uCertify

Course Outline

SQL Queries for Mere Mortals



28 Mar 2024

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1. Course Objective

SQL is the standard language for communicating with most database systems. Any time you import data into a spreadsheet or perform a merge into a word processing program, you're most likely using SQL in some form or another. Learn SQL and gain a hands-on experience in SQL with the course SQL Queries for Mere Mortals 4e. This course is designed for a beginning database user and it is also for an expert user who is suddenly faced with solving complex problems or integrating multiple systems that support SQL. This course has well-descriptive interactive lessons containing knowledge checks, quizzes, flashcards, and glossary terms to get a detailed understanding of SQL Queries.

2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

3. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.



4. Quizzes

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.



5. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



6. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



7. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

8. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

9. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

10. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been

recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution
    2. Best Virtual Learning Solution
    3. Best Student Assessment Solution
    4. Best Postsecondary Learning Solution
    5. Best Career and Workforce Readiness Solution
    6. Best Instructional Solution in Other Curriculum Areas
    7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform

2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**
  1. Best Virtual Learning Solution
  2. Best Content Authoring Development or Curation Solution
  3. Best Higher Education Learning Management Solution (LMS)

- **2020**
  1. Best College and Career Readiness Solution
  2. Best Cross-Curricular Solution
  3. Best Virtual Learning Solution

11. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Introduction

- Are You a Mere Mortal?
- About This Course
- What This Course Is Not

- How to Use This Course
- Reading the Diagrams Used in This Course
- Sample Databases Used in This Course

Chapter 2: What Is Relational?

- Types of Databases
- A Brief History of the Relational Model
- Anatomy of a Relational Database
- What’s in It for You?
- Summary

Chapter 3: Ensuring Your Database Structure Is Sound

- Why Is this Lesson Here?
- Why Worry about Sound Structures?
- Fine-Tuning Columns
- Fine-Tuning Tables
- Establishing Solid Relationships
- Is That All?

- Summary

Chapter 4: A Concise History of SQL

- The Origins of SQL
- Early Vendor Implementations
- "… And Then There Was a Standard"
- Evolution of the ANSI/ISO Standard
- Commercial Implementations
- What the Future Holds
- Why Should You Learn SQL?
- Which Version of SQL Does this Course Cover?
- Summary

Chapter 5: Creating a Simple Query

- Introducing SELECT
- The SELECT Statement
- A Quick Aside: Data versus Information
- Translating Your Request into SQL
- Eliminating Duplicate Rows

- Sorting Information
- Saving Your Work
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 6: Getting More Than Simple Columns

- What Is an Expression?
- What Type of Data Are You Trying to Express?
- Changing Data Types: The CAST Function
- Specifying Explicit Values
- Types of Expressions
- Using Expressions in a SELECT Clause
- That “Nothing” Value: Null
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 7: Filtering Your Data

- Refining What You See Using WHERE
- Defining Search Conditions
- Using Multiple Conditions
- Nulls Revisited: A Cautionary Note
- Expressing Conditions in Different Ways
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 8: Thinking in Sets

- What Is a Set, Anyway?
- Operations on Sets
- Intersection
- Difference
- Union
- SQL Set Operations
- Summary

Chapter 9: INNER JOINs

- What Is a JOIN?
- The INNER JOIN
- Uses for INNER JOINs
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 10: OUTER JOINs

- What Is an OUTER JOIN?
- The LEFT/RIGHT OUTER JOIN
- The FULL OUTER JOIN
- Uses for OUTER JOINs
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 11: UNIONs

- What Is a UNION?

- Writing Requests with UNION
- Uses for UNION
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 12: Subqueries

- What Is a Subquery?
- Subqueries as Column Expressions
- Subqueries as Filters
- Uses for Subqueries
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 13: Simple Totals

- Aggregate Functions
- Using Aggregate Functions in Filters
- Sample Statements

- Summary
- Problems for You to Solve

Chapter 14: Grouping Data

- Why Group Data?
- The GROUP BY Clause
- “Some Restrictions Apply”
- Uses for GROUP BY
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 15: Filtering Grouped Data

- A New Meaning for “Focus Groups”
- Where You Filter Makes a Difference
- Uses for HAVING
- Sample Statements
- Summary

- Problems for You to Solve

Chapter 16: Updating Sets of Data

- What Is an UPDATE?
- The UPDATE Statement
- Some Database Systems Allow a JOIN in the UPDATE Clause
- Uses for UPDATE
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 17: Inserting Sets of Data

- What Is an INSERT?
- The INSERT Statement
- Uses for INSERT
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 18: Deleting Sets of Data

- What Is a DELETE?
- The DELETE Statement
- Uses for DELETE
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 19: “NOT” and “AND” Problems

- A Short Review of Sets
- Finding Out the “Not” Case
- Finding Multiple Matches in the Same Table
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 20: Condition Testing

- Conditional Expressions (CASE)

- Solving Problems with CASE
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 21: Using Unlinked Data and “Driver” Tables

- What Is Unlinked Data?
- Solving Problems with Unlinked Data
- Solving Problems Using “Driver” Tables
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 22: Performing Complex Calculations on Groups

- Grouping in Sub-Groups
- Extending the GROUP BY Clause
- Getting Totals in a Hierarchy Using Rollup
- Calculating Totals on Combinations Using CUBE
- Creating a Union of Totals with GROUPING SETS

- Variations on Grouping Techniques
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 23: Partitioning Data into Windows

- What You Can Do With a “Window” into Your Data
- Calculating a Row Number
- Ranking Data
- Splitting Data into Quintiles
- Using Windows with Aggregate Functions
- Sample Statements
- Summary
- Problems for You to Solve

Chapter 24: Appendix A: SQL Standard Diagrams

Chapter 25: Appendix B: Schema for the Sample Databases

- Sales Orders Example Database

- Sales Orders Modify Database
- Entertainment Agency Example Database
- Entertainment Agency Modify Database
- School Scheduling Example Database
- School Scheduling Modify Database
- Bowling League Example Database
- Bowling League Modify Database
- Recipes Database
- “Driver” Tables

Chapter 26: Appendix C: Date and Time Types, Operations, and Functions

- IBM DB2
- Microsoft Access
- Microsoft SQL Server
- MySQL
- Oracle
- PostgreSQL

12. Practice Test

Here's what you get

83	2	83
PRE-ASSESSMENTS QUESTIONS	FULL LENGTH TESTS	POST-ASSESSMENTS QUESTIONS

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

13. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations

- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Creating a Simple Query

- Using the SELECT Statement
- Using the DISTINCT Keyword
- Using the ORDER BY Clause

Getting More Than Simple Columns

- Using the CAST Function
- Using a Literal
- Using the Concatenation Expression
- Using the NULL Values
- Naming an Expression
- Finding Null Values in a Column

Filtering Your Data

- Using the LIKE Predicate
- Using the IN Predicate
- Using the BETWEEN Predicate
- Using Comparison Predicates
- Using the WHERE Clause
- Using the NOT Operator
- Using the ESCAPE Option
- Using the Order of Precedence

- Using AND and OR Operators
- Using the NOT IN Operator

Thinking in Sets

- Using the UNION Operator
- Using the EXCEPT Operator
- Using the INTERSECT Operator

INNER JOINs

- Using an INNER JOIN
- Using a Subquery with the IN Predicate

OUTER JOINs

- Using the FULL OUTER JOIN
- Using the RIGHT OUTER JOIN
- Using the LEFT OUTER JOIN

UNIONs

- Sorting with UNION

Subqueries

- Using Subqueries
- Using the COUNT Function
- Using the SOME Predicate
- Using the ALL predicate
- Using the ANY Predicate

Simple Totals

- Using the MIN and MAX Functions
- Using the SUM and AVG Functions

Grouping Data

- Using the GROUP BY Clause

Filtering Grouped Data

- Using the HAVING Clause

Updating Sets of Data

- Using the UPDATE Statement

Inserting Sets of Data

- Using the INSERT Statement

Deleting Sets of Data

- Using the DELETE Statement

“NOT” and “AND” Problems

- Using the NOT EXISTS Command

Condition Testing

- Using the CASE Statement

Performing Complex Calculations on Groups

- Using ROLLUP
- Using the CUBE clause

Partitioning Data into Windows

- Using the RANK Function

Here's what you get

45	45	55
LIVE LABS	VIDEO TUTORIALS	MINUTES

14. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

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