



ASP .NET With C# / VB.net

- **Introduction of ASP.NET**
 - Architecture
 - Difference Between ASP and ASP.NET
 - Inline Technique & Code-Behind Technique
 - Code Render Blocks
 - Server Controls
 - Page Basics, Page lifecycle
 - Post back Request
 - View State, Directives

- **Server Controls**
 - Html Server Controls
 - Web Server Controls
 - Basic Web Controls
 - List Controls, Data Controls
 - Adv Controls, User Controls

- **Web Forms Architecture**
 - Page Class
 - Web Forms Life Cycle
 - Web Forms Event Model
 - Code-Behind

- **Caching in ASP.NET**
 - What Is Caching
 - Page-Level Caching
 - Page Fragment Caching
 - Optimizing Your ASP.NET Application
 - Application Caching

- **ADO .NET Prog.**
 - Architecture
 - Data Readers and Data Sets
 - Command Object
 - Transaction Programming
 - Procedure Execution
 - Data Adapter and Data Set
 - Data Tables
 - Data Relation
 - Data Views



- **ADO.NET and ASP.NET**

- Working with Data Controls
- Grid View
- Inserting, Updating, Deleting
- Sorting in Data Grid
- Paging in Data Grid
- Data Source Controls
- Dataset
- Details View
- Form View
- Data List
- Repeater Control
- Crystal Reports

- **XML PROGRAMMING**

- DTDs & XSDs
- Parsers
- SAX Model
- DOM Model
- XML Programming in .Net
- XML Readers
- XML Serialization

- **Data Access in ASP.NET**

- Data Source Controls
- Connection String Storage
- Grid View
- Details View
- Form View
- Object Data Sources
- List View
- Data Pager
- LINQ Data Source

- **STATE MANAGEMENT WITH ASP.NET**

- Context
- View State
- Cookie State
- Session State
- Session Tracking
- Application Object
- Session and Application Events



- **Debugging, Diagnostics and Error Handling**

- Debugging
- Application Tracing
- Page Tracing
- Error Handling

Basic of C#

- **Data Types in C#**

- Data Types
- Integer Types
- Floating Point Types
- Decimal Type
- Characters and Strings
- Boolean Type
- Conversions
- Nullable Types

- **Operators and Expressions**

- Operator Cardinality
- Arithmetic Operators
- Relational Operators
- Logical Operators
- Bitwise Operators
- Assignment Operators
- Expressions
- Checked and Unchecked

- **Control Structures**

- If Tests
- Loops
- Arrays
- Foreach
- More about Control Flow
- Switch

- **Object-Oriented Programming**

- Objects
- Classes
- Inheritance
- Polymorphism



- Object-Oriented Languages
- Components
- **Classes**
 - Classes as Structured Data
 - Methods
 - Constructors and Initialization
 - Static Fields and Methods
 - Constant and Read only
- **Methods, Properties and Operators**
 - Methods
 - Parameter Passing
 - Method Overloading
 - Variable-Length Parameter Lists
 - Properties
 - Operator Overloading
- **Characters and Strings**
 - Characters
 - Strings
 - String Input
 - String Methods
 - String Builder Class
 - Programming with Strings
- **Arrays and Indexers**
 - Arrays
 - System Array
 - Random Number Generation
 - Jagged Arrays
 - Rectangular Arrays
 - Arrays as Collections
 - Bank Case Study - Step 1
 - Indexers
- **Inheritance**
 - Single Inheritance
 - Access Control
 - Method Hiding
 - Initialization
- **Virtual Methods and Polymorphism**
 - Virtual Methods and Dynamic Binding
 - Method Overriding



- Fragile Base Class Problem
- Polymorphism
- Abstract Classes
- Sealed Classes
- Heterogeneous Collections

- **Formatting and Conversion**
 - ToString
 - Format Strings

 - String Formatting Methods

 - Type Conversions

- **Exceptions**
 - Exception Fundamentals
 - Structured Exception Handling
 - User-Defined Exception Classes
 - Inner Exceptions

- **Interfaces**
 - Interface Fundamentals
 - Programming with Interfaces
 - Using Interfaces at Runtime
 - Resolving Ambiguities

- **.NET Interfaces and Collections**
 - Collections
 - IEnumerable and IEnumerator
 - Copy Semantics and ICloneable
 - Comparing Objects
 - Generic Types
 - Type-Safe Collections

- **Delegates and Events**
 - Delegates
 - Anonymous Methods
 - Events

- **Introduction to Windows Forms**
 - Creating Windows Applications Using Visual Studio
 - Partial Classes
 - Buttons, Labels and Textboxes
 - Handling Events
 - List box Controls



- **Additional C# Features**
 - Auto-Implemented Properties
 - Implicitly Typed Variables
 - Object Initializers
 - Collection Initializers
 - Anonymous Types
 - Partial Methods
 - Extension Methods
 - Lambda Expressions
 - Language-Integrated Query (LINQ)

Basic of SQL

- **Introduction to SQL constructs**
 - Review of Basic SQL statements
 - Select, Project, Join
 - Describing Oracle tables
 - Restricting row returns
- **Joining Oracle tables**
 - Equi-join
 - Outer join
 - Hiding joins by creating views
 - Using IN, NOT IN, EXISTS and NOTEXISTS
 - Subqueries
 - Exercise – write a subquery
 - Correlated subquery
 - Non-correlated subqueries
- **Aggregation in SQL**
 - Count(*)
 - Sum
 - Avg
 - Min and max
 - Using the group by clause
- **SQL access methods**
 - Review of Basic joining methods
 - Merge join
 - Hash Join
 - Nested Loop join
 - Advanced SQL operators
 - Between operator



- **SQL Tuning**

- Introduction to rule-based optimization
- Introduction to cost-based optimization
- Collecting table and index statistics
- Using column histograms
- Changing the default optimizer modes
- Using TKPROF
- Using SQL*Trace
- SQL reusability within the library cache
- Table high-water mark
- Table striping and table partitions
- Using EXPLAIN PLAN
- Interpreting EXPLAIN PLAN Output
- Using indexes to improve performance
- Identifying full-table scans
- Re-writing SQL queries
- Using hints to improve SQL performance
- Using parallel query to improve performance
- Tuning sub-queries

Introduction to LINQ

- **Getting Started with LINQ in C#**

- Introduction to LINQ Queries
- LINQ and Generic Types
- Basic LINQ Query Operations
- Data Transformations with LINQ
- Type Relationships in LINQ Query Operations
- Query Syntax and Method Syntax in LINQ
- C# Features That Support LINQ
- Walkthrough: Writing Queries in C# (LINQ)

- **Standard Query Operators Overview**

- Query Expression Syntax for Standard Query Operators
- Classification of Standard Query Operators by Manner of Execution
- Sorting Data
- Set Operations
- Filtering Data
- Quantifier Operations
- Projection Operations
- Partitioning Data
- Join Operations
- Grouping Data



- Generation Operations
 - Equality Operations
 - Element Operations
 - Converting Data Types
 - Concatenation Operations
 - Aggregation Operations
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- **LINQ to Objects**
 - LINQ and Strings
 - LINQ and Reflection
 - LINQ and File Directories
 - How to: Query an ArrayList with LINQ
 - How to: Add Custom Methods for LINQ Queries
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- **LINQ to XML**
 - Getting Started (LINQ to XML)
 - Programming Guide (LINQ to XML)