Assignment 2: Complete SQL Commands Guide

DDL (Data Definition Language)

Command	Description	Example
CREATE	Creates database or table	CREATE TABLE students(id INT, name VARCHAR(50));
ALTER	Modifies table structure	ALTER TABLE students ADD age INT;
DROP	Deletes table or database permanently	DROP TABLE students;
TRUNCATE	Deletes all records, no rollback	TRUNCATE TABLE students;
RENAME	Renames a table	RENAME TABLE students TO learners;

DML (Data Manipulation Language)

Command	Description	Example
INSERT	Inserts new data	INSERT INTO students VALUES (1,'Ravi',20);
UPDATE	Updates existing data	UPDATE students SET age=21 WHERE id=1;
DELETE	Deletes records	DELETE FROM students WHERE id=1;

DQL (Data Query Language)

Command	Description	Example
SELECT	Fetches data	SELECT * FROM students;
DISTINCT	Removes duplicates	SELECT DISTINCT age FROM students;
WHERE	Filters records	SELECT * FROM students WHERE age>18;

ORDER BY	Sorts data	SELECT * FROM students ORDER BY age DESC;
GROUP BY	Groups records	SELECT age, COUNT(*) FROM students GROUP BY age;
HAVING	Filters grouped data	SELECT age FROM students GROUP BY age HAVING COUNT(*)>1;

JOIN Commands

Command	Description	Example
INNER JOIN	Matching records	SELECT * FROM A INNER JOIN B ON A.id=B.id;
LEFT JOIN	All from left table	SELECT * FROM A LEFT JOIN B ON A.id=B.id;
RIGHT JOIN	All from right table	SELECT * FROM A RIGHT JOIN B ON A.id=B.id;
FULL JOIN	All records	SELECT * FROM A FULL JOIN B ON A.id=B.id;

Aggregate Functions

Command	Description	Example
COUNT()	Counts rows	SELECT COUNT(*) FROM students;
SUM()	Adds values	SELECT SUM(age) FROM students;
AVG()	Average value	SELECT AVG(age) FROM students;
MIN()	Minimum value	SELECT MIN(age) FROM students;
MAX()	Maximum value	SELECT MAX(age) FROM students;

Set Operators

Command	Description	Example
UNION	Combines without duplicates	SELECT name FROM A UNION SELECT name FROM B;
UNION ALL	Combines with duplicates	SELECT name FROM A UNION ALL SELECT name FROM B;
INTERSECT	Common records	SELECT name FROM A INTERSECT SELECT name FROM B;
EXCEPT	Records not in second table	SELECT name FROM A EXCEPT SELECT name FROM B;

TCL (Transaction Control Language)

Command	Description	Example
COMMIT	Saves transaction	COMMIT;
ROLLBACK	Undo changes	ROLLBACK;
SAVEPOINT	Sets rollback point	SAVEPOINT sp1;

DCL (Data Control Language)

Command	Description	Example
GRANT	Gives permission	GRANT SELECT ON students TO user1;
REVOKE	Removes permission	REVOKE SELECT ON students FROM user1;