



SQL FUNDAMENTALS

COURSE DURATION: 3 DAYS

PREREQUISITE: WINDOWS OR EQUIVALENT KNOWLEDGE

Introduction: Databases and the Web

- Overview
- The File System
- Databases and the ACID Test

An Overview of SQL

- The Role of SQL
- SQL History and Major DBMS Vendors

Relational Databases

- Queries and Recordsets
- Building a Simple SQL Query

More Parts of Relational Databases

- Tables
- Primary Keys, Foreign Keys, and Relationships

Retrieving Data with SELECT

- Comparison Operators for the WHERE Clause
- Apostrophes in Database Text
- Calculated Columns: Doing Math in Select Statements
- Select Distinct
- Selecting All Columns
- Selecting Data from the Database

Data Manipulation: INSERT, UPDATE, DELETE

- INSERT Statements
- UPDATE Statements
- DELETE Statements

Data Retrieval: More about SELECT

- ORDER BY
- Practicing with ORDER BY
- Practicing with Aggregate Functions
- Extended WHERE Conditions
- Practicing with Extended WHERE Clauses

Fine-Tuning Aggregate Functions

- GROUP BY
- The HAVING Clause
- Using GROUP BY and HAVING to Analyze Data

Querying Data Across Tables

- Basic Joins
- Selecting From Multiple Tables

Reusing Queries as Views

- Creating Views

Query Within a Query

- Subqueries
- Subqueries vs. Joins

Database Definition SQL

- CREATE TABLE
- Creating a Table for a Guest Book

Database Design

- Data Modeling
- Handling More than One Phone Number
- Adding Columns with ALTER TABLE

Establishing a Primary Key

- Auto-numbered Columns

Relationships Between Tables

- Normalization
- Normalizing the Guestbook Table
- Online Transaction Processing vs. Decision Support

Restructuring Tables

- Renaming Tables or Columns
- Adding or Deleting Columns
- Normalizing the Camp Sales Database

Data Integrity: Controlling What Goes Into a Database

- Default Values
- Setting Default Values
- Check Constraints
- Checking Input
- Creating Foreign Keys
- Defining Primary and Foreign Keys

Many-to-Many Relationships

Introduction to Transactions

Major SQL Statements