كلية الخوارزمي الدولية KIC
KHAWARIZMI INTERNATIONAL COLLEGE

Course:	**Advanced database design**	Semester:	**Spring 2020**
Code:	**BIT365**	Lecturer:	**Dr. Ayda Saidane** **Dr. Rasha Hasan**
Handout date:	**23/3/2020**	Due date:	**20/4/2020**
Project: Group		**Maximum Mark:**	**100**

S1: Student Name: _____ ID:_____

S2: Student Name: _____ ID:_____

Learning Outcomes being assessed:

LO 1. Critically examine how databases have evolved from desktop systems to modern DBMS, by synthesizing the reasons and ramifications of this evolution

LO 2. Evaluate a leading modern DBMS product, against a range of complex information management problems

LO 3. Design and build a data warehouse infrastructure given a range of disparate data sources

LO 4. Critically evaluate alternative data warehouse and business intelligence architectures

LO 5. Reflect on the range of alternative approaches to modelling structured and semi-structured data.

Handing in format instructions:

- Write your project with a suitable format in a word file and submit to Moodle.
- Project will not be accepted after submission deadline.

Plagiarism policy

- In submitted works, a maximum of 20 percent similarity should be accepted without any deduction of marks.
- After this threshold, every 1 percent increase in similarity would attract a deduction of 2% marks up to a similarity of 30%.
- After the threshold of 30%, every 1 percent increase in similarity would attract a deduction of an additional 4% marks.

A sample table is

Percentage Similarity	Deduction of marks (in percentage)
<20	0
25	10
30	20
35	40
40	60
45	80
50	100

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Marks

Tasks	Marks allotted	Marks obtained S1	S2	Feedback to students
Task1	20 marks			
Task2	20 marks			
Task3	20 marks			
Task4	20 marks			
Task5	20 marks			
Total	**100**			

Program Manager Approval:

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Assignment Marking Scheme

Question	CLO	Marks allotted	Assessment Scheme
1	LO1,2	20 marks	10 marks for the conceptual models 5 marks for the choice of the DBMS 5 marks for the logical model
2	LO3,4,5	20 marks	10 marks for the design of the Datawarehouse architecture 10 marks for the design of the queries and the forms
3	LO3,5	20 marks	10 marks on the implementation of the databases 5 marks on the forms and interfaces 5 marks on the 3 reports
4	LO1,2,3,4,5	20 marks	5 marks for the quality of the structure 10 marks for the quality and readability of the report 5 marks on the quality of the comments on the diagrams
5	LO1,2,3,4,5	20 marks	10 marks to answer the oral questions. 10 marks for demonstration of the prototype executed properly.
Total		**100**	

A car manufacturer decides to expand its activities to one of 3 countries (country_A, country_B, Country_C) that are located in 3 different continents. In order to ensure a well-informed expansion, it decided to carry a thorough analysis on the car market in the last 10 years in those countries and to track the success models per age range. Different consulting companies work on statistical data on the car market and they hold specialized databases about every car model.

1: Database Design (20)

- Identify the structured and less structured data sources needed in order to study the car market study of the 3 countries
- Design the conceptual models for the databases
- Select what DBMS you want to use for the implementation and justify your choice
- Design the logical model suitable for the DBMS

2: Datawarehouse Design (20)

- Design the Datawarehouse distributed architecture using a suitable modeling language and including the external data sources

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Project: Group			Maximum Mark:	**100**

- Design the appropriate queries, user interfaces and forms using suitable query and modeling languages

3: Datawarehouse Implementation (20)

- Implement the different databases
- Create sample data
- Implement the forms and interfaces
- Generate at least 3 reports

4: Report (20)

- Write a good quality report integrating the description of the requirements, the design and implementation

5: Demonstration and Presentation (20)

- Prepare a demonstration of your prototype
- Prepare a PowerPoint presentation and answer oral questions

USEFUL RESOURCES

E-books
- Jeff Hoffer, Ramesh Venkataraman, Heikki Topi (2016). Modern Database Management Global Edition , Pearson Education
- Narayan S. Umanath, Richard W. Scamell, (2014), Data Modeling and Database Design, 2nd edition, Cengage learning

Paper books (Library)
- Vincent Rainardi, Building a data warehouse with examples in SQL server
- Inmon, William H.,   Building the data warehouse
- Ahmed, S. Ejaz (Ed.), Big and complex data analysis: methodologies and applications
- Vissers, Chris A., Architectural design conception and specification of interactive systems