

DATABASE DESIGNING TRAINING COURSE

General Database Purpose and Structure

This lesson presents an overview of the entire course as well as an introduction to the reasons behind the growth of database management systems (DBMS). It explores the history of database use and the mistakes and dead-ends of the past to present the participants with a context in which to develop criteria for judging database design and effectiveness. This lesson also introduces the main types of DBMS structures.

Information Structure

This lesson differentiates between data and information structure. It expands on the central theme of information retrieval by introducing Structured Query Language (SQL). Practical examples of procedures for querying and reporting data are provided.

Information Retrieval

In this lesson, you will use several separate database tables to retrieve data by joining files in various ways. In addition, you will explore the kinds of information available to you in public-domain databases, as well as to non-SQL methods of information transfer and retrieval such as those used on the Web.

Information Analysis

You will be exposed to analysis techniques that identify common characteristics of data and that can help identify exceptions. Techniques suitable to large and small-scale databases are contrasted.

Data Modeling and Database Design

You will develop a conceptual database design using industry standard methodologies. Diagramming techniques will be used to design the "big picture" that provides a robust data model. This, in turn, will be used to convey the design to the database builders.

Relational Database Design and Implementation

In this lesson you will be exposed to the development of the logical design for a database using techniques such as normalization. Standard techniques will be used to take database design from the "big picture" to the actual table structure.

Databases and the System Development Project

This lesson describes the required components of an application system—and the techniques used to design and develop the non-database parts of such a system. Once you understand the building of an application, we will discuss organizational roles as they relate to implementation, maintenance, and security of database systems.

Security

In this lesson, the principles of security of data and systems are developed, and types of data loss and methods for preventing data loss are examined.

Ethics and Legal Issues

In this lesson, we will discuss legal and ethical issues as they relate to privacy and ownership of data and software systems.