Full Stack Developer (ASP.NET Core + Angular + SQL Server) Interview Questions
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1. ASP.NET Core (Backend) Questions

Basics:
- What is ASP.NET Core and how is it different from ASP.NET MVC?
- Explain the project structure of ASP.NET Core.
- What are Controllers, Actions, and Routing?
- What are Middleware and their role in request pipeline?
- Explain Dependency Injection (DI) in ASP.NET Core with an example.
- What are Filters? Types of filters?
- What is Configuration in ASP.NET Core?
- What are Tag Helpers?

Intermediate:
- Difference between IActionResult and ActionResult.
- What is Model Binding and Model Validation?
- Explain Repository Pattern with an example.
- What is the difference between AddScoped, AddTransient, and AddSingleton?
- How do you implement Exception Handling in ASP.NET Core?
- Difference between REST API and Web API.
- What are Data Transfer Objects (DTOs)? Why use them?
- How do you implement CORS in ASP.NET Core?
- What is Authentication vs Authorization?

Advanced:
- Explain JWT Authentication flow.
- How to secure APIs with JWT?
- What are Claims and Roles in ASP.NET Core?
- What is Middleware vs Filters difference?
- How do you implement Caching in ASP.NET Core (Memory cache, Distributed cache)?
- What is Logging in ASP.NET Core?
- How do you implement Unit Testing in ASP.NET Core?
- How do you use async/await in Web API?
- What is the difference between IEnumerable, IQueryable, and List in C#?

2. Angular (Frontend) Questions

Basics:
- What is Angular and why use it over plain JavaScript?
- Explain Components, Templates, and Modules.
- What is Data Binding? Types (One-way, Two-way).
- What are Directives? (Structural vs Attribute).
- Difference between ngIf and ngSwitch.
- What are Pipes? Built-in pipes vs Custom Pipes.
- Difference between Template-driven and Reactive Forms.

Intermediate:
- What is Dependency Injection in Angular?
- Explain Services and how to create a Service.
- What is RxJS? Explain Observable and Observer.
- Difference between Observable and Promise.
- What are Subjects, BehaviorSubject, ReplaySubject?
- What are Angular Lifecycle Hooks?
- Explain Routing and Lazy Loading in Angular.

- What is Interceptor in Angular?
- How do you handle HTTP calls with HttpClient?

Advanced:
- What is Change Detection in Angular?
- Difference between ngOnChanges and ngDoCheck.
- What is State Management in Angular? Explain NgRx basics.
- How do you secure Angular routes? (Route Guards: CanActivate, CanDeactivate).
- What is Ahead-of-Time (AOT) compilation vs Just-in-Time (JIT)?
- What is Angular Universal (SSR)?
- How do you optimize Angular performance?
- How do you implement JWT Authentication in Angular with Interceptor?

3. SQL Server Questions

Basics:
- What is SQL vs T-SQL?
- What are Primary Key, Foreign Key, Unique Key?
- What is Normalization and its types?
- Difference between Clustered and Non-Clustered Index.
- What is the difference between DELETE, TRUNCATE, and DROP?
- What is a View?
- What are Stored Procedures?
- What are Functions in SQL Server (Scalar vs Table-Valued)?

Intermediate:
- Explain Joins (INNER, LEFT, RIGHT, FULL).
- Difference between WHERE and HAVING.
- What are Transactions? Explain ACID properties.
- What is Deadlock? How do you resolve it?
- Difference between UNION and UNION ALL.
- What is CTE (Common Table Expression)?
- How do you optimize SQL queries?
- What is Index fragmentation?

Advanced:
- What are Triggers in SQL Server?
- What is the difference between Temporary Tables and Table Variables?
- What is Execution Plan in SQL Server?
- How do you handle performance tuning in SQL?
- How do you implement pagination in SQL Server?
- How do you write a query to find the nth highest salary?
- What is Difference between OLTP and OLAP databases?

4. C# Core Questions

- Difference between Class and Struct.
- What are Access Modifiers in C#?
- Difference between Abstract class and Interface.
- What is Inheritance? Explain with an example.
- What is Polymorphism? (Compile-time vs Runtime).
- What is Encapsulation?
- What is Abstraction?
- Difference between ref and out parameters.
- What is Garbage Collection in C#?
- What is async/await? Explain with an example.

- Difference between Value Types and Reference Types.

5. Coding Questions

C#:
1. Reverse a string without using built-in functions.
2. Find the second highest number in an array.
3. Write a program to check if a string is a palindrome.
4. Swap two numbers without using a third variable.
5. Print Fibonacci series up to n terms.
6. Count occurrences of each character in a string.

SQL:
1. Write a query to find the 2nd highest salary.
2. Write a query to get employees who don't have a manager.
3. Write a query to find duplicate rows in a table.
4. Write a query to display the top 5 employees by salary.
5. Write a query to get employees who joined in the last 30 days.

Angular:
- Create a component with two-way data binding.
- Implement a search filter using a custom pipe.
- Create a service and consume it inside a component.
- Write code to implement route guard.
- Write code to consume REST API using HttpClient.

6. HR / Behavioral Questions

- Tell me about yourself.
- Why do you want to join a product-based company?
- What projects have you worked on?
- What challenges did you face in your last project and how did you solve them?
- Where do you see yourself in 3 years?
- How do you handle pressure and deadlines?