

Introduction to SQL

Presented by



SQL

- SQL means **Structured Query Language**.
- The acronym **SQL** is derived from **Sequel**.
- SEQUEL was renamed SQL because **SEQUEL** was a trademark of ISO & ANSI
- In Relational Database Management Systems, SQL supports definition, manipulation, and control operations.
- SQL is used to manipulate and retrieve data stored in a database.



Benefits of SQL

- Provides:
 - Portability across systems
 - Complete database language
 - SQL standards
- Retrieves data from a database
- Inserts new records into a database
- Deletes records from a database
- Updates records in a database • • • • • •

SQL Sub Languages

SQL is segregated into DDL, DML, DCL, and TCL.

Data retrieval: SELECT

| DDL | DML | DCL | TCL |
|----------|--------|--------|-----------|
| CREATE | INSERT | GRANT | COMMIT |
| ALTER | DELETE | REVOKE | ROLLBACK |
| DROP | UPDATE | | SAVEPOINT |
| TRUNCATE | | | |

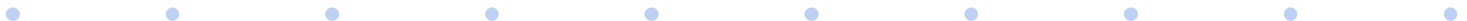
DDL

- Allows users to define the database and its objects.
- The set of relations in a database must be specified to the system by means of Data Definition Language.
- Database schema is specified by a set of definitions expressed by a Data Definition Language.



DML

- **DML** is a language that enables users to access or manipulate data as organized by the appropriate data model.
- DML manipulation commands are the most frequently used SQL commands.
 - They are used to query and manipulate existing objects, **such as** tables.



DCL

- DCL is a language that provides users with privilege commands.
- DCL is the segment of SQL used for controlling access to data in a database.
- DCL allows protecting tables and other objects created by a user from accidental manipulation by another user.
- DCL grants privileges (insert, read, write, select) to others, and allows them to perform operations within their scope.
 - Privileges determine whether or not a particular user can perform a command.

TCL

- A transaction is a logical unit of work that contains one or more SQL statements
- When a transaction makes multiple changes to the database, --
 - either all the changes succeed when the transaction is committed,
 - or all the changes are undone when the transaction is rolled back.

