**Web Designing+ React**

**Duration: 10 Days**

**WEB DESIGNING**

HTML

* Introduction to HTML
* Structure of HTML
* Attributes & Values
* Comments, Header
* Tags Image Tag
* Link Tags (Text &Image) Marquee Tag
* Table, List
* Form without Table
* Form with Table
* Practical Implementations
* Sign up page
* Login Page, Audio
* Video

CSS

* Introduction of CSS, Task on Form Creation and Table
* Types of Selector
* Types of CSS
* Property of CSS
* Border, Float
* Padding
* Margin
* Gradient, Opacity, Background
* Animation Properties-
* Transition Effects, Multiple Transition Effects
* Animation Effects of Css3, Keyframes
* Div. Creation,
* Menu Creation
* Layout Design
* Gallery Page,
* Page partitions,
* Templates

JAVA SCRIPT

* JavaScript Introduction
* Popups in JavaScript
* Variables, Functions, and Scopes
* Data Types in JavaScript
* Math, Number, and Boolean Objects
* Functions
* Parameters
* return with Functions
* Default Values
* Arguments Object
* Control Structures
* Exception Handling
* Conditionals and Loops
* Expressions and Statements
* JavaScript Operators
* Literals in JavaScript
* The Array Literal
* The Object Literal
* The String Object
* The Date Object
* Timings Methods

DOCUMENT OBJECT REFERENCE

* Document Object Model Essentials
* Generic HTML Element Objects
* Location & History Objects
* The Document & Body Objects
* Image Object
* Form Object
* Button Object
* Event Object
* Style Sheet & Style Objects
* Debugging

ADVANCED JAVA SCRIPT

* Advanced Functions in JavaScript  
   → Arrow Function  
   → Callback Functions   
   → Bind()  
   → Currying  
   → Chaining
* Typed Array
* Set and Map
* Cookies and Storage
* Important Features  
   → Spread Syntax  
   → Rest Parameters  
   → Getter and Setter
* Ajax
* JSON
* **Asynchronous programming using Javascript ( callbacks,promise, Fetch Api, Async/Await),**
* **Json-server**
* Object-oriented JavaScript (OOJS)
* Prototypal Inheritance
* Built-in Prototypes
* Functional Inheritance
* Closures
* Class Abstractions
* Name-spacing
* Polymorphism
* Encapsulation
* Asynchronous Execution and Timers
* Promises
* Await
* Sync

JAVA SCRIPT DESIGN PATTERNS

* OO Design Patterns
* JavaScript-specific Coding Patterns  
   → Singleton Pattern  
   → Module Pattern  
   → Revealing Module Pattern   
   → Factory Pattern
* Anti-patterns
* Object Creation Patterns
* Code Reuse Patterns

BOOTSTRAP

* Introduction to Bootstrap
* Grid System
* Responsive page creation
* Buttons
* Buttons Size
* Stripped Table
* Hover Rows Table
* Bordered Table
* Alerts
* Bootstrap wells
* Vertical Form

RESPONSIVE FORM CREATION

* Introduction to Custom Directives
* Creating Custom Attributes Directives
* Creating Custom Structural Directives
* Using HostListener and HostBinding
* Inputs and Configuration
* Pager
* Responsive Menu
* Dropdown
* Carousel

PROJECT

**REACT JS**

GITHUB

* Real-time environmental setup with GitHub

INTRODUCTION TO REACTJS & SETUP REACTJS ENVIRONMENT

* What React JS?
* Why React JS?
* What is Single Page Application?
* Why SPA?
* React JS Version
* What is CLI : create-react-app project name
* Advantage using CLI
* How to debug React JS application.
* Installation CLI
* Create a hello world example

BASIC FEATURES OF REACTJS & KEY FEATURES OF REACTJS

* React Concepts
* JSX
* TSX
* Render Elements
* Components and Props
* State and Lifecycle
* Handling Events
* Practice on above topics
* Conditional Rendering
* Lists and Keys
* FORMS

COMPONENT LIFECYCLE

* Understanding component lifecycle

INTRODUCTION TO FETCH API

* Network Call
* Interaction With Server
* Third Party Module(Axios)
* Live Data Fetching (JSON Server)

EVENT HANDLING IN REACT

* Understanding React event system
* Passing arguments to event handlers

WORKING WITH FORMS

* Controlled components
* Understand the significance to default Value prop
* Using react ref prop to get access to DOM element

ROUTING WITH REACT ROUTER

* Setting up react router
* Understand routing in single page applications
* Working with Browser Router components
* Configuring route with Route component
* Making routes dynamic using route params
* Working with nested routes
* Navigating to pages using Link and NavLink component
* Redirect routes using RedirectComponent

INTRODUCTION TO REDUX

* What is React Redux
* Why React Redux
* Redux Install and setup
* Actions
* Reducers
* Store
* High order component
* Understanding mapStateToProps and mapDispatchtToProps usage

PROJECT

**. Net Core**

Duration: 20 Days

INTRODUCTION TO .NET FRAMEWORK, C# LANGUAGES, ASSEMBLIES & GAC

* What is a .Net Framework and its components?
* Different .Net Framework versions and their Dependency
* The core of the .Net Framework and the Types of .Net Applications
* What are Base class Libraries and What is a Namespace
* How the Compilation process and Execution Process is done
* What is Portable Executable and its extensions?
* What is MSIL and Why MSIL instructions are Platform Independent Instructions
* What is Metadata and which type of Information does the Metadata Stores \
* What is CLR and what are the Components in CLR
* Data Types and declaring a Variable
* Value Type and Reference Type
* What is Implicit Casting and Explicit Casting?
* Difference between string and string Builder
* What is Boxing/Unboxing
* What are constants and Enums
* Operators in C#
* If, while, do while, switch
* For & Foreach
* Single dimension & multi dimension Array
* What is method overloading?
* Optional parameters
* What are Named Arguments?
* What is params Parameter?
* How to Pass argument by value, ref and out

OOPS CONCEPTS

* Introduction to OOPS and its principles
* Class and Objects
* Introduction to Constructor
* Types of Constructors
* Constructor Overloading
* Properties
* Static variables and Non-Static variables
* Static methods and Non-static methods
* Static Constructor
* This keyword
* Encapsulation and Data abstraction
* Garbage collector

OOPS CONCEPTS

* Introduction to Association
* Introduction to Inheritance
* Types of Inheritance
* Advantage of Inheritance
* Access Specifiers
* Method Overriding
* Introduction to Polymorphism
* Types of Polymorphism
* Static Binding and Dynamic Binding
* Method overloading
* Operator Overloading
* Understanding Abstraction
* Abstract methods
* Abstract Class Interface
* Abstract class vs Interface

EXTENDED C# LANGUAGE FEATURES

* What is the partial class, partial methods
* Extension Methods
* Anonymous Types
* Lambda Expression
* Tuples
* String Interpolation
* Null Conditional Operator
* Auto Property Initializer
* Dictionary / Index Initializer
* Expression-bodied function members
* What is name of Expression
* Async & Await

IO STREAMS

* What is a Stream and Types of Streams?
* How Files can be handled using FileMode, FileAccess, FileShare
* What is Reader & Writer?
* How to work with File System
* What is Serialization and Deserialization?

COLLECTIONS & GENERICS

* What are the Types of collections
* What is IEnumerable, ICollection, IList, IDictionary?
* What is ArrayList, HashTable, SortedList, Queue, and Stack?
* How to iterate using IEnumerable
* How sort using IComparer and IComparable
* What are the advantages of Generics and how they work at runtime?
* What are Generic methods and Generic collection classes?
* What is List and Dictionary?

INTRODUCTION TO ASP .NET CORE

* Introduction
* What is ASP.NET Core?
* ASP.NET Core Features
* Advantages of ASP.NET Core
* MVC Pattern Understanding ASP.NET Core MVC
* ASP.NET Core vs. ASP.NET MVC vs. ASP.NET Web Forms

ASP .NET CORE FIRST APPLICATION

* ASP.NET Core Environment Setup
* ASP .NET Core First Application
* Project Layout
* Understanding Life Cycle of ASP.Net Core Request

CONTROLLERS & ACTION METHODS

* Controllers Overview Action
* Methods and IActionResult object
* Passing data from Controller to View
* Understanding Action Selectors
* Action Filters Building Custom Action Filters
* Middleware
* Asynchronous Action Methods

VIEWS

• Introducing Razor View   
• Advantages of Razor View   
• Razor Syntax   
• Types of Views   
• Partial Views   
• Layout Pages

HELPERS

• Html Helpers   
• Built-In Html Helpers   
• URL helpers   
• Tag Helpers   
• Custom Tag Helpers

MODEL BINDING

• Model Binder Overview   
• DefaultModelBinder   
• Binding to Complex Classes   
• IFormCollection Model Binding   
• IFormFile Model Binder   
• Bind Attribute   
• TryUpdateModelAsync

VALIDATIONS & DATA ANNOTATIONS

• Data Annotations and Validations Overview   
• Validations with Data Annotation   
• Server Side and Client Side Validation   
• Custom Server side validation   
• Model level validation using IValidatableObject   
• Remote Validation   
• Anti-Forgery Tokens

SECURITY

• Authentication and Authorization   
• Implementing Security using ASP.NET Core Identity   
• Seeding Users and Roles   
• OAuth implementation   
• Social Sites Login

SQL INJECTION

• SQL Injection   
• Cross-Site Scripting (XSS)   
• HTTPS and HTTP headers   
→ X-XSS-Protection   
→ Content-Security-Policy   
→ X-Frame-Options   
→ Strict-Transport-Security (HSTS)   
→ X-Content-Type-Options

ASP .NET CORE – WEB CACHING

• Cache Tag Helpers   
• Memory Caching Introduction   
• In-Memory Caching   
• Response Cache **•** Distributed Cache

ENTITY FRAMEWORK CORE

• Entity Framework Requirements   
• What is ORM?   
• Database First Approach

CODE FIRST APPROACH

• Code First Approach   
• Model First Approach   
• Use of BO/Model/Entities   
• Basic CRUD Operations using Entity Framework   
• Writing Generic Class / Repository   
• Migrations   
• Linq with EF   
• Caching in Repository

WEB API AND JQUERY AJAX

• Introduction to Web API   
• Restful Convention   
• Building and Testing Web API   
• AJAX implementation using JQuery   
• Calling the Web API with JQuery Ajax   
• Data Transfer Object   
• Auto Mapper   
• IActionResult   
• Media Types   
• Creating a Web API that Supports CRUD Operations using EF

UNIT TEST

• Why do We Need Unit Test?   
• Setting Up the Unit Testing Framework   
• Facts, Theories and Inline Data   
• Asserts and Exceptions   
• Mocking and Integration Tests

WEB TECHNOLOGIES BEHAVIOR

• Introduction to Servers   
• IIS Server   
• Nginx server   
• Handling Requests and Server Working   
• Web Hosting Concepts

**DATABASE (SQL)**

**Duration: 5 Days**

INTRODUCTION, INSTALLATION & QUERIES

• Introduction to SQL   
• Basics of SQL Types of SQL Statements   
• DDL, DML, DQL, DCL and TCL   
• Datatypes in SQL Server

WORKING WITH QUERIES

• Understanding different query statements   
• Usage of Top, Distinct, Null etc...keywords   
• Using String and Arithmetic Expressions   
• Exploring Where Clause with Operators   
• Using Advanced Operators   
• Sorting data using Order By clause   
• Working with basic of Sub Queries

AGGREGATE FUNCTIONS

• Predefined functions   
• Using functions in Queries   
• Count, Sum, Min, Max, Avg Group By and Having Clause

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

WORKING WITH STORED PROCEDURES AND FUNCTIONS

• Introduction to stored procedures   
• Benefits of Stored Procedures   
• Creating, Executing Modifying, Dropping   
• Input–Output and Optional Parameters

VIEWS AND INDEXES

• Basic Views   
• Complex Views   
• Basic and Advance Indexes

BACKUP & RESTORE

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

Project

CLOUD COMPUTING

Duration: 5 days

**Introduction to Microsoft Azure**

Features of Azure

Azure Architecture

How Azure Works?

Microsoft Azure – Using the Azure Quickstart Centre

Microsoft Azure – Getting a Free Trial with Azure Quickstart Center

Storage

Azure Storage Account

Storage in Azure Cloud Shell

Azure Storage in Container App

Blob versioning

Microsoft Azure – Using Blob Versioning

Manage Blob Lifecycle

Microsoft Azure – Automatically Manage Azure Blobs Lifecycles

Microsoft Azure – Add Storage Blob Owner Role Assignment For Azure AD User

**Network**

Data Security

Azure Virtual Network

Microsoft Azure – Application Security with Azure Active Directory

**Compute**

Azure Virtual Machines

How to setup windows VM

What are Pre-built VM

Tips to Reduce Cost with Azure Virtual Machines

**Functions**

Monitoring Azure Functions

Microsoft Azure – Creating Azure Functions From VS Code

Microsoft Azure – Debugging Azure Functions using VS Code

Microsoft Azure – Deploy Azure Functions using VS Code

Microsoft Azure – Renaming an Azure Functions

Microsoft Azure – Simple way to Create a Function App

Microsoft Azure – Monitoring Azure Functions

Microsoft Azure – New Features in Azure Functions

Microsoft Azure – Using VS Code for Azure Function Projects

Microsoft Azure – Custom Handlers for Azure Functions

**Azure Services**

Microsoft Azure – Introduction to Quickstart Center

Microsoft Azure – Working with App Service Domains

Microsoft Azure – Create Web Apps in Azure

Microsoft Azure – Creating an App Service Plan

Microsoft Azure – Creating a Logic App of Consumption Type

Microsoft Azure – Azure App Service Managed Certificates

Microsoft Azure – Deploy a Static Web App

Microsoft Azure – Creating an HTTP Trigger with Azure Logic Apps

Microsoft Azure – Using JSON with Azure Logic Apps

Microsoft Azure – Configuring Log Analytics Data Retention

Microsoft Azure – Creating JSON Snippet For Policy Initiative Creation using CSV File

Microsoft Azure – Working with Files in Azure App Service

Microsoft Azure – Using Power Apps in VS Code

**Dashboards**

Microsoft Azure – Customizing Charts on Azure Dashboard

Microsoft Azure – Customizing Azure Dashboard Tiles

Microsoft Azure – Auto Refreshing Dashboards

Microsoft Azure – Pinning to Portal Dashboard

**Databases**

Database availability

Azure SQL Database

Security in Azure SQL

Microsoft Azure – Azure SQL Managed Instance Deployment Options

Microsoft Azure – Azure SQL Managed Instance

Introduction to Azure Cosmos DB

Microsoft Azure – Using C# in CosmoDB

Microsoft Azure – Choosing a Partition Key in Cosmos DB

Microsoft Azure – Introduction to Azure Data Factory

Microsoft Azure – Migrating From MySQL to Cloud

**DevOps**

Introduction to Azure DevOps

Create a Project in Azure DevOps

Create a Project in Azure using the Agile Process

Microsoft Azure – Developing ARM Templates using Azure Bicep

**Miscellaneous**

Microsoft Azure – Productivity Tips For Azure portal