Training Schedule
Database Design & Development

Database is a collection of data that is organized in a systematic way so that its contents can easily be accessed, managed and updated.The Database Design phase is a very important step for all IT projects developing systems that rely on a database to adequately store, query, import & export data and support reporting.

This course is an introduction to Database Design and Development focuses on the process of creating a database. It guides the student through the initial conception of the database. It covers gathering of requirements and business rules, the logical and physical design and the testing of the database. Students get hands-on experience by doing practices and developing databases for different scenarios.

Who will get the benefits from the Course?

Anybody can participate who have interest or intention to make career in this technology. B.E./B.Tech/B.C.A/M.C.A/B.Sc./M.Sc. students who wants to proceed their career in programming , Database Administration, Database Development, Database Architect must join this course. People transitioning into a database job can also join.

Course Objectives

After completing this course, students will be able to give a general definition of a relational database, to identify a variety of ways to gather database requirements, to define business rules for a database, to create an Entity design for a database, to normalize a design up to third normal form, to develop a database in a given DBMS, to run SQL Queries against sample data to test requirements and business rules etc.

Requirements

Basic computer skills are necessary to complete this course.

Technical Overview Training Course
- Course Introduction
- Why we are using Database?
- Database contains of what?
- What all you need for learning Database design and Development?

Skills Gained
The delegates will be introduced to:
- Relational Database
- Gathering Information
- Analyze the Requirements
- Define the Business Rules
- Database Design
- Normalization
- Review the Design
- Physical Implementation
- SQL
- Security
- Case Study

Database Design And Development -Course Contents

Session 1

WHO NEEDS A DATABASE?
- Define relational databases
- Understand the position of Relational Databases in the history of Databases
- Identify major Relational Database Management Systems
- Identify main characteristics of Relational databases
- Understand SQL's role in relational database
- Recognize some indications of where a database could be useful
- Define a statement of scope for a given database scenario

Session 2

GATHERING INFORMATION
- Review documents
- Discover relevant entities
- Discover attributes for database
- Prepare interview questions and follow up
- Prepare questionnaires
- Observe work flow for process and exceptions

Session 3

REQUIREMENTS AND BUSINESS RULES
- Use nouns from notes and observations
- Discover database elements
- Group elements into entities and attributes
- Define business rules
- Develop Use Case diagrams to model requirements

Session 4

DATABASE DESIGN
- Use the database modeling template in Microsoft Visio
- Create Entities and add attributes
- Determine the appropriate relationship between entities
- Resolve many to many relationships

with a linking table

Session 5

NORMALIZATION AND DESIGN REVIEW

- Evaluate entities against first three normal forms
- Three Normal Forms
- Adjust the relational diagram to reflect normalization

Session 6

PHYSICAL

- Implement a physical design of the database
- Logical ERDs.
- Choose appropriate data types for columns
- Enter sample data into tables

Session 7

SQL

- Name the main events in the development of SQL
- Run SELECT queries with a variety of criteria
- Join two or more tables in a query
- Use the Aggregate Functions
- COUNT
- AVG
- SUM
- MIN
- MAX
- INSERT
- UPDATE
- DELETE records

- Use SQL to test business rules

Session 8

IS IT SECURE?

- Analyze security needs and restrictions for users of the database
- Analyze threats to database integrity
- Understand the concepts of authentication and authorization
- Create logins and users
- Create roles

Session 9

PROJECT WORK

Develop a Database for Hospital Management System