Module 01 - Enterprise Data Base Management Systems

Course Outcome

At the end of this course, students will:

- Understand basic database concepts, including the structure an operation of the relational and non-relational data model, design principles, E-R diagrams, E-R modeling, data warehousing, client/server, and internet database environments
- Apply the concept of a database transaction and related database facilities, including concurrency control, journaling, backup and recovery, and data object locking and protocols.
- Analyze advanced database topics such as distributed database systems, data modeling techniques and the data warehouse.
- Evaluate administration and security issues, and three enterprise database management systems widely used by organizations.
- Create a database management and security plan for a database project.

Core Concepts

- Role and Advantages of the DBMS
- Identifying the types of Databases
- File System Data Processing Evolution
- Identifying the difference of Qualitative and Quantitative data

Activities

- Introduce Yourself
- The Muddiest Point
- Concept Test
- Discussion Board
- Hands-On Practice
- Knowledge Check
- Team Project Proposal Announcement

Required Reading

Negi, M. (2019). Fundamental of Database Management System. BPB Publications. (ISBN: 9789388176620)

- Chapter 1: Fundamentals of Data and Database Management System

Additional

Manning, A. (2015). Databases for small business: essentials of database management, data analysis, and staff training for entrepreneurs and professionals. Apress. (ISBN: 9781484202784)

Coronel, C., & Morris, S. (2019). Database Systems: Design, Implementation, & Management. Cengage Learning. (ISBN: 9780357687536)

Silberschatz, A., Korth, H. F., & Sudarshan, S. (2019). Database System Concepts (7th Ed.). McGraw-Hill. (ISBN: 9780078022159)

DB01: Discussion Board

Part 1 (Due Wednesday)

In this modern technology world, why is Data Modeling important (and why it's not)?

Please share your idea with the group with a minimum of 200 words.

Part 2 (Due Sunday)

To extend the discussion, first review the posts of your classmates. Then choose at least two of your classmates' posts and respond with thoughtful and substantive contributions. Answer any questions from your instructor.

CT01: Concept Test

Part 1 (Due Wednesday)

1. Performance tuning relates to which one of the following activities? Justify your answer.

a) The activities that make the database perform more efficiently in terms of storage and access speed

b) The activities that guarantee the integrity and consistency of the data in database

c) The activities of extracting the same data which is stored unnecessarily at different places

d) The activities which have been developed when not all the required changes in the redundant data are made successfully

2. Which of the following best explains the DISTINCT keyword? Justify your answer.

a) **Deletes duplicate rows from tables**

b) Filters duplicate rows in query results

c) The primary key column is the first column returned

d) Ensures all column values in query results are unique

Part 2 (Due Sunday)

Respond to one of your classmates by critiquing his or her choice and justification. You are not allowed to select the same classmate if you chose the peer last week. You can convince your peer with your answer if the peer's answer is different from yours. If both have the same answer, you can discuss your justification with your peer to reinforce your answer.

How a Discussion Forum works: To post on the Discussion Forum, click the name of the forum then click on **Create Thread**. Type a subject "CT01- Your first name and last name" and a message. Then **Submit** your post.

Introduce Yourself

The headings should use the heading under the paragraph drop down. You may or may not have multiple parts to your discussion board activities. Please use these headings for each part (if you have parts) with the due day of the week as shown below. No heading is necessary - the title of the discussion board should suffice as the topic or title of what the activity is.

Part 1 (Due Wednesday)

Introduce yourself with any details you'd like to share with your classmates; in addition post an image that represents your feelings about your writing skills. Your image can be a photo or graphic that you create or one you find online. Does your image represent excitement? fear? Think about your current knowledge of writing and explain why the image is a good representation. Are there any particular challenges you have with writing? How will becoming a better writer help you prepare for your dream job, or be more successful in school?

Part 2 (Due Sunday)

Respond to at least two of your classmates to welcome them.

MP01: The Muddiest Point

Q1:

After reading the required reading, select only one key topic that you could not clearly understand or found confusing. If you understood everything and nothing needs further clarification, find one topic/concept that you found interesting.

Briefly describe the muddiest point or the most interesting point.

Your instructor will visit the collected topics and explain the muddiest topic(s) in class.

Q2: Choose all the items that can be an advantage to a Database Management System.

1. Controlling data inconsistency
2. Backup and recovery
3. Performance tuning
4. Enforced integrity
5. Data security
6. Frequent upgrades
7. Complexity
8. Skilled resources
9. Data consistency
10. Controlling redundancy

KC01: Knowledge Check

Q1: What query will be used if dealing with large amounts of sales data?

1. Select query
2. Ad hoc query
3. Aggregate query
4. Query result set

Q2: A database that is designed primarily to support a company's day-to-day operations is classified as an _____?

1. Analytical database
2. General purpose database
3. Data warehouse
4. Operational database

Q3: A character or group of characters (in table) that has a specific meaning is known as?

1. Record
2. Data
3. File
4. Field

Q4: Which of the following is used by DBMS to ensure data safety and integrity?

1. Data transformation and presentation
2. Multiuser access control
3. Database communication interfaces
4. Backup and recovery management

Q5: Which one of the following group designs and implement the application programs?

1. Database administrators
2. Database designers
3. End users
4. System analysts and programmers