Assignment #2

An Exercise of SQL Using SQL*Plus

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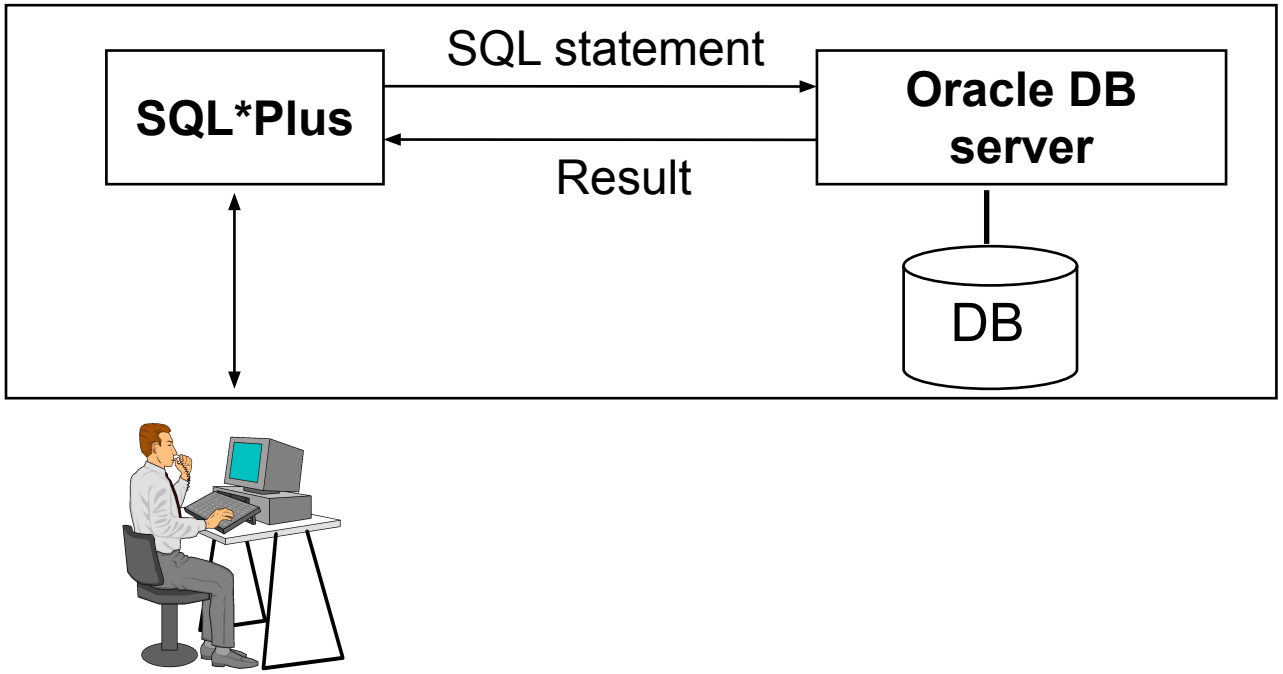
SQL*Plus

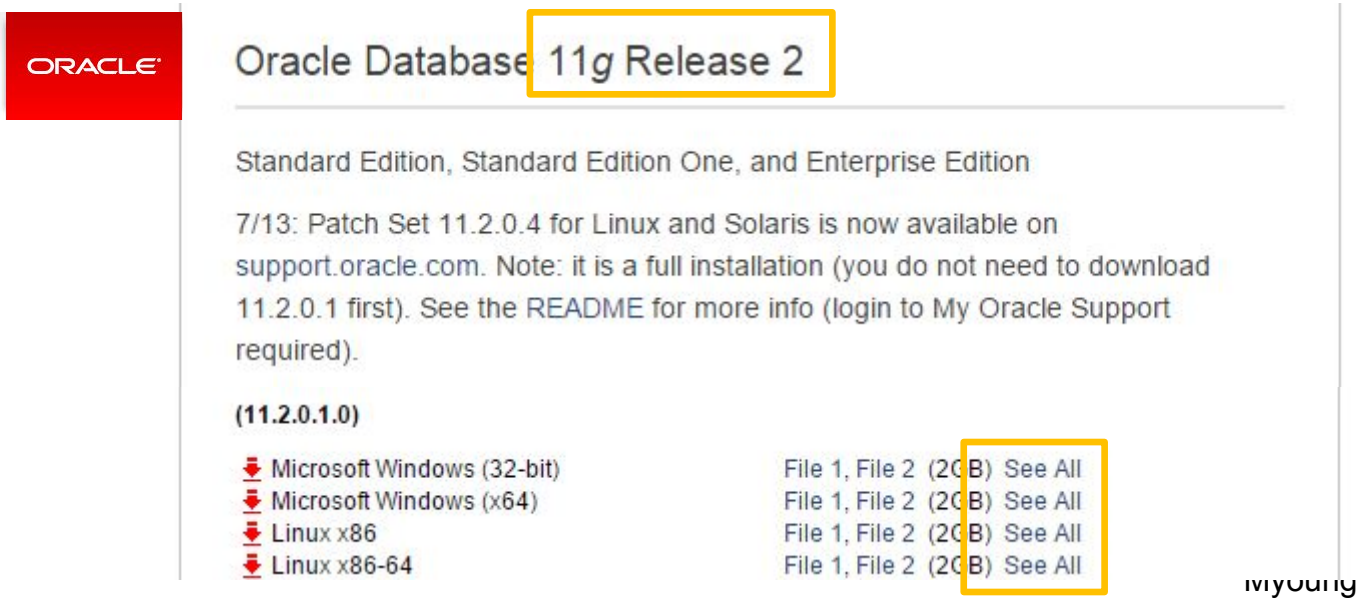
Oracle SQL*Plus

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



Access to DB using SQL*Plus

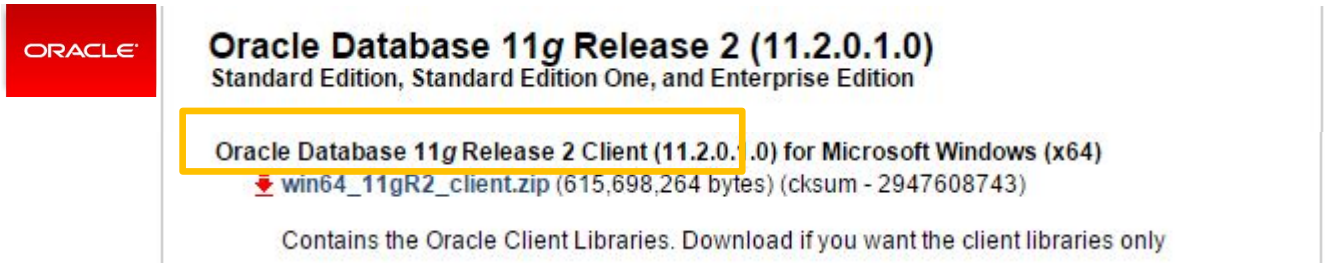
- Install Oracle Client
  1) http://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html
  2) Scroll down to *Oracle Database 11g Release 2*
  3) Click *See All*



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

- Install Oracle Client

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



  5) Run *setup.exe*

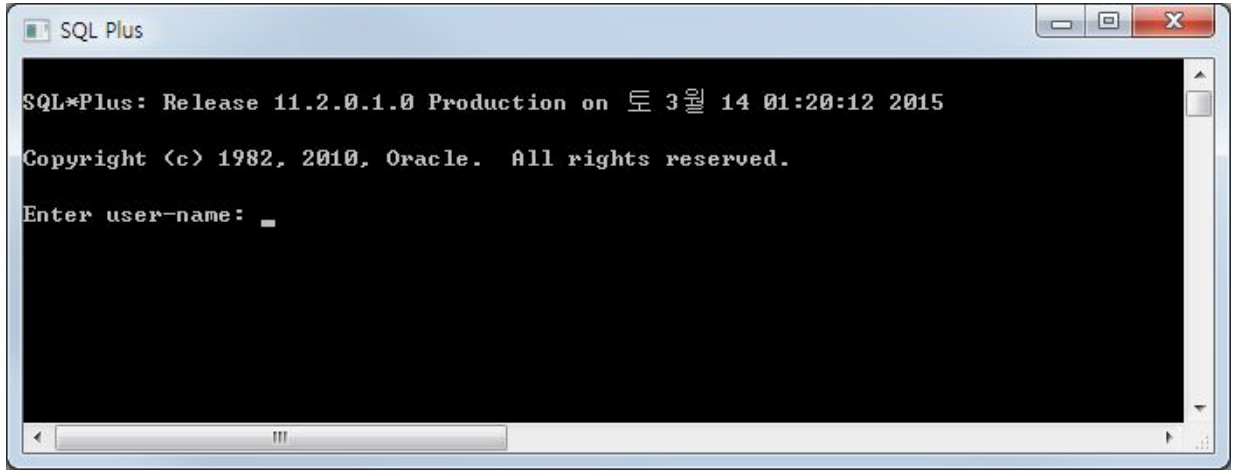
  6) Install 'Manager' type

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

- Run SQL Plus

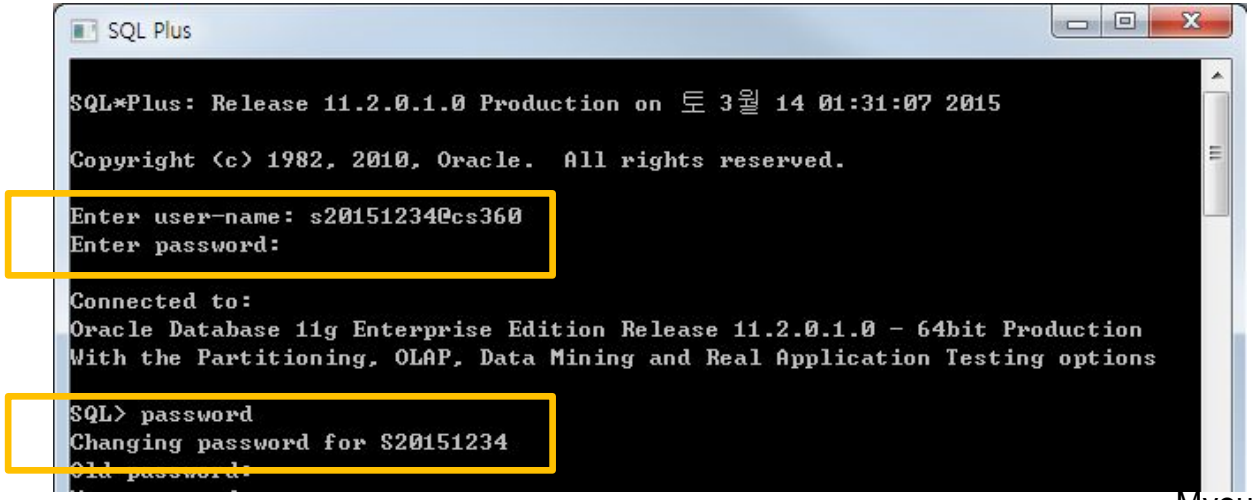
1) Download *tnsnames.ora* from course homepage and copy it to (directory that *Oracle Client* is installed: ex. C:₩app₩MyDirect₩product₩11.2.0₩client_2)₩network₩admin

2) Run *SQL Plus*



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

- Access to database
  - User-name: s[studentID]@cs360
    - » ex) If your studentID is 20151234, thenyour 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 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)

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

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

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

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

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

List the first line

Change text on the current line

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'

SQL> /

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

Show the contents in the sql buffer

Execute the command currently stored in the sql buffer

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

SQL> del 4;

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

Show the contents in the sql buffer

Delete the 4th line

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 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*

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

Submission

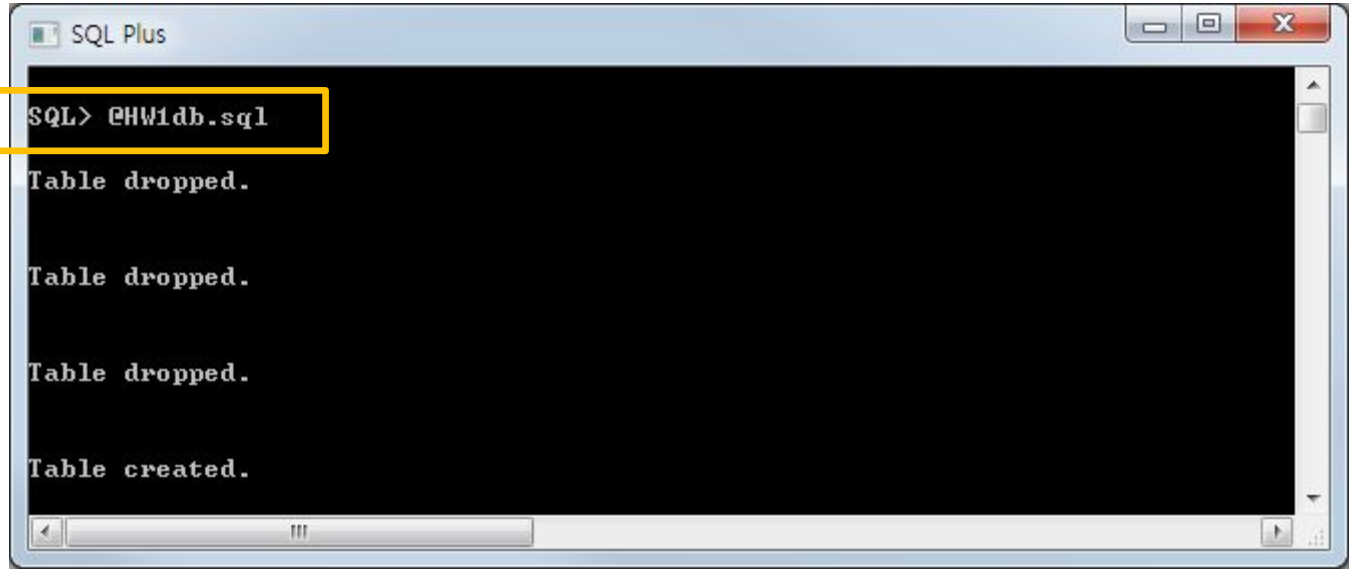
- **Due**
  - Sep. 23, 2:00 a.m.
  - Delay is not accepted
- **Submission standard**
  - *[student ID].lst* contains the executions of SQL commands and their results. You may use ***SPOOL*** command.
  - Upload the .lst file to course homepage
- **Evaluation**
  - You will get points if your SQL queries find the right answers.
  - Do not cheat others. Both of them will get no point.

Example Database

- Create tables for homework.

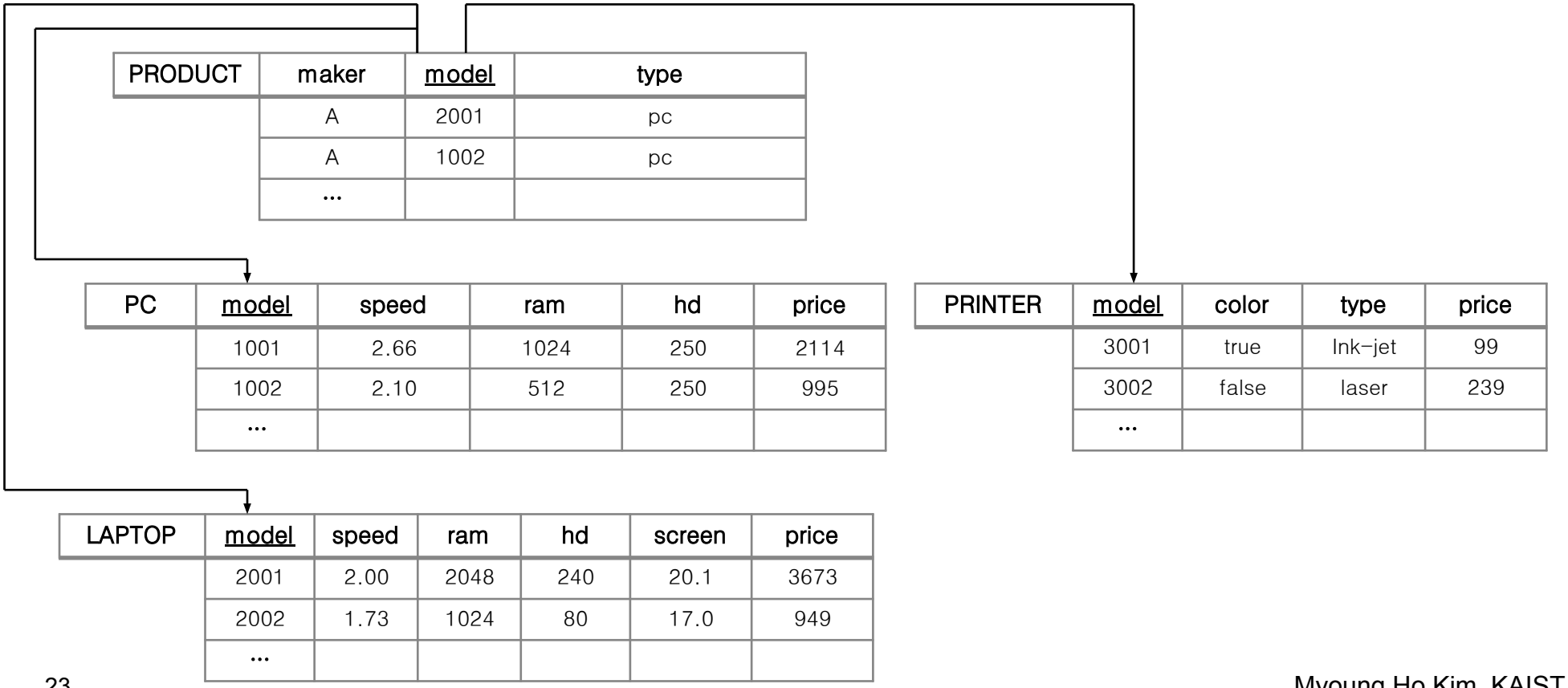
1) Download *HW2db.sql* from the course homepage and Copy it to (directory that *Oracle Client* is installed)₩BIN

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



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
	...					

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/