Oracle SQL Statements and How to Use Them

1. Data Query Language (DQL)
DQL statements retrieve data from the database.

SELECT Statement:
```
SELECT column1, column2 FROM table_name WHERE condition;
```

Example:
```
SELECT first_name, last_name FROM employees WHERE department_id = 10;
```

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2. Data Definition Language (DDL)
DDL statements define and manage database structures.

CREATE Statement:
```
CREATE TABLE employees (
    emp_id NUMBER PRIMARY KEY,
    first_name VARCHAR2(50),
    salary NUMBER(10,2)
);
```

ALTER Statement:
```
ALTER TABLE employees ADD (job_title VARCHAR2(100));
```

DROP Statement:
```
DROP TABLE employees;
```

TRUNCATE Statement:
```
TRUNCATE TABLE employees;
```

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3. Data Manipulation Language (DML)

DML statements modify table data.

INSERT Statement:
INSERT INTO employees (emp_id, first_name, salary) VALUES (101, 'John', 5000);

UPDATE Statement:
UPDATE employees SET salary = 6000 WHERE emp_id = 101;

DELETE Statement:
DELETE FROM employees WHERE emp_id = 101;

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4. Transaction Control Language (TCL)
TCL statements manage transactions.

COMMIT:
COMMIT;

ROLLBACK:
ROLLBACK;

SAVEPOINT:
SAVEPOINT sp1;
UPDATE employees SET salary = 7000 WHERE emp_id = 101;
ROLLBACK TO sp1;

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5. Data Control Language (DCL)
DCL statements control access to database objects.

GRANT Statement:
GRANT SELECT, INSERT ON employees TO user1;

REVOKE Statement:
REVOKE INSERT ON employees FROM user1;

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6. Procedural SQL (PL/SQL)
PL/SQL statements add procedural logic to SQL.

DECLARE Block:

```
DECLARE v_salary NUMBER;
BEGIN
    SELECT salary INTO v_salary FROM employees WHERE emp_id =
101;
END;
```

IF-ELSE Statement:

```
DECLARE v_salary NUMBER;
BEGIN
    SELECT salary INTO v_salary FROM employees WHERE emp_id =
101;
   IF v_salary > 5000 THEN
      DBMS_OUTPUT.PUT_LINE('High salary');
   ELSE
      DBMS_OUTPUT.PUT_LINE('Low salary');
   END IF;
END;
```

LOOP Statement:

```
DECLARE v_counter NUMBER := 1;
BEGIN
   LOOP
      DBMS_OUTPUT.PUT_LINE('Counter: ' || v_counter);
      v_counter := v_counter + 1;
      EXIT WHEN v_counter > 5;
   END LOOP;
END;
```

Summary:

- DQL (SELECT) retrieves data.
- DDL (CREATE, ALTER, DROP, TRUNCATE) defines database structures.
- DML (INSERT, UPDATE, DELETE) modifies data.
- TCL (COMMIT, ROLLBACK, SAVEPOINT) manages transactions.
- DCL (GRANT, REVOKE) controls user permissions.
- PL/SQL enables procedural logic.