
SQL Syllabus

Course Objectives: Learn about SQL – Structured Query Language

- ❖ Build database using Data Definition Language Statements Perform basic CRUD operations using Data Manipulation Language statements like Insert, Update and Delete Write and call Stored Procedures and Functions stored in database.
- ❖ Write and manage database triggers, cursors and Index.

Pre-requisite / Target Audience:

This sql server course can be taken by any beginner who wants to build career in Information Technology. The subscriber needs to have working knowledge of Windows Operating System.

Module 1: Introduction to Basic Database Concepts

In this module we learn about Basic concepts and advantages of DBMS and limitations of file management system ,and also about 3 data base models

- ❖ What is Data, Field, Record and database?
- ❖ Limitations of File Management System.
- ❖ Basic Concepts of Advantages of DBMS.
- ❖ Levels of Abstraction. Database Models.
- ❖ Exploring Relational DBMS
- ❖ Understanding Client and Server

Module 2: E-R Modeling and Diagram

In this module we learn about entity, attributes and relationship , identify the entities and attributes How to draw a E-R diagram and translating the E-R diagram in relation schema.

- ❖ Analyzing the Requirement
- ❖ Identify Entities and their Relationships
- ❖ Drawing E-R Diagram
- ❖ Conversion of E.R. Diagrams into Tables

Module 3: Normalization

In this module we learn about what is normalization, types of normalization, data before and after normalization, benefits of normalization.

- ❖ First Normal Form
- ❖ Second Normal Form
- ❖ Third Normal Form Practically Normalizing Tables

Module 4: Introduction to SQL Server

In this module we learn about SQL Server, history of sql server, types of system databases, communication between frontend and backend and sql server editions.

- ❖ What is SQL Server Version history and different editions
- ❖ Basic Features Components and Tools
- ❖ Starting and Stopping SQL Server Instances / Services
- ❖ Introduction to Management Studio
- ❖ Types of System Databases in SQL

Module 5: Introduction to SQL

In this module we learn about types of sql statements, databases in sql server, how to create a database, datatypes in sql server, and about DDL Statements.

- ❖ Basics of SQL Types of SQL Statements
- ❖ DDL, DML, DQL, DCL and TCL
- ❖ Create Database using Management Studio
- ❖ Datatypes in SQL Server
- ❖ Exploring DDL Statements on Table using Management Studio

Module 6: DDL and DML Statements

In this module we learn about how to create a table, alter and drop a table, and about DML statements, like insert update and delete statements.

- ❖ Why write statements in Frontends?
- ❖ Create, Alter and Drop Table Insert,
- ❖ Update and Delete Statement Truncate Statement

Module 7: Working with Queries (DQL)

In this module we learn about select statement, top, distinct string and arithmetic expressions, Sorting the data and about sub queries and where clause (condition).

- ❖ Understanding Select Statement
 - ❖ Usage of Top, Distinct, Null etc...keywords
 - ❖ Using String and Arithmetic Expressions
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- ❖ Exploring Where Clause with Operators
 - ❖ Using Advanced Operators
 - ❖ Sorting data using Order By clause
 - ❖ Working with basic of Sub Queries

Module 8: Aggregate Functions

In this module we learn about how to use aggregate functions like sum,mean,max,avg what is difference between having and where clause, group by clause rollup and cube operator.

- ❖ Using functions in Queries
- ❖ Using predefined functions ☐
- ❖ Count, Sum, Min, Max, Avg Group By and Having Clause
- ❖ Using Group By with Rollup and Cube

Module 9: Joins and Set Operations

In this module we will know about joins and types of joins how to join the tables and about Sub queries ,types of operators like union ,intersect and except and how to add the tables and relationship between them.

- ❖ Introduction to Joins Cross Joins
- ❖ Inner Join
- ❖ Outer Join
- ❖ Self Join
- ❖ Co-related Sub Queries
- ❖ Set Operations using Unions, Intersect and Except

Module 10: Implementation of Data integrity

In this module , we will learn correctness of data and types of integrity and types of constraints.

- ❖ Entity integrity
- ❖ Domain integrity
- ❖ Referential integrity
- ❖ Types of constraints

Module 11:Working with Constraints

In this module, we will learn about how to create a constraint,types of constraints,and difference between unique, not null and primary key constraints.

- ❖ Unique
 - ❖ Not NULL
 - ❖ Primary Key
 - ❖ Default Check Foreign Key
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