Oracle SQL LiveLessons

**Overall Introduction: Welcome to Beginning Introduction**

Welcome to *Oracle SQL LiveLessons*. My name is Dan Hotka. I am a Training Specialist and an Oracle ACE Director (a recognized expert by Oracle Corp). I have been working in the computer industry for over 36 years, and have over 30 years of experience with Oracle products. My experience with the Oracle RDBMS dates back to the Oracle V4.0 days. I enjoy sharing my knowledge of the Oracle RDBMS. I am well published with 12 Oracle books and well over 200 published articles. I am frequently published in Oracle trade journals, I regularly blog; and I often speak at Oracle conferences and user groups around the world.

This LiveLessons video contains hands-on lab exercises that are based on a class I teach. I am also available for on-site consulting. I have a portable computer lab for this or any of my other Oracle/Unix classes we do at your location. I am available to answer any questions you have on this content. Let me know how I can help by email at Dan@DanHotka.com.

???Dan: Per LiveLessons series convention for the scripts, please update below overall Introduction by also referencing the specific lessons in the order that matches as shown in your final outline. In other words, please introduce and describe the Lessons/video course in a sequential order that matches exactly as you listed in the final outline/EDL for consistency. Viewers will be confused if you introduce the lessons in an inconsistent order. Consistency is important. So, please put “(L1)” around the description where you first introduce the coverage of Lesson 1, then “(L2)” around your description about Lesson 2, then “(L3)” and so on sequentially. That way, the studio knows when to display each Lesson’s name on screen during your course introduction. Please redo below accordingly for clarity. Thanks. --songlin

In these lessons, you learn how to use Oracle’s SQL language. These lessons allow you to become functional with this language and you gain the ability to read and write your own queries against Oracle databases. The SQL language is common across many relational databases so this knowledge will easily transfer to other computing environments as well. There is a lesson on SQL common to business intelligence called Analytical SQL. These lessons cover the SQL query language as well as the ANSI syntax that is also commonly used in the industry. These lessons also cover Oracle scripting techniques, an introduction to SQL performance tuning, working with referential integrity, and accessing the Oracle RDBMS from Microsoft Office products. I utilize three common tools throughout these lessons: SQL\*Plus, Toad, and SQL\*Developer. You can use any query tool you desire to do the hands-on labs with these lessons.

This is a very hands-on course. You have the opportunity to do the lab exercises yourself and follow along as I cover various tips and techniques in and around the SQL query language. This course is also based on a few table objects that are included in the course download. This course really isn’t Oracle database specific. All examples work with Oracle10, Oracle11, and Oracle12 databases but the concepts and most of the tips apply to any Oracle database.

I start with a review of the tools and the data objects used in the lessons. I then review the Oracle RDBMS architecture of how the Oracle RDBMS processes SQL. I then illustrate the tools that will be used at various points throughout the course as well. You can use any tool that is designed to work with Oracle SQL. I alternate between using Dell Software Solutions Toad tool and the free Oracle Corp SQL\*Developer graphical tools. This course makes use of SQL\*Plus mostly during the scripting part of the course.

This course covers the basic SQL syntax, table joins, and use of functions. This course also covers advanced SQL topics such as sub-queries (including in-line views), analytical SQL (common to business intelligence users and analysts), and ANSI SQL syntax.

This course then covers some basic and advanced Oracle SQL scripting techniques. Cross-reference and pivot tables are covered in lesson 11: Simple Reports using SQL\*Plus. Advanced scripting topics are reviewed such as SQL creating SQL, script error handling, and useful tips for building scripts for your test and application environments.

The course then dives into creating reports and saving data in various formats (including MS Office Excel and Access). Each tool covered has unique reporting environments where useful report-building tips and techniques are covered.

Lesson 9 covers tables with related data, called referential integrity. The course concludes with a lesson on accessing Oracle SQL directly from MS Office Excel and Access. This lesson shows how to install the ODBC drivers and build SQL queries using the MS Office environment.

**Lesson 1 Introduction**

Welcome to **Lesson 1: Oracle SQL Course Overview**. This lesson first covers the course pre-requisites (1.1), the course download (1.2) that builds the objects and contains example code (and hands-on lab answers) that are used throughout these lessons. Then it introduces the course database objects (1.3). Next, it covers the Database Relational Model (1.4) and the Oracle Architecture (1.5).

**Lesson 2 Introduction**

Welcome to **Lesson 2: Introduction to the Course Tools**. This lesson covers basic knowledge of the three tools that will be used throughout the course. You can use any tool that works with the Oracle database but this lesson utilizes a mix of these three tools:

1. SQL\*Plus, a character-mode and script running tool that comes with the Oracle RDBMS (2.1)
2. Oracle Corp’s free SQL\*Developer, another popular SQL and PL/SQL development tool that many use as a query tool as well (2.2)
3. Dell Software Toad, a popular SQL and PL/SQL development environment that many use as a query tool because of its ease of use, ability to create Excel spreadsheets, and its reporting features (2.3)

**Lesson 3 Introduction**

Welcome to **Lesson 3: Introduction to SQL**. This lesson covers the basics of the SQL language by working with simple queries (3.1) and Where clauses (3.2).

**Lesson 4 Introduction**

Welcome to **Lesson 4: Table Joins**. This lesson first illustrates how to find the tables and columns available to you, the end user (4.1). Then it covers some useful techniques to create required SQL without having to type in long cumbersome column names (4.2), table joins (4.3), and how to code when you are accessing more than one table. Next, the course covers the ANSI SQL (4.4) that also works with table joins and introduces new features of the various releases of Oracle (4.5). Finally, it explores sorting options (4.6).

**Lesson 5 Introduction**

Welcome to **Lesson 5: Functions and Pseudocolumns.** This lesson introduces you to pseudocolumns (5.1), the string functions (5.2), date functions (5.3), and number functions (5.4). This lesson covers the SQL IF/THEN/ELSE logic known as DECODE and also now includes the newer CASE function (5.5). It then covers the Group By and aggregate functions (5.6). I share my knowledge of mixing and combining functions together to solve complex business requirements (5.7). Finally, I cover tips on using non-table columns along with the other functions to solve your business needs (5.8).

**Lesson 6 Introduction**

Welcome to **Lesson 6: Advanced Queries Using Sub-Queries.** This lesson begins with a detailed coverage on sub-queries (6.1). Then it introduces and illustrates good uses for in-line views (6.2). Next, the lesson concludes with a look at some useful coding tips and techniques (6.3).

**Lesson 7 Introduction**

Welcome to **Lesson 7: Oracle Data Manipulation and Definition Language**. This lesson begins with an introduction on how to create tables (7.1), subset data using a single SQL statement (7.2), and more. Then it covers insert/update/delete SQL (7.3 thru 7.5). Next, there is coverage of the merge statement, a combined insert/update/delete SQL statement (7.6). Again the tools contain useful templates and wizards to assist with creating tables (creating most any object) and altering the data, which is the last topic covered (7.7).

**Lesson 8 Introduction**

Welcome to **Lesson 8: Database Management**. This lesson covers some useful application objects such as sequences (8.1), identity columns (8.2) and views (8.3). It also covers permissions, including synonyms and roles (8.4). The lesson then introduces SQL performance tuning, including indexes (8.5) and Explain Plans (8.6).

**Lesson 9 Introduction**

Welcome to **Lesson 9: Data Relationships**. This lesson covers referential integrity (9.1), how to explore your data that might have these built-in relationships (9.2). It also covers how to take advantage of these relationships to display related table and column objects (9.3), view related data (9.4), and save this data that might be useful for testing and reporting needs (9.5).

**Lesson 10 Introduction**

Welcome to **Lesson 10: Analytical SQL**. This lesson is more for the business intelligence analyst covering the analytical functions that were introduced back in Oracle9. This lesson starts with an introduction to analytical SQL (10.1) and using the analytical functions (10.2). This lesson is full of working examples on partitioning (10.3) and windowing (10.4) analytical functions and report output.

**Lesson 11 Introduction**

Welcome to **Lesson 11: Simple Reports Using SQL\*Plus**. This lesson explores the SQL\*Plus formatting commands (11.1) that are useful for creating simple character-mode reports (11.2). It then shows how these simple reports can easily be turned into web pages as well (11.3). Next, it focuses on creating pivot tables (11.4) and a variety of Oracle scripting (11.5).

**Lesson 12 Introduction**

Welcome to **Lesson 12: Toad and SQL Developer Reports**. This lesson covers creating reports via the Toad Report Writer (12.1). This lesson also covers how to create reports in SQL\*Developer (12.2).

**Lesson 13 Introduction**

Welcome to **Lesson 13: Spreadsheets and Saving the Data Using the Tools**. This lesson illustrates how to save data in a variety of formats including: fixed-format and Excel spreadsheets using the three course tools: SQL\*Plus (13.1), SQL\*Developer (13.2), and Toad (13.3). SQL\*Developer can also create PDF output and Toad can create Access database output.

**Lesson 14 Introduction**

Welcome to **Lesson 14: Microsoft Office Programs with Oracle SQL**. This final lesson completes the SQL story with installing and using ODBC drivers (14.1 and 14.2) to allow Microsoft Office products such as Excel (14.3) and Access (14.4) to directly access the Oracle database.

**Summary**

Thank you for attending this course. I have given you the knowledge to query your Oracle database using the SQL query language. I started with the tools, showing useful tools for working with SQL. I then took you on a tour of the relational database model and the Oracle architecture. I illustrated how your workstation interacts with the Oracle database environment. I then covered the SQL language, from beginning to advanced topics that include ANSI SQL, analytical SQL, and sub-queries with in-line view processing. These lessons illustrated the power of each of the tools used. These lessons covered a variety of reporting and scripting tips and techniques. I provided hands-on lab exercises for you to follow along if you so choose, enhancing your learning of the topics presented. I gave many real-world examples on various topics along the way. I made several references to performance tuning and even introduced using indexes to increase SQL performance. There is a complete video course on *Oracle SQL Performance Tuning for Developers LiveLessons* that I would recommend to anyone taking this *Oracle SQL LiveLessons* course.

Thank you again for attending this course and let me know if you would like the live version at your site, complete with hands-on lab exercises.

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