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RELATIONAL DATABASE MANAGEMENT SYSTEM (RDMS) –a type of databases management system (DBMS) that stores data in the form of related tables and is based on the relational model.

STRUCTURED QUERY LANGUAGE (SQL) –a programming language for retrieving and updating information from a database

QUERY – primary mechanism for retrieving information from a database. A request information from a database.

SCHEMA – is a way to logically group objects such as tables, views, etc. Organization or structure for a database.

SQL 4 MAJOR CATEGORIES:

Data Definition Language (DDL) statements are used to define the database structure or schema. Some examples:

- CREATE - to create objects in the database
- ALTER - alters the structure of the database
- DROP - delete objects from the database
- TRUNCATE - remove all records from a table, including all spaces allocated for the records are removed
- COMMENT - add comments to the data dictionary
- RENAME - rename an object

Data Manipulation Language (DML) statements are used for managing data within schema objects. Some examples:

- SELECT - retrieve data from the a database
- INSERT - insert data into a table
- UPDATE - updates existing data within a table
- DELETE - deletes all records from a table, the space for the records remain
- MERGE - UPSERT operation (insert or update)
- CALL - call a PL/SQL or Java subprogram
- EXPLAIN PLAN - explain access path to data
- LOCK TABLE - control concurrency

Data Control Language (DCL) statements. Some examples:

- GRANT - gives user's access privileges to database
- REVOKE - withdraw access privileges given with the GRANT command

Transaction Control (TCL) statements are used to manage the changes made by DML statements. It allows statements to be grouped together into logical transactions.

- COMMIT - save work done
- SAVEPOINT - identify a point in a transaction to which you can later roll back
- ROLLBACK - restore database to original since the last COMMIT
- SET TRANSACTION - Change transaction options like isolation level and what rollback segment to use

SQL SERVER MANAGEMENT STUDIO (SSMS)

- is a client tool and not the server
- (RDMS) used to connect to SQL Server

Database can be created, altered, and dropped in 2 ways:
1. (IDE) Graphically using SSMS
2. Using a query

Whether you create a database graphically using the designer or, using a quesry, the ff. 2 files will be generated
- .MDF : Data File (Contains actual data)
- .LDF : Transaction Log File (Used to recover the database)

2 Types of Stored Procedures :
1. System SP – provided my MS SQL Server
2. User-defined SP

CASCADING REFERENTIAL INTEGRITY CONSTRAINT
-allows to define the actions MS SQL Server should take when a user attempts to delete or update a key to which an existing foreign keys points

DATA INTEGRITY –refers to maintaining and assuring the accuracy and consistency of data. Data security is the protection data from the unauthorized users.

INTEGRITY CONSTRAINTS–a constraint (rule/ restriction) that must remain true for a database to preserve data integrity. IC are specified at database creation time and enforce by the DBMS

1. Primary Key/ Entity Integrity - uniquely identifies each row/record in a table

2. Foreign Key/ Referential Integrity - points to a primary key in another table. Prevents invalid data from being inserted into the foreign key column. The values that you enter into the foreign key column, has to be one of the values contained in the table it points to. Foreign key