

Assignment 01 – SQL

Objectives

The purpose of this assignment is to assess the students' knowledge about storing and querying data from a database considering the relationships between tables in that database. Students will query data from a database (single/multiple tables) and use the relationships to reconnect some tables when extracting data and obtaining information. Student will:

- Produce query results containing data from multiple tables using joins and demonstrate their knowledge of inner, outer and full joins.
- Troubleshoot queries to handle potentially ambiguous fields across multiple tables through the use of aliases.

Submission

Your submission will be a single SQL file with the solutions provided. (with a .sql file extension)

DBS211_Assignment01_LastName.sql

Your submission needs to include a comment header block and be commented top clearly indicate the answers to each question. Make sure every SQL statement terminates with a semicolon.

Example Submission

```
-- *****
-- Name: Your Name
-- ID: #####
-- Date: The current date
-- Purpose: Assignment 01 DBS211
-- *****
```

```
-- Q1 SOLUTION --
```

```
SELECT * FROM TABLE;
```

```
-- Q2 Solution --
```

```
SELECT * FROM TABLE;
```

Locate, select, and submit the file to the assignment link.

Setup

Create a new worksheet in SQL developer and add an appropriate comment header that includes your name, student id, the date and the purpose of the file (i.e. DBS211 – Assignment 01).

Style Guide

Your SQL should be written using the standard coding style:

- all keywords are to be upper case,
- all user-defined names are to be lower case, (example: table and field names)
- there should be a carriage return before each major part of the SQL statements (i.e. before SELECT, FROM, WHERE and ORDER BY)

See the following sample:

```
SELECT columns
FROM tables
WHERE conditions
ORDER BY column1, column2;
```

To save time, you can write the SQL statements in your SQL developer. To make sure that your SQL statements style follows the standard SQL style guideline, copy and paste your SQL statements onto the following website and click on “FORMAT SQL” or “FORMAT SQL IN NEW WINDOW”.

<https://www.freeformatter.com/sql-formatter.html#ad-output>

You can also upload your SQL file. See the setting in the following image. Have SQL keywords (SELECT, INSERT, UPDATE, etc) uppercase and user defined objects and identifiers (tables, columns, etc.) lowercase.

The screenshot shows the SQL Formatter website interface. It has two main options: "Option 1: Copy-paste your SQL query here" and "Option 2: Or upload your SQL document". Under Option 1, there is a text area containing the SQL query: "select * from dbs211_orders;". Under Option 2, there is a "Browse..." button, a "No file selected." message, and a "UTF-8" dropdown menu. Below these options, there are three settings: "Indentation level:" set to "3 spaces per indent level", "Change case of SQL keywords (select, from, where, etc.):" set to "Modify to upper case", and "Change case of identifiers (tables, columns, etc.):" set to "Modify to lower case". At the bottom, there are two buttons: "FORMAT SQL" and "FORMAT SQL IN NEW WINDOW".

Marking Scheme

Question	Points	Question	Points
1	1.5	6.a	1.5
2	1.5	6.b	0.5
3	1.5		
4	2		
5	1.5		

Total: 10

Grade Policy

- Questions with errors do not get any marks. (They get zero.)
 - Execute your *.sql* file by selecting all the statements and using the “Run statement” button to make sure there is no errors in your file and check the output result returned by each query.
- Make sure your result in a question matches the sample output result.
- You do not receive marks for the missing or incomplete solutions.

Tasks:

Important: For each question, the title of columns and the output result must match the provided output result in that question to receive a full mark.

Remember to comment the question number for each solution.

If you do not have a solution for any question, write the following statement for that question.

See the example:

```
SELECT 'No Solution'
```

```
FROM dual;
```

1. Display employee number, employee full name, phone, extension, city, manager ID, and manager name for employees who do not report to a manager. (See the following output) *Sort the result based on the city and the employee number.* (1.5 Marks)

Employee Number	Employee Name	Phone	Extension	City	Manager ID	Manager Name
1	1002Murphy, Diane	+1 650 219 4782 x5800		San Francisco	Unknow	Unknown

2. Display employee number, employee full name, phone, extension, and city for employees who work in NYC, Tokyo, and Paris. *Sort the result based on the city and the employee number.* (1.5 Marks)

EMPLOYEE NUMBER	Employee Name	Phone	Extension	City
1	1286Foon Yue Tseng	+1 212 555 3000 x228		NYC
2	1323George Vanauf	+1 212 555 3000 x4102		NYC
3	1102Gerard Bondur	+33 14 723 4404 x5408		Paris
4	1337Loui Bondur	+33 14 723 4404 x6493		Paris
5	1370Gerard Hernandez	+33 14 723 4404 x2028		Paris
6	1401Pamela Castillo	+33 14 723 4404 x2759		Paris
7	1702Martin Gerard	+33 14 723 4404 x2312		Paris
8	1621Mami Nishi	+81 33 224 5000 x101		Tokyo
9	1625Yoshimi Kato	+81 33 224 5000 x102		Tokyo

3. Modify the query in Question 2 to display the manager ID and the manager name for the employees returned by the previous query. *Sort the result based on the city and the employee number.* (1.5 Marks)

Employee Number	Employee Name	Phone	Extension	City	Manager ID	Manager Name
1	1286Tseng, Foon Yue	+1 212 555 3000 x228		NYC	1143	Anthony Bow
2	1323Vanauf, George	+1 212 555 3000 x4102		NYC	1143	Anthony Bow
3	1102Bondur, Gerard	+33 14 723 4404 x5408		Paris	1056	Mary Patterson
4	1337Bondur, Loui	+33 14 723 4404 x6493		Paris	1102	Gerard Bondur
5	1370Hernandez, Gerard	+33 14 723 4404 x2028		Paris	1102	Gerard Bondur
6	1401Castillo, Pamela	+33 14 723 4404 x2759		Paris	1102	Gerard Bondur
7	1702Gerard, Martin	+33 14 723 4404 x2312		Paris	1102	Gerard Bondur
8	1621Nishi, Mami	+81 33 224 5000 x101		Tokyo	1056	Mary Patterson
9	1625Kato, Yoshimi	+81 33 224 5000 x102		Tokyo	1621	Mami Nishi

4. For all managers, display manager ID, manager name, country, and the person who the manager reports to. See the following output. *Sort the result according to the manager ID.* (2 Marks)

	Manager ID	Manager Name	COUNTRY	Reports to
1	1002	Diane Murphy	USA	Does not report to anyone
2	1056	Mary Patterson	USA	Reports to Diane Murphy (President)
3	1088	William Patterson	Australia	Reports to Mary Patterson (VP Sales)
4	1102	Gerard Bondur	France	Reports to Mary Patterson (VP Sales)
5	1143	Anthony Bow	USA	Reports to Mary Patterson (VP Sales)
6	1621	Mami Nishi	Japan	Reports to Mary Patterson (VP Sales)

5. The vendor 'Exoto Designs' offers a discount on some particular products. The customers who purchased products with quantity higher than 55 from this vendor are eligible to receive the discount. They will get 10% discount to purchase the same products they have purchased with high quantity (> 55).

Use the msrp column in the product table as the old price and calculate the new price using this column. In your report, display customernumber, customername, productcode, old price, and the new price **(1.5 Marks)**

Hint: First, find products from this vendor that were sold with quantity greater than 55. Then, you need to find the customers who purchased them. For these products, calculate the new price.

	CUSTOMERNUMBER	CUSTOMERNAME	PRODUCTCODE	OLD Price	New Price
1	282	Souveniers And Things Co.	S18 4409	92.03	82.83
2	362	Gifts4AllAges.com	S18 4522	87.77	78.99
3	450	The Sharp Gifts Warehouse	S24 2887	117.44	105.7
4	450	The Sharp Gifts Warehouse	S18 3856	105.87	95.28

6. Answer the following questions:

- a. Find customers who have more than one order: **(1.5 Marks)**

Show customer number and customer name in your result. Sort the result according to customer number. (Do not show duplicate values)

The query returns 97 rows. Please see the first 10 rows of the result. (Your query must return all 97 rows.)

	CUSTOMERNUMBER	CUSTOMERNAME
1	103	Atelier graphique
2	112	Signal Gift Stores
3	114	Australian Collectors, Co.
4	119	La Rochelle Gifts
5	121	Baane Mini Imports
6	124	Mini Gifts Distributors Ltd.
7	128	Blauer See Auto, Co.
8	129	Mini Wheels Co.
9	131	Land of Toys Inc.
10	141	Euro+ Shopping Channel

Do not use aggregate functions (COUNT()) to answer this question.

Hint: To find customers with different order numbers, you need to join the table dbs211_orders with itself. (If for the same customer, there are different orders.) To get the given result, you may need to join more tables. **(0.5 Marks)**

b. Modify the query in Q6.a to return customers who have only one order. Sort the result by customer number and customer name. The query returns one customer.

	CUSTOMERNUMBER	CUSTOMERNAME
1	415	Bavarian Collectables Imports, Co.

Good Luck