Homework Assignment HW_3 SQL

Overview

- This homework is worth 15 points (15%) toward your final grade.
- It is due on Friday 6/28/2019, 11:59 pm.
- Late policy applies (grace period of 3 days with 20% late penalty). After that time (7/1/2019), no late work will be accepted.
- Save your results in a document (such as a .txt file, MS Word or similar tool) and submit your assignment deliverable in a PDF on Canvas.
- You must turn in BOTH your SQL and your ANSWER SET (unless otherwise specified). Some queries may produce NO answer set e.g. drop table. However, you need to show your sql.

This homework will give you hands-on practice in working with SQL (Structured Query Language.) In this homework you will create a database and populate it using scripts provided. The database you create will then be used for various queries/problems in this homework.

Objectives

1. Become familiar with SQL language & syntax for SELECT queries, DDL and DML
2. Become familiar with a tool of your choice for building and submitting queries (whether command mode or GUI.)
3. Successfully run the scripts necessary to create a sample database consisting of 8 tables, verify that your database is correctly built.
4. Write SQL queries against sample database to answer the assigned problems.

Step One: Downloading and Installing MySQL

For this homework assignment you will need to download and install MySQL on your computer. How you do this will depend on what type of computer you have and what Operating System it is running.

You may want to download **MySQL Workbench Community Server (CE) 8.0.** The current release number changes from time to time. As of this writing, the most recent release is 8.0.12, however, either version will work fine.

Do NOT download "MySQL Cluster" software. That is a much different product.

This page contains online documentation links where you can find help with the download and install if you need it.

The download you need can be found here: choose the download file that matches your computer's OS and version.

https://dev.mysql.com/downloads/mysql/

Step Two: Choose Your Preferred Query Editor Tool

In order to create SQL queries and run them against your MySQL database, you will need a tool or a "window" through which you can create and execute queries.

However, managing and running queries against MySQL databases is simpler, faster and easier if you use a GUI (graphic user interface) tool. There are many available.

You can use MySQL Workbench to build and submit queries against your database. It is available here: https://dev.mysql.com/downloads/workbench/ . They offer versions for Windows, Linux, MAC.

Step Three: Creating the Database

Once you have selected your query editor, you need to download the "**HW_3_SQL_NorthWinds.sql**" script file from **Canvas**, and execute it. It will create your database and tables, and then load the tables with data. The script runs fine as-is without any modification.

The script begins with a command to DROP the table before it creates it. This allows you to run the script over and over as needed.

Before you can create your database, you need to make sure that your instance of MySQL is running in the background and Safe Undates is unchecked (Edit - SQL Editor - **Uncheck** Safe Undates). Then using your query editor, you must connect to the running MySQL instance prior to running the script.

There is an ERD of this database in the Canvas called "**HW_3_SQL_Northwinds_ERD.pdf**". You

should download and print this diagram and keep it handy when you are doing the homework. It is very helpful to have table and column names in front of you when writing SQL queries.

The **HW_3_SQL_NorthWinds.sql** contains 9 scripts for creating each of 8 tables, and one to verify that everything worked OK.

- Suppliers
- Shippers
- Customers
- Employees
- Products
- Categories
- Orders
- Order_details

- Verify

If you are using the command line editor, you can enter SHOW TABLES and MySQL will show you all the tables in your database.

After running **HW_3_SQL_NorthWinds.sql** script, run the "**Verify**" script, as below. You should see the following 8 tables and row counts for each.
Note: Please let instructor know if your tables/counts are different.

```
--  Verify row counts

    USE HW_3_SQL_NorthWinds;
    SELECT table_name, table_rows
    FROM information_schema.tables
    WHERE TABLE_NAME LIKE 'HW%';
```

TABLE_NAME	TABLE_ROWS
hwcategories	8
hwcustomers	87
hwemployees	9
hworderdetails	2155
hworders	830
hwproducts	77
hwshippers	3
hwsuppliers	29

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Query Problems

Again, for this homework you must execute queries against the **HW_3_SQL_NorthWinds** database.

- You must turn in BOTH your SQL and your ANSWER SET (unless otherwise specified). Some queries may produce NO answer set e.g. drop table. However, you need to show your sql.
- **All Questions are equally weighted.**

Questions:

1. Select all/everything from Categories table.
2. List the Company Name, Address, City, Region, Postal Code and Phone for all suppliers located in France or Germany.
3. List the Contact Name and Title for all suppliers with a Supplier ID number ranging from 5 to 20 (inclusive) list them by Contact Name ascending order.
4. Create Products result set listing Product Name, Quantity per Unit, Unit Price and Units in Stock for products with a Unit Price less than $10.00
5. Show a List of Product ID, product Name, unit in Stock, Unit Price and record level for all products that are currently in stock (Products in stock have at least one unit in inventory i.e. Unit in Stock) and whose inventory level is at or below the reorder level.
6. Create a list of all employees with their last name, first name, hiredate (formated to mm/dd/yyyy) who are not living in the USA and have been employed for at least 5 years. List your result alphabetical by Last Name and First Name.
7. What is the product name and unit price of the most expensive product (i.e. highest unit price)? You **must use a Sub Query**.
8. List Product ID, Product Name and 'Total Inventory Value' (i.e. units in stock multiplied by the unit price) for products whose 'Total Inventory Value' is over 2000.
9. List the Product ID, Product Name, Unit Price for all products whose product name like 'cans' that have been discontinued (i.e. discontinued =1)

10. List the ShipCountry and count of Orders for all the Orders shipped outside the USA during the month of September 2013.

11. What is the Average Unit Price (rounded to two decimal places) of all the products? Make sure to call your result column as 'Average Unit Price'.

12. How many Customers are from France?

13. List all CustomerID and ShipCountry who has more than 20 Orders.

14. List Supplier ID from 1 to 5 (inclusive) and their **TOTAL value** of their inventory ('value of inventory' = UnitsInStock * UnitPrice.).

15. Create a list showing the Supplier's CompanyName, Product's ProductName and UnitPrice for suppliers located in USA.

16. Create an EMPLOYEE ORDER list showing FirstName, LastName, Title and Orders count for each employee who has more than 100 orders, sort result in alphabetical order by full name.

17. List CustomerID and CompanyName of all customers who has NO Orders on file (i.e. NULL OrderId).

18. Create an OUT OF STOCK LIST showing the Supplier's CompanyName, ContactName, Categories' CategoryName, CategoryDescription, product's ProductName and UnitsOnOrder for all products that are currently out of stock (i.e. UnitsInStock = 0.

19. List product's productname, UnitsInStock, supplier's companyname and country for all products whose QuantityPerUnit has 'bottle' or 'bottles'.

20. Create a list of customer's from Mexico with their Company Name, order's shipname and the value of all theri orders, round to 2 decimal places.
HINT: the value of an order is (UnitPrice multipled by Quantity less discount)

21. Create an 'EmployeesOrders' VIEW listing Employee's firstname, lastname, and the count Orders as 'OrderCount' for each employee.

22. Select everything from the EmployeeOrders view, you created in question 21.

23. Create a table named 'TopItems' with the following columns:
ItemID (INT NOT NULL PRIMARY KEY), ItemCode (INT), ItemName (varchar(40)), ItemDate (DATE), ItemQuantity (INT), ItemPrice (decimal (9,2)) and SupplierID (INT).

DESCRIBE your table to show the table you created.

24. Insert date into table 'TopItems' you created in question 23 using bulk insert statement from **hwproducts** table for product's **unitprice less than 8**.
Use this mapping to insert data:

itemID = ProductID
itemname = ProductName
itemdate = CURDATE()
ItemQuantity = unitsInStock
itemprice = UnitPrice
itemsupplierid = supplierid

List ALL from your table TopItems.

25. Delete the rows from TopItems for itemid 54 and 75.
List ALL from your table TopItems to display result.

26. Add a new column to the TopItems table called InventoryValue (decimal (9,2)) after the ItemPrice column.
DESCRIBE your table to show the column you added.

27. Update the TopItems table, setting the InventoryValue column equal to ItemPrice multiplied by ItemQuantity.

28. List all columns from the TopItems table.

29. Drop the TopItems table.

30. Drop view employeeorders.

☺☺ The End. ☺ ☺

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