**JOIN**

CREATE DATABASE company\_db;

USE company\_db;

**-- Create departments table**

CREATE TABLE departments (

dept\_id INT PRIMARY KEY,

dept\_name VARCHAR(100)

);

**-- Create employees table**

CREATE TABLE employees (

emp\_id INT PRIMARY KEY,

emp\_name VARCHAR(100),

dept\_id INT

);

**-- Insert into departments**

INSERT INTO departments VALUES

(1, 'HR'),

(2, 'Engineering'),

(3, 'Marketing');

**-- Insert into employees**

INSERT INTO employees VALUES

(101, 'Alice', 1),

(102, 'Bob', 2),

(103, 'Charlie', 2),

(104, 'David', NULL),

(105, 'Eve', 4); -- 4 doesn't exist in departments

**-- INNER JOIN**

SELECT e.emp\_id, e.emp\_name, d.dept\_name

FROM employees e

INNER JOIN departments d ON e.dept\_id = d.dept\_id;

**-- LEFT JION**

SELECT e.emp\_id, e.emp\_name, d.dept\_name

FROM employees e

LEFT JOIN departments d ON e.dept\_id = d.dept\_id;

**-- RIGHT JOIN**

SELECT e.emp\_id, e.emp\_name, d.dept\_name

FROM employees e

RIGHT JOIN departments d ON e.dept\_id = d.dept\_id;

**-- FULL JOIN**

-- Combine LEFT and RIGHT JOIN, remove duplicates with UNION

SELECT e.emp\_id, e.emp\_name, d.dept\_name

FROM employees e

LEFT JOIN departments d ON e.dept\_id = d.dept\_id

UNION

SELECT e.emp\_id, e.emp\_name, d.dept\_name

FROM employees e

RIGHT JOIN departments d ON e.dept\_id = d.dept\_id;

**-- CROSS JOIN**

SELECT e.emp\_name, d.dept\_name

FROM employees e

CROSS JOIN departments d;

**-- UNION**

SELECT emp\_name AS name FROM employees

UNION

SELECT dept\_name AS name FROM departments;

**-- UNION ALL**

SELECT emp\_name AS name FROM employees

UNION ALL

SELECT dept\_name AS name FROM departments;

**-- INTERSECTION**

SELECT emp\_name AS name

FROM employees

INNER JOIN departments ON employees.emp\_name = departments.dept\_name;