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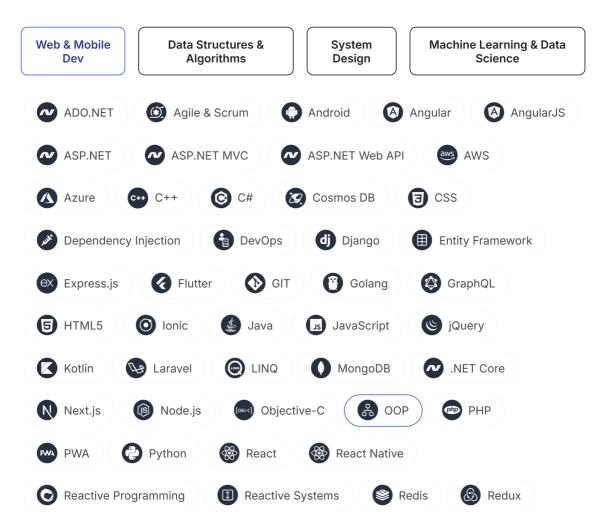


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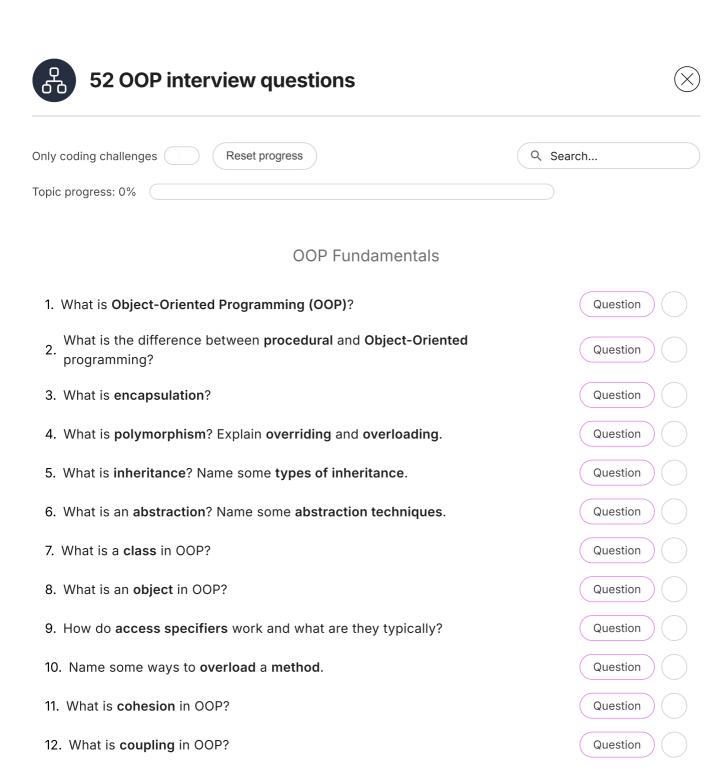
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Class Relationships and Design

13. What is a constructor and how is it used?	Question) (
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https://devinterview.io/questions/web-and-mobile-development/oop-interview-questions/

Question

15. Compare inheritance vs. mixin vs. composition.	Question
16. Explain the concept of an interface and how it differs from an abstract class.	Question Question
17. Can a class have multiple parents in a single-inheritance system?	Question Question
18. How would you design a class to prevent it from being subclassed?	Question Question
19. Explain the 'is-a' vs 'has-a' relationship in OOP.	Question Question
20. Explain how aggregation relationship is represented in OOP.	Question Question
21. What is method overriding, and what rules apply to it?	Question Question
22. Describe the use of static methods and when they are appropriate. Advanced OOP Concepts	Question Question
23. What is multiple inheritance and what are some of its disadvantages?	Question Question
24. Can you explain the 'diamond problem' in multiple inheritance?	Question Question
25. How does OOP languages support polymorphism under the hood?	Question Question
26. What are generics , and how can they be useful in OOP ?	Question Question
27. Explain the concept of object composition and its benefits.	Question Question
What is Liskov Substitution Principle (LSP)? Provide some examples of violation and adherence .	Question Question
29. What is the dependency inversion principle?	Question Question
30. How can the open/closed principle guide object-oriented design?	Question Question
31. Describe how the Interface Segregation Principle affects system design.	Question Question
32. What is a mixin, and how does it differ from traditional inheritance?	Question Question
Practical Use and Patterns	
33. How would you refactor a class that has too many responsibilities?	Question Question
34. Describe a singleton pattern and discuss its pros and cons.	Question Question
35. What is a factory method, and when should it be used?	Question Question
36. Explain the builder pattern and where you might apply it.	Question Question
37. What is the prototype pattern , and how does it relate to OOP ?	Question Question
38. When would you use the Adapter pattern?	Question Question

39. Can you explain the use of the Decorator pattern ?	Question Question
40. Describe the Observer pattern and a scenario in which you might use it.	Question Question
41. What are the advantages of using the Command pattern?	Question Question
42. How does the Strategy pattern provide flexibility in objects?	Question Question
OOP Best Practices	
43. What are some common OOP design anti-patterns?	Question Question
44. How do you ensure that your objects are properly encapsulated?	Question Question
45. Name some techniques for reducing coupling between classes.	Question Question
46. How does immutability help in object-oriented design , and how can it be implemented?	Question Question
What tools or techniques would you use to document an object-oriented design?	Question Question
48. How do you address circular dependencies in an OOP system?	Question Question
49. Explain how to apply unit testing to object-oriented code.	Question Question
What strategies can be used to safely refactor legacy object-oriented code?	Question Question
How can the principles of OOP help in achieving a modular and maintainable codebase ?	Question Question
How do you balance the use of OOP principles with performance considerations in a system design?	Question Question

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