**WINAIM - Backend Database Programming Assignments**

**SQL Assessment**

**### Exercise 1: Employee Management System**

1. \*\*Database Schema Design\*\*:

CREATE TABLE employees (

employee\_id INT PRIMARY KEY,

first\_name VARCHAR(50),

last\_name VARCHAR(50),

department\_id INT,

hire\_date DATE, FOREIGN KEY (department\_id) REFERENCES departments(department\_id)

);

CREATE TABLE departments (

department\_id INT PRIMARY KEY,

department\_name VARCHAR(100)

);

CREATE TABLE salaries (

employee\_id INT,

salary DECIMAL(10, 2),

from\_date DATE,

to\_date DATE,

PRIMARY KEY (employee\_id, from\_date),

FOREIGN KEY (employee\_id) REFERENCES employees(employee\_id)

);

2. \*\*SQL Queries\*\*:

Write a query to find all employees who have been hired in the last year.

SELECT employee\_id, first\_name, last\_name, hire\_date

FROM employees

WHERE hire\_date >= DATEADD(year, -1, GETDATE());

Write a query to calculate the total salary expenditure for each department.

SELECT d.department\_id, d.department\_name, SUM(s.salary) AS total\_salary\_expenditure

FROM departments d

JOIN employees e ON d.department\_id = e.department\_id

JOIN salaries s ON e.employee\_id = s.employee\_id

GROUP BY d.department\_id, d.department\_name;

Write a query to find the top 5 highest-paid employees along with their department names.

SELECT e.employee\_id, e.first\_name, e.last\_name, d.department\_name, s.salary

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id JOIN salaries s ON e.employee\_id = s.employee\_id

WHERE s.to\_date = '9999-01-01'

ORDER BY s.salary DESC

LIMIT 5;