

Database Management Systems II (DBMS-2004)

Mid-term Project Part A – Stored Procedures

This is the first part of the Mid-term Project in which you will develop PL/SQL code that automatically extracts information about a schema into which you are logged (in this case, your schema in DBMSDBII). Each successive part of this project will build on the previous parts. The final version will be a useful tool to explore Oracle databases in the future.

You will need:

- Lecture and Power point slides on Oracle system catalog (from this semester and from the DBMS term 2 course).
- Lectures on stored code, **cursors** and **formatting** of output with **DBMS_OUTPUT.PUT_LINE**.
- Oracle functions for **string** manipulation.
- PL/SQL loops, conditional process control.
- Most material from the 2 Oracle Courses you have attended.

In the course of this project, you will develop:

- Debugging skills.
- Research skills.
- PL/SQL coding experience.
- Practical knowledge of some parts of the Oracle catalog.
- An initial understanding of Exception handling in PL/SQL.

*Note: **Do NOT use** the Output Formatting commands (from Lecture 3).*

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 (use the **'USER_' System Catalog tables**).
 - Tables **have to appear** in alphabetic order.
 - Procedure **Extract_Tables** is responsible for outputting **table-related lines** (in the sample, lines 1-6, 11-15 and 24-28).
 - 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 **7-10 & 16-23**) for the **currently selected table** in **Extract_Tables**.
 - **Columns** must be listed in the **same order** as in the original **CREATE Table statement**.
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.

Database Management Systems II (DBMS-2004)

Mid-term Project Part A – Stored Procedures

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

```
1      ---- Oracle Catalog Extract Utility V1.0 ----
2      ----
3      ---- Run on Nov 3, 2015 at 13:50
4      ----
5      -- Start extracting table COURSES
6      CREATE TABLE COURSES (
7          COURSEID
8          , COURSENAME
9          , DESCRIPTION
10         , COURSECODE
11         ); -- END of Table COURSES creation
12     --
13     --
14     -- Start extracting table CUSTOMERS
15     CREATE TABLE CUSTOMERS (
16         CUSTOMER
17         , LASTNAME
18         , FIRSTNAME
19         , ADDRESS
20         , CITY
21         , STATE
22         , ZIP
23         , REFERRED
24         ); -- END of Table CUSTOMERS creation
25     --
26     --
27     ---- Oracle Catalog Extract Utility V1.0 ----
28     ---- Run Completed on Nov 3, 2015 at 13:52
```

Database Management Systems II (DBMS-2004)

Mid-term Project Part A – Stored Procedures

Submit the following:

1. One text file called **YourLastName_A_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_A_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_A.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_A_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_A_Run.SQL**. **Do not pause** - the **batch file must terminate immediately** when the SQL script completes.

Database Management Systems II (DBMS-2004)

Mid-term Project Part A – Stored Procedures

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_PartA* 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.
 - Submission reviews will only take place during lab periods or the instructor's office hours (or by appointment).
 - Do not come to see the instructor until you have made a drop box submission.
 - 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.