

ASSIGNMENT #1 – Beginning to Use Oracle

ISQA 4300/8306-001

Fall 2010

**Due date: Monday, September 13 (any time)
(according to Blackboard)**

Overview

The purpose of this assignment is to give you some initial hands-on exposure to Oracle before we dive into serious database administration. In this assignment, you will:

- Make sure your Oracle account is in order
- Gain some initial exposure to the Oracle Enterprise Manager.

Task 1: Logging into Oracle (10%)

From the instructions in Blackboard for the Week of August 30, you should already have successfully logged into Oracle using SQL*Plus and reset your password. If you have not done that, do it before proceeding further with this assignment.

Then....

Create a table and insert some data, just to make sure that you are able. If you are not able to create a table and insert data, let me know.

Task 2: Using the Enterprise Manager (75%)

The bulk of this assignment involves exploring the Oracle Enterprise Manager to find answers to a number of questions. By design, this exploration is not guided; I intend for you to spend time clicking around.

Logging in to the Oracle Enterprise Manager.

Point your browser to: <https://oracle.ist.unomaha.edu:5500/em/>

You will probably get some sort of “certificate error”, with your browser telling you that this site does not have a valid security certificate. I know. The Oracle Advanced Security server has not been installed. You’ll just continue to this website (Internet Explorer), or add this website to the approved list (Firefox).

Provide your username (but not the '@dbadb' you used in SQL*Plus) and password, and connect as *Normal*.

Imagine that you are a DBA who has been given responsibility for an Oracle database. You've been given access. Now what? You'll use the Oracle Enterprise Manager to explore the database. We'll cover a few of the basics now (plus a few obscure questions to make the assignment a bit more interesting), and get into more details later in the course.

General Items

To get use oriented initially, look at some of the overall characteristics of this database instance.

- Q1** What version of the database are we running?
- Q2** How large is the database?
- Q3** Since which date has the database been up (running)?

Database Structure

We'll next familiarize ourselves with the storage structures of this database.

- Q4** How many data files are used in this database? Which one is the largest? Which one is most full (greatest % used)?
- Q5** What is the maximum permitted size of the file identified in Q4?
- Q6** How many tablespaces are used in this database? How does the number of tablespaces compare to the number of data files? Explain.
- Q7** What is the total size of the SGA (System Global Area)? Take a screen shot to show the allocation of memory to each component of the SGA.
- Q8** How many control files does the database have?

Operational environment

Now let's look at the current operations of the database. We'll look at current activity and see whether there are any potential problem areas.

- Q9** Look at the Average Active Sessions. What kind of activity seems to predominate (e.g. CPU used, scheduler, user I/O, system I/O, etc.). Take a screen shot (ALT-Print Screen), then paste into your answer document).
- Q10** Look at the I/O Megabytes per Second by I/O Function. Take a screen shot. Interpret what you see.
- Q11** Look at the Top Activity. For a time period of your choice, indicate the session ID, username, and program for the top session. Take a screen shot.

- Q12** What alerts are noted (just indicate the category, and how many such alerts you see)
- Q13** Examine the initialization parameters. Where are (redo) logs archived (log_archive_dest_1)? Using the help available, describe what the *optimizer_mode* parameter is. What is its current value? What do you think this value means?
- Q14** According to the patch advisor, do any critical security patches need to be applied at this time?
- Q15** Looking at the metrics for the database, consider the efficiency metrics. Describe how the response time (per transaction) has varied over the last 24 hours. Take a screen shot.

Users and user schemas

Finally (for now), let's see what kind of users we have.

- Q16** How many users are there? Do any users have the SYSTEM tablespace as their default tablespace? (In most cases, this is a bad idea).
- Q17** List the tables created in your account (schema). You should see the one you created at the start of this assignment. In what tablespace is this table located? What kind of extent management is used for this table? What kind of segment management? Take a screen shot.

Task 3: Explore (10%)

- Q18** Spend some more time exploring the database using the Enterprise Manager. What is the most interesting thing you found? Why did you find it interesting? Be thoughtful.

(ISQA 8306 Students only):

- Q19** You have just started a new job as a DBA, and you are looking the DBADB database over. Is there anything here that should be of concern? If so, how might you fix it? Just speculate at this point. **NOTE: PLEASE DO NOT ACTUALLY ATTEMPT TO "FIX" THE DATABASE. THIS IS LIKELY TO HAVE AN IMPACT ON OTHER USERS.**

Task 5: Reflection (5%)

Pick **two** (2) of the bullet points from this list and answer the questions¹. Please indicate which questions you are answering.

- What did I actually achieve with this piece of work? Which were the most difficult parts, and why were they difficult for me? Which were the most straightforward parts, and why did I find these easy?
- How well do I think I achieved the intended learning outcomes for this task? Where could I have improved my achievement? Why didn't I improve it at the time?
- What have I got out of doing this assignment? How have I developed my knowledge and skills? How do I see the payoff from doing this assignment helping me in the longer term?
- What else have I got out of doing this assignment? Have I developed other skills and knowledge, which may be useful elsewhere at another time? If so, what are my own emergent learning outcomes from doing this assignment?
- What was the best thing I did? Why was this the best thing I did? How do I know that this was the best thing I did?
- What worked least well for me? Why did this not work well for me? What have I learned about the topic concerned from this not having worked well for me? What have I learned about myself from this not having worked well for me? What do I plan to do differently in future as a result of my answers to the above questions?
- With hindsight, how would I go about this assignment differently if doing it again from scratch? To what extent will this assignment influence the way I tackle anything similar in future?
- What did I find the greatest challenge in doing this work? Why was this a challenge to me? To what extent do I feel I have met this challenge? What can I do to improve my performance when next meeting this particular sort of challenge?
- What was the most boring or tedious part of doing this assignment for me? Can I see the point of doing these things? If not, how could the assignment have been re-designed to be more stimulating and interesting for me?
- Has it been worth the effort I put in? Do the marks represent a just reward? Should this assignment be worth more or less marks in the overall scheme of things?
- Do I feel that my time on this assignment has been well spent? If not, how could I have used my time more sensibly? Or should the assignment have been designed differently? Which parts of the assignment represent the time best spent? Which parts could be thought of as time wasted?

¹ Questions taken from <http://www.escalate.ac.uk/resources/reflection/09.html>

- How useful do I expect the feedback to be, that I receive on my efforts for this assignment? What sorts of feedback do I really want at this point in time? What sorts of feedback do I really need at this point in time? What are my expectations of getting useful feedback now, based on the feedback (or lack of it) that I've already received on past work?
- Overall, how has this assignment helped (or hindered) my motivation to learn more about this part of my syllabus? Has it encouraged me, or disillusioned me?
- To what extent has this assignment helped me to clarify what I need to learn about this topic? Have I a clearer picture after doing the assignment, or a foggier one? Who can help me gain a clearer picture, if the latter?
- To what extent has this assignment helped me to see where the goalposts stand for future assessments such as exams? Has it given me useful insights into what will be expected of me in future?
- What advice would I give go a friend about to start on the same assignment? How much time would I suggest that it would be worth putting into it? What pitfalls would I advise to be well worth not falling into?
- What are the three most important things that I think I need to do with this topic at this moment in time? Which of these do I think is the most urgent for me to do? When will I aim to start doing this, and what is a sensible deadline for me to have completed it by?

Deliverables

One document with the answers to questions 1-16 (17 for ISQA 8306 students) plus your reflections. Upload to Blackboard. Please do not e-mail me any part of this assignment.