Full Stack .Net Core 5 Diploma
Prepared By
Eng. Ahmed Samir Elgendy

Note: our diploma divided to 4 parts

Part 1: programming in html5 with java script and css3 (40 Hr)

Part 2: Querying-Data-with-Transact-SQL (Sql Sever) (20 Hr)

Part 3: Programming in C# with OOP (40 Hr)

Part 4: Developing ASP.NET Core web applications (40 Hr)

Tools

Part 1: VS Code

Part2: Microsoft Sql Server + Report builder

Part3 + Part4: Microsoft Visual Studio 2019 + Postman (APIs)

Part 1 (Overview to Web Technology)

• **Overview to Development Career Path**

• **Overview to Web Technology**

• **What is HTML**

• **What is CSS -- Media Query -- Bootstrap (Responsive Design)**

• **What is CSS Preprocessor Compiler (Less , Sass , Stylus)**

• **What is Javascript -- Jquery -- Angular -- React -- Vue -- Typescript -- ES6**

• **What is server side Code and client-side code**

• **What is Mean By Url + WWW**

• **What is web server**

• **What is Domain (.com , .org , .gov ..etc)**

• **What is proxy server**

• **What is Post back**

• **What is http -- State Less Protocol --One Way Protocol**

• **What is -- XML Http Request -- Ajax -- HTTP Client (Call/Back Without post/back)**

• **What is Long polling (Timer + Ajax)**

• **What is Web Socket**

• **What is SignalR**

• **What is web service**

• **What is API**

• **More topics about web technology**

Part 1 Con. (Overview To HTML 4)

- **Get Start With Visual Studio Code**

- **Extensions (--Auto Close Tag --CSS Peek --ESLint --Prettier – Code formatter --Path Intellisense --Live Server)**

- **HTML History and structure.**

- **Head Section & Body Section**

- **Comment In HTML**

- **Text Formating**

- **Different Between Tag , Element , Attribute (Id , Class , Style , Title)**

- **Links**

- **Images**

- **Iframe**

- **List (order list, unorder list , definition list , Neasted List)**

- **Table**

- **Forms**

- **Blocks (Div and Span)**

Part 1 Con. (Overview To Css)

- **Overview To CSS**

- **CSS History and structure**

- **How to use css in your code (Internal style , External style , inline style)**

- **Syntax and Selectors**

- **Comment In Css**

- **Colors**

- **Borders**

- **Outlines**

- **Background**

- **Text**

- **Fonts**

- **Width & Height**

- **Box Model (content,padding,border, margin)**

- **Links**

- **Lists**

- **DropDowns**

- **Tables**

- **Display**

- **Positions**

- **OverFlow**

- **Float**

- **Align**

- **Combinators**

- **Pesoudo class**

- **Pesoudo Elements**

- **Opacity**

- **Attr Selectors**

- **Forms**

- **Web Site Layout**

- **Font Awesome**

- **Media Query (Here Bootstrap Became Alternative)**

Part 1 (Overview To Bootstrap 4)

- **Intro. To Bootstrap**

- **Grid System (Xsmall - small - meduim - large - XLarge)**

- **Responsive Design Using Bootstrap**

- **How To Edite In Bootstrap File**

- **Bootstrap Components**

- **Colorsx**

- **Tables**

- **Images**

- **Jumbotron**

- **Alerts**

- **Buttons**

- **Badges**

- **Progress bar**

- **Spinners**

- **Pagination**

- **List**

- **Tabs**

- **Cards**

- **Dropdowns**

- **Navs**

- **Forms**

- **Collapse**

- **Accordion**

- **Modal**

- **Tooltip**

- **Popover**

- **Scrollspy**

- **Toast**

- **Filters**

- **Browse All Components on (https://www.w3schools.com/bootstrap4)**

- **Bootswatch -- Free Themses For Bootstrap**

- **Bootstrap Select**

Part 1 Con. (Overview To Java script ES5)

- **Introduction To Javascript**

- **JavaScript History**

- **Comment In Javascript**

- **What Is Dom and Bom**

- **Vaiables and Constant**

- **Datatypes (Variable Declaration)**

- **Parsing**

- **Operators**

- **Priority Of operations**

- **Statement (Conditional , Iterations , Jump)**

- **If , If-else and If..Else-IF Condition**

- **switch Case Statement**

- **For Statement**

- **While and do-while Statement.**

- **Continue and break Statement.**

- **Numbers Methods**

- **Date Methods**

- **Math Methods**

- **Array**

- **Array Methods**

- **Object**

- **JSON**

- **JSON Vs XML**

- **Functions**

- **Error Handling**

- **Events**

- **More Problem Solving Tasks with Demo**

Part 1 Con. (Overview To Jquery)

- **Introduction To Jquery**

- **Install jQuery in your project**

- **jQuery Syntax**

- **jQuery Selectors**

- **Events**

- **jQuery Effects**

- **Hide/Show**

- **Fade**

- **Slide**

- **Animate**

- **Stop**

- **Callback**

- **Chaining**

- **JQuery Get**

- **JQuery Set**

- **JQuery Add**

- **Remove**

- **Empty**

- **Jquery Css**

- **jQuery dimensions**

- **Traversing**

- **Parent**

- **Child**

- **Siblings**

- **jQuery Ajax**

- **jQuery CRUD Operations with backend API**

- **More Problem Solving Tasks with Demo**

- **Overview To Jquery UI**

  - **What is jQuery UI**

  - **Install jQuery UI in your project**

  - **Draggable**

  - **Accordion**

  - **Tabs**

  - **Date picker**

  - **Browse All Jquery UI Controls on (https://www.jqueryui.com/)**

- **Overview To Jquery Plugins**

  - **Flickerplate**

- **Moment**

- **chosen**

- **table2excel**

- **print-preview**

- **Popup**

- **Browse All Plugins on (https://www.jqueryscript.net/)**

Part 1 Con. (Overview To HTML5 + Css3)

- **Css3**
  - **Linear Grediant**
  - **Radial Grediant**
  - **Transform (Rotate , Translate , Scale , Skew)**
  - **Transition**
  - **Animation**
  - **Font Face**
  - **Browser Support**
  - **Media Query**

- **HTML5**
  - **What is HTML5 and CSS3**
  - **New elements (new Tags , new Attributes)**
  - **Audio and Video**

- **Drag and Drop**

- **Communicate with Files**

- **Graphic (SVG , Canvas)**

- **Animation**

- **Offline Data**

  - **Web Sql**

  - **Index DB**

- **xml http request (Ajax)**

- **Geolocation**

- **Web Worker**

- **Web Socket (Signal R)**

- **Deploy External Template**

- **Good Sources To Download Free Themses + Free Components**

Part 2 (Sql Server Database)

- **Introduction to database**

- **Versions and Editions**

- **Sql architecture**

- **Get Start With Sql Server Management Studio**

- **Comment In Sql Server**

- **variables**

- **Data types**

- **Sql categories (DDL , DML , DQL , DCL)**

- **DDL (Create , Drop , Alter)**

- **DML (Insert , Update , Delete)**

- **DQL (Select)**

- **DCL (Grant , Revoke)**

- **Truncate**

- **Use Wizard to Execute DDL and DML**

- **Overview On ERD Diagram**

- **How To Backup Your Database**

- **How To Restore Database**

- **How To Generate Database Script**

- **How To Create Schema and for what ?**

- **How To Create Class Diagram and for what ?**

- **How To Import/Export data between Sql Server and Excel File**

- **Query data**

- **Filter and sorting data**

- **Order By**

- **Case expression**

- **Relations (1:1 , 1:M , M:M)**

- **join (inner ,left ,right ,full ,cross ,self)**

- **Group By**

- **Having**

- **Index (Cluster and Non cluster index)**

- **Programming with sql**

- **Functions In Sql Server**

- **Built In Functions**

- **Aggregate Functions**

- **User Define Functions**

- **Views**

- **Procedures**

- **Triggers**

- **Transaction**

- **Introduction To Reporting Services (ssrs)**

Part 3 (Programming With C# and OOP)

Beginners Level In C# :

========================

• **Get Start With Visual Studio 2019**

• **Introduction to Programming**

• **Procedure Programming and Structured Programming**

• **What Is Function , Class , Namespace and Assemply**

• **What Is OOP**

•**.Net Framework Vs C#**

• **What is Design Pattern (Creational Patterns , Structured Patterns , Behavior Patterns)**

• **What is SOLID Principles**

• **What is Architecture**

• **Overview .Net Framework**

• **Overview on Console application**

• **Read/Write Line In C#**

• **Comment In C#**

• **Regions**

• **Snippets**

• **C# Data type (Primitive and non-primitive)**

• **What is stack and Heap**

•**.NET Data type**

• **Object , var and dynamic**

- **variables , Constant and readOnly varibale**

- **Naming of Varibales**

- **Casting (Implicit - inboxing & Explicit - unboxing)**

- **Checked and Unchecked Keyword**

- **Exception/Error Handling (Try .. Catch .. Throw .. Finally)**

- **Event Viewer**

- **Types of Exception**

- **Operators**

- **Priority Of Operations**

- **Statement (Conditional , Iterations , Jump)**

- **If , If-else and If..Else-IF Condition**

- **switch Case Statement**

- **For Statement**

- **While and do-while Statement**

- **Continue , break and Goto Statement**

- **Foreach statement**

- **Enumerator**

- **Array (Single dimension array - Multi dimension Array - Jagged Array)**

- **Array Methods**

- **List**

- **List Methods**

- **Functions (Return value , No Return value , with parameters , with no parameters)**

- **How to document your functions**

- **How To Append Functions To Class**

- **Optional parameter**

- **Params**

- **Call by value , reference and Out**

- **Overload function**

- **Generic Function**

- **Extension Method**

- **Function Refactor**

- **Debugging In C#**

- **Variable and property**

- **Indexer**

Intermediate Level In C# :

===========================

- **Introduction to Object Oriented Programming**

- **Class & object**

- **Abstraction**

- **Inheritance**

- **abstract Class , Sealed Class , Base class , Child class**

- **Static Members**

- **Interface**

- **Abstract Function**

• **Encapsulation**

• **Access Modifiers 'Private , protected , Internal , Protected Internal , Public'**

• **Polymorephism (Override , Overload)**

• **Virtual function**

• **Operator Overloaded**

• **Constructor (default Constructor , parametarized Constructor , Overload Constructor, Static Constructor)**

• **Destructor**

• **Dispose**

• **Partial Class**

• **Struct**

• **Enum**

• **Logical and physical class Name**

• **Attribute**

Advanced Topics In C# :

========================

• **Generic**

• **What is Generic**

• **Generic Class**

• **Generic Methods**

• **Generic List Class**

• **Generic with inheritance**

- **What is delegate**

- **Delegate**

- **Anonymous methods**

- **Lambda Expression**

- **Generic delegate**

- **Action**

- **Func**

- **predicate**

- **Synchronous Programming Vs Asynchronous Programming**

- **Why Asynchronous Programming**

- **What is Task?**

- **What is Thread?**

- **implement Asynchronous Programming**

- **Async and await**

LINQ And Entity Framework Core :

===================================

• **What is LINQ**

• **What is Entity Framework Core**

• **LINQ Query Methods**

• **CRUD Operation with Entity Framework Core**

• **Demo to explain dependency injection**

• **N-Tier Layers (Data Access Layer , Business Layer , Presentation Layer)**

Part 4 (ASP.NET Core 5 MVC + Web APIs)

- **Intro. To .Net Core (MVC "Razor Project" - APIs)**

- **Intro. To MVC**

- **Project Structure**

- **Create Web Site In MVC Project**

- **Adding Bootstrap In Your Project**

- **Html Vs Html Helper Vs Tag Helper**

- **_ViewImports**

- **Layout (Render Body - RenderSction)**

- **_ViewStart**

- **Partial View**

- **Custom Routing**

- **Workshop (Demo)**

  - **Adding External Template (Admin Dashboard " BSB Admin ")**

  - **Managing Layout + ViewImports + ViewStart**

  - **Custom Routing**

- **How To Pass Data From Action To View**

- **How To Pass Data From View To Action**

- **Repository**

- **CRUD Operation Using EF Core**

- **Tag Helper**

- **Validation (Client Side , Server Side)**

- **SingleTone Principle**

- **Dependency Injection**

- **Dependency Inversion ==> SOLID**

- **tightly coupled Vs Loosly coupled**

- **Base Demo**

- **Adding Connection String To AppSetting.Json**

- **Auto Mapper**

- **Work shop**
  - **CRUD Operation (Employee) with Tag Helper**
  - **Validation (Server Side)**
  - **Dependency Injection**
  - **Enhancing ConnectionString**
  - **Use Auto Mapper**

- **Inject In View**

- **Newtonsoft**

- **Ajax With Core MVC**

- **Filter Using Ajax**

- **Globalization/Localization**

- **Resource File**

- **Controlls**

- **Data Table (Data Grid)**

- **Paging**

- **Search (Filter)**

- **Sorting**

- **Jquery Plugins**

- **Area (Modul) - Controller - View - Model**

- **Upload File**

- **Remove File**

- **Send Mail "SMTP"**

- **Security (Microsoft Identity)**

- **Web APIs**

- **Concepts with demo**

  - **SDLC (software development life cycle)**

  - **System Analysis**

  - **System Design**

  - **Software methedology (Agile , WaterFull , ProtoType , Scrum)**

End of content, thank you