Lab Activity 3 - SQL

Software System Development – Monsoon 2024

Due Date: 04 September 2024, 05:00 pm

Instructions:

- ➢ Deadline mentioned during the Lab is strictly immutable. No extensions will be given.
- ➢ Any naming convention mentioned in the lab activity must be followed strictly or marks may be deducted for the same.
- ➢ Any plagiarized content will fetch zero marks for the current lab and will be followed by strict action against the students involved. However, discussion of ideas is allowed.

Submission Criteria:

- ➢ Create a folder with your roll number as its name and containing the following files corresponding to the questions:
  - ○ <roll_number>_q1_A.sql
  - ○ <README.md
- ➢ Compress the folder as a zip file (name should be <roll_number>.zip) and then upload it on the Moodle before deadline.
- ➢ README.md should contain steps for execution of your script and any extra information that you want the evaluator to know before running your script, such as dependencies on some external tools or libraries.
- ➢ For Example:

2023202010.zip

|___2023202010

|___2023202010_q1_A.sql

|___2023202010_q1_B.sql

|___so on …

|___README.md

Question 1: (100 Marks: 5 Marks each)

You're given a database with following tables.

productlines, products , offices, employees, customers, payments, orders, orderdetails

{Find CREATE & INSERT scripts in Q1.sql file}

You need to write SQL commands for the following queries:

A. Find the top 5 employees who have the highest total sales (sum of order amounts) and work in an office located in the USA.

B. Retrieve the 10 most expensive products, skipping the first 5.

C. List all customers who have placed an order or made a payment.

D. List customers who have both placed an order and made a payment.

E. Find all employees who do not manage any other employees.

F. Retrieve a list of all orders along with the product names. Include orders even if the products are not currently available.

G. Find the names of customers who have never placed an order.

H. List all possible combinations of products and offices, regardless of whether a product is available in an office.

I. Find the total sales per employee and list the top 3 employees by total sales using Common Table Expressions

J. List the total quantity ordered for each product.

K. Find products that have been ordered more than 1000 times in total.

L. Retrieve the list of customers ordered by their credit limit in descending order

M. List all distinct cities where either an office or a customer is located

N. Find cities where both an office and a customer are located.

O. List all customers who have placed at least one order.

P. Retrieve a list of orders along with the names of the products ordered.

Q. List all products and their corresponding orders, including those that have not been ordered.

R. Retrieve all orders and the corresponding products, including orders with no matching products.

S. List all possible combinations of product lines and offices.

T. Create a Common Table Expression to find the average sales amount per customer, and then list customers who have spent more than twice the average.