

Assignment #2

# **An Exercise of SQL Using SQL\*Plus**

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KAIST

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# SQL\*Plus

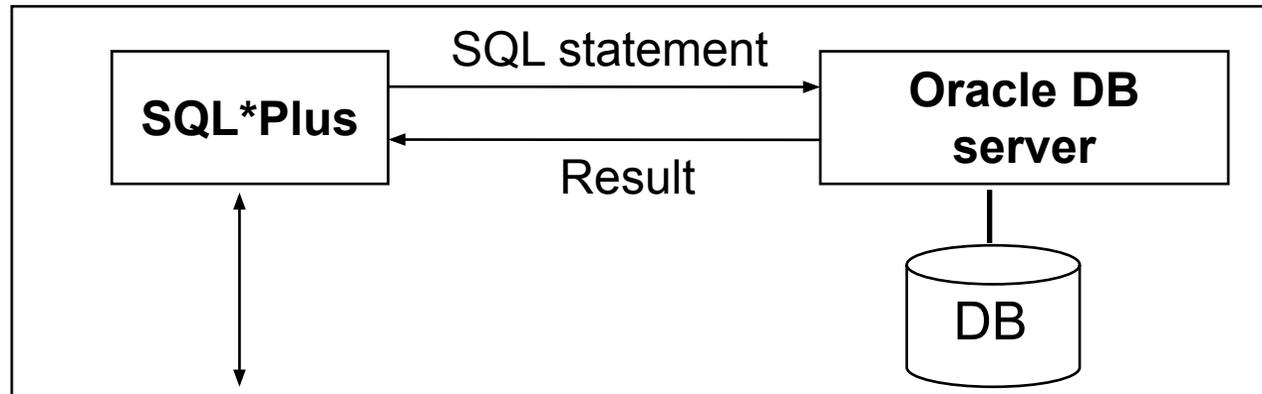
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# Oracle SQL\*Plus

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- 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*



The screenshot shows the Oracle Database 11g Release 2 download page. The Oracle logo is on the left. The main heading is "Oracle Database 11g Release 2", with "11g Release 2" highlighted in a yellow box. Below the heading, it lists "Standard Edition, Standard Edition One, and Enterprise Edition". A notice states: "7/13: Patch Set 11.2.0.4 for Linux and Solaris is now available on support.oracle.com. Note: it is a full installation (you do not need to download 11.2.0.1 first). See the README for more info (login to My Oracle Support required)." Under the version "(11.2.0.1.0)", there are four download links: "Microsoft Windows (32-bit)", "Microsoft Windows (x64)", "Linux x86", and "Linux x86-64". To the right of these links, there are four "See All" links, each preceded by "File 1, File 2 (20B)". The "See All" link for the "Linux x86-64" version is highlighted in a yellow box.

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

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- Install Oracle Client

4) [Download](#) *Oracle Database 11g Release 2 Client*



The screenshot shows the Oracle Database 11g Release 2 (11.2.0.1.0) download page. The Oracle logo is on the left. The main heading is "Oracle Database 11g Release 2 (11.2.0.1.0) Standard Edition, Standard Edition One, and Enterprise Edition". Below this, a yellow box highlights the link for "Oracle Database 11g Release 2 Client (11.2.0.1.0) for Microsoft Windows (x64)", which is a zip file named "win64\_11gR2\_client.zip" (615,698,264 bytes) with a checksum of 2947608743. A note below the link states: "Contains the Oracle Client Libraries. Download if you want the client libraries only".

5) [Run](#) *setup.exe*

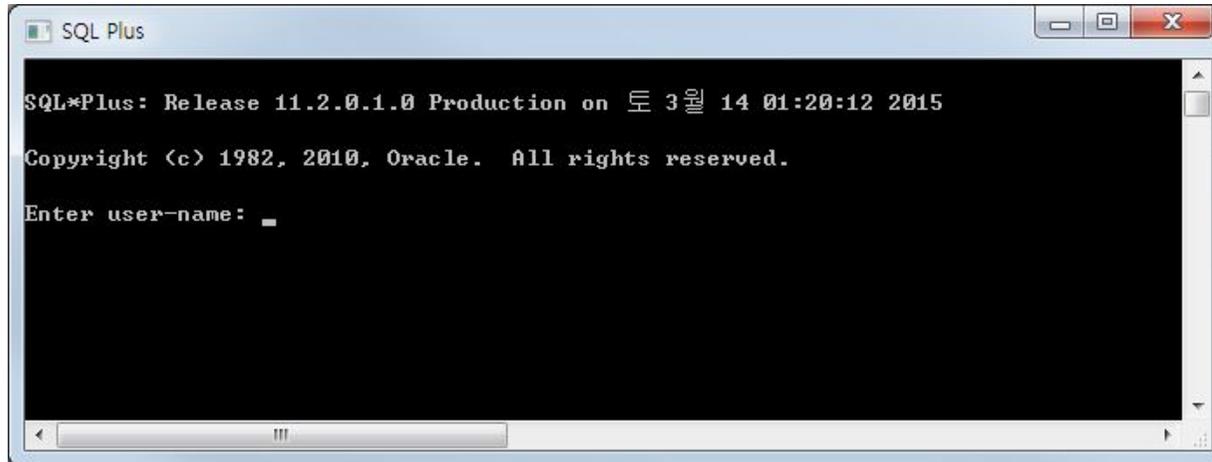
6) [Install](#) 'Manager' type

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

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- Run SQL Plus

- 1) Download *tnsnames.ora* from course homepage and copy it to (directory that *Oracle Client* is installed: ex. `C:\Wapp\WMyDirect\Wproduct\W11.2.0\client_2)\Wnetwork\Wadmin`)
- 2) Run *SQL Plus*



```
SQL*Plus: Release 11.2.0.1.0 Production on 토 3월 14 01:20:12 2015
Copyright (c) 1982, 2010, Oracle. All rights reserved.
Enter user-name: _
```

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

- Access to database

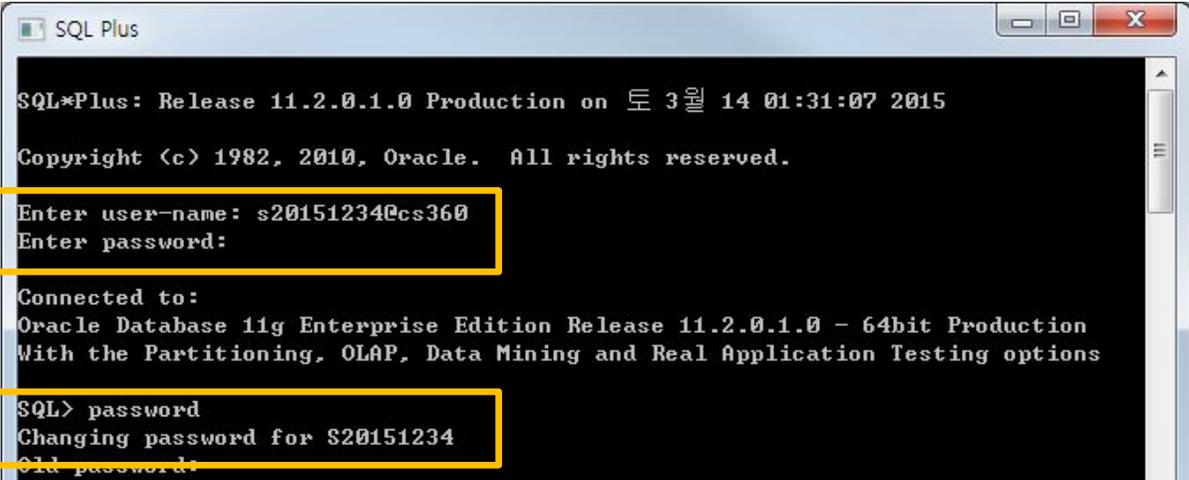
- User-name: `s[studentID]@cs360`

- » 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



```
SQL*Plus: Release 11.2.0.1.0 Production on 14 3월 14 01:31:07 2015
Copyright (c) 1982, 2010, Oracle. All rights reserved.

Enter user-name: s20151234@cs360
Enter password:

Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> password
Changing password for S20151234
Old password:
```

# SQL\*Plus Commands

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# SQL\*Plus Commands

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- **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)

# SQL\*Plus Commands (cont'd)

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- 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

# SQL\*Plus Commands (cont'd)

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- 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

# 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

# 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_number
2 , email
3 from customer
4* where state='TX'
```

Show the contents in the sql buffer

```
SQL> del 4;
```

Delete the 4<sup>th</sup> line

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

Show the contents in the sql buffer

# 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 4<sup>th</sup> 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)

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- 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*

# 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

# 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

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# Submission

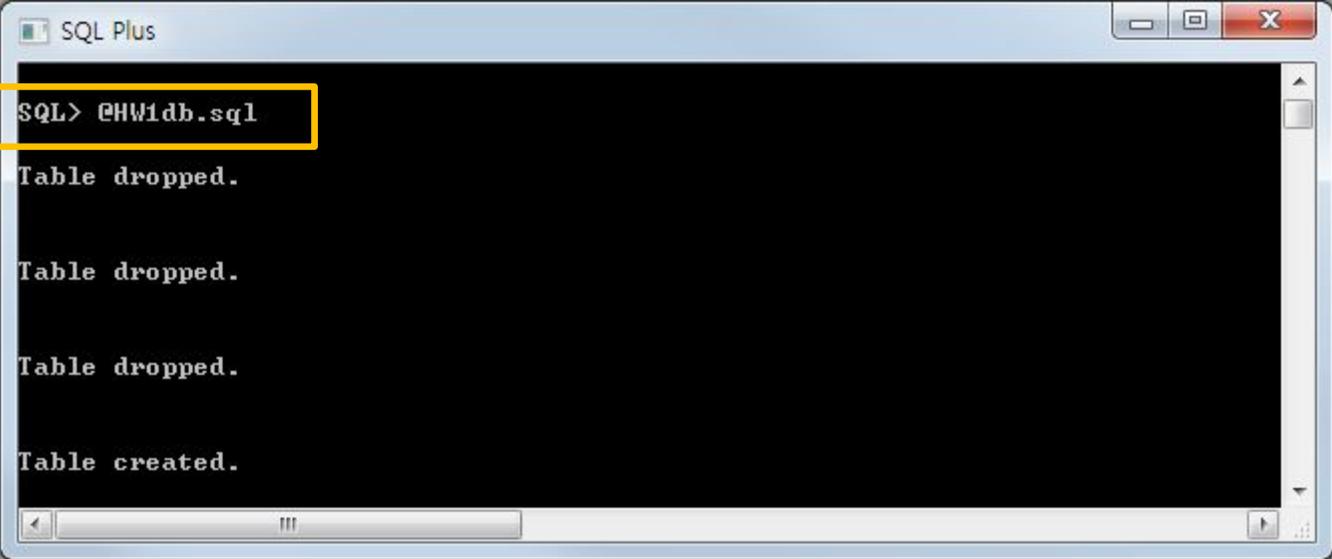
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- **Due**
  - Sep. 23, 2:00 a.m.
  - Delay is not accepted
- **Submission standard**
  - *[student ID].lst* contains the executions of SQL commands and their results. You may use **SPOOL** command.
  - Upload the .lst file to course homepage
- **Evaluation**
  - 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

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- 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.
```

# Example Database (cont'd)

- Database Design

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

PRODUCT	maker	<u>model</u>	type
	A	2001	pc
	A	1002	pc
	...		

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

PRINTER	<u>model</u>	color	type	price
	3001	true	lnk-jet	99
	3002	false	laser	239
	...			

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

# Queries

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- **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

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- **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

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- Lecture notes
- Text book
  - Chapter 6.1, 6.2, 6.3
- Oracle SQL Plus Tutorial
  - <http://www.holowczak.com/oracle/sqlplus/>