SQL Server

Programming Basic to Advance concepts

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**Objective**

This course has been designed for the beginners to help them understand the basics to advanced concepts of MSSQL programming language. After completing this tutorial, you will find yourself at a great level of expertise in SQL programming, from where you can take yourself to the next levels.

**Course Content (42 Hr)**

* **Introduction** (2 Hr)
  + Brief History of SQL
  + Relational Database
    - Table
    - Relationships
    - Primary Keys
    - Foreign Keys
    - Relational Database Management System
  + Normalization
  + SQL Statements
    - DDL - Data Definition Language
    - DML - Data Manipulation Language
    - DQL - Data Query Language
    - DCL - Data Control Language
* **SQL Server Setup** (1 Hr)
  + Installation
  + Query Tool
  + Session and SQL Editor
* **DQL – Select Statement (Part – I)** (6 Hr)
  + Exploring Tables
  + Operators
    - Mathematical
    - Comparison
    - Logical
    - Set
  + Clauses
    - Where
    - Group By
    - Having
    - Order By
    - Distinct
  + Functions
    - Aggregate Functions
    - Date Functions
    - String Functions
* **DDL – Data Definition Language** (3 Hr)
  + Create Table
    - Data Type
    - Primary Key
    - Foreign Key
    - Constraints
    - Null Concept
  + Alter Table
    - Add Column
    - Alter Column
    - Drop Column
    - Add Constraint
    - Drop Constraint
  + Drop Table
* **DML – Data Manipulation Language** (2 Hr)
  + INSERT
  + UPDATE
  + DELETE
  + Constraint Violation
* **DQL – Data Control Language** (1 Hr)
* Commit
* Rollback
* Understanding of Transaction and ACID Property
* **DQL – Select Statement (Part – II)** (6 Hr)
  + Sub Query
  + Co-related Query
  + Joins with multiple tables
    - Inner
    - Outer
* Union/ Union All
* **Programing Construct** (3 Hr)
  + Declare
  + Set
  + Conditional Construct
  + Looping Construct
  + Set
* **User Define Programming Objects** (6 Hr)
  + Store Procedure
  + Function
  + Views
  + Trigger
* **Error Handling & Query Optimization** (3 Hr)
  + Raising an error
  + Creating Index
  + Difference between Clustered Index and Non Clustered Index
  + B-Tree Structure
  + Reading Execution Plan
* **Complex Datatype** (3 Hr)
  + XML
  + JSON

**Project & Assignment – Part I (3Hr)**

**Project & Assignment – Part II (3Hr)**