

Course Outline



Tel: +44 (0) 118 979 4000 Fax: +44 (0) 118 979 4000

Email: training@ptr.co.uk Web: www.ptr.co.uk

Generic Relational Database Design

Course Description:

This course provides an introduction to relational database concepts, terminology and design principles. Through a variety of exercises, you will learn how to model a business enterprise using the entity-relationship approach to relational database design. You will learn data normalisation techniques and how to propose, evaluate, and choose between design alternatives. In addition, you will have hands-on experience creating a simple database and tables using Microsoft Access.

Pre-requisites:

None.

Course Content:

- **Introduction to Databases**
 - What Is A Database System?
 - What Is A Database?
 - Why Use A Database?
 - Data Duplication & Redundancy
 - Data Sharing
 - Central Administration
 - Types Of Databases
 - Heirarchical
 - Network
 - Relational
 - Relational Databases

Course Outline



Tel: +44 (0) 118 979 4000

Fax: +44 (0) 118 979 4000

Email: training@ptr.co.uk

Web: www.ptr.co.uk

- **Relational Database Design**
 - Business Needs Analysis
 - Database Specification
 - Identify Database & Programming Functions
 - Enterprise Rules
 - Data Modeling
 - Database Creation
 - The Design Phases

- **The Relational Data Model**

- **The Conceptual Data Model**

- **The Entity-Relationship Data Model**
 - Entities & Attributes
 - Simple & Composite Attributes
 - Single-Valued & Multi-Valued Attributes
 - Stored & Derived Attributes
 - Entity Types
 - Key Attributes
 - Entity Sub Types
 - Example
 - Relationships
 - Relationship Definition
 - Connectivity
 - Cardinality
 - Existence
 - Domain

- **Entity-Relationship Diagrams**
 - The Role Of E-R Diagrams
 - Construction Of The Erd
 - Entities
 - Attributes
 - Attribute Properties

21a Peach Street Wokingham Berkshire RG40 1XJ

Tel 0118 979 4000 **Fax** 0118 979 4035 **Email** training@ptr.co.uk **www.ptr.co.uk**

Registered Office: Grenville Court Britwell Road Burnham Bucks SL1 8DF Company Registered No: 2442290 – VAT registration No:532 1929 56

Course Outline



Tel: +44 (0) 118 979 4000

Fax: +44 (0) 118 979 4000

Email: training@ptr.co.uk

Web: www.ptr.co.uk

- **Entity-Relationship Diagrams**
 - No Value?
 - Unique?
 - Domains

- **Relationship Definition**
 - Optional One To Many Relationship :
 - Resolving One-To-One Relationships
 - Resolving Many-To-Many Relationships
 - Primary Key
 - Composite & Surrogate Primary Keys
 - Foreign Key
 - Where Should We Put The Foreign Key?

- **Testing Your Data Model**

- **Normalisation**
 - First Normal Form (1nf)
 - Second Normal Form
 - Third Normal Form
 - Normalisation Example
 - First Normal Form
 - Second Normal Form
 - Third Normal Form

- **Online Transaction Processing (OLTP) and Online Analytical Processing (OLAP) Database Design Concepts**
 - Beyond Third Normal Form
 - De-Normalization
 - Star Schemas
 - Multidimensional Data

- **Database Applications**
 - Database Management Systems
 - Client-Server Database Applications
 - N-Tier Database Applications

Course Duration:

1 Days

21a Peach Street Wokingham Berkshire RG40 1XJ

Tel 0118 979 4000 **Fax** 0118 979 4035 **Email** training@ptr.co.uk **www.ptr.co.uk**

Registered Office: Grenville Court Britwell Road Burnham Bucks SL1 8DF Company Registered No: 2442290 – VAT registration No:532 1929 56