**MODULE 5 [ API Integration & Live Project]**

1. **Explain Area in MVC?**

* Area allows us to partition large application into smaller units where each unit contains separate MVC folder structure, same as default MVC folder structure.
* For example, large enterprise application may have different modules like admin, finance, HR, marketing etc. So an Area can contain separate MVC folder structure for all these.
* When you add an area to a project, a route for the area is defined in an AreaRegistration file.
* The route sends requests to the area based on the request URL. To register routes for areas, you add code to theGlobal.asaxfile that can automatically find the area routes in theAreaRegistrationfile.

1. **Explain Render Section in MVC?**

* **RenderSection** is a method that helps us determine the display position of content on websites.
* **@RenderSection (“Footer”, required: false)**: the meaning of the content displayed will not be required
* **@RenderSection (“Footer”, required: true)**: required content, if the View does not declare the name Section , we will get an error

1. **Which assembly is the MVC framework is defined?**

* The MVC framework is defined through System.Web.Mvc assembly. This is because this is the only assembly which contains classes and interfaces that support the ASP.NET Model View Controller (MVC) framework for creating Web application.

1. **Apply validations using data annotation attributes.**

* When you use the Data Annotations Model Binder, you use validator attributes to perform validation.
* The System.ComponentModel.DataAnnotations namespace includes the following validator attributes:
* Range – Enables you to validate whether the value of a property falls between a specified range of values.
* RegularExpression – Enables you to validate whether the value of a property matches a specified regular expression pattern.
* Required – Enables you to mark a property as required.
* StringLength – Enables you to specify a maximum length for a string property.
* Validation – The base class for all validator attributes.

1. **What is difference between JavaScript and jQuery?**

| [**JavaScript**](https://www.geeksforgeeks.org/introduction-to-javascript/) | | [**jQuery**](https://www.geeksforgeeks.org/jquery/) |
| --- | --- | --- |
| 1. | JavaScript uses JIT[Just in Time Compiler] which is a combination of interpreter and Compile and is written in C. It’s a combination of ECMA script and DOM (Document Object Model). | While JQuery Uses the resources that are provided by JavaScript to make things easier. It is a lightweight JavaScript library. It has only the DOM. |
| 2. | JavaScript uses long lines of code as an individual has to write the code own-self. | With JQuery, one has to write fewer lines of code than JavaScript. We just need to import the library and use the only specific functions or methods of the library in our code. |
| 3. | In JavaScript, we have to write extra code or move around to have cross-browser compatibility. | JQuery has an inbuilt feature of cross-browser compatibility. We don’t need to worry about writing extra lines of code or moving around in order to make our code compatible with any browser. |
| 4. | Pure JavaScript can be faster for DOM selection/manipulation than jQuery as JavaScript is directly processed by the browser and it curtails the overhead which JQuery actually has. | JQuery is also fast with modern browsers and modern computers. JQuery has to be converted into JavaScript to make it run in a browser. |
| 5. | We can make animations in JavaScript with many lines of code. Animations are mainly done by manipulating the style of an Html page. | In JQuery, we can add animation effects easily with fewer lines of code. |
| 6. | JavaScript is a language, obviously, it would be heavier than JQuery. | While JQuery is a library, derived from JavaScript hence, it is lightweight. |
| 7. | JavaScript is an independent language and can exist on its own. | JQuery is a JavaScript library. It would not have been invented had JavaScript was not there. jQuery is still dependent on JavaScript as it has to be converted to JavaScript for the browser in-built JavaScript engine to interpret and run it. |
| 8. | JavaScript is a programming language. | jQuery is an Application Programming Interface (API). |
| 9. | There are no special symbols to define JavaScript like JQuery. | There are special symbols to define JQuery. |
| 10. | The disadvantage of JavaScript is that it is not easy to use it. | The advantage of JQuery is the ease in which one can use JQuery. |

1. **What is LINQ?**

* LINQ (Language Integrated Query) is uniform query syntax in C# to retrieve data from different sources and formats.
* It is integrated in C#, thereby eliminating the mismatch between programming languages and databases, as well as providing a single querying interface for different types of data sources.
* For example, SQL is a Structured Query Language used to save and retrieve data from a database. In the same way, LINQ is a structured query syntax built in C# to retrieve data from different types of data sources such as collections, ADO.NetDataSet, XML Docs, web service and MS SQL Server and other databases.
* Use System.Linq namespace to use LINQ.
* LINQ queries return results as objects. It enables you to uses object-oriented approach on the result set and not to worry about transforming different formats of results into objects.

1. **What is difference between LINQ and Entity Framework?**

|  |  |
| --- | --- |
| **LINQ** | **Entity Framework** |
| LINQ only works with SQL Server. | It works with various RDBMS like Oracle, MySQL, SQL Server, DB2 |
| LINQ cannot generate the database based on model classes. | Entity Framework generates the database based on model classes |
| LINQ uses the Data Context class to interact with a database. | Entity Framework generates the DBContext class to interact with the database. |
| It supports only 1-1 relation while mapping the relational tables with classes. | It supports the 1-1, 1-\*, \*-1, \*-\* relation while mapping relation tables with classes |
| It will generate the DBML file (Database Mark up Language) and the file with 3 sections to represents the schema: csdl, msl,ssdl | It generates the .EDMX file (Entity Data Model Extension) |

1. **What is Data Annotation Validator Attributes in MVC?**

* Data annotations are nothing but certain validations that are used with models to validate the user input from users. Data Annotation attribute classes are present in System.ComponentModel.DataAnnotations namespace is a powerful way to check for errors and, if necessary, display messages to the user.

1. **What are AJAX Helpers in MVC?**

* AJAX Helpers are used to create AJAX enabled elements like as Ajax enabled forms and links which performs request asynchronously. Using Ajax helper you can submit your HTML form using Ajax so that instead of refreshing the entire web page only a part of it can be refreshed. Additionally, you can also render action links that allow you to invoke action methods using Ajax. AJAX Helpers are extension methods of AJAXHelper class which exist in System.Web.Mvc.Ajax namespace.

1. **What are required attributes for Ajax call?**

* When making an Ajax (Asynchronous JavaScript and XML) call, you typically use the XMLHttpRequest object or a more modern approach like the Fetch API. The required attributes for an Ajax call may vary slightly depending on the method used, but here are common attributes and considerations:

1. **URL (Uniform Resource Locator):**

* Specify the URL of the server-side resource you want to interact with.

1. **Method:**

* Define the HTTP method (e.g., GET, POST, PUT, DELETE) for the request.

1. **Asynchronous flag:**

* Set the asynchronous flag to true for asynchronous requests. This allows the web page to continue processing while waiting for the server's response.

1. **Callback function or Promise:**

* Specify a callback function or handle a promise to process the server's response when it is received.

1. **Request Headers:**

* Set any necessary HTTP headers using the setRequestHeader method. Common headers include "Content-Type" for POST requests, "Authorization" for authentication, etc.

1. **Data (for POST or PUT requests):**

* Include the data you want to send to the server, usually in the form of a query string or JSON object. Set the "Content-Type" header accordingly.

1. **Cross-Origin Resource Sharing (CORS):**

* Be mindful of CORS restrictions if making requests to a different domain. Ensure that the server allows requests from the domain where the JavaScript is hosted.

1. **Error handling:**

* Implement error handling to manage network errors or errors returned by the server.

1. **What is JsonResultType in MVC?**

* JsonResult is an ActionResult type in MVC. It helps to send the content in JavaScript Object Notation (JSON) format.

1. **What is the meaning of Unobtrusive JavaScript?**

* Unobtrusive JavaScript is a general term that conveys a general set of guidelines or margins to the term REST.
* REST is nothing but the Representational State Transfer.
* We can explain Unobtrusive JavaScript as- it is not your particular JavaScript code that you generally use in your markup page.
* Example
* In spite of using event attributes like
* 'onbuttonclick'
* 'onpageload'
* 'onsubmit'
* 'onclick'
* 'mouseover'
* Etc.
* Unobtrusive JavaScript, attaches element directly by their ID or class, in the presence of the other attributes.

1. **What are the sub types of ActionResult?**

* **ViewResult** - Renders a specified view to the response stream
* **PartialViewResult** - Renders a specified partial view to the response stream
* **EmptyResult** - An empty response is returned
* **RedirectResult** - Performs an HTTP redirection to a specified URL
* **RedirectToRouteResult** - Performs an HTTP redirection to a URL that is determined by the routing engine, based on given route data.
* **JsonResult** - Serializes a given ViewData object to JSON format
* **JavaScriptResult** - Returns a piece of JavaScript code that can be executed on the client
* **ContentResult** - Writes content to the response stream without requiring a view
* **FileContentResult** - Returns a file to the client
* **FileStreamResult** - Returns a file to the client, which is provided by a Stream
* **FilePathResult** - Returns a file to the client.

1. **Different way to return view in MVC?**

* There are many ways to return or render a view in ASP.NET MVC.
* **The View() Method:**

This method generates the HTML markup to be displayed for the specified view and sent to the browser.

* **The RedirectToAction() Method:**

This method redirects to a specified action instead of rendering the HTML. In this case, the browser receives the redirect notification and makes a new request for the specified action.

* **The Redirect() Method:**

This method redirects to a specified URL instead of rendering HTML. In this case, the browser receives the redirect notification and makes a new request for the specified URL.

* **The RedirectToRoute() Method:**

This method looks up the specified route into the Route table defined in global.asax and then redirects to that controller/action defined in that route.