SQL Cheat Sheet

# 1. Database Basics

- \*\*Database\*\*: A structured collection of data.  
- \*\*Types of Databases\*\*: Relational (SQL), NoSQL (e.g., MongoDB).

# 2. SQL

SQL (Structured Query Language) is used to communicate with a database.

# 3. Creating a Database

Syntax:

CREATE DATABASE database\_name;

Example:

CREATE DATABASE school;

# 4. Creating a Table

Syntax:

CREATE TABLE table\_name (  
 column1 datatype constraint,  
 column2 datatype constraint,  
 ...  
);

Example:

CREATE TABLE students (  
 id INT PRIMARY KEY,  
 name VARCHAR(50),  
 age INT  
);

# 5. SQL Data Types

- INT: Integer  
- VARCHAR(size): String of variable length  
- DATE: Date value (YYYY-MM-DD)  
- FLOAT: Floating point number  
- BOOLEAN: True/False

# 6. Types of SQL Commands

- \*\*DDL (Data Definition Language)\*\*: CREATE, ALTER, DROP  
- \*\*DML (Data Manipulation Language)\*\*: SELECT, INSERT, UPDATE, DELETE  
- \*\*DCL (Data Control Language)\*\*: GRANT, REVOKE  
- \*\*TCL (Transaction Control Language)\*\*: COMMIT, ROLLBACK

# 7. Keys

- \*\*Primary Key\*\*: Uniquely identifies each record.  
- \*\*Foreign Key\*\*: Links to a primary key in another table.

# 8. Constraints

- \*\*NOT NULL\*\*: Ensures a column cannot have a NULL value.  
- \*\*UNIQUE\*\*: Ensures all values in a column are different.  
- \*\*CHECK\*\*: Ensures a condition is met.  
- \*\*DEFAULT\*\*: Sets a default value if no value is specified.

# 9. Insert Command

Syntax:

INSERT INTO table\_name (column1, column2, ...) VALUES (value1, value2, ...);

Example:

INSERT INTO students (id, name, age) VALUES (1, 'John', 20);

# 10. Select Command

Syntax:

SELECT column1, column2, ... FROM table\_name WHERE condition;

Example:

SELECT name, age FROM students WHERE age > 18;

# 11. WHERE Clause

Syntax:

SELECT \* FROM table\_name WHERE condition;

Example:

SELECT \* FROM students WHERE age = 20;

# 12. Operators

- \*\*AND\*\*: Combines multiple conditions (e.g., age > 18 AND name = 'John').  
- \*\*OR\*\*: Satisfies at least one condition.  
- \*\*LIKE\*\*: Pattern matching (e.g., name LIKE 'J%').

# 13. Aggregation Functions

- \*\*COUNT()\*\*: Counts rows.  
- \*\*SUM()\*\*: Adds values.  
- \*\*AVG()\*\*: Calculates average.  
- \*\*MIN()\*\*: Finds minimum value.  
- \*\*MAX()\*\*: Finds maximum value.

# 14. GROUP BY Clause

Syntax:

SELECT column, AGG\_FUNCTION(column) FROM table\_name GROUP BY column;

Example:

SELECT age, COUNT(\*) FROM students GROUP BY age;

# 15. ORDER BY Clause

Syntax:

SELECT \* FROM table\_name ORDER BY column ASC|DESC;

Example:

SELECT \* FROM students ORDER BY age DESC;