

## Course Overview

In this 2-day course (formerly called Access Level 3), you will learn advanced techniques for designing tables and working with queries and forms. First, you will review the three types of table relationships, plus learn how to enhance these relationships to provide automatic data updates and deletes. You will learn how to approach the task of designing a system of related tables by learning the rules of table design. These rules (called Normal Forms) must be applied in order to have well designed tables. You will use query wizards to find erroneous data. You will also learn how to join tables in a query using inner, outer, and self-joins to ensure you are seeing the data you want. You will also import and export data into and out of an Access database. Additionally, you will learn to use Action queries to modify data on a mass scale. You will also split one table into several tables to fix data duplication problems. You will use functions to perform advanced calculations in queries. You will create a basic form for a single table, and you will also create forms to accommodate two or three tables with various relationships between them. Finally, you will begin to develop user-friendly forms by adding dropdown lists (combo boxes), radio buttons (option groups), subforms, tabs, functions to calculate data and display custom messages, and command buttons to open other forms and refresh data.

## Course Preparation

Prerequisite Course: Access Comprehensive Introduction (formerly called Access Level 1&2) or equivalent experience. You should come to this class with a working knowledge of creating basic tables, setting single and multiple field primary keys, creating table relationships in the Relationships Window, creating multi-table queries that use Group By to perform math calculations, and creating reports.

## Course Topics

### Creating Table Relationships

- Naming Conventions
- Reviewing One-to-Many Relationships
- Reviewing Many-to-Many Relationships
- Reviewing One-to-One Relationships
- Creating Table Relationships
- Enforcing Referential Integrity
- Using Cascade Update
- Using Cascade Delete

### Theory of Table Design

- History of Relational Database Design
- About Primary and Foreign Key Fields
- First Normal Form
- Second Normal Form
- Third Normal Form
- Additional Design Considerations

### Using Query Wizards to Find Problems

- Finding Duplicate Values
- Finding Unmatched Records

### Joining Tables in a Query

- About Table Joins
- Querying on Unjoined Tables
- Creating an Inner Join
- Creating an Outer Join
- Creating a Self-Join

### Importing and Exporting Data

- Importing from another Access Database
- Importing Data from Excel
- Exporting Data to Excel
- Exporting Data to Word

### Using Action Queries

- Action Queries vs. Select Queries
- Creating a Make Table Query
- Creating a Delete Query
- Creating an Append Query
- Creating an Update Query

### Splitting a Table to Eliminate Duplicate Data

- Splitting a Table into Two Tables
- Creating New ID Numbers to Link the Tables
- Linking the Two Tables by the New ID Numbers

### Using Functions in Queries

- Calculating Price Increases
- Rounding Numbers
- Calculating Employee Vested Status
- Calculating Monthly Income
- Using Criteria with Calculations
- Understanding the Sequence of a Query
- Finding Help on Functions

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### **Working with Single-Table Forms**

- Creating a Form using the Form Wizard
- Viewing Data through a Form
- Modifying a Form using Design View
- Changing the Tab Order
- Generating the Next ID Number without AutoNumber
- Creating a Combo Box (Dropdown List) from a Table
- Creating a Combo Box from a Query
- Creating an Option Group (Radio Buttons)

### **Working with Multi-Table Forms**

- Creating a Form for a One-to-One Relationship
- Creating Tabs on a Form
- Main/SubForms for a One-to-Many Relationship
- Improving SubForm Appearance
- Main/Subforms for a Many-to-Many Relationship

### **Customizing Forms**

- Creating Command Buttons
- Using the IIF Function on a Form
- Modifying Text Box Properties
- Modifying Form Properties

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