Course syllabus: Introduction to databases

Prerequisites

To take this course, you don't need any previous database or coding experience. However, you must be eager to get started with coding!

Module 1

In this opening module you'll receive an introduction to the course and explore possible career roles that you could follow as a database engineer. You'll also review some tips around how to take this course successfully and discuss what it is that you hope to learn. As part of your introduction, you'll learn about the basics of databases and data and how they work.

You'll then receive an introduction to SQL, or Structured Query Language, the coding syntax used to interact with databases. Finally, you'll explore the basic structure of databases and discover the different types of keys they use.

By the end of this module, you'll be able to:

Explain what a database is and what it's used for.

Explain how data is related in a database and how tables organize data.

Differentiate between types of databases and keys.

And apply SQL syntax to create SQL commands.

Module 2

In module 2 you'll explore CRUD, or Create, Read Update and Delete operations. You'll begin with an exploration of SQL data types and learn how to differentiate between numeric data, string data and default values. You'll also embark upon several exercises in which you'll learn how to utilize these different data types within your database projects.

You'll then move on to learn how to Create and Read data within a database. You'll discover how to create databases and tables and populate them with data using SQL statements. Lastly, you'll explore the SQL statements used for updating and deleting data in a database. And to demonstrate your ability with CRUD operations, you'll complete exercises that will task you with creating and managing data.

By the end of this module, you'll be able to:

Differentiate between SQL data types.

Create and read records and tables in an existing database.

And update and delete records in an existing database.

Module 3

In the third module, you'll explore SQL operators and learn how to sort and filter data. You'll begin this module with a lesson on SQL operators. As part of this first lesson, you'll explore the syntax and process steps used to deploy SQL arithmetic and comparison operators within a database.

Next, you'll discover how to sort and filter data using clauses. The clauses that you'll learn about include the Order By clause, Where clause and Select Distinct clause. In each lesson item, you'll receive an overview of how each clause is used to sort and filter data in a database. You'll also view demonstrations of these clauses and then receive an opportunity to try them for yourself.

By the end of this module, you'll be able to:

Explain how SQL operators are used within a database.

And sort and filter data in an existing database.

Module 4

In module four, you'll learn about database design. In the first lesson, you'll receive an overview of how to design a database schema. As part of this overview, you'll learn about basic database design concepts like schema and find out about different types of schemas.

The next lesson focuses on relational database design. In this lesson, you'll explore how to establish relationships between tables in a database using keys. You'll also learn about the different types of keys that are used in relational database design, such as primary keys and foreign keys.

Finally, you'll receive a lesson on database normalization. In this lesson you'll investigate the key concepts around database normalization. You'll then learn about the concept of "normal form" and different types of normal form.

By the end of this module, you'll be able to:

Describe how tables are structured in a database.

Differentiate between types of database schema.

Define different types of keys in a database.

Maintain data integrity and relationships through the use of keys.

Define relationships between entities in a database.

Module 5
In the last module, you'll have an opportunity to recap what you learned and identify your strengths and target topics that you would like to revisit in this course.
Mark as completed