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Although you could do all of your work for this class using SQL*Plus as the client interface, you should gain some experience with a graphical interface client. SQL Developer is a free Java based graphical interface that Oracle provides (in Windows and Mac and Linux versions). You download it from the Oracle Tech website. You can use this client to connect to your hills CCSF Oracle account or to other Oracle installations. This document discusses:

- How to download and setup SQL Developer
- Creating a connection to your CCSF Oracle account
- What the interface looks like and how to use it

One problem that the use of SQL Developer might cause is that you get used to using the autocomplete and other features and have trouble writing queries on the midterm and final exam. Remember these exams are Paper and Pencil exams- and a piece of paper does not do autocomplete!

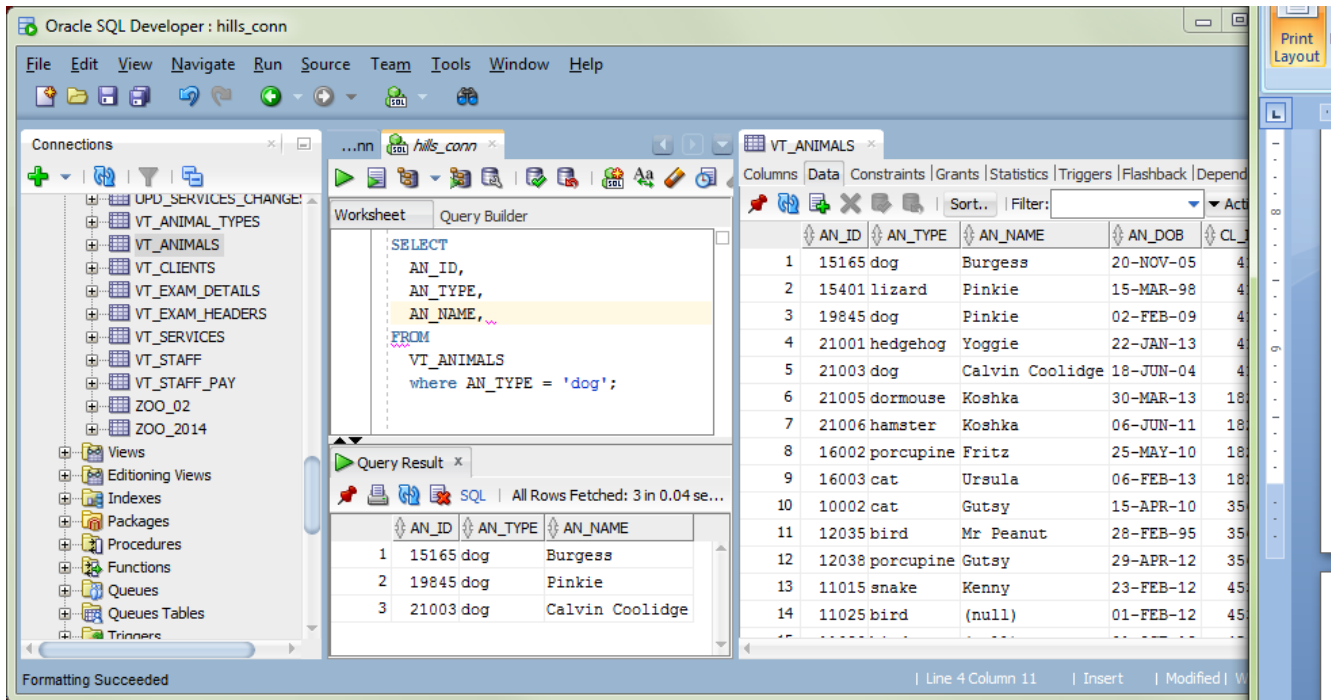
A critical thing to remember about this- and any other software tool- is that it is just a way to create and execute sql statements. You do not have to learn everything about a software tool to be more productive. It takes me 2-3 weeks to get comfortable using a new tool- so don't expect to like this immediately. If you are more comfortable using SQL*Plus, that is also OK. You can use SQL Developer for the things it is good at (such as editing in the code window) and SQL*Plus for the things that it is good at (running assignment scripts).

Since SQL*Plus and SQL Developer are different clients, you may find some places where the output looks different in terms of formatting. For example, SQL*Plus right aligns numbers in the column and SQL Developer left aligns.

Something that causes some people a lot of trouble with assignments. SQL Developer allows blank lines within a query. SQL*Plus does not. So do not include any blank lines within a query or your assignment script will be full of errors.

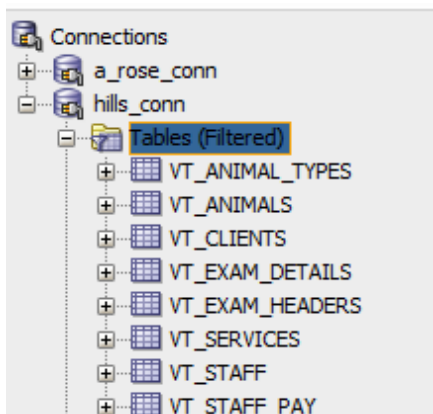
1. Why would you want to bother with this?

Because there is a very good chance that this will make you more efficient. You can edit the code window in place and rerun the command. You can highlight one command in the code window and run it by itself. You can see your table attributes without having to give another command. You can multiple windows open and switch between them. Did I mention that it is free?



The above image is a screen shot of SQL Developer (version 4.0.2). There is too much going on to explain everything at once- but what we have includes:

- A menu bar. I don't use the menus too often, but you probably want to look at the Tools menu at least.
- A tool button bar. You may want to use the Save button to save your sql statements. Or use the SQL worksheet button (near the right end) to open another window for your connection.
- You can open multiple tabs with different queries or table info displays in each. The sql in the left window was run with the "Run Statement" button (the green arrow) and the output is displayed in a grid. You can use the "Run Script" button- the green arrow imposed on a text document- and the output from all of the queries in that window is displayed in the script output pane. You can highlight part of the sql and run just that part.
- The above screenshot shows a browser window. It shows your connections and a connection can be expanded to shows the tables and other objects in that schema; tables can be expanded to show the column names.
- You can also filter the table list using a wildcard pattern. I wanted to see only the tables for the vets database, and all of those table names start with vt_ right click the Tables node and use Apply Filter



2. Download and install SQL Developer

Download the zipped file from Oracle Tech.

http://www.oracle.com/technology/products/database/sql_developer/index.html

It is easiest to just take the version that includes Java although that may give you another Java installation.

Store the zipped file in a folder (not in a folder that holds any other Oracle files- this only applies to people with a local Oracle installation.). Unzip the file. It will unzip into a folder and you will have an executable file sqldeveloper.exe .

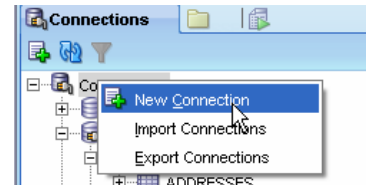
This is not a "regular" installation in the common sense. The files and folders are simply unzipped.

To run SQL Developer, simply double-click the file sqldeveloper.exe. You will probably want to set a short cut to this.

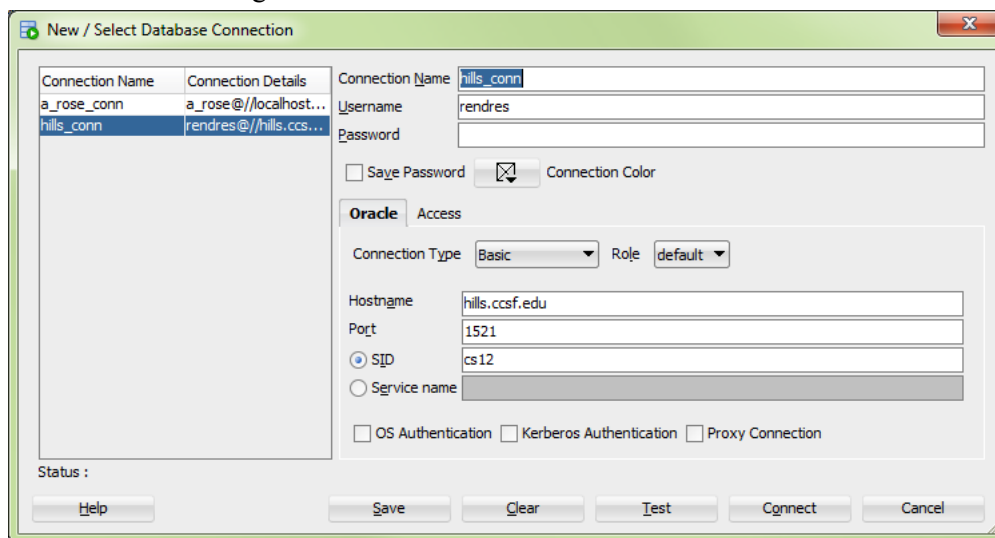
3. Creating a connection

3.1. Connecting to your CCSF Oracle Account

Right-click the Connections node and select New Connection. You will get a dialog box. I have two connections already established.



The connection dialog is shown here.



Enter a connection name in the text area for Connection Name. You can name this anything you want- hills_conn makes sense to me. Enter a valid user name and password in the next two text areas. You can decide if you want the system to save your password in this client. This would be a bad idea if this is on a machine that other people can use. Note that this is your Oracle password- not your hills password. You need to put your password in the first time you connect. Complete the bottom of the form. Leave the Role as Default and the Connection Type as Basic.

The host name is hills.ccsf.edu ; the default port number is 1521 and the SID is cs12 (that is a lowercase cs followed by the number twelve.)

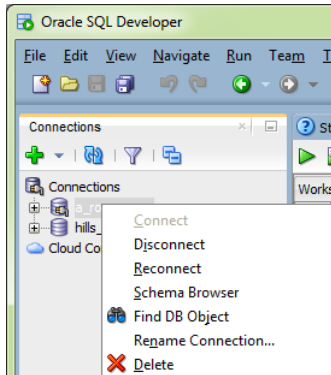
Click the test button and you should get a Status: Success! message in the lower left corner of the dialog.

If you want, you can now erase the password and the user will have to supply the password when they login.

(If you have a local installation of Oracle xe, you might use Connection type as Local/Bequeath)

3.2. Disconnect

Disconnect by right-click your connection and choosing Disconnect.

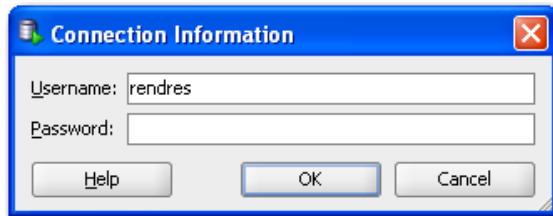


4. The Oracle SQL Developer interface

This interface is crowded but fairly simple if you have experience in using a graphical IDE.

4.1. Connect

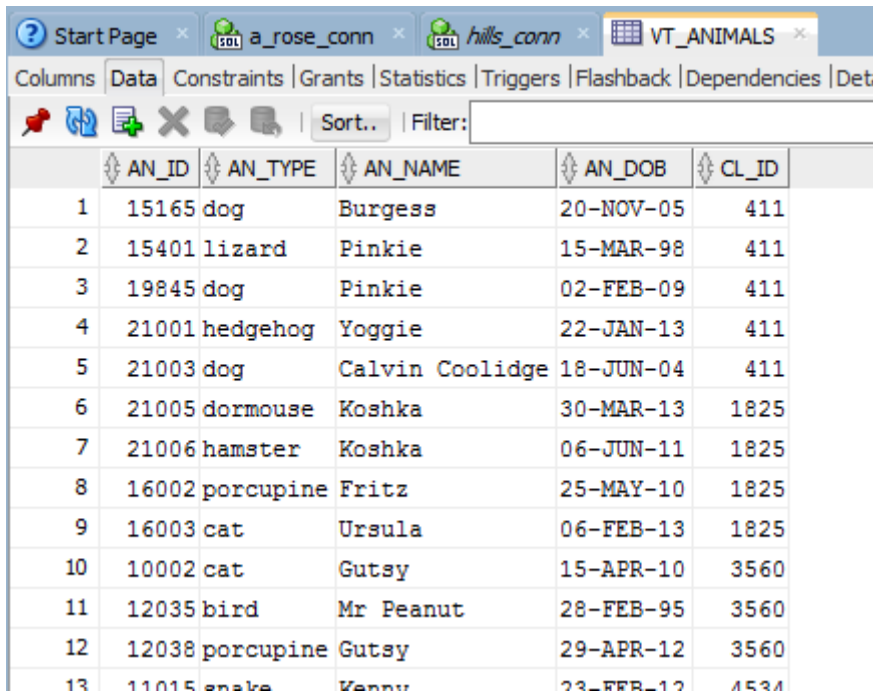
We have a Connection window which shows established connections to schema. If we right click a schema node, and select connect we can be prompted for a username and password so that we can login. We can then navigate to the node for tables and see our table names and then columns



4.2. See a table as a description or data

If you double-click a table name, you can see its description using the Columns tab and the data in the Data tab.

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	AN_ID	NUMBER (6, 0)	No	(null)	1	(null)
2	AN_TYPE	VARCHAR2 (25 BYTE)	No	(null)	2	(null)
3	AN_NAME	VARCHAR2 (25 BYTE)	Yes	(null)	3	(null)
4	AN_DOB	DATE	No	(null)	4	(null)
5	CL_ID	NUMBER (6, 0)	No	(null)	5	(null)



	AN_ID	AN_TYPE	AN_NAME	AN_DOB	CL_ID
1	15165	dog	Burgess	20-NOV-05	411
2	15401	lizard	Pinkie	15-MAR-98	411
3	19845	dog	Pinkie	02-FEB-09	411
4	21001	hedgehog	Yoggie	22-JAN-13	411
5	21003	dog	Calvin Coolidge	18-JUN-04	411
6	21005	dormouse	Koshka	30-MAR-13	1825
7	21006	hamster	Koshka	06-JUN-11	1825
8	16002	porcupine	Fritz	25-MAY-10	1825
9	16003	cat	Ursula	06-FEB-13	1825
10	10002	cat	Gutsy	15-APR-10	3560
11	12035	bird	Mr Peanut	28-FEB-95	3560
12	12038	porcupine	Gutsy	29-APR-12	3560
13	11015	snake	Vannu	23-FEB-12	1534

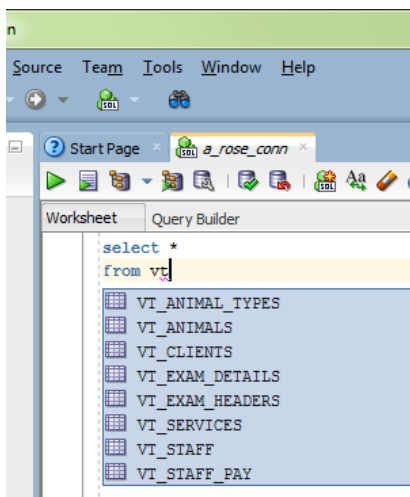
5. Running a query

You want to get to a Worksheet window. You can use the Tools menu or the dropdown menu for the SQL tool button.

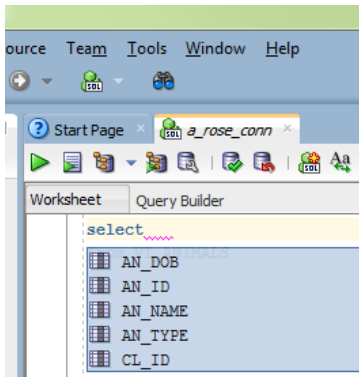
6. More on creating code/sql

This shows an autocomplete feature (Code Insight) You may also want to look at the following web page <http://www.thatjeffsmith.com/archive/2014/05/video-completion-insight-in-oracle-sql-developer-v4-0-2/>

In the Worksheet window, I type "select * from vt" and wait a moment and the names of my tables that start with vt appear in a pop up box and I can select the table I want.



Then I go back up and put my cursor after the word select and type a blank; I get a pick list of the attribute names, I can select one, type a comma and I get the pick list again.



You can toggle individual lines or selected groups of lines as comments with Control /

7. Creating a script

What you may want to do is build and test the script file in SQL Developer and then do the final run using SQL*Plus. You ftp your script to your hills account as needed and ftp your spool file to your local computer.

8. SQL*Plus commands that do not work in SQL Worksheet

Some of the SQL*Plus commands you might want to use do not work in SQL Worksheet. The most annoying commands missing are the column command for formatting output. You may get a message about skipped commands.

9. Preferences

From the Tools menu you can get to Preferences. There are a lot of choices and you do not need to set them all. The Help for this is not particularly helpful.

You might want to change the display colors or font size. I find that making comments stand out is helpful. You can save your style settings.

10. Line and Column numbers

If you get an error message when you try to run a query, the message usually refers to a line and column. The line numbers can be displayed in the query window. The status bar at the bottom of the SQL Developer window displays the line and Column number of the position of the cursor in the query (code) window. As you move the cursor to a different position the status bar updates. This can help you find the problem with Error at Command Line:15 Column 43

11. dbForge for Oracle

dbForge has a free version of its Oracle client and also paid versions. It includes an Object browser, editing abilities, tabbed windows, code completion. Its interface is similar to that of Visual Studio.

<http://www.devart.com/dbforge/oracle/studio/>