ASSIGNMENT 2

Individual - 10 %

This assignment has been designed to make you review Chapters 1-6, focusing on more advanced SELECT commands.

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COMP 2003 Relational Database

Assignment 2 – Relational Database

This assignment requires you to create, populate, and manipulate a database using SQL, then use advanced selection queries to extract relevant data. Your mark in this assignment counts for 13% of your final grade.

Assignment Requirements:

This is an individual assignment. All submitted work is to be your own work. Please ensure that you are familiar with the academic integrity policies referred to in the course syllabus.

Please submit your work as a Word document (docx - not pdf) as well as your finalized SQL script (sql).

Report formatting

- Name your report file *YourName*_Assignment2.docx
- Give your report an appropriate title with separate title page.
- Please include your name and student number.
- For each question, please include the question's number and text.
- Please include the text of your queries (including comments, and a screenshot which clearly shows the execution of your commands and the results. You might need to send more than one screenshot to show the results for each question).

SQL formatting

- Name your SQL script *YourName*_Assignment2.sql and complete all your SQL work in this file. Inside I should find all your SQL commands required to complete the assignment.
- Please include your name and student number as a comment header at the start of the script.
- The data provided (customers.sql) is solely for the purpose of populating your database with data – do not complete your SQL work in this file.
- Utilize the SQL Standards document provided in week 2 – with note to capitalization of keywords and lower-case database, table and field names.
- Complex statements should be broken over several lines as appropriate.
- Remember to add a brief descriptive comment for each query. You do not need to document every single line, but you must demonstrate that you understand what the SQL is doing.
- Please write in complete sentences in the commenting for relevant questions.

Submitting your assignment

- Create a zip file containing your SQL script and report document.
- Submit assignment zip file via the course website -> Assignments. Do not submit via email.

Evaluation Method

For each question you will receive the following marks:

- Execution: A variable number of marks will be assigned whether the command will run as provided.
- Accuracy: A variable number of marks will be assigned whether the question is answered correctly.

Additionally, the following marks will be assigned to the SQL script as a whole

- Structure: Up to 7 marks will be assigned for well-structured scripts that follow SQL standards. i.e. capitalized commands, lower case field names with underscores where needed, new lines, etc.
- Commenting: Up to 4 marks will be assigned for helpful, descriptive comments to be included throughout the script

If you have any questions, please do not hesitate to ask me.

Good luck.

Questions

Use the Customers.sql file to populate your assignment database.

1. Make a database and name it 'Assignment2' and add the data from Customers.sql to your database.
   Execution: 1.5 marks
   Accuracy: 0.5 mark

2. Use a single line SQL command to return the structure of the table from Q1. In your report, tell me what command you would use to generate a list of all the tables in your database.
   Execution: 1 mark
   Written answer: 1 mark

3. Add a column named *bonus* to your table. Place it after *surname*. Enable the users to store bonuses with values such as: 1099.99 or 2.00 by choosing the proper data type for *bonus*. In your report, mention the data type you chose and another that you considered but chose not to use.
   Execution: 1 mark
   Accuracy: 2 marks
   Written answer: 1 mark

4. Using a CASE command fill the data for the bonus column.
    - Non-credit card holders will receive a bonus of zero.
    - Customers who hold a VISA or who live in New Brunswick the bonus will be $140
    - All American Express holders will get $100
    - Customers who live in any province other than New Brunswick and have a Mastercard, will get $70 as bonus.
    - Then, customers with any other credit cards will get $55.99 as bonus.

    In your report, explain the considerations that were made in constructing this statement.

    Execution: 1 mark
    Accuracy: 5 marks
    Written answer: 1 mark

5. Let's increase the bonuses. Please increase all the bonuses by 20% for customers who are born in August or work for the company Freedom Map. But, please only apply this increase to the people who were only getting a bonus of less than $140.

    Execution: 1 mark
    Accuracy: 4 marks

6. We need to calculate the total dollar value of bonuses being given to customers in each province.
    - List each province and tabulate the average value of bonus dollars provided to customers in that province and name the new column as *average_bonuses*.
    - Sort the list alphabetically by province.

    In your report, explain the considerations that were made in constructing this statement.

    Execution: 1 mark
    Accuracy: 3 marks
    Written answer: 1 mark

7. Generate a list displaying *only* the five longest occupations in customers' table. In two columns display the *occupation*, and the character length of the occupation in a field called *occupation_length*. Please have the list sorted from longest to shortest. In your comments, how you would return occupations 6 though 10 of this same list. An example table is provided with occupations 1 through 5, your results should mirror what is presented below.

occupation	occupation_length
Food and tobacco roasting, baking, and drying machine operator	62
Extruding, forming, pressing, and compacting machine tender	59
Water and wastewater treatment plant and system operator	56
Cleaning, washing, and metal pickling equipment operator	56
Cleaning, washing, and metal pickling equipment tender	54

    Execution: 1 mark
    Accuracy: 3 marks
    Written answer: 1 mark

8. Write a query to show customers' full names, street address and city.
    - Please return their last name in all capital letters, followed by there first name.
    - Please call the name column 'full_name' and include both their first and last name as shown.

full_name	streetaddress	city
RUFFNER, Rosa	3846 St. Paul Street	St Catharines

Execution: 1 mark
Accuracy: 3 marks

9. Write a query to show how many customers have MasterCards and how many are using Visa. In your comments, explain how you would sort this table alphabetically by credit card type. An example table is provided below; these numbers are fictitious.

cctype	num_customers
Visa	589
MC	432

Execution: 1 mark
Accuracy: 3 marks
Written Answer: 1 mark

10. If you were asked to add a *total_bonuses* column to the output results of Q9's query tabulating the total amount of bonuses provided to Visa vs MC customers,? How you would do so?

Written Answer: 3 marks