**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

1. **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.

1. **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.

1. **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.

1. **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.