

# uCertify

## Course Outline

### SQL for Data Analytics



14 May 2024

1. Course Objective
2. Pre-Assessment
3. Exercises, Quizzes, Flashcards & Glossary  
Number of Questions
4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
7. Award Winning Learning Platform (LMS)
8. Chapter & Lessons

Syllabus

Chapter 1: Understanding and Describing Data

Chapter 2: The Basics of SQL for Analytics

Chapter 3: SQL for Data Preparation

Chapter 4: Aggregate Functions for Data Analysis

Chapter 5: Window Functions for Data Analysis

Chapter 6: Importing and Exporting Data

Chapter 7: Analytics Using Complex Data Types

Chapter 8: Performant SQL

Chapter 9: Using SQL to Uncover the Truth – a Case Study

Chapter 10: Appendix

Videos and How To

9. Practice Test

Here's what you get

Features

10. Live labs

Lab Tasks

Here's what you get

11. Post-Assessment

## 1. Course Objective

Gain hands-on expertise to work with SQL for Data science with the SQL for Data Analytics course and lab. Lab simulates real-world, hardware, software, and command-line interface environments and can be mapped to any textbook, course, or training. The SQL course and lab will teach everything from the basics of SQL for Analytics to SQL for Data preparation, aggregate functions for Data analysis, importing and exporting data; analytics using complex data types, and more.

## 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.

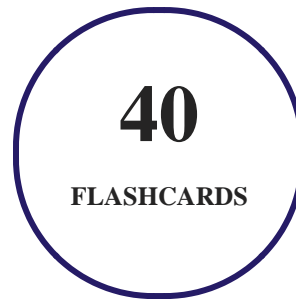
## 3. Quizzes

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.



## 4. 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.



## 5. 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.



## 6. 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.

## 7. 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.

## 8. 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.

## 9. 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

## 10. 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: Understanding and Describing Data

- Introduction
- The World of Data
- Methods of Descriptive Statistics
- Statistical Significance Testing
- Summary

#### Chapter 2: The Basics of SQL for Analytics

- Introduction

- Relational Databases and SQL
- Basic Data Types of SQL
- Reading Tables: The SELECT Query
- Creating Tables
- Updating Tables
- Deleting Data and Tables
- SQL and Analytics
- Summary

### Chapter 3: SQL for Data Preparation

- Introduction
- Assembling Data
- Transforming Data
- Summary

### Chapter 4: Aggregate Functions for Data Analysis

- Introduction
- Aggregate Functions



- Aggregate Functions with GROUP BY
- The HAVING Clause
- Using Aggregates to Clean Data and Examine Data Quality
- Summary

## Chapter 5: Window Functions for Data Analysis

- Introduction
- Window Functions
- Statistics with Window Functions
- Summary

## Chapter 6: Importing and Exporting Data

- Introduction
- The COPY Command
- Using R with Our Database
- Using Python with Our Database
- Best Practices for Importing and Exporting Data
- Summary

## Chapter 7: Analytics Using Complex Data Types

- Introduction
- Date and Time Data Types for Analysis
- Performing Geospatial Analysis in Postgres
- Using Array Data Types in Postgres
- Using JSON Data Types in Postgres
- Text Analytics Using Postgres
- Summary

## Chapter 8: Performant SQL

- Introduction
- Database Scanning Methods
- Performant Joins
- Functions and Triggers
- Summary

## Chapter 9: Using SQL to Uncover the Truth – a Case Study

- Introduction

- Case Study
- Summary

## Chapter 10: Appendix

- Installing pgAdmin 4

## 11. Practice Test

### Here's what you get

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PRE-ASSESSMENTS QUESTIONS

**55**

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.

## 12. 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

### Understanding and Describing Data

- Sandbox

### The Basics of SQL for Analytics

- Using the ORDER BY Clause
- Using the SELECT Statement
- Using the WHERE Clause
- Using the AND Clause
- Using the NOT IN Clause
- Using the LIMIT Clause
- Using the CREATE TABLE Statement
- Using the INSERT INTO...VALUES Statement
- Using the UPDATE Statement

- Adding a Column to a Table
- Using the DROP TABLE Statement
- Using the DELETE Statement

### **SQL for Data Preparation**

- Using the Cross Join
- Using the Inner Join
- Using the Left Outer Join
- Using the Right Outer Join
- Using the DISTINCT Keyword
- Using the CASE WHEN Statement

### **Aggregate Functions for Data Analysis**

- Using the AVG Function
- Using the COUNT Function
- Using the GROUP BY Clause
- Using the HAVING Clause

### **Window Functions for Data Analysis**

- Using the PARTITION BY Clause

### **Importing and Exporting Data**

- Using the COPY Command

### **Analytics Using Complex Data Types**

- Using the INTERVAL Keyword
- Using the EXTRACT Keyword
- Using the now() Function
- Understanding the current date Keyword
- Using the STRING\_TO\_ARRAY Function
- Using the REGEXP\_REPLACE Function
- Using the row\_to\_json Function

- Using the ARRAY\_TO\_STRING Function

### Performant SQL

- Using the DROP INDEX Command
- Using the CREATE INDEX Command
- Using the EXPLAIN Command
- Creating an Index on a Column of a Table of a Database

## Here's what you get

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LIVE LABS

### 13. 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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