Lab 03 – SQL – Single Table Queries

# Objectives

The purpose of this lab is to start learning SQL by writing basic DML statements involving a single table. You will learn to create basic CRUD statements (queries as well as insert, update and delete).

## Submission:

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

## Setup

Create a new worksheet in SQL developer and add an appropriate comment header that includes your name, Oracle USER ID, student id, the date and the purpose of the file (i.e. DBS211C50 – Lab 03).

Immediately under the comment header, enter the following line and then execute it:

SET AUTOCOMMIT ON;

You will need to execute this statement each time you login to the server until the completion of this lab.

Save the script as: DBS211C50-L03.sql

## 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)

Using comments to number the question answers, write the SQL code to complete the following tasks.

**Tasks:**

1. Display the data for all offices.

Ans:

SELECT \* FROM offices;

1. Display the employee number for all employees whose office code is 1.

**Ans**: SELECT employeenumber

FROM employees

WHERE officecode = 1;

1. DISPLAY CUSTOMER NUMBER, customer name, contact first name and contact last name, and phone for all customers in Paris. (**hint**: be wary of case sensitivity)

Ans:

SELECT customernumber,customername,contactfirstname,contactlastname,phone

FROM customers

WHERE UPPER(city) = 'PARIS';

1. Repeat the previous Query with a couple small changes:
   1. The contact’s first and last name should be in a single column in the format “lastname, firstname”.
   2. Show customers who are in Canada

Ans:

SELECT customernumber,customername,contactfirstname||''||contactlastname as name,phone,city FROM customers

WHERE UPPER(country) = 'CANADA';

1. Display customer number for customers who have payments. Do not included any repeated   
   values. (**hints**: how do you know a customer has made a payment? You will need to access only one table for this query)

Ans:

SELECT DISTINCT customernumber

FROM payments

ORDER BY customernumber;

1. List customer numbers, check number, and amount for customers whose payment amount is not in the range of $30,000 to $65,000. Sort the output by top payments amount first.

Ans:

SELECT customernumber,checknumber,amount

FROM payments

WHERE amount NOT BETWEEN 30000 AND 65000

ORDER BY amount DESC;

1. Display the order information for all orders that are cancelled.

Ans:

SELECT \* FROM orders

WHERE UPPER(status) = 'CANCELLED';

1. The company needs to know the percentage markup for each product sold. Produce a query that outputs the ProductCode, ProductName, BuyPrice, MSRP in addition to
   1. The difference between MSRP and BuyPrice (i.e. MSRP-BuyPrice) called *markup*
   2. The percentage markup (100 \* calculated by difference / BuyPrice) called *percmarkup*rounded to 1 decimal place.

Ans:

SELECT productcode,productname,buyprice,msrp,msrp-buyprice AS markup, ROUND(100\*((msrp-buyprice)/buyprice)) AS percmarkup

FROM products;

1. Display the information of all products with string ‘***co’*** in their product name. (c and o can be lower or upper case).

Ans:

SELECT \* FROM products

WHERE UPPER(productname) LIKE '%CO%';

1. Display all customers whose contact first name starts with letter ***s*** (both lowercase and uppercase) and includes letter ***e*** (both lowercase and uppercase).

Ans:

SELECT contactfirstname

FROM customers

WHERE UPPER(contactfirstname) LIKE 'S%' AND UPPER(contactfirstname) LIKE '%E%';

1. Create a statement that will insert yourself as an employee of the company.
   1. Use a unique employee number of your choice
   2. Use your school email address
   3. Your job title will be “Cashier”
   4. Office code will be 4
   5. You will report to employee 1088

Ans:

INSERT INTO employees (employeenumber, lastname, firstname, extension, email, officecode, reportsto, jobtitle)

VALUES(7812,'Latifi','Mobin','x10','mlatifi@myseneca.ca',4,1088,'Cashier');

1. Create a query that displays your, and only your, employee data

Ans: SELECT \* FROM employees

WHERE employeenumber = 7812;

1. Create a statement to update your job title to “Head Cashier”

Ans:

UPDATE employees

SET jobtitle = 'Head Cashier'

WHERE employeenumber = 7812;

1. Create a statement to insert another fictional employee into the database. This employee will be a “Cashier” and will report to you. Make up fake data for the other fields.

Ans:

INSERT INTO EMPLOYEES (employeenumber, lastname, firstname, extension, email, officecode, reportsto, jobtitle)

VALUES(4321,'Messi','Leo','x102','messi@soccer.ca',4,7812,'Cashier');

1. Create a statement to Delete yourself from the database. Did it work? If not, why?

Ans:

DELETE FROM employees

WHERE employeenumber = 7812;

* No, it did not work and says it violated the integrity constraint and says “child record found”. It is probably because the fictional employee that I created still reports to me.

1. Create a statement to delete the fake employee from the database and then rerun the statement to delete yourself. Did it work?

Ans: Yes it did work. Both of the rows got deleted.

DELETE FROM employees

WHERE employeenumber = 4321;

DELETE FROM employees

WHERE employeenumber = 7812;

1. Create a **single** statement that will insert both yourself and the fake employee at the same time. This time the fake employee will report to 1088 as well.

Ans:

INSERT ALL

INTO employees VALUES(7812,'Latifi','Mobin','M10','mlatifi@myseneca.ca',4,1088,'Cashier')

INTO employees VALUES(4321,'Messi','Leo','x102','messi@soccer.ca',4,1088,'Cashier')

SELECT \* FROM DUAL;

1. Create a **single** statement to delete both yourself and the fake employee.

Ans:

DELETE FROM employees

WHERE employeenumber = 7812 OR employeenumber = 4321;