COMP5112 Lab 6
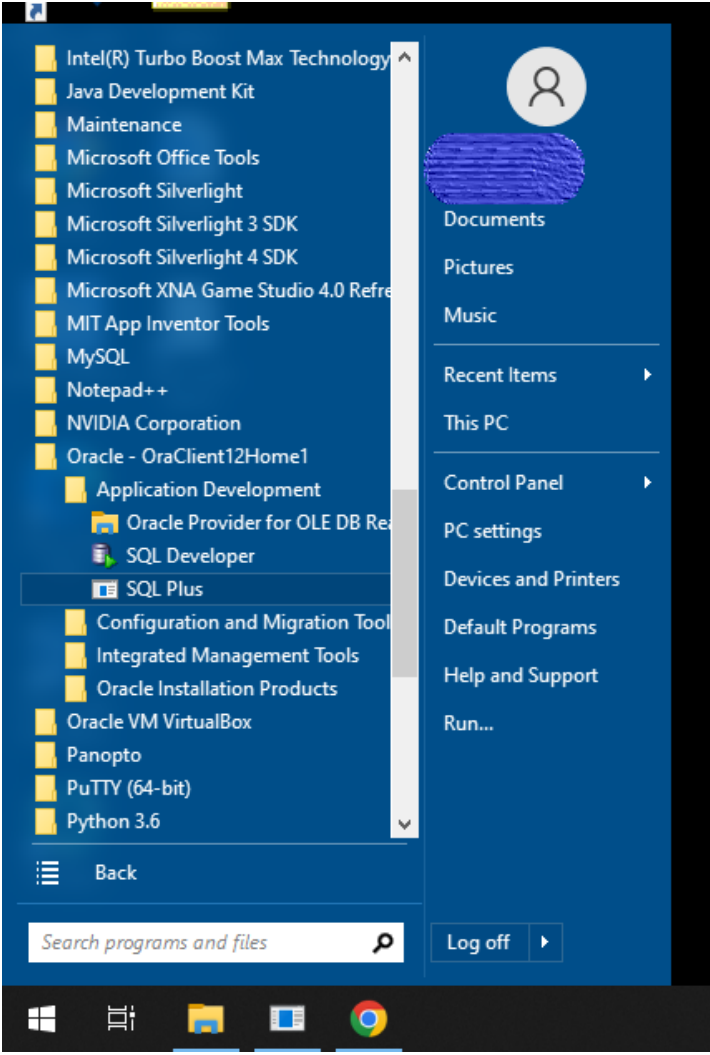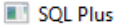
1. Objective

a) Learn the usage of SQL*Plus
b) Learn the basic operation in oracle DBMS, i.e., create load tables, run simple SQL queries

2. Login SQL*Plus

[Step 1] Start -> Programs -> Oracle – OraClient12Home1 -> Application Development -> SQL Plus	
[Step 2] Login with your Oracle User Name and Password	Student Account with ID

(Host String must be "dbms" without quotes) If login fails, try to add **a double quote** on the username, "22012345g" @dbms	SQL Plus SQL*Plus: Release 12.1.0.1.0 Production on Fri Oct 7 12:48:51 2022 Copyright (c) 1982, 2013, Oracle. All rights reserved. Enter user-name: 22012345g@dbms Enter password:

Next, you can execute commands.

The references to all commands can be found in https://docs.oracle.com/en/database/oracle/oracle-database/21/sqpug/SQL-Plus-command-reference.html#GUID-177F24B7-D154-4F8B-A05B-7568079800C6

3. Introduction to the tables

We shall use the following five tables in this lab.

Table name	Table content
Employees	<table><tr><th>FNAME</th><th>MINIT</th><th>LNAME</th><th>CPR</th><th>BDATE</th><th>ADDRESS</th><th>SEX</th><th>SALARY</th><th>DNO</th></tr><tr><td>Lars</td><td>T</td><td>Andersen</td><td>123</td><td>1955-12-10</td><td>Klarup</td><td>M</td><td>15,000</td><td>12</td></tr><tr><td>Kristian</td><td>C</td><td>Bohr</td><td>456</td><td>1965-10-05</td><td>Tylstrup</td><td>M</td><td>18,000</td><td>11</td></tr><tr><td>Charlotte</td><td>F</td><td>Kierkegaard</td><td>789</td><td>1975-08-06</td><td>Vejgaard</td><td>F</td><td>14,000</td><td>11</td></tr><tr><td>Uffe</td><td>J</td><td>Bajers</td><td>111</td><td>1960-09-07</td><td>Gistrup</td><td>M</td><td>30,000</td><td>12</td></tr><tr><td>Hans</td><td>U</td><td>Brahe</td><td>222</td><td>1970-04-02</td><td>Svenstrup</td><td>M</td><td>20,000</td><td>10</td></tr><tr><td>Helle</td><td>O</td><td>Dreyer</td><td>333</td><td>1950-01-08</td><td>Uttrup</td><td>F</td><td>35,000</td><td>10</td></tr><tr><td>Peter</td><td>P</td><td>Nielsen</td><td>987</td><td>1973-05-30</td><td>Lundby</td><td>M</td><td>23,000</td><td>12</td></tr><tr><td>Niels</td><td>A</td><td>Thorvaldsen</td><td>654</td><td>1953-02-27</td><td>Vodskov</td><td>M</td><td>32,000</td><td>11</td></tr><tr><td>Tina</td><td>C</td><td>Jacobsen</td><td>321</td><td>1963-11-16</td><td>Nytorv</td><td>F</td><td>26,000</td><td>12</td></tr></table>
Departments	<table><tr><th>DNAME</th><th>DNUMBER</th><th>MGRCPR</th><th>MGRSTARTDATE</th></tr><tr><td>ConsProd</td><td>10</td><td>333</td><td>1994-10-01</td></tr><tr><td>InduProd</td><td>11</td><td>654</td><td>1995-05-01</td></tr><tr><td>Research</td><td>12</td><td>111</td><td>1990-06-15</td></tr></table>
Projects	<table><tr><th>PNAME</th><th>PNUMBER</th><th>PLOCATION</th><th>DNUM</th></tr><tr><td>MobilePhone</td><td>1</td><td>Nørresundby</td><td>10</td></tr><tr><td>InteractiveTV</td><td>2</td><td>Nørresundby</td><td>12</td></tr><tr><td>MmedMonitor</td><td>3</td><td>Aarhus</td><td>11</td></tr><tr><td>PalmTop</td><td>4</td><td>Aalborg</td><td>10</td></tr><tr><td>MobileOffice</td><td>5</td><td>Aarhus</td><td>11</td></tr></table>
Locations	<table><tr><th>DNBR</th><th>DLOCATION</th></tr><tr><td>10</td><td>Aalborg</td></tr><tr><td>10</td><td>Nørresundby</td></tr><tr><td>11</td><td>Aarhus</td></tr><tr><td>12</td><td>Nørresundby</td></tr><tr><td>12</td><td>Frederikshavn</td></tr></table>

Allocations		ECPR	PNO	HOURS
		123	3	27
		456	3	12
		789	4	35
		111	1	15
		111	2	5
		222	5	30
		333	3	20
		333	5	20
		987	4	25
		654	2	30
		321	1	15
		321	2	10

4. Basic Operation

Execute SQL file. This command will execute the SQL command in the file one by one:
Command: @<absolute_path_of_sql_file>

Show tables information in DBMS:
Command: SELECT table_name FROM user_tables;

Drop table;
Command: DROP TABLE <your_table_name>

Insert data:
Command: INSERT INTO <table_name> VALUES <data_information>

Query
Command: SELECT <column_name> FROM <table_name> WHERE <condition>

5. Task

[Step 0] Extract the content of "Lab6code.zip" to a folder.

[Step 1] Create the tables by executing the CREATE TABLE statements in the "create_table.sql" file.
Note:
Copy, pasting, and executing the command from the SQL file is acceptable.
A convenient way is to use "@<absolute_path_of_sql_file>" command without a double quote for executing the whole SQL file.
Expected output

```
SQL> @\\COMPDrive\staff2\cszbian\COMProfile\Desktop\allfiles\create_table.sql

Table created.


Table created.


Table created.


Table created.


Table created.
```

[Step 2] Insert data into tables (shown in part 3) by executing the INSERT statements in the "insert_<table_name>.sql" file.
Note:
It may meet an error when executing the "insert_employees.sql". Table Employees have a date variable whose local format is inconsistent with the insertion statement. Please run
ALTER SESSION SET NLS_DATE_FORMAT = 'YYYY-MM-DD';
before the execution.
You can check whether the insertion is a success by the command
SELECT * FROM <table_name>
Expected output

```
SQL> @\\COMPDrive\staff2\cszbian\COMProfile\Desktop\allfiles\insert_departments.sql

1 row created.


1 row created.


1 row created.


  COUNT(*)
----------
         3


Commit complete.
```

[Step 4] Try to run the SQL queries in the file "queries.sql" one by one.
Suppose the above steps are correctly executed. Then, the output would be like the following screenshot.

Query 1:

```
        DNO
----------

Charlotte                        F Kierkegaard                     789
1975-08-06 Vejgaard                                        F        14000
        11
Uffe                             J Bajers                          111
1960-09-07 Gistrup                                         M        30000

FNAME                             M LNAME                    CPR
---------------------------------- - -------------------------- ----------
BDATE      ADDRESS                                           S      SALARY
---------- ------------------------------------------------- - ----------
        DNO
----------
        12

Hans                             U Brahe                           222
1970-04-02 Svenstrup                                       M        20000
        10

Helle                            O Dreyer                          333

FNAME                             M LNAME                    CPR
---------------------------------- - -------------------------- ----------
BDATE      ADDRESS                                           S      SALARY
---------- ------------------------------------------------- - ----------
        DNO
----------
1950-01-08 Uttrup                                          F        35000
        10

Peter                            P Nielsen                         987
1973-05-30 Lundby                                          M        23000
        12

FNAME                             M LNAME                    CPR
---------------------------------- - -------------------------- ----------
BDATE      ADDRESS                                           S      SALARY
---------- ------------------------------------------------- - ----------
        DNO
----------

Niels                            A Thorvaldsen                     654
1953-02-27 Vodskov                                         M        32000
        11

Tina                             C Jacobsen                        321
1963-11-16 Nytorv                                          F        26000
        12

FNAME                             M LNAME                    CPR
---------------------------------- - -------------------------- ----------
BDATE      ADDRESS                                           S      SALARY
---------- ------------------------------------------------- - ----------
        DNO
----------

9 rows selected.

SQL>
```

Query 2:


```
SQL> select fname from employees where sex='F';

FNAME
------------------------------
Charlotte
Helle
Tina
```

Query 3:


```
SQL> SELECT AVG(SALARY) "Average Salary"FROM    Employees;

Average Salary
--------------
    23666.6667
```

Query4:

```
SQL> INSERT INTO Employees VALUES ('Viggo', 'M', 'Madsen', 999, '1945/12/10', 'København', 'M', 45000, 13);

1 row created.
```

Query5:

```
SQL> UPDATE Employees SET SALARY = 35000,    DNO    = 12WHERE FName = 'Viggo';

1 row updated.
```

Query 6:

```
SQL> DELETE FROM Employees WHERE FName =   'Viggo';

1 row deleted.
```

[Step 5] Try to guess the meaning of SQL queries in the "*.sql" files.