INFOSYS 222 A2P2 –SQL (15%)

BACKGROUND

The purpose of this assignment is to assess the level of understanding and skill in composing SQL statements and SQLite commands. The questions are based on the database of a fictitious trading company called Northwind that manages their business records from 1996 to 1998. Students need to download a copy of the database script file (i.e. nw.sql) from Canvas and create a database instance (e.g. nw.db) before they proceed with the questions. All answers should be captured in a single file for submission (i.e. username.txt or username.sql).

QUESTIONS

Q01: Use the comment feature of SQL to print your **full name**, **AUID** and **username** in three separate lines at the top of the script file. From this point onwards, you should use the comment feature to separate your answers for each question. (0.2 mark)

Q02: Write a SQL statement to retrieve all the rows from the **Product** table. All the columns should be renamed with proper spacing using the alias feature. For example, the **UnitPrice** column should be renamed as “Unit Price”. (0.2 mark)

Q03: Write a SQL statement to retrieve all the rows from the **Product** table with **ProductName**, **UnitPrice** and **UnitsInStock** columns only. The rows should be sorted by **UnitPrice** in descending order. (0.2 mark)

Q04: You need to locate the phone number of a shipper company named United Package. Write a SQL statement to retrieve only that piece of information from the appropriate table. Your SQL statement should cater for different casing scenarios. (0.2 mark)

Q05: You are going to send a product list to all the customers by fax. Write a SQL statement to retrieve rows from the **Customer** table only if those customers have a fax number. (0.2 mark)

Q06: You want to study some particular orders. Write a SQL statement to retrieve rows from the **Order** table when their **OrderDate** values are within the month of July in 1996. (0.2 mark)

Q07: You want to generate a list of countries that covers all the existing customers. Write a SQL statement to retrieve a country list without any duplication (i.e. the same country should not appear twice in that list) from the **Customer** table. (0.2 mark)

Q08: Write a SQL statement to return the total number of rows in the **Order** table. Rename the column in the output as "Numbers of Order". (0.2 mark)

Q09: Write a SQL statement without using any function to retrieve a list of products where the **ProductName** is exactly 5 characters long. Write another SQL statement that uses appropriate function to do the exact same thing. (0.2 mark)

Q10: You are interested to know the top 10 most stocked products in the inventory. Write a SQL statement to retrieve that information from the **Product** table with both the **ProductName** and **UnitsInStock** columns. (0.2 mark)

Q11: Write a SQL statement to generate a tidy employee list with only two columns, one with their full name and one with their full address. The full name is composed of the **LastName** in all caps, the **FirstName**, and a comma in between. (0.5 mark)

Q12: You need to examine the order detail of the order 10250. Write a SQL statement that would retrieve the rows from the **OrderDetail** table with the columns **OrderID**, **ProductID**, **UnitPrice**, **Quantity**, **Discount** and a derived column named **Subtotal** which is calculated from other columns. For the output, the columns **UnitPrice** and **Subtotal** should have a dollar sign ($) as prefix, and **Discount** should be shown as a percentage with the sign (%) as suffix. (0.5 mark)

Q13: Write a SQL statement that can retrieve all products with the following features: **ProductName** begins with 'C'; **CategoryID** equals to either 1 or 2; **UnitPrice** that is more than $20; and **Discontinued** is false. (0.5 mark)

Q14: Write the SQL statements to insert 3 rows to the **Shipper** table:

CompanyName	**Phone**
Trustworthy Delivery	(503) 555-1122
Amazing Pace	(503) 555-3421
Your Name Limited	(503) Your AUID

For the last row use your full name as the **CompanyName** and use the first 7 digits of your own AUID as the number for the **Phone** after the area code 503. Make sure the **ShipperID** is automatically generated and so you do not enter them manually. (0.5 mark)

Q15: Write a SQL statement to generate a list of employees with **FirstName**, **LastName** and their exact age from the **Employee** table. For the output, the age should be rounded to the nearest number without any decimal value, and it should be shown as a whole number. (0.5 mark)

output与sampleoutput不一样

Q16: Two employees of **Northwind**, Nancy Davolio and Andrew Fuller, are married recently and you are asked to update Nancy's details in the **Employee** table. Write a SQL statement to update

Nancy's **LastName** from Davolio to Fuller, and also the **TitleOfCourtesy** from Ms. to Mrs. Your SQL statement should cater for different casing scenarios. (0.5 mark)

Q17: Since Nancy has moved in with Andrew after they get married, you need to change her **Address**, **City**, **Region**, **PostalCode** and **HomePhone** columns from the **Employee** table. Write a SQL statement with subqueries to update Nancy's contact details. Your SQL statement should cater for different casing scenarios. (0.5 mark)

Q18: Write a SQL statement to create a new table called **ProductHistory** with the following column specifications:

Column name	**Data type**	**Nullability**
ProductID	INTEGER	No
EntryDate	DATE	No
UnitPrice	REAL	Yes
UnitsInStock	INTEGER	Yes
UnitsOnOrder	INTEGER	Yes
ReorderLevel	INTEGER	Yes
Discontinued	INTEGER	No

You need to set a primary key and a foreign key for the table. Add a primary key constraint based on both the **ProductID** and **EntryDate** columns. Add a foreign key constraint based on the **ProductID** columns of both **ProductHistory** and **Product** tables. (0.5 mark)

Q19: Write a SQL statement to fill up the **ProductHistory** table with all existing rows in the **Product** table. The **EntryDate** column should be filled with the current date and time that can be obtained from the appropriate function. (1 mark)

Q20: Write a SQL statement to create a list with 2 columns: **Day of Week** and **Hired**. The **Day of Week** column has a possible value ranged from Monday to Sunday, and the **Hired** column shows the exact number of employees from the **Employee** table being hired on a particular **Day of Week**. (1 mark)

Q21: You are asked to find out the top sales representative (by the accumulated dollar amount of orders) in **Northwind**. Write a SQL command to return the **LastName**, **FirstName** and the total dollar amount of orders of that employee under the column **Total** with a dollar sign ($) as prefix. (1 mark)

Q22: Write a SQL statement with no subquery to create a list with 2 columns: **Employee** and **Manager**. The column **Employee** shows the **FirstName** of the employee, and the column **Manager** shows the **FirstName** of the manager of that employee. Make sure that all employees are listed whether they have a manager or not. For those employees who do not have a manager, the value "No manager" should show up in the second column. (2 marks)

Q23: You notice that some products are sold lower than their recommended prices (i.e. the **UnitPrice** with **Discount** in **OrderDetail** table is lower than the **UnitPrice** in the **Product** table). Write a SQL statement to generate a full customer list with five columns:

1. **CompanyName** column from the **Customer** table renamed as **Company**;
2. **Recommended** column with the total amount they should have paid for all the products ordered based on the **UnitPrice** from the **Product** table,
3. **Ordered** column with the total they have actually paid (calculated from the **OrderDetail** table),
4. **Discount** column showing discount in absolute value, and
5. **Percentage** column showing discount in percentage value

All columns with numeric values should be rounded to two decimal places and displayed with appropriate prefix or suffix. Sort the list by the **Percentage** column in descending order to show which customer is enjoying the highest percentage of discount from **Northwind**. (2 marks)

Q24: According to the **Order** table, **Northwind** ships their products to over 20 different countries via three companies in the **Shipper** table. Over the years staff in **Northwind** have learnt from which shipper company would be the best for which country. Your task is to reveal that piece of tacit knowledge from the existing data, assuming that the preferred shipper would have earned the highest total **Freight** from **Northwind** for shipments to a particular country. Write a SQL statement with subqueries to generate a list with two columns: the **ShipCountry** from the **Order** table and also the preferred **CompanyName** from the **Shipper** table for that country. (2 marks)

Q24
table t - country, shipper(shipperbar - 1,2,3), total
from that table t, how do you change multi-line to just single line

if table name = column name -- use full name - - column name.table name