that you are having a shipping company called ABC which relies on a wide information system to track the location of each shipped item. The system consists of:

1. Shipped items which are the core of the ABC tracking system, which including: item number (ID), weight, dimensions, destination, and final delivery date.
2. Shipped items are received into the ABC system at a single retail center. Retail centers are characterized by their number, type and address.
3. Shipped items make their way to their destination via one or more standard ABC transportation methods. These transportation methods are characterized by a unique trip ID, a type, and a Delivery Route.

Create an ERD that captures all mentioned information about the ABC system. Be certain to indicate identifiers and cardinality constraints.

# Question Three

***1 Mark***

*Learning Outcome(s):*

*LO3. Recognize software requirements and analysis to properly assess the problem faced by the client and suggest an appropriate solution*

*LO4 Demonstrate the role of software quality assurance and software testing for successful software development.*

*LO5: Use most common analysis and design techniques with comfort*

The university has decided to buy an e-assessment (e-exam) system. This system will be used by students to do their exam. During the requirement gathering the university decided that the system needs to have high standard of performance requirement. Please describes some of the performance requirements should the university apply and which architecture design should be selected and why?

# Question Four

***2 Marks***

*Learning Outcome(s):*

*LO4:* Use most common analysis and design techniques with comfort

Normalize the following unnormalized table using the three normalization rules and describe each step.

Unnormalized table:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Student-ID | Student-Name | Student-City | Student-Code\_Area | Instructor-ID | Instructor-Name | Instructor-Office | Course-ID | Course-Name | Grade |
| S1445 | Ahmad | Dammam | 03 | F12 | Abdullah | 315 | CS140 | Programming 1 | A |
| S1446 | Samer | Jeddah | 05 | F93 | Nora | 116 | IT244 | Database | B+ |
| S2356 | Emad | Riyadh | 01 | F34 | Salem | 231 | IT243 | SAAD | B+ |
| S1445 | Ahmad | Dammam | 03 | F16 | Omar | 564 | CS141 | Programming 2 | B |
| S2356 | Emad | Riyadh | 01 | F16 | Omar | 564 | CS141 | Programming 2 | D |
| S9511 | Khaled | Tabuk | 06 | F55 | Saleh | 987 | IT455 | DSS | A+ |