DAT102 – Working with Databases

Final Test – Spring 2024

Instructions:

Total marks: 30

This is an open book test. You may use any resources including Internet sites and your course materials. However, you are not allowed to discuss the questions with anyone else in any way.

You may use MySQL Workbench. This way you can test your code before submission. The scripts MUST work using MySQL.

All answers to the test are to be submitted to the Assignments folder associated with this Final Test.

This test may be completed over a period of time (as indicated by the dates in A2L).

Part 1 – SQL Statements (19 marks)

You will be using the Northwind database in MySQL. The script to install the database is included in the Assignment information where this document was opened from.

Please provide the answers to the following questions as statements in <u>one executable</u> script file called xxMidterm.sql, where xx are your initials. Please comment each answer to indicate the question it addresses. Remember, this file must execute without an error.

Questions – Write a single statement for each question below:

1. What is each category called, and how many different products are there in each category? (3 marks)
2. For each *Territory Description*, what is the name of the Employee responsible for it? (2 marks)
3. For each *Region Description* (in the Region table), how many employees are there? (3 marks)
4. Which product has the highest number of units in stock, and what is that number? (3 marks)
5. For each Order Detail, what is the product name, quantity sold, orderID, order date and customer's company name? Make sure this is sorted by order ID, then by product name. (4 marks)
6. Remove the PostalCode index on the Employees table. You may use two separate statements. (2 marks)
7. Add an index for the City on the Employees table. (2 marks)

Part 2 – Written Answers (11 marks)

Please provide the written answers to these questions in a Word document.

1. When you connect to a database from an application like Excel, what are the three critical pieces of information you need to supply to make a successful connection? (3 marks)
2. What is the purpose of an ODBC driver? (2 marks)
3. What can you do to generally improve the performance of SELECT statements that use JOINs? How is performance improved using this approach? (3 marks)
4. What is a log file (Binary Log file) and how can you keep its size manageable? (3 marks)

Put both the SQL script file and Word document in a zipped folder and upload it to the Assignments folder for this Test.

(End of test)