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SQL

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About Course

Microsoft SQL Server is a relational database management system (RDBMS) that supports a wide variety of transaction processing, business intelligence and analytics applications in corporate IT environments.

Differences between SQL and SQL Server. Type: SQL is a query language. It is used to write queries to retrieve or manipulate the relational database data. On the other hand, SQL Server is proprietary software or an RDBMS tool that executes the SQL statements

SQL SERVER

CURRICULUM

1 Introduction to Basic Database Concepts

What are Data, Field, Record, and database?
Limitations of File Management System.
Basic Concepts of Advantages of DBMS.
Exploring Relational DBMS
Understanding Client and Server

2 E-R Modeling and Diagram

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

3 Normalization

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

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4 Introduction to SQL Server

Learn with Example
Learn with Example
ALTER, DROP, RENAME, MODIFY
Learn with Example

5 Introduction to SQL

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

6 DDL and DML Statements

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

7 Working with Queries (DQL)

Understanding Select Statement
Usage of Top, Distinct, Null, etc...keywords
Using String and Arithmetic Expressions

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8 Aggregate Functions

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

9 Joins and Set Operations

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

10 Implementation of Data Integrity

Entity integrity
Domain integrity
Referential integrity
Types of constraints

11 Working with Constraints

Unique
Not NULL
Primary Key
Default Check Foreign Key

12 Implementing Views

- Introduction & Advantages of Views
- Creating, Altering, Dropping Views
- Advance Options while Creating a View
- SQL Server Catalogue Views

11 Data Control Language (DCL)

- Creating Users & Roles
- Granting & Revoking of Roles & Privileges
- Managing using Management Studio

12 Working with Indexes

- Introduction Clustered and Non-Clustered Index
- Creating and Dropping Indexes

13 Writing Transact-SQL (T-SQL)

- What is T-SQL?
- Scripts and Batches Declaring Variables
- Using Statements
- Working with Temp tables
- Error Handling
- Using System Functions / Global Variables
- Using Dynamic SQL

16 Working with Stored Procedures and Functions

- Introduction to stored procedures
- Benefits of Stored Procedures
- Creating, Executing Modifying, Dropping
- Input–Output and Optional Parameters
- The system defined SPsand Functions.
- User-defined Functions

17 Implementing Triggers

- Introduction to triggers
- Constraints vs Triggers
- Creating, Altering, Dropping triggers
- for/after/instead of triggers
- Using Rollback Tran

18 Working with Cursors

- Creating Cursors
- Cursors vs. Select
- Types of cursors
- Locks on cursors
- Advantages of cursors

19 Transaction Control Language (TCL)

Introduction Transactions process
Types of transactions (Implicit, explicit)
Working with Locks, Types of locks

20 Backup and Restore

Generating SQL Script
Executing SQL Script
Generating Change Script
Taking database Backup
Restoring database using backup
Attaching and Detaching of database

21 Advance Features

Pivot Table
Common Table Expression
Ranking Functions Using BLOB data type
Using XML data type

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