

## Full Stack .NET Developer Interview Questions

### .NET Core & C#

1. What is Middleware in .NET Core? Can we create custom middleware?
2. What are the four pillars of OOP?
3. Difference between Abstract Class and Interface?
4. What is the SOLID principle?
5. What is Dependency Injection?
6. Difference between .NET Framework and .NET Core?
7. Why do we use the using keyword in C#?
8. Why do we use Delegates in C#?
9. Difference between Value Type and Reference Type?
10. What is Authentication and Authorization?
11. What is JWT Token-based Authentication? What do we store in a JWT token?
12. What is a Constructor and its types?
13. What is Inheritance and its types?
14. Difference between Function Overloading and Function Overriding?
15. What is Serialization and Deserialization?
16. What is Asynchronous Programming in C#?
17. What are Access Specifiers in C#?
18. Why do we use ref, out, and in keywords?
19. Difference between IEnumerable and IQueryable?
20. What are Design Patterns in .NET?
21. What is Routing in ASP.NET Core?
22. How to handle Global Exceptions in .NET Core?
23. Difference between PUT and PATCH in Web API?
24. How to implement Versioning in Web API?
25. What is DTO (Data Transfer Object), and why use it?
26. What is appsettings.json file in .NET Core?
27. What is DbContext and why do we use it?
28. What is Kestrel vs IIS in .NET Core hosting?
29. What is an Access Token, and how is it used in securing .NET Core apps?

30. How does .NET Core handle Logging and Monitoring?

31. What is CQRS pattern, and when should it be used?

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## ❖ SQL & Database

32. What are Joins in SQL? Explain Inner Join, Full Join, and Self Join.

33. What are the types of Joins?

34. Difference between WHERE vs HAVING?

35. What are Indexes and Constraints in SQL?

36. Difference between Primary Key and Unique Key?

37. What are Stored Procedures?

38. What are Cursors and Aggregate Functions?

39. Difference between DELETE vs TRUNCATE vs DROP?

40. What is Normalization and Denormalization?

41. How to find the Nth highest salary in SQL?

42. Write a query to get the Total Marks of Students.

43. Write a query to find the Second-Highest Salary in SQL.

44. Write a query to get Employees from a Particular Department.

45. Write a query to Count Employees in Each Department.

46. Write a query for Left Join in EF Core.

47. What is a Temporary Table in SQL, and where is it used?

48. Clustered vs Non-Clustered Index (with examples).

49. Difference between SQL and NoSQL Databases.

50. Types of Functions in SQL.

51. Candidate Key vs Composite Key in SQL.

52. Composite Key vs Primary Key vs Unique Key.

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## ❖ Angular

53. Angular vs AngularJS?

54. What is a Component and Nested Component?

55. What are Lifecycle Hooks in Angular?

56. Explain Data Binding and Directives.

57. What are Pipes and Custom Pipes?
  58. Difference between Template-driven vs Reactive Forms.
  59. What are Auth Guards and Route Guards?
  60. Explain Angular Architecture and Single Page Application (SPA).
  61. What is Lazy Loading in Angular?
  62. What are Services and Dependency Injection in Angular?
  63. What is RxJS? What are Observables and Async Pipe?
  64. Difference between Observable vs Promise.
  65. Difference between @Input vs @Output Decorators.
  66. Difference between @ViewChild vs @ViewChildren.
  67. What is AOT (Ahead-of-Time) Compilation?
  68. How do you handle API calls in Angular?
  69. How do you Pass Token in Angular (using Interceptor)?
  70. How do you handle Errors in Angular?
  71. What are Angular Guards?
  72. What is NgZone in Angular?
  73. Difference between switchMap, mergeMap, concatMap, and exhaustMap.
  74. Difference between a Resolver and a Guard in Angular's routing?
  75. How do you ensure State Management in Angular?
  76. How do you share Data between Components?
  77. What is Angular Universal?
  78. How can you optimize Angular application performance?
  79. Which libraries in Angular are used to manage token expiry?
  80. What is an Injector in Angular?
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## Cloud & DevOps (Azure)

81. What is CI/CD in Azure DevOps?
82. How does CI/CD work in Azure DevOps?
83. What is an Azure Function, and when do you use it?
84. What is Azure Service Bus and why use it?
85. How do you handle Logging and Monitoring in Microservices?

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- 86. How to build Microservices in .NET Core?
  - 87. How does Azure Service Bus process messages?
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#### ❖ Practical & Problem-Solving

- 88. How to reverse a string in C#?
  - 89. LINQ Pagination Example using Skip() and Take().
  - 90. Get employees where Department = “.NET Developer” (SQL + LINQ).
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#### ❖ Behavioral / HR

- 91. Describe a challenging bug you fixed and your approach.
  - 92. How do you mentor junior developers in your team?
  - 93. How do you handle work under a tight deadline?
  - 94. Share an example of conflict resolution within a team.
  - 95. What challenges have you faced in your projects?
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#### ❖ Best Practices & Advanced

- 96. Explain the benefits of RESTful Services.
- 97. What are the principles of RESTful APIs?
- 98. Explain Token Expiry and its importance in security.
- 99. Limitations/Disadvantages of JWT Token.
- 100. Explain SOLID Principles with examples