**ASP.NET and General Web development**

1. What is a view state?

A view state is like a session state but for a specific page. It preserves the value of a page and controls round-trip.

1. Different view state management techniques
   1. Client-Side State Management Techniques - To maintain the state of values on the client’s machine, we use the client-side state management techniques
   2. Server-Side State Management Techniques - To maintain the state of values on the server’s machine, we use the server-side state management techniques
2. How would you achieve input validation in ASP.NET?

<https://docs.microsoft.com/en-us/aspnet/web-pages/overview/ui-layouts-and-themes/validating-user-input-in-aspnet-web-pages-sites>

1. What is bootstrap?

Bootstrap is the most popular CSS Framework for developing responsive and mobile-first websites

<https://www.w3schools.com/whatis/whatis_bootstrap.asp>

1. What is JIT?

Just-In-Time Compiler (JIT) is a part of Common Language Runtime (CLR) in .NET which is responsible for managing the execution of .NET programs regardless of any .NET programming language.

A language-specific compiler converts the source code to the intermediate language.

This intermediate language is then converted into the machine code by the Just-In-Time (JIT) compiler. This machine code is specific to the computer environment that the JIT compiler runs on.

1. Difference between .NET core and .NET framework
   1. .NET Core is used to create server applications that run on Windows, Linux, and Mac.
   2. .NET Framework is used to create Windows desktop and server-based application, including ASP.NET web applications
2. What is Entity Framework?

Entity Framework is an open source ORM framework for .NET applications supported by Microsoft.

* 1. It enables developers to work with data using objects of domain specific classes without focusing on the underlying database tables and columns where this data is stored

With the Entity Framework, developers can work at a higher level of abstraction when they deal with data and can create and maintain data-oriented applications with less code compared with traditional applications

1. What is and how do you use ADO.NET?

ActiveX Data Objects - ADO.NET is a set of classes that expose data access services for . NET Framework programmers. ADO.NET provides a rich set of components for creating distributed, data-sharing applications.

It is an integral part of the . NET Framework, providing access to relational, XML, and application data.

1. ASP.NET MVC vs ASP.NET core

The primary difference between ASP.NET MVC and ASP.NET Core is their cross-platform approach. ASP.NET Core can be used on Windows, Mac, or Linux, whereas ASP.NET MVC can only be used for applications on Windows

1. MVC and how does it work?

Model–view–controller is a software architectural pattern commonly used for developing user interfaces that divide the related program logic into three interconnected elements.

This is done to separate internal representations of information from the ways information is presented to and accepted from the user

1. MVC vs ASP.NET MVC

MVC (Model, View, Controller) is an Architect Pattern

ASP.NET MVC is an implementation of this pattern of Microsoft ASP.NET and you can use C#, VB.Net and other languages to programming on this platform

You also can build your application using MVC principles (for sample) in a Windows Forms application without any default implementation like ASP.NET MVC

1. Partial view and have you used it

A partial view is a Razor markup file ( . cshtml ) without an @page directive that renders HTML output within another markup file's rendered output. The term partial view is used when developing either an MVC app, where markup files are called views, or a Razor Pages app, where markup files are called pages

1. What is the Angular model, components, servers, and how you use them in a project?

Angular is a platform and framework for building single-page client applications using HTML and TypeScript. Angular is written in TypeScript. It implements core and optional functionality as a set of TypeScript libraries that you import into your applications

1. What is model binding?

ASP.NET MVC model binding allows mapping HTTP request data with a model. It is the procedure of creating . NET objects using the data sent by the browser in an HTTP request. Model binding is a well-designed bridge between the HTTP request and the C# action methods

1. How do you make a web API call from a view?

I believe this is the fetch API, which starts a request and receives a promise

<https://www.digitalocean.com/community/tutorials/how-to-use-the-javascript-fetch-api-to-get-data>

<https://dev.to/ramonak/javascript-how-to-access-the-return-value-of-a-promise-object-1bck>

1. How do you pass data from a view to a controller?

<form method=”post”>

1. Which class is used to make web API calls from models?

HttpClient

1. What is the return type of an Action in controller?

IActionResult

1. Ways to connect to database from MVC
   1. EF
   2. ADO.NET
2. What NuGet packages are needed with EF core?
   1. Microsoft.EntityFrameworkCore
   2. Microsoft.EntityFrameworkCore.Design
   3. Microsoft.EntityFrameworkCore.SqlServer
   4. Microsoft.EntityFrameworkCore.Tools
3. Strongly-typed vs. dynamic views

<https://docs.microsoft.com/en-us/aspnet/mvc/overview/views/dynamic-v-strongly-typed-views>

1. What framework did you use to connect the database to C#? (Interviewer did not accept EF Framework)

A .NET Framework data provider is used for connecting to a database, executing commands, and retrieving results

1. What do you do to get data from an API in Cacophony?  
   <https://api.cacophony.org.nz/>
2. What’s the difference between Javascript and Typescript?
   1. TypeScript is an object-oriented programming language developed by Microsoft Corporation, whereas JavaScript is the programming language for the web.
   2. TypeScript is an open-source language to build large-scale web apps, whereas JavaScript is a server-side programming language that helps to develop interactive web pages.
   3. Typescript is object-oriented. Javascript is not
3. Name and explain different positions and properties

Position

* + static
  + relative
  + fixed
  + absolute
  + sticky

Properties

* + text
  + list
  + border
  + font

<https://www.freecodecamp.org/news/css-position-property-explained/>

1. What is a viewbag?

A way to pass data from a controller to a view

1. What’s the difference between private and protected?

A private field can only be used within the class. A protected field can be used from within the class or classes that inherit from it.

1. What are partial views and when would you use one?
   1. In theory, the answer is: A partial view is a "sub-view" that you embed within a main view - something that you might reuse across multiple views, like a sidebar
   2. Views are the general result of a page that results in a display. It's the highest level container except the masterpage. While a partial view is for a small piece of content that may be reused on different pages, or multiple times in a page

<https://stackoverflow.com/questions/2043394/what-is-the-difference-between-a-view-and-a-partialview-in-asp-net-mvc>

1. What are ref and out?

ref is used to state that the parameter passed may be modified by the method. in is used to state that the parameter passed cannot be modified by the method. out is used to state that the parameter passed must be modified by the method

1. What is LinQ?

Language-Integrated Query (LINQ) is the name for a set of technologies based on the integration of query capabilities directly into the C# language.

Traditionally, queries against data are expressed as simple strings without type checking at compile time or IntelliSense support.

Furthermore, you have to learn a different query language for each type of data source: SQL databases, XML documents, various Web services, and so on.

With LINQ, a query is a first-class language construct, just like classes, methods, events

1. How would you get data from a controller to a view?

At the end of an ActionResult method, use:

return View([item]);

“item” is what you want returned, such as an Object

1. What is .NET framework?

<https://dotnet.microsoft.com/en-us/learn/dotnet/what-is-dotnet-framework>

1. ADO.NET

ADO.NET is a data access technology from the Microsoft .NET Framework that provides communication between relational and non-relational systems through a common set of components. ADO.NET is a set of computer software components that programmers can use to access data and data services from a database

1. Write a connection string for connection to a database

**Main fields to note:**

* Server (points to server)
* Catalog (point to name of DB)
* User id
* Password

**Other fields to note:**

* Persist Security Info
* MultipleActiveResultSets
* Encrypt
* TrustServerCertificate
* Connection Timeout

"Server=tcp:nikhils-p2.database.windows.net,1433;Initial Catalog=SocialDB;Persist Security Info=False;User Id=trainer;Password=Password@1234;MultipleActiveResultSets=False;Encrypt=True;TrustServerCertificate=False;Connection Timeout=30;"

1. Where do you write the connection string?

appsettings.json

1. What is REST?

A REST API (also known as RESTful API) is an application programming interface (API or web API) that conforms to the constraints of REST architectural style and allows for interaction with RESTful web services.

REST stands for representational state transfer and was created by computer scientist Roy Fielding

1. What are some events in ASP.NET (i.e., its lifecycle)?

<https://docs.microsoft.com/en-us/previous-versions/aspnet/ms178472(v=vs.100)>

1. Write a code down on paper that will take an input list, count how many times an element appears in that list, and then output ONLY the elements that appear more than once, including the count itself
2. How do you create a data access layer using Entity Framework?

<https://blog.magnusmontin.net/2013/05/30/generic-dal-using-entity-framework/#:~:text=Start%20by%20creating%20a%20new,be%20included%20in%20the%20model>

1. What does migration do?

The Migrations feature

enables you to change the data model and deploy your changes to production by updating the database schema without having to drop and re-create the database

1. What is the order of the CSS box model?

In CSS, the term "box model" is used when talking about design and layout.

The CSS box model is essentially a box that wraps around every HTML element.

It consists of: margins, borders, padding, and the actual content.

The image below illustrates the box model:

Graphical user interface

Description automatically generated

1. How would you add a link in HTML?

<a href=”[url]”>The link’s message here</a>

1. How would you add an image that opens a new window when clicked?

Graphical user interface, text

Description automatically generated

1. How would you implement a button that hides paragraphs when clicked?

* Assign the same class name to every <p> element
* Call a Javascript function for a button when it is clicked
* Within the function, grab the elements by class name and iterate through each one, setting the .style.display to ‘none’.

Text

Description automatically generated