

EXAMINATION INFORMATION PAGE

Written examination

Subject code: BID3000-1		Subject name: Business Intelligence and Data Warehouse	
Examination date: 06/12/2022	Examination time from/to: 9.00 – 13.00	Total hours: 4	
Responsible course manager: Ali Chelli and Veralia Sanchez			
Campus: Ringerike		Faculty: Business School	
No. of assignments: 3	No. of attachments: 0	No. of pages incl. front page and attachments: 2	
Permitted aids: None			
Information regarding attachments:			
Comments:			

Select the type of examination paper <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> Spreadsheets <input type="checkbox"/> </div> <div style="text-align: center;"> Line sheets <input checked="" type="checkbox"/> </div> </div>

Problem 1 (23 points)

1. Provide a definition of Business Intelligence. **(7 points)**
2. Mention 3 major benefits of using BI for companies. **(6 points)**
3. Make a drawing of a typical BI architecture including its 5 main components. **(10 points)**

Problem 2 (36 points)

1. Explain what a data warehouse is. **(7 points)**
2. Bill Inmon the father of data warehousing said that "A Data Warehouse is a *subject-oriented, integrated, time-variant* and *nonvolatile* collection of data." Explain what is meant in this citation by the following terms
 - a. Explain the meaning of the term "*subject-oriented*" in this citation. **(4 points)**
 - b. Explain the meaning of the term "*integrated*" in this citation. **(4 points)**
 - c. Explain the meaning of the term "*time-variant*" in this citation. **(4 points)**
 - d. Explain the meaning of the term "*nonvolatile*" in this citation. **(4 points)**
3. Compare operational databases to data warehouses and highlight the difference between them according to 3 criteria. **(6 points)**
4. Explain the difference between a data mart and a data warehouse. **(7 points)**

Problem 3 (41 points)

1. Explain the ETL process. **(7 points)**
2. Explain the concept of star schema. **(7 points)**
3. Explain how a snowflake schema can be obtained from a star schema. **(3 points)**
4. Provide practical reasons for preferring star schema to snowflake schema. **(6 points)**
5. Explain the concept of surrogate keys. **(5 points)**
6. What are the benefits of using surrogate keys? **(5 points)**
7. Provide an example that highlights the usefulness of surrogate keys. **(8 points)**