DDL (Data Definition Language) commands in SQL are used to define, modify, and manage the structure of database objects like tables, indexes, and constraints. Here are the most common DDL commands along with explanations and examples:

**CREATE**:

**Purpose:** Creates a new database object like a table, index, or view.

**Syntax:** **CREATE TABLE table\_name (column1 datatype, column2 datatype, ...);**

**Example:**

sqlCopy code

CREATE TABLE employees ( emp\_id INT, emp\_name VARCHAR(50), emp\_salary DECIMAL(10,2) );

**ALTER**:

**Purpose:** Modifies the structure of an existing database object.

**Syntax:** **ALTER TABLE table\_name ADD column\_name datatype;**

**Example:**

sqlCopy code

ALTER TABLE employees ADD emp\_age INT;

**DROP**:

**Purpose:** Deletes a database object like a table or index.

**Syntax:** **DROP TABLE table\_name;**

**Example:**

sqlCopy code

DROP TABLE employees;

**TRUNCATE**:

**Purpose:** Deletes all records from a table without removing the table structure.

**Syntax:** **TRUNCATE TABLE table\_name;**

**Example:**

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TRUNCATE TABLE employees;

**RENAME**:

**Purpose:** Renames a database object.

**Syntax:** **ALTER TABLE table\_name RENAME TO new\_table\_name;**

**Example:**

sqlCopy code

ALTER TABLE employees RENAME TO staff;

**COMMENT**:

**Purpose:** Adds comments to a database object for documentation purposes.

**Syntax:** **COMMENT ON TABLE table\_name IS 'comment';**

**Example:**

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COMMENT ON TABLE employees IS 'Contains information about company employees.';

These DDL commands are essential for defining and managing the structure of database objects in SQL. They allow users to create, modify, and delete tables, indexes, and constraints to organize and manipulate data effectively.

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DML (Data Manipulation Language) commands in SQL are used to manipulate data stored in the database. Here are the most common DML commands along with explanations and examples:

**SELECT**:

**Purpose:** Retrieves data from one or more tables based on specified criteria.

**Syntax:** **SELECT column1, column2 FROM table\_name WHERE condition;**

**Example:**

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SELECT emp\_name, emp\_salary FROM employees WHERE emp\_age > 30;

**INSERT**:

**Purpose:** Inserts new records into a table.

**Syntax:** **INSERT INTO table\_name (column1, column2) VALUES (value1, value2);**

**Example:**

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INSERT INTO employees (emp\_name, emp\_salary) VALUES ('John Doe', 50000);

**UPDATE**:

**Purpose:** Modifies existing records in a table.

**Syntax:** **UPDATE table\_name SET column1 = value1 WHERE condition;**

**Example:**

sqlCopy code

UPDATE employees SET emp\_salary = 55000 WHERE emp\_id = 101;

**DELETE**:

**Purpose:** Deletes records from a table based on specified criteria.

**Syntax:** **DELETE FROM table\_name WHERE condition;**

**Example:**

sqlCopy code

DELETE FROM employees WHERE emp\_id = 101;

**MERGE**:

**Purpose:** Performs an INSERT, UPDATE, or DELETE operation on a target table based on the results of a join with a source table.

**Syntax:** **MERGE INTO target\_table USING source\_table ON condition WHEN MATCHED THEN UPDATE SET column1 = value1 WHEN NOT MATCHED THEN INSERT (column1, column2) VALUES (value1, value2);**

**Example:**

sqlCopy code

MERGE INTO employees\_target USING employees\_source ON employees\_target.emp\_id = employees\_source.emp\_id WHEN MATCHED THEN UPDATE SET employees\_target.emp\_salary = employees\_source.emp\_salary WHEN NOT MATCHED THEN INSERT (emp\_id, emp\_name, emp\_salary) VALUES (employees\_source.emp\_id, employees\_source.emp\_name, employees\_source.emp\_salary);

These DML commands are essential for manipulating data stored in tables within the database. They allow users to query, insert, update, and delete data to perform various operations on the database.

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DCL (Data Control Language) commands in SQL are used to control access to the database and its objects. Here are the most common DCL commands along with explanations and examples:

**GRANT**:

**Purpose:** Provides specific privileges to users or roles.

**Syntax:** **GRANT privilege ON object TO user;**

**Example:**

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GRANT SELECT, INSERT ON employees TO user1;

**REVOKE**:

**Purpose:** Removes specific privileges from users or roles.

**Syntax:** **REVOKE privilege ON object FROM user;**

**Example:**

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REVOKE INSERT ON employees FROM user1;

These DCL commands are crucial for managing access control to the database and its objects, ensuring security and integrity of the data.Top of Form