School of Computer Science – Coursework 1

Session	2017/18	Semester	2
Module Name	Databases and Interfaces	**Code**	AE1DBI
Module Lecturer	Prof. Dr. Sherif Kassem Fathy		

Coursework Name	Databases and Interfaces	Weight	25%
Deliverable	Tasks will test an aspect of the taught material and the database design capabilities		
Format	Power Point Presentation file must be submitted to Moodle		

Issue Date	20 March, 2018
Submission Date	2 April 2018
Submission Mechanism	Moodle. No other methods are accepted
Late Policy	Strict - No late submission. Students will be informed during lectures and lab sessions of this policy
Feedback Date	On line feedback is given after students' seminar during either lecture or lab or Moodle
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Instructions	Complete the tasks provided before the deadline
Assessment Criteria	Each part of the task will have a specific mark
Innovation	30% of the final mark is dedicated for innovation

1. *Introduction:*

Databases and database technology have a major impact on the growing use of computers. Databases play a critical role in almost all areas in our life. Database can be used in business, engineering, medical systems, law, education, and other systems.

2. *Database Design:*

Conceptual modeling is a very important phase in designing a successful database application. An Entity-Relationship (ER) model is a popular high-level conceptual data model.

3. *Objective*

The main objective of first Course Work (CW1) is to design conceptual database model system based on Entity-Relationship (ER) model. Each group may choose any suitable practical database system application.

4. *Procedures*

Each group must specify the functional requirements of the database system application. These consist of the user-defined operations or transactions that will be applied to the database. Once the requirements have been collected and analyzed, each group may create a conceptual schema for database using a high level conceptual data model. This step is called conceptual design. The conceptual schema is a concise description of data requirements of the users and includes detailed descriptions of the entity types, relationships, and constraints. The high-level conceptual schema can be used as reference to ensure that all users' data requirements are met without any conflict.

5. *Deliverable*

Each one of the group must deliver the same Power Point Presentation file to MOODLE. The file must have the name "nn-x…-i…", "nn" is the project number, "x…" is the project name and "i…" is the student id. Each Power Point Presentation file must contain the following:

    i.   Complete Project Name
    ii. Names of all Project team members and their IDs
    iii. Introduction about your database system application

iv. A complete functional requirements of the your database system application

v. A complete list of all Entities in the database with corresponding attributes. Each team must specify how he/she inferences each entity with corresponding attributes from functional requirements.

vi. A list of weak Entity Types, if exists

vii. A list of all candidate keys, primary keys, foreign keys and composite keys (if any) for each entity in the database system

viii. Identify Relationships Types and the corresponding entities according to the functional requirements

ix. Draw the Entity-Relationship (ER) Diagrams completely according the previous steeps. Add any extra information (if any)

x. Draw a diagram to illustrate the referential integrity constraints of the database system

xi. Draw the database extension of database system.

xii. It has to be mentioned that the number of entities must be greater than five, the degree of each entity must be greater than two and the cardinality must be greater than five, otherwise redesign the database system

xiii. Write SQL Statements to create the corresponding database system

6. *Similar Well-Known Database Projects:*

The following are most popular well-known databases. *I encourage you not to choose anyone of them:*

i. Inventory control Database
ii. Student Record Database
iii. Online Retail Database
iv. College Database
v. Railway Database
vi. Payroll Database
vii. Hospital Database
viii. Library Database
ix. Health care Database
x. Restaurant Database
xi. Blood Donation Database
xii. Art Gallery Database
xiii. Hotel Database

xiv. School Database
 xv. Wholesale Database
xvi. ATM or Bank Database
xvii. Personnel Database
xviii. On-Line Delivery Database

Please, be motivated; choose other databases system from real world.

Innovation is part of the final mark.

Do not imitate.

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