Assignment #2
An Exercise of SQL Using SQL*Plus

KAIST

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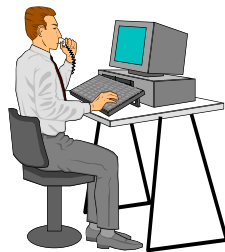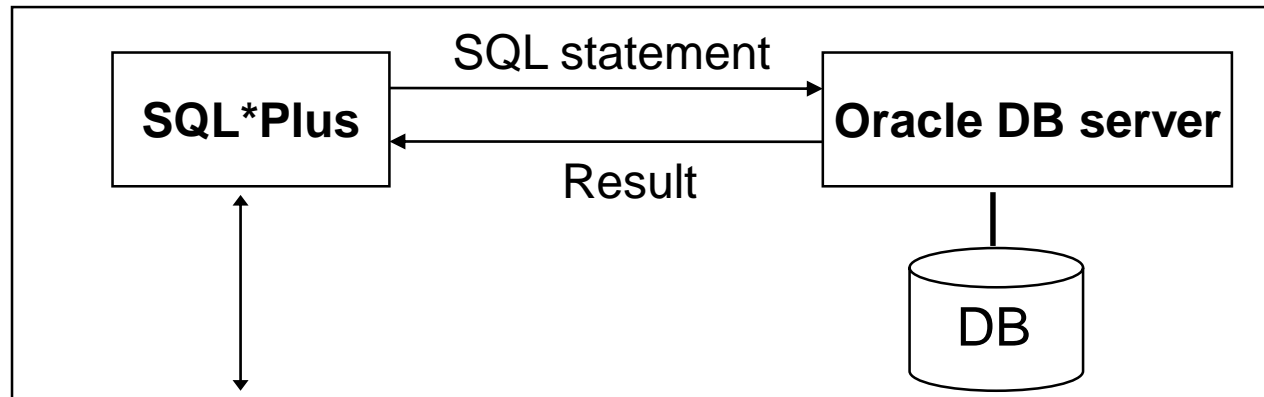
- **SQL*Plus**
  - Oracle SQL*Plus
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SQL*Plus

Oracle SQL*Plus

- An Oracle command-line utility program that can run SQL commands interactively or from a script.

Access to DB using SQL*Plus

◆ **Install Oracle Client**

1) http://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html

2) Scroll down to *Oracle Database 11g Release 2*

3) Click *See All*

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Access to DB using SQL*Plus (Cont'd)

◆ **Install Oracle Client**

   4)   Download *Oracle Database 11g Release 2 Client*

Oracle Database 11*g* Release 2 (11.2.0.1.0)
Standard Edition, Standard Edition One, and Enterprise Edition

Oracle Database 11*g* Release 2 Client (11.2.0.1.0) for Microsoft Windows (x64)
    ⬇ win64_11gR2_client.zip (615,698,264 bytes) (cksum - 2947608743)
Contains the Oracle Client Libraries. Download if you want the client libraries only
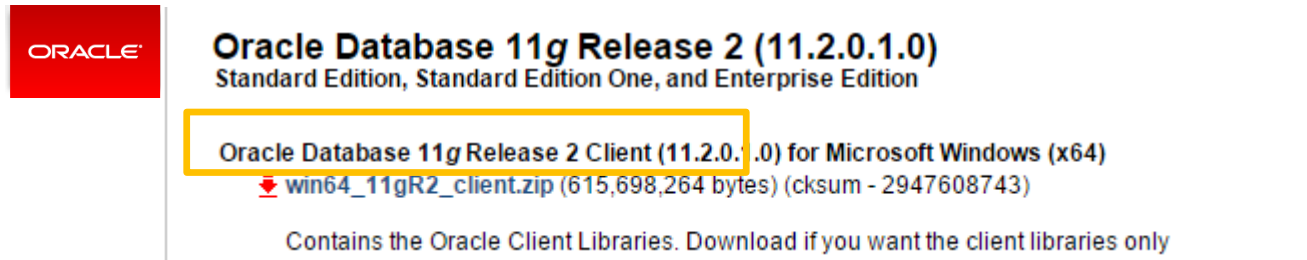
   5)   Run *setup.exe*

   6)   Install 'Manager' type

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Access to DB using SQL*Plus (cont'd)

◆ **Run SQL Plus**
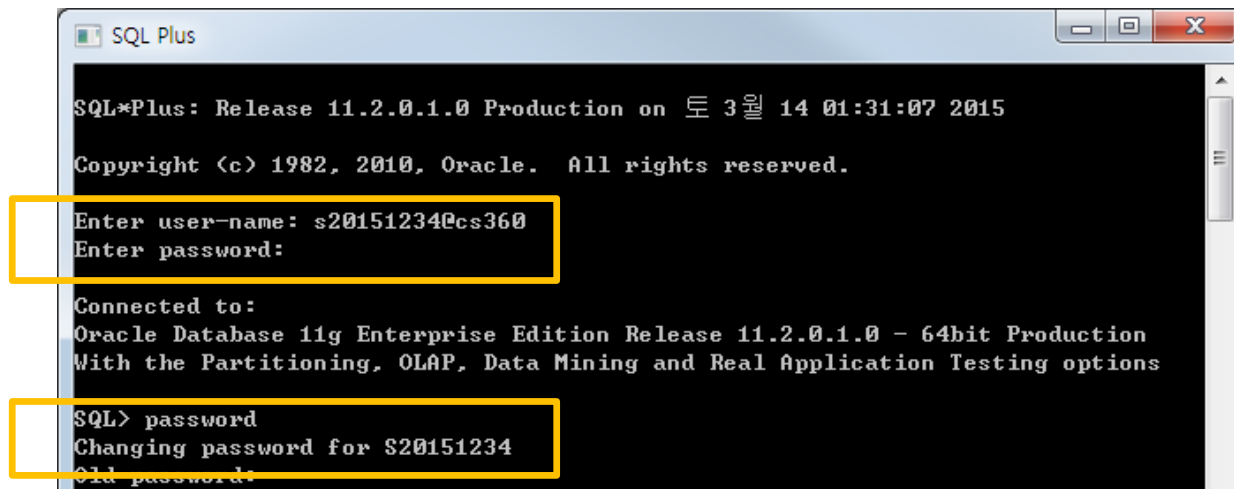
1) Download *tnsnames.ora* from course homepage and copy it to (directory that *Oracle Client* is installed: ex. C:₩app₩MyDirect₩product₩11.2.0₩client_2)₩network₩admin

2) Run *SQL Plus*

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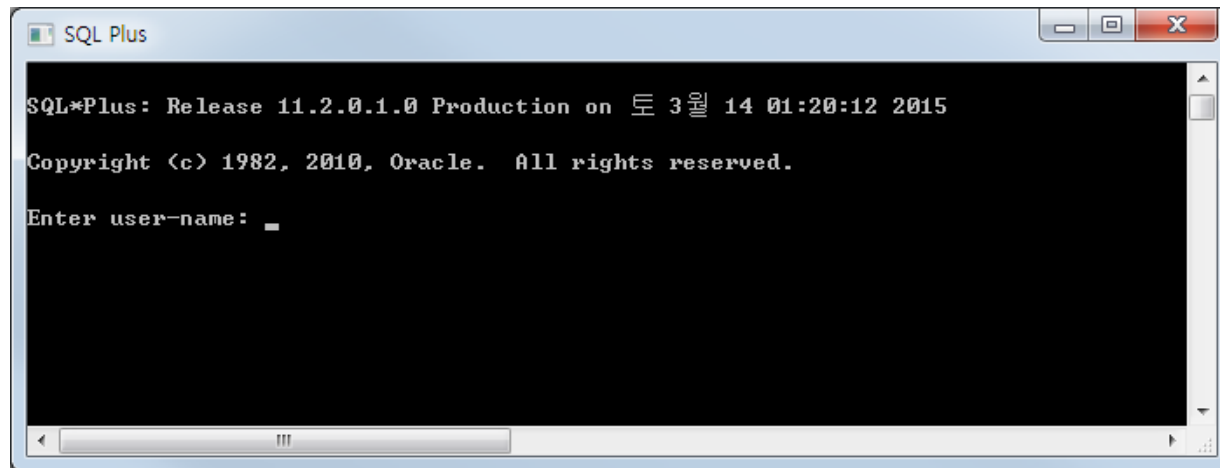
Access to DB using SQL*Plus (cont'd)

◆ **Access to database**

– User-name: s[studentID]@cs360

» ex) If your studentID is 20151234, then your user-name is *s20151234@cs360*

– Password: s[studentID]

» ex) If your studentID is 20151234, then your password is *s20151234*

• It is recommended to change your password for security

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SQL*Plus Commands

SQL*Plus Commands

- ◆ **SQL*Plus buffer commands**
  - **LIST**   List one or more lines of the SQL buffer
  - **CHANGE**   Change text on the current line in the buffer
  - **DEL**   Delete one or more lines of the buffer
  - **APPEND**   Add specified text to the end of the current line in the buffer
  - **RUN**   Execute the SQL command currently stored in the SQL buffer
  - **CLEAN BUFFER** Erase the SQL command currently stored in the SQL buffer

- ◆ **SQL*Plus file commands**
  - **SAVE**   Save the contents of the SQL buffer in a host operating system file
  - **GET**   Load a host operating system file into the SQL buffer
  - **START**   Execute the contents of the specified script
  - **SPOOL** Store query results in an operating system file (.sql)
  - **HOST**   Execute a host operating system command without leaving SQL*Plus
  - **EDIT**   Open a text editor like the notepad to edit an text file (.sql, .lst, etc)

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SQL*Plus Commands (cont'd)

- ◆ **SQL*Plus buffer commands**
  - » Besides sending SQL statements to the server, SQL*Plus also saves them into a local buffer and allow users to view and change the statements
  - *LIST*
    - » Display one or more lines of the SQL buffer
  - *CHANGE*
    - » Change text on the current line in the buffer
  - *RUN* (or /)
    - » Execute the SQL command currently stored in the SQL buffer

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SQL*Plus Commands (cont'd)

◆ **SQL*Plus buffer commands**

- – *DEL*

  » Delete one or more lines of the buffer

- – *APPEND/ INPUT*

  » Add specified text / line(s) to the end of the current line in the buffer

- – *CLEAR BUFFER*

  » Erase the SQL command currently stored in the SQL buffer

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SQL*Plus Commands (cont'd)

◆ **SQL*Plus buffer commands**

– *LIST, CHANGE*

```
SQL> select customer_numberr
  2 , email
  3 from customer
  4 where state='TX';
select customer_numberr
      *
ERROR at line 1:
ORA-00904: "customer_numberr": invalid
identifier

SQL> list;
  1  select customer_numberr
  2  , email
  3  from customer
  4* where state='TX'
```

Show the contents in the sql buffer

```
SQL> list 1;
  1* select customer_numberr
```

List the first line

```
SQL> change /numberr/number;
  1* select customer_number
```

Change text on the current line

```
SQL> list;
  1  select customer_number
  2  , email
  3  from customer
  4* where state='TX'
```

Show the contents in the sql buffer

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SQL*Plus Commands (cont'd)

- ◆ **SQL*Plus buffer commands**
  - – *RUN*(or */), DEL*

```
SQL> list;
  1  select customer_number
  2  , email
  3  from customer
  4* where state='TX'          Show the contents
                               in the sql buffer

SQL> /

CUSTOMER_NUMBER        EMAIL
--------------------------  --------------------------
321654987              bfarmer@email.com

                             Execute the command
                             currently stored
                             in the sql buffer
```

```
SQL> list;
  1  select customer_numberr
  2  , email
  3  from customer
  4* where state='TX'          Show the contents
                               in the sql buffer


SQL> del 4;                    Delete the 4th line

SQL> list;
  1  select customer_number
  2  , email
  3* from customer             Show the contents
                               in the sql buffer
```

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SQL*Plus Commands (cont'd)

- ◆ **SQL*Plus buffer commands**
  - – *APPEND*

```
SQL> list;
  1  select customer_numberr
  2  , email
  3  from customer
  4* where state='TX'
```
Show the contents in the sql buffer

```
SQL> list 2;
  2* , email
```
Show the second line

```
SQL> append ,city
  2* , email,city
```
Add text to the end of the current line in the buffer

```
SQL> list;
  1  select customer_number
  2  , email,city
  3  from customer
  4* where state='TX'
```
Show the contents in the sql buffer

```
SQL> /
CUSTOMER_NUMBER          EMAIL                   CITY
-------------------------------  ----------------------  -----------------------
321654987               bfarmer@email.com       DALLAS
```
Execute the command currently stored in the sql buffer

SQL*Plus Commands (cont'd)

◆ **SQL*Plus buffer commands**

– *INPUT, CLEAR BUFFER*

```
SQL> list;
 1  select customer_number
 2  , email,city
 3  from customer
 4* where state='TX'
```

Show the contents in the sql buffer

```
SQL> del 4;
```

Delete the 4th line

```
SQL> list;
 1  select customer_number
 2  , email,city
 3* from customer
```

Show the contents in the sql buffer

```
SQL> input where state='FL'
```

Add a line to the end of the current line in the buffer

```
SQL> list;
 1  select customer_number
 2  , email,city
 3  from customer
 4* where state='FL'
```

Show the contents in the sql buffer

```
SQL> clear buffer;
Buffer cleared
```

Erase the commands currently stored in the buffer

SQL*Plus Commands (cont'd)

- ◆ **SQL*Plus file commands**
  - – *SAVE, GET, START(or @)*
    - » Save the contents of the SQL buffer into a script file
    - » Load a contents of script file into the SQL buffer
    - » Execute the contents of the specified script
  - – *SPOOL*
    - » Store query results in an operating system file
    - » SPOOL result.lst : start to write in result.lst
    - » SPOOL OFF : stop to write
  - – *HOST*
    - » Execute a host operating system command without leaving SQL*Plus
      - • ex) HOST *dir* : execute a MS-DOS command *dir*

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SQL*Plus Commands (cont'd)

◆ **SQL*Plus file commands**

– *SAVE, GET, START(*or *@)*

cf. If you cannot execute these commands, please run SQL*Plus in administrator mode

```
SQL> select customer_number,
  2  email, city from customer
  3 where state='TX';
CUSTOMER_NUMBER    EMAIL            CITY
----------------------------  ---------------------------  -----------------
321654987          bfarmer@email.com    DALLAS
```

```
SQL> save query.sql;
```
Save buffer contents into a file

```
SQL> get query.sql;
  1  select customer_number,
  2  email, city from customer
  3  where state='TX'
```
Retrieve a file and place it into the buffer

```
SQL> @query.sql
CUSTOMER_NUMBER    EMAIL            CITY
----------------------------  -------------------------  -----------------
321654987          bfarmer@email.com    DALLAS
```

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SQL*Plus Commands (cont'd)

◆ **SQL*Plus file commands**

– *SPOOL, HOST*

SQL> **spool result.lst**

> Start to write in result.lst

SQL> **create table Spooled(name char(10));**
Table created.

SQL> **spool off**

> Stop to write

SQL> **create table NotSpooled(name integer);**
Table created.

SQL> **spool result.lst append**

> Restart to write in result.lst

SQL> **create table anotherSpooled(name char(10));**
Table created.

SQL> **spool off**

> Stop to write

SQL> **host** *dir*
result.lst schema.sql insert.sql

> Execute a command *ls*

SQL> **edit result.lst**

> Open *result.lst* to see or edit

Assignment #2

Submission

- **Due**
  - Sep. 23, 2:00 a.m.
  - Delay is not accepted

- **Submission standard**
  - *[student ID].lst* contains the executions of SQL commands and their results. You may use **SPOOL** command.
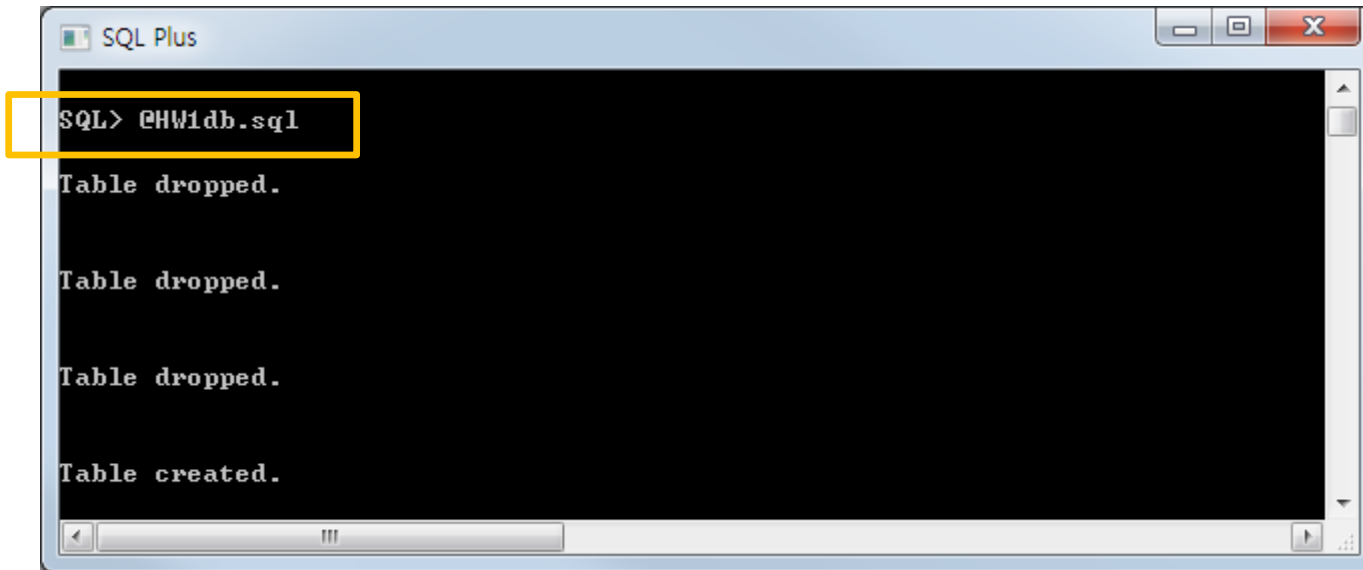 - Upload the .lst file to course homepage

- **Evaluation**
  - You will get points if your SQL queries find the right answers.
  - Do not cheat others. Both of them will get no point.

Example Database

◆ **Create tables for homework.**

1) Download *HW2db.sql* from the course homepage and Copy it to (directory that *Oracle Client* is installed)₩BIN

2) *@HW2db.sql* or *start HW2db.sql*

```
SQL Plus

SQL> @HW1db.sql

Table dropped.


Table dropped.


Table dropped.


Table created.
```

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Example Database (cont'd)

◆ **Database Design**

 – You can see all the tables stored in your database using a command '**select * from tab**'

PRODUCT	maker	model	type
	A	2001	pc
	A	1002	pc
	...		

PC	model	speed	ram	hd	price
	1001	2.66	1024	250	2114
	1002	2.10	512	250	995
	...				

PRINTER	model	color	type	price
	3001	true	Ink-jet	99
	3002	false	laser	239
	...			

LAPTOP	model	speed	ram	hd	screen	price
	2001	2.00	2048	240	20.1	3673
	2002	1.73	1024	80	17.0	949
	...					

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Queries

◆ **Q1. Find all the tuples in the Printer relation for color printers. Remember that color is a boolean-valued attribute.**

  – If a value of color attribute is 1 then the printer is a color printer.

  – If a value of color attribute is 0 then the printer is not a color printer

◆ **Q2. Find the model number, speed, and hard-disk size for all PC's whose price is under $800.**

◆ **Q3. Find the manufacturers of laptops**

Queries

- **Q4. Find those manufactures that sell PC's but not Laptops**

  - In oracle, the operator for difference of sets is 'MINUS' (instead of 'EXCEPT')

- **Q5. Find the model number and price of all products (of any type) made by manufacturer C**

- **Q6. Find those processor speeds that occur in two or more PC's**

References

- Lecture notes

- Text book
  - Chapter 6.1, 6.2, 6.3

- Oracle SQL Plus Tutorial
  - http://www.holowczak.com/oracle/sqlplus/