DATA SCIENCE AND ANALYTICS PROFESSIONAL BOOTCAMP

SQL AND DATABASES

COURSE SYLLABUS

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COURSE DETAILS

Duration

24 hours • 8 modules

Course Description

This course provides an introduction to SQL, a popular language used to query databases. Using SQL, you will import data into databases, query data, join data together, filter and sort data, create views, and export data. This course also introduces you to database design and teaches you how to manage your own database.

You will start practicing SQL skills early in this course, guided by an expert instructor with vast experience in SQL and databases. SQL is the world's most popular database query language, and most data professionals know how to query databases as part of their work.

Learning Goals

By the end of this course, you will be able to read, write, and interpret SQL queries and gain a solid foundation in working with relational databases and SQL.

Learning Objectives

- Read, write, and interpret SQL queries.
- Convert user requirements into an efficient SQL query that extracts the right data.
- Use a variety of SQL statements to query, update, insert, or delete data.
- Use aggregate and summary functions when querying data.

REQUIREMENTS

Course Completion Requirements

- Receive 15 points or more on the course project.
- Earn a score of 70% or higher on all quizzes.
- Attend 80% of the classes.

Software

To complete the course, learners need the following:

- Computer with internet access
- Web browser
- MySQL Community Server
    - ***https://dev.mysql.com/downloads/mysql/***
- MySQL Workbench
    - ***https://dev.mysql.com/downloads/workbench/***
    - You may choose to download the MySQL Installer, which allows you to install both the server and MySQL Workbench software.

GRADING

Assessment Scale

Assessment	Points	% of Grade	# of Assessments	Cumulative Points
Project	25	45%	1	25
Quizzes	10	55%	3	30
			Points Possible	**55**

Project Rubric

Criteria	Novice (1)	Trained (3)	Experienced (5)	Score
Effort	Failed to meet all requirements	Met all requirements	Went above and beyond the assignment	
Craftsmanship	Errors are noticeable and distracting or detract from the work.	Work has some mistakes, but they don't detract from the work.	Work has no errors and exceeds expectations.	
Correctness	The SQL results are not correct or meet only a minor part of the stakeholder requirements.	The SQL results address most stakeholder requirements but may contain spurious data.	The SQL results address all stakeholder or user requirements and are 100% correct.	
Use of SQL	The SQL code is messy and/or disorganized and does not correctly use aggregates, functions, or clauses.	The SQL code is somewhat messy. With some changes, the structure and organization could improve. There may be logic errors in the use of functions, aggregates, or clauses.	The SQL code is well written, is highly organized and structured, and correctly uses functions, aggregates, and clauses.	
Organization of Deliverable	The deliverable does not meet expectations in terms of overall structure and organization, spelling, and mechanics.	The deliverable meets expectations in terms of overall structure and organization, spelling, and mechanics.	The deliverable exceeds expectations in terms of overall structure and organization, spelling, and mechanics.	
			TOTAL	**/25**

COURSE OVERVIEW

Class Details

#	Module Name	Lessons and Workshops
SQL-01	**Introduction to SQL**	2.1.1 What Is SQL? 2.1.2 SQL Data Types 2.1.3 Relational Databases 2.1 Async: Review
SQL-02	**SQL Continued**	2.2.1 SQL Dialects 2.2.2 Exploring MySQL 2.2.3 SQL Introduction Review 2.2 Async: Managing Databases and Tables
SQL-03	**Basic SQL**	2.3.1 Querying 2.3.2 Basic Filters 2.3.3 Filters and Searches 2.3 Async: Best Practices
SQL-04	**Basic SQL II**	2.4.1 Aggregate Functions 2.4.2 Aggregates and Grouping 2.4.3 Updating Data 2.4 Async: SQL Security and SQL Injection
SQL-05	**Basic SQL III**	2.5.1 Keys and Joins 2.5.2 Joins (LEFT JOIN, RIGHT JOIN, OUTER JOIN, UNION) 2.5.3 Review and SQL Tips 2.5 Async: Database Servers
SQL-06	**Advanced SQL**	2.6.1 SELECT INTO and INSERT INTO 2.6.2 Subqueries 2.6.3 Null Values and Functions 2.6 Async: Data Warehouses
SQL-07	**Advanced SQL II**	2.7.1 Case Statements 2.7.2 SQL Views 2.7.3 Stored Procedures 2.7 Async: SQL Review II
SQL-08	**Final Project**	2.8.1 Project Hour I 2.8.2 Project Hour II 2.8.3 Project Hour III 2.8 Async: Project Hour IV

Class Assignments

#	Module Name	To-Dos Before Next Class	Canvas Assignments
01	**Introduction to SQL**	Ensure MySQL is installed and running correctly on your computer.	
02	**SQL Continued**		Quiz 1
03	**Basic SQL**		
04	**Basic SQL II**		
05	**Basic SQL III**		Quiz 2
06	**Advanced SQL**		
07	**Advanced SQL II**		Quiz 3
08	**Final Project**	Work on project.	**Project**: Submit final project.