

# Database Management Systems II (DBMS-2004)

## Mid-term Project Part B – Stored Procedures

This is the second part of the Mid-term Project. In this part you will add to the PL/SQL code you wrote in Part A to automatically extract information about a schema into which you are logged (in this case, your schema in DBMSDBII). The remaining parts of this project will build on the previous parts. The final version will be a useful tool to explore Oracle databases in the future.

### This second stage will add as follows:

- Extra comment lines in the output.

### For each table:

- DROP TABLE statements

### For each column

- NOT NULL constraints – as required.
- Data Type & Size for the column (CHAR, VARCHAR2, DATE and NUMBER only). If any other data type is encountered display the message '\*\*\* Unknown data type type \*\*\*'. Do not complete any further processing for this column.
- Default value (if one is defined)

The SQL code to do this is to be added to the code you developed in Part A.

Specifications:

1. **Before beginning, run the SQL Script 'Run\_SetUp.bat'. This batch file will run a SQL script to prepare your schema for this part of the project.**
2. Procedure Extract\_Tables will process each table in your schema.
  - Tables have to appear in alphabetic order.
  - Procedure Extract\_Tables is responsible for outputting table-related lines (in the sample, lines 1-16, 22-26 and 34-39).
  - Procedure Extract\_Tables will call procedure Extract\_Columns for each table found.
3. Procedure Extract\_Columns is responsible for outputting column-related lines (in the sample, lines 17-21 & 27-33) for the currently selected table in Extract\_Tables.
  - Columns must be listed in the same order as in the original CREATE Table statement.
  - The **default value** for a column (if there is one) is stored in **a deprecated datatype** (a long). To extract this information you will **need to translate the line feed character to a space** then trim the result. If not done the output produced will not format properly (you will have blank lines).
4. The code of the procedures must contain comments that describe what the procedure does (at the top of the procedure code) as well as comments for major sections of code within the procedure.
5. Objects, variables must all be named using a consistent naming convention.
6. All output must go to a file called Create\_Tables\_YourLastName.SQL.
7. The format of the SQL CREATE TABLE Statements must match exactly the sample shown in Figure 1.
8. Make sure that your SERVEROUTPUT is set to a SIZE of at least 10,000.
9. Please ask your instructor for assistance. Don't get stuck!

IMPORTANT:

- Code that does not compile or run on the instructor laptop will not be marked.
- Code that does not output to the proper file when run on the instructor laptop will not be marked.

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Figure 1: Sample result from PL/SQL code run (your tables will differ).

```
1      ---- Oracle Catalog Extract Utility V2.0 ----
2      ----
3      ---- Run on Nov 3, 2015 at 12:50
4      ----
5      ---- S T A R T I N G   T A B L E   D R O P S
6      ----
7      DROP TABLE CLIENTS;
8      DROP TABLE ORDERLINES;
9      ----
10     ---- T A B L E   D R O P S   C O M P L E T E D
11     ----
12     ----
13     ---- S T A R T I N G   T A B L E   C R E A T E
14     ----
15     -- Start extracting table COURSES
16     CREATE TABLE CLIENTS (
17         CLIENT                NUMBER(6)                NOT NULL
18         , FIRSTNAME            VARCHAR2(35)
19         , LASTNAME             VARCHAR2(35)
20         , CLIENTSINCE          DATE                    DEFAULT SYSDATE NOT NULL
21         , PICTURE              *** Unknown data type BLOB ***
22                               ); -- END of Table COURSES creation
23     --
24     --
25     -- Start extracting table ORDERLINES
26     CREATE TABLE ORDERLINES (
27         ORDERLINE              NUMBER(6)                NOT NULL
28         , ORDER                NUMBER(6)                NOT NULL
29         , PRODNO               VARCHAR2(15)             NOT NULL
30         , SUPPLIER             NUMBER(6)                NOT NULL
31         , UNITPRICEPAID        NUMBER(8,2)
32         , QUANTITY             NUMBER(4)                DEFAULT 0.00
33         , STATUS               CHAR(1)                  DEFAULT 'P' NOT NULL
34                               ); -- END of Table CUSTOMERS creation
35     --
36     --
37     ---- T A B L E   C R E A T E   C O M P L E T E D
38     ----
39     ---- Oracle Catalog Extract Utility V2.0 ----
40     ---- Run Completed on Nov 3, 2015 at 12:52
```

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## Mid-term Project Part B – Stored Procedures

Submit the following:

1. One text file called **YourLastName\_B\_Compile.SQL**. This file will contain your stored procedure creation code:
  - One stored procedure named Extract\_Tables.
  - One stored procedure named Extract\_Columns.
2. One text file called **YourLastName\_B\_Run.SQL**.
  - This file will contain the SQL code necessary to run your stored procedures and spool output to the file specified in '3' below.
3. One text file called **Create\_Tables\_YourLastName.SQL**.
  - This file will contain the code generated by running 'Extract\_Tables'. Your code will produce this file each time 'Extract\_Tables' runs.
  - Note: the line numbers to the left of the sample output on Page 2 are only for reference within this document. Do not produce line numbers!
4. One text file named **YourLastName\_B.BAT**.
  - This file prompts to compile or run your stored procedures.
  - DOS commands cannot display on the screen when this batch file runs.
  - Prompt the user to 'C'ompile, 'R'un'.
    - If they choose 'C'ompile, run the SQL script **YourLastName\_B\_Compile.SQL**. Make sure to pause so you can see the output to determine if the procedures compiled correctly. After the user hits enter terminate the batch file.
    - If they choose 'R'un, then run the SQL script **YourLastName\_B\_Run.SQL**. Do not pause - the batch file must terminate immediately when the SQL script completes.

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*The following standards are to be used when coding:*

- Keywords are in Uppercase
- Names are coded in camel case (First letter capitalized)
- Each clause is placed on a line by itself

### ***Submission Instructions***

- Compress all files into a zip archive named *lastname,firstname\_PartB* and submit the archive to the appropriate LEARN dropbox.
- ***Have your instructor review your submission immediately after submitting it.*** You will not be able to start the next part of the project until your instructor provides feedback on this part.
  - o Submission reviews will only take place during lab periods or the instructor's office hours (or by appointment).
  - o Do not come to see the instructor until you have made a drop box submission
  - o Do not email the instructor asking for the next component to be released. It won't be.

### ***Marking Guidelines***

This part contributes 10% to the final mark for the Mid-term Project. The project component does have a due date (drop box submission) as well as a requirement to have the project reviewed by your instructor. If a submission to the drop box is not made before the due date or an in-person review with the instructor is not completed before the next parts due date the mark for the component will be zero.

A rubric is used to allocate marks on this component. See the Learn dropbox.