

Daffodil Institute of IT (DIIT)

Department of Computer Technology

Semester Plan

Course: Database Management System

Course Code:66664

Semester: 6th

Objectives

- To be able to acquire the knowledge and skill in the database system concept.
- To be able to familiarize with data models in database systems.
- To be able to acquire the knowledge and skill in the Relational databases2 ?
- To be able to acquire the knowledge and skill in the Integrity & security.
- To be able to acquire the knowledge and skill in the Data storage, Transactions & concurrency control and Database system architecture.

DESCRIPTION

Database system concept; Data models; Relational databases, Integrity & security, Data storage, Transactions & concurrency control, cursor and Database system architecture.

Course Teacher

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Syllabus:

SL NO	SUBJECT CODE	NAME OF THE SUBJECT	T	C	P	MARKS				TOTAL
						THEORY		PRACTICAL		
						CON. ACCESS	FINAL EXAM	CON. ACCESS	FINAL EXAM	
1	66664	DATABASE Management System	2	3	3	40	60	25	25	150

Course Plan

Class	Chapter	Detail
1	1	1. Understand the basic concept of database system. 1.1 Define database management system. 1.2 Explain the purpose of database management system. 1.3 Mention the difference between conventional file system and database management system.
2	1	1. Understand the basic concept of database system. 1.4 Mention the advantages & disadvantages of database management system. 1.5 Define data abstraction, instances and schemas. 1.6 Mention the types of schemata. 1.7 Data type concept.
3	2	2. Understand the concepts of database languages, users, manager and administrator. 2.1 Describe the database languages with examples. 2.2 Describe the basic operation of DDL, DML and data dictionary. 2.3 Describe the different types of database system users.
4	2	2. Understand the concepts of database languages, users, manager and administrator. 2.4 Example the different tasks of database manager. 2.5 Describe the functions of a database administrator. 2.6 Describe the functional components of a database system.
5	3	3. Understand the data models. 3.1 Define the entity, entity set and data model. 3.2 Mention the meaning of E-R diagram symbol. 3.3 Describe the E-R diagram for different mapping constrains.
6	3	3. Understand the data models. 3.4 State different types of attributes use in E-R diagram. 3.5 State the techniques to convert E-R diagram to table. 3.6 Describe the different types of data models with examples.
7	3	3. Understand the data models. 3.7 Describe the constraints in entity-relationship (mapping, cardinalities and existences) with diagrams. 3.8 State the meaning of different types of keys in RDBMS (primary key and foreign key, super key, candidate key). 3.9 Distinguish between strong and weak entity sets. 3.10 Describe the schema diagram with example.
8	4	4. Understand the relational database Query language. 4.1 Define query language. 4.2 Mention the different among SQL, QBE and Data log.
9	4	4. Understand the relational database Query language.

		4.3 Describe the fundamental operations of relational algebra (select, project, union, set difference, Cartesian product, rename, set intersection, natural joint, division and assignment).
10	5	5. Understand the SQL and PL/SQL. 5.1 Mention the several parts of SQL and PL/SQL. 5.2 Explain five clauses of SQL expression (select, from, where, group by and having). 5.3 Describe the uses of SQL set operations (union, intersect, and except).
11	5	5. Understand the SQL and PL/SQL. 5.4 Describe the uses of SQL aggregate functions (avg, min, max, sum, count, upper, lower, initcap, string operation etc.). 5.5 Describe the technique to add, remove and change information with SQL (delete, insert, and update).
12	6	6. Understand the integrity and security. 6.1 Define integrity constraint. 6.2 Describe the referential integrity in SQL. 6.3 Describe the assertions in RDBMS.
13	6	6. Understand the integrity and security. 6.4 Define the triggers and need for triggers in RDBMS. 6.5 Define the security in RDBMS. 6.6 Describe the protection of database.
14	6	6. Understand the integrity and security. 6.7 Define encryption and authentication in database. 6.8 Mention the technique of encryption.
15	7	7. Understand the relational database design. 7.1 Define the normalization. 7.2 Mention the need for normalization. 7.3 Describe the term redundancy in RDBMS.
16	7	7. Understand the relational database design. 7.4 Explain the three stages/rules of normalization in database management system (1NF, 2NF, and 3NF) 7.5 Describe the overall database design process.
17	8	8. Understand the data-storage media. 8.1 List the physical storage media. 8.2 Describe the storage-device hierarchy used for database storage. 8.3 Define the RAID. 8.4 Describe the different levels of RAID.
18	8	8. Understand the data-storage media. 8.4 Describe the different levels of RAID. 8.5 Describe the choice of RAID levels.
19	9	9. Understand the Transactions and concurrency controls. 9.1 Define transaction and concurrent execution in DBMS. 9.2 Mention the properties of the transaction.
20	9	9. Understand the Transactions and concurrency controls.

		9.3 Explain the transaction state with diagram. 9.4 Mention the reasons for allowing concurrency.
21	10	10. Understand the database system architecture. 10.1 Define centralized, parallel and distributed database system. 10.2 Explain the homogeneous and heterogeneous databases.
22	10	10. Understand the database system architecture. 10.3 Explain the structure of server (Centralized and client server), parallel and distributed database system architecture. 10.4 Describe the advantages and disadvantages of server, parallel and distributed database system architecture.
23	11	11. Understanding the cursor statement 11.1 Declare a cursor that defines a result set in a stored procedure 11.2 Open the cursor to establish the result set.
24	11	11. Understanding the cursor statement 11.3 Fetch the data into local variables as needed from the cursor, one row at a time. 11.4 Close the cursor when done.
25	12	12. Database Backup and Restoring System