**Assignment 2 – Data Selection, Joins, and Cross Product**

**Topics Covered:**

* Selecting Specific Columns
* Selecting Specific Rows
* Ordering and Limiting Results
* Types of Joins (INNER, LEFT, RIGHT, FULL\*)
* Cross Product

**Table Structure**

**🔹 departments Table**

CREATE TABLE departments (

dept\_id INT PRIMARY KEY,

dept\_name VARCHAR(50)

);

**🔹 employees Table**

CREATE TABLE employees (

emp\_id INT PRIMARY KEY,

emp\_name VARCHAR(50),

dept\_id INT,

salary INT,

FOREIGN KEY (dept\_id) REFERENCES departments(dept\_id)

);

**Sample Data**

**🔹 Insert into departments**

INSERT INTO departments VALUES

(1, 'HR'),

(2, 'Finance'),

(3, 'IT');

**🔹 Insert into employees**

INSERT INTO employees VALUES

(101, 'Alice', 1, 60000),

(102, 'Bob', 2, 55000),

(103, 'Charlie', 3, 70000),

(104, 'Diana', NULL, 50000);

**Assignment Questions**

**Q1. Select specific columns: employee name and salary**

**Q2. Select rows where salary is greater than 55000**

**Q3. Select employees in department 3 (IT)**

**Q4. Select employees ordered by salary (highest first)**

**Q5. Select top 2 employees with lowest salary**

**Q6. INNER JOIN: List employee names with their department names**

**Q7. LEFT JOIN: List all employees with their department (if any)**

**Q8. RIGHT JOIN: List all departments with employees (if any)**

**Q9. FULL OUTER JOIN simulation using UNION**

Note: MySQL does **not support FULL OUTER JOIN** directly.

**Q10. CROSS JOIN: List all combinations of employees and departments**