GALGOTIAS UNIVERSITY

ADMISSION NUMBER

School of Business

Bachelor of Business Administration
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

Sem IV - D1UF404T - Data Warehousing and Multidimensional Modelling

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Identify the major features of a data warehouse.	K3(3)
2)	Illustrate the Data mart.	K4(4)
3)	In the context of a retail company aiming to consolidate data from multiple sources including sales transactions, inventory systems, customer databases, and online analytics, how would you go about selecting the most suitable ETL(Extract,Transform and Load) (Extract, Transform, Load) tool to accomplish this data integration task effectively?	K3(6)
4)	Create a schema to represent client click data on the web.	K6(6)
5)	Develop a comprehensive OLAP (Online Analytical Processing) implementation plan for a healthcare organization to improve patient data analysis.	K6(6)
6)	A financial institution is experiencing rapid growth and needs a scalable OLAP (Online Analytical Processing) solution to analyze transactional data, customer profiles, and market trends. The management team wants to explore different OLAP (Online Analytical Processing) architectures to determine the best fit for their requirements. Considering the rapid growth and analytical needs of the financial institution described, discover how does the choice of OLAP (Online Analytical Processing) architecture impact the organization's ability to handle expanding transactional data volumes, provide real-time access to detailed information for ad-hoc queries, and address scalability challenges with increasingly complex data models?	K4(8)
7)	Imagine you are leading a data warehouse project for a large financial institution aiming to enhance its data analytics capabilities. As the project manager, you recognize the critical importance of	K3(9)

user interface development in ensuring the success and adoption of the data warehouse solution.

The financial institution has invested in building a comprehensive data warehouse to centralize and analyze data from various sources, including transaction records, customer interactions, and market data. The project aims to empower business users, including analysts, managers, and executives, with intuitive and efficient tools for accessing and interpreting the wealth of information stored in the data warehouse.

However, you face challenges in conveying the significance of user interface development to stakeholders, who may prioritize backend infrastructure and data processing capabilities over user experience considerations.

Identify why is user interface development significant in data warehouse projects like the one at the financial institution? (4)

How can a well-designed user interface enhance the usability and accessibility of the data warehouse for business users? (5)

8)	In the context of a data warehouse project, Identify the importance of securing senior management support and its impact on project success. Choose real-world examples to illustrate the significance of senior management involvement in driving the implementation and adoption of data warehouse initiatives within organizations.	K3(9)
9)	Determine that highly distributed source systems impact the Data warehouse or Data mart project.	K5(10)
10)	In your capacity as a data architect at a financial services company, you're tasked with crafting a data warehouse schema tailored to facilitate financial reporting and analysis. Your mandate encompasses delineating a snowflake schema and juxtaposing fact and dimension tables within the framework of data warehousing. Utilizing a preferred data modeling tool or software, craft a snowflake schema pertinent to the financial services company's data warehouse. This schema should encompass dimensions such as Time, Product, Customer, and Region, alongside a fact table harboring financial metrics like Revenue and Profit. Employ labels and annotations to distinctly delineate the hierarchical arrangement of the schema.	K4(12)
11)	A healthcare organization wants to improve patient care by analyzing data from various sources such as electronic health records, medical imaging systems, and patient feedback surveys. How would you design a data warehouse architecture to integrate and analyze this diverse data while ensuring compliance with regulatory requirements such as HIPAA?	K6(12)
12)	Explain about normalization and different types of normalization and take two tables of your choice and join them through the uses of keys.	K5(15)