## Lab assignment # 2- Data Retrieval Language, SELECT from a single table

In this lab you will work with SELECT statements against a single table. Start by creating the table customer and fill it with data, by copy the following SQL statements and paste them into your SQL client software, and hit "Run".

----------------------------------COPY and PASTE START------------------------

CREATE TABLE customer(

username VARCHAR2(8) PRIMARY KEY,

passwd VARCHAR2(8) NOT NULL,

first\_name VARCHAR2(20) NOT NULL,

last\_name VARCHAR2(20) NOT NULL,

profession VARCHAR2(20),

reg\_date DATE NOT NULL,

salary NUMBER(7));

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('MrBig','MBisKING','Roger','nyberg','Officer',TO\_DATE('1998-NOV-29','YYYY-MON-DD'),317000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('MEZcal','P33kssa','maria','Nyberg','psychologist',TO\_DATE('1999-08-29','YYYY-MM-DD'),435000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('FISSIped','bintje','Tomas','kvist','Potatoe farmer',TO\_DATE('2000-02-28','YYYY-MM-DD'),198000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('OlleBull','Bullas','hans','Lindqvist',NULL,TO\_DATE('2002-05-05','YYYY-MM-DD'),116000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('MrMDI','MDIisit','Hans','Rosenboll','assistant professor',TO\_DATE('1997-01-15','YYYY-MM-DD'),307000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('King25','asdf1234','charlotte','Ortiz','dentist',TO\_DATE('2003-12-10','YYYY-MM-DD'),586000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('h01hanro','T56xxL','Sven','Larsson',NULL,TO\_DATE('2003-08-09','YYYY-MM-DD'),NULL);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('XXXL','IRule','Margareta','ek','MD',TO\_DATE('2001-06-29','YYYY-MM-DD'),942000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('Rolven','revolver','roger','nyberg',NULL,TO\_DATE('1998-10-29','YYYY-MM-DD'),240000);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('IceMan','Quantos','Maria','Nyberg','Engineer',TO\_DATE('1998-02-14','YYYY-MM-DD'),412000);

COMMIT;

----------------------------------END COPY and PASTE--------------------------

**Your task in the lab** is to write SQL statements that retrieve information, from the database, asked for in the tasks. Write your SQL-statements well structured, like:

SELECT col, col, group functions(),..

FROM table..

WHERE..

AND..

HAVING..

GROUP BY..

ORDER BY col.. ASC.. DESC..

**In order for you to succeed with the lab**, you have to use the built in function NVL() to handle NULL-values. The functions TO\_DATE() or TO\_CHAR() to handle date conversions, and finally the functions UPPER() or LOWER() to handle, case sensitive storage of string values (andersson, Andersson, ANDERSSON). We assume that NULL = 0 (zero) in columns of numeric data type.

**Task 1**

Show **all data** about all customers, sort by last\_name (a-ö).

**Task 2**

Show **all data** about all customers, sort by last\_name (ö-a).

**Task 3**

Show **the numbers of customers** that are stored in the customer table

(i.e. the number of rows).

Correct answer = 10

**Task 4**

Show **how many** customers that have an annual (yearly) income that is greater than

300 000 SEK.

Correct answer = 6

**Task 5**

Show **how many** customers that have an annual (yearly) income that is less than

300 000 SEK.

Correct answer = 4

**Task 6**

Show average **annual income for all customers**. The column headline should be: **average\_salary**

Correct answer:

average\_salary

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355300

**Task 7**

Show **username**, **first\_name**, **last\_name** and **salary** for those customers that have a salary that is less than the average annual income for all customers.

Correct answer:

USERNAME FIRST\_NAME LAST\_NAME SALARY

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MrBig Roger nyberg 317000

FISSIped Tomas kvist 198000

OlleBull hans Lindqvist 116000

MrMDI Hans Rosenboll 307000

h01hanro Sven Larsson 0

Rolven roger nyberg 240000

**Task 8**

Show **first\_name**, **last\_name** with **UPPER-CASE LETTERS** for those customers who have the letter 's' in the last name.

Correct answer::

FIRST\_NAME LAST\_NAME

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TOMAS KVIST

HANS LINDQVIST

HANS ROSENBOLL

SVEN LARSSON

**Task 9**

Show **first\_name**, **last\_name** and **profession** with **lower-case letters** for those customers who have a first name which ends with the letter 's'. Replace null-values in the column profession with the string 'jobless'. Correct answer:

FIRST\_NAME LAST\_NAME PROFESSION

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tomas kvist potatoe farmer

hans lindqvist jobless

hans rosenboll assistant professor

**Task 10**

Show **profession** and the **number of customers** in that **profession category**. Sort by profession (z-a).

The column headings should be **profession** and **quantity**. Replace null-values in the column profession with the string 'jobless'. Show profession **capitalized**. Suggestion! Use the function initcap(). Correct answer:

PROFESSION QUANTITY

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Psychologist 1

Potatoe Farmer 1

Officer 1

Md 1

Jobless 3

Engineer 1

Dentist 1

Assistant Professor 1

**Task 11**

Show **first\_name** concatenated with a **space** and **last\_name** under the heading **customer\_name**. Show both names capitalized. Concatenate in Oracle: 'string1'||'string2'||'string3'..

Correct answer:

CUSTOMER\_NAME

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Roger Nyberg

Maria Nyberg

Tomas Kvist

Hans Lindqvist

Hans Rosenboll

Charlotte Ortiz

Sven Larsson

Margareta Ek

Roger Nyberg

Maria Nyberg

**Task 12**

Show **the number of customers** who has the username = 'King25' and

passwd = 'asdf1234' with the heading logged\_in**.**

Correct answer:

logged\_in

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1

**Task 13**

Show the **number of customers** who has the username = 'KING25' and

passwd = 'ASDF1234' with the heading logged\_in**.**

Correct answer:

logged\_in

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0

**Task 14**

Show **username**, **passwd** and **reg\_date** for those customers who registered before **year 2000**.

Correct answer:

USERNAME PASSWD REG\_DATE

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MrBig MBisKING 1998-11-29

MEZcal P33kssa 1999-08-29

MrMDI MDIisit 1997-01-15

Rolven revolver 1998-10-29

IceMan Quantos 1998-02-14

**Task 15**

Show **username**, **passwd** and **reg\_date** for those customers who registered between

01 january 2001 and 01 october 2003. Correct answer:

USERNAME PASSWD REG\_DATE

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OlleBull Bullas 2002-05-05

h01hanro T56xxL 2003-08-09

XXXL IRule 2001-06-29

**Task 16**

Add the following rows in the table customer:

----------------------------------COPY and PASTE START------------------------

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('MrBig2','MBisKING','Roger','kvist','Researcher',TO\_DATE('2016-NOV-29','YYYY-MON-DD'),NULL);

INSERT INTO customer(username,passwd,first\_name,last\_name,profession,reg\_date,salary)

VALUES('MEZcal33','P33kssa','roger','eriksson','carpenter',TO\_DATE('2013-08-29','YYYY-MM-DD'),NULL);

Commit;

----------------------------------COPY and PASTE END------------------------

Show **username**, **passwd**, **first\_name**, **last\_name** for those customers who has a last name equal to 'nyberg' or 'kvist' and first name **not** equal to 'roger' .

Correct answer:

USERNAME PASSWD FIRST\_NAME LAST\_NAME

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MEZcal P33kssa maria Nyberg

FISSIped bintje Tomas kvist

IceMan Quantos Maria Nyberg

**Task 17**

Show **first\_name**, **last\_name** and **salary** for the customer with the highest salary of all customers.

Correct answer:

FIRST\_NAME LAST\_NAME SALARY

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Margareta ek 942000

**Task18**

Show **first\_name**, **last\_name** and **salary** for the customer with the lowest salary of all customers. Do not include customers with NULL salary.

Correct answer:

FIRST\_NAME LAST\_NAME SALARY

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hans Lindqvist 116000

**Task 19**

Show **first\_name** and **last\_name** for those customers who has a NULL value in the profession column.

Correct anawer:

FIRST\_NAME LAST\_NAME

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hans Lindqvist

Sven Larsson

roger nyberg