This course introduces you to a process for effectively planning and designing a functional, efficient database. Knowing how to plan a relational database is important to the success of the databases you create. Without planning, you cannot possibly know what the database needs to do, or even what information to include in the database. Planning a database is essential, and prevents the extra work of fixing data maintenance problems later on. The concepts are not specific to a particular software application and can be applied to any relational database management system.

Who Should Attend

This course is designed for students who need to learn database design essentials, typically in preparation for, or as a supplement to, a course on SQL such as SQL Querying: Fundamentals and courses on specific relational database platforms.

Course Objectives

In this course, you will perform steps to design a relational database, including gathering requirements, data modeling, and planning implementation.

You will:
- Follow an efficient process for designing a relational database
- Define the database conceptual model
- Define the database logical model
- Apply database normalization methods to improve the initial design of a database
- Complete the database design, including controls to ensure its referential integrity and data integrity

Course Outline

1 GETTING STARTED WITH RELATIONAL DATABASE DESIGN

Identify Database Components
Identify Common Database Design Problems
Follow a Database Design Process
Gather Requirements

2 DEFINING THE DATABASE CONCEPTUAL MODEL

Create the Conceptual Model
Identify Entity Relationships

3 DEFINING THE DATABASE LOGICAL MODEL

Identify Columns
Identify Primary Keys
Identify and Diagram Relationships

4 NORMALIZING DATA

Avoid Common Database Design Errors
Comply with Higher Normal Forms
5 FINALIZING THE DATABASE DESIGN
Adapt the Physical Model for Different Systems
Ensure Referential Integrity
Ensure Data Integrity at the Column Level
Ensure Data Integrity at the Table Level
Design for the Cloud