

CIS 11051 – PRACTICAL FOR DATABASE DESIGN
DEPARTMENT OF ICT
FACULTY OF TECHNOLOGY
SOUTH EASTERN UNIVERSITY OF SRI LANKA

Title: In Class Assignment 3

Time allowed: 2 Hours

Instructions:

1. Create a folder on the Desktop named with your registration number, followed by "_DB"
e.g., SEU/IS/22/ICT/000_DB
2. For **each question**, write the **question number**, then **include the corresponding code and outputs as screenshots** in order.
3. Include your **registration number at the top of the document**. Export the Word file to PDF format and rename the **PDF file using your registration number**.
4. **The PDF document should have your answers (screenshots) in an orderly sequence, with the question numbers, ready for submission.**
5. **Finally, submit your PDF document as a ZIP file.**

Questions:

1. Create a **database** named **“CA3”** to insert the following data into the table and do the following tasks:
 - a. Create a **table** named **employees** with the given data below.

<i>Column Name</i>	<i>Data Type</i>	<i>Constraints</i>
<i>emp_id</i>	INT	PRIMARY KEY
<i>name</i>	VARCHAR(50)	NOT NULL
<i>department</i>	VARCHAR(50)	
<i>salary</i>	DECIMAL(10,2)	
<i>join_date</i>	DATE	

emp_id	Name	Department	Salary	Join Date
1	Nimal Perera	IT	75000.00	2021-03-15
2	Kamal Fernando	HR	50000.00	2020-06-10
3	Saman Silva	Finance	60000.00	2019-01-22
4	Amara Jayasinghe	IT	80000.00	2022-07-01
5	Dilani Wickramasinghe	Marketing	45000.00	2023-02-14
6	Ruwan Senanayake	HR	55000.00	2021-11-30
7	Thilina Bandara	IT	70000.00	2020-08-05

- i. Display the employee's names and departments of employees who work in the IT department.
 - ii. Write a query to find the average salary of employees in the company.
 - iii. Show the number of employees in each department.
 - iv. List employees who joined after 1st January 2021, showing their names and join dates.
 - v. Display the highest and lowest salaries from the employees table.
 - vi. Show names and salaries of employees, sorted by salary from highest to lowest.
 - vii. Display departments where the minimum salary is less than 60000.
 - viii. Display the first 3 employees (based on join date, newest first).
 - ix. Modify the salary column to ensure it cannot be NULL.
 - x. Show each department's total salary, sorted in descending order by total salary.
2. Create **another table** as **projects** and insert the given data below

<i>Column Name</i>	<i>Data Type</i>	<i>Constraints</i>
<i>project_id</i>	INT	PRIMARY KEY
<i>emp_id</i>	INT	FOREIGN KEY
<i>project_name</i>	VARCHAR(100)	NOT NULL
<i>project_budget</i>	DECIMAL(10,2)	NOT NULL

project_id	emp_id	Project Name	Project Budget
101	1	Payroll System	120000.00
102	2	Recruitment Portal	80000.00
103	4	Inventory App	95000.00
104	7	Help Desk System	70000.00
105	5	Marketing Automation	60000.00

- a. List the names of employees and the projects they are working on, but only show projects with a budget greater than 80,000. Use INNER JOIN
- b. Display projects names and employees working on them, but only show projects with names containing the word 'System'. Use RIGHT JOIN
- c. List all possible combinations of employee names and project names. Use CROSS JOIN.