DATA ENGINEERING

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Batch: Python Batch 2

Day2:

Topics:

- ✓ Storing Data in a Table
- ✓ Updating Data in a Table
- ✓ Deleting Data from a Table
- ✓ Retrieving Specific Attributes
- ✓ Retrieving Selected Rows
- ✓ Filtering Data: Where Clauses
- ✓ Filtering Data: IN, DISTINCT, AND, OR, BETWEEN, LIKE, COLUMN & TABLE ALIASES

A **Database Management System (DBMS)** is a software application that enables users to create, manage, and manipulate databases. It serves as an intermediary between users and the database, allowing for efficient storage, retrieval, and management of data.

Examples: RDMBS, NoSQL etc

Types of Databases:

Relational Databases: Stores data in tables, data is organized into rows and columns.

1) MySQL

2) PostgreSQL

3) Oracle

4) Microsoft SQL Server

NoSQL Databases: contains unstructured or semi structured data

EX: MongoDB, DynamoDB etc

Object-Oriented Databases: stores data in objects, similar to object-oriented programming languages.

EX: OjectDB

SQL Commands:

1. **Data Query Language (DQL):** These commands are used to query and retrieve data from a database.
   SELECT: Retrieves data from one or more tables

2. **Data Definition Language (DDL):** DDL commands define the structure of the database, including creating, altering, and deleting tables and other database objects.
   CREATE: Creates a new table or database.
   ALTER: Modifies an existing table.
   DROP: Deletes a table or database.
   TRUNCATE: Removes all records from a table but keeps the structure of the table.

3. **Data Manipulation Language (DML):** DML commands are used for managing data within the tables.
   INSERT: Adds new records to a table.
   UPDATE: Modifies existing records in a table.
   DELETE: Removes records from a table.

4. **Data Control Language (DCL):** DCL commands control access to data within the database.
   GRANT: Gives a user access privileges to database objects
   REVOKE: Removes access privileges from a user.

5. **Transaction Control Language (TCL):** TCL commands manage transactions in the database.
   COMMIT: Saves all changes made during the current transaction.
   ROLLBACK: Undoes changes made during the current transaction.
   SAVEPOINT: Creates a point within a transaction to which you can later roll back.