SQL Commands

SQL commands can be broadly categorized into four groups:

1. Data Definition Language (DDL)

Used to define and manage the structure of the database

Common DDL commands:

- CREATE: Create a new database, table, view, or other object
- ALTER: Modify an existing database object
- DROP: Remove an existing database object
- TRUNCATE: Remove all records from a table

2. Data Manipulation Language (DML)

Used to manipulate data within the database

Common DML commands:

- INSERT: Add new records to a table
- UPDATE: Modify existing records in a table
- DELETE: Remove records from a table
- SELECT: Retrieve data from one or more tables

3. Data Control Language (DCL)

Used to manage user access and permissions

Common DCL commands:

- GRANT: Give specific privileges to a user or role
- REVOKE: Remove privileges from a user or role

4. Transaction Control Language (TCL)

Used to manage transactions within the database

Common TCL commands:

- COMMIT: Save the changes made by a transaction
- ROLLBACK: Undo the changes made by a transaction
- SAVEPOINT: Create a point within a transaction to which you can roll back

Data Types

SQL supports various data types to store different kinds of data.

1. Numeric Data Types
INT, SMALLINT, TINYINT, BIGINT: For storing integer values
DECIMAL, NUMERIC: For storing fixedpoint numbers
FLOAT, DOUBLE: For storing floatingpoint numbers

2. Text Data Types
CHAR(n): Fixedlength character string (max 255 characters)
VARCHAR(n): Variablelength character string (max 65,535 characters)
TEXT: Variablelength character string (max 65,535 characters)

3. Date and Time Data Types
DATE: Stores date values (YYYYMMDD)
TIME: Stores time values (HH:MM:SS)
DATETIME: Stores date and time values (YYYYMMDD HH:MM:SS)
TIMESTAMP: Stores date and time values (YYYYMMDD HH:MM:SS)

4. Binary Data Types
BLOB: Binary Large Object, for storing binary data (images, files, etc.)
VARBINARY(n): Variablelength binary data (max 65,535 bytes)

5. Other Data Types
BOOLEAN: For storing boolean values (TRUE or FALSE)
ENUM: For storing a set of predefined values
SET: For storing a set of values (multiple values from a predefined list)

**** Note ****
Its important to note that the specific syntax and available data types may vary slightly between different RDBMS (e.g., MySQL, PostgreSQL, Oracle, SQL Server).