SRINIX COLLEGE OF ENGINEERING, BALASORE

DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

ASSIGNMENT ON

DATA BASE MANAGEMENT SYSTEMS

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ASSIGNMENT-I

1. Compare and Contrast file Systems with database system?
2. Define Data Abstraction and discuss levels of Abstraction?
3. Discuss about different types of Data models?
4. Describe the architecture of DBMS?
5. Discuss additional features of the ER-Models?
6. Discuss about the Conceptual Design with the ER-Model?
7. Write about views and updates on views?
8. Explain different types of database users and write the functions of DBA?
9. Explain about different types of integrity constraints?
10. Discuss about the logical database Design?
11. Distinguish strong entity set with weak entity set? Draw an ER diagram to illustrate Weak entity set?
12. Explain how the integrity constraints are specified and enforces?
13. Explain in detail about views?

ASSIGNMENT-II

1. Illustrate different operations in Relational algebra with an example?
2. Define Join? Explain different types of joins?
3. Discuss about Relational calculus in detail?
4. Define trigger and explain its three parts? Differentiate row level and statement level triggers?
5. Illustrate Group by and having clauses with examples?
6. Discuss about Complex integrity constraints in SQL?
7. Define null value? Describe the effect of null values in database?
8. Discuss different types of aggregate operators with examples in SQL?
9. a Define a nested query?

   b Write a nested query to find the names of sailors who have reserved both a red and green boat?

   c. Write a nested query to find the names of sailors who have reserved all boats?
10. a. Discuss correlated nested queries?

    b. Write a query to find the names of sailors who have reserved a red boat?

    c. Write a query to find the names of sailors who have not reserved a red boat?

ASSIGNMENT-III

1. Define redundancy?
2. Define decomposition and how does it address redundancy?
3. Discuss the problems thatmay be caused by the use of decompositions?
4. Define functional dependencies. How are primary keys related to FD's?
5. Define normalization? Explain 1NF,2NF,3NF normal forms
6. Compare and contrast BCNF with 3NF?
7. Describe properties of decompositions
8. Define functional dependency?
9. Explain the problems with Redundancy?
10. What is decomposition? Explain the properties of Decomposition?
11. Discuss normalization?
12. Illustrate functional dependency with example?
13. Illustrate fully functional dependency with example?
14. Demonstrate transitive dependency? Give an example?
15. Define First Normal Form?

ASSIGNMENT-IV

1. Explain ACID properties and illustrate them through examples?
2. Discuss How do you implement Atomicity and Durability
3. Illustrate Concurrent execution of transaction with examples
4. Discuss Serializability in detail?
5. Discuss two phase locking protocol and strict two phase locking protocols?
6. Describe Times tamp based locking protocols?
7. Describe Validation-based locking protocols?
8. Discuss in detail Multiple Granularity?
9. Explain in detail storage structure
10. Discuss how do you recover from failure?
11. Explain Buffer Management?
12. Explain different types of advanced recovery techniques
13. Write in detail about Remote Backup systems?

ASSIGNMENT-V

1. Discuss about data on External storage?
2. What is indexing and what are the different kinds of indexing?
3. Write in detail about hash based indexing and Tree based indexing
4. Compare I/O costs for all file organizations
5. Explain in detail about ISAM
6. Explain about B+ tree index file?
7. Demonstrate searching a given element in B+ trees? Explain with example?
8. Illustrate insertion of an element in B+ Tree with example
9. Illustrate deletion of an element in B+ Tree with example
10. Write in detail about Static Hashing
11. Explain in detail about Extendible hashing
12. Explain in detail about Linear hashing