

Core Java Interview Reading Questions

Lesson-1- Introduction to Java

1. Explain the execution flow of a Java Program.
2. What are source code and byte code files in Java?
3. Why is Java termed as a platform-neutral or independent language?
4. What are the components of JRE and its functionalities?
5. What is the importance of JIT?
6. What is the difference between JVM, JRE, and JDK?

Lesson-2- Fundamentals

7. Describe the difference between equals() method and equality operator (==) in Java?
8. Explain String pool in Java?
9. Difference between StingBuilder vs StringBuffer.
10. What is Thread Safe and Why String thread-safe in Java?
11. Utility class vs Immutable class?

Lesson-3-Class and Objects

12. What is Immutable? Tell the Immutable APIs.
13. Speak to difference between a static variable and static method in java.
14. What is the purpose of using OOPs concepts?
15. What are the main features of OOPs?
16. What is the difference between Heap and Stack Memory in java?
17. What is a singleton class in Java? How do you implement a singleton class?
18. What is an immutable class in Java? How do you implement an immutable class?
19. Describe how Java works as “pass by value” or “pass by reference” phenomenon?

Lesson-5- Inheritance, Abstract class, Interfaces and Object methods

- 20. How does Java achieve polymorphism?
- 21. In Java, if you need to handle multiple objects (e.g., three or four) in different ways, how would you design and implement a solution for this?
- 22. Using relevant properties highlight the differences between interfaces and abstract classes?
- 23. Overloading vs Overriding.
- 24. Regular class vs Abstract class.
- 25. Difference between Abstract class and Interface.
- 26. Why do you need to override object methods(toString(), equals() and hashCode())?
- 27. Purpose of Java Reflection Library.

Lesson-6-Inner Class

- 28. Why would you use an inner class in Java? What are the different types of inner classes in Java?
- 29. How does a static nested class differ from a non-static inner class?
- 30. What is an anonymous inner class, and when would you use one?
- 31. Can a local inner class access local variables of the enclosing method?
- 32. Differentiate between Comparable and Comparator in the context of Java?

Lesson 8-11- Java Collection Framework

- 33. Explain the hierarchy of the Collection framework in Java?
- 34. Explain the various interfaces used in the Collection framework?
- 35. Difference between ArrayList and LinkedList?
- 36. Differentiate between List and Set in Java?
- 37. Differentiate between Iterator and ListIterator in Java?
- 38. Differentiate between HashSet and TreeSet. When would you prefer TreeSet to HashSet?

- 39. Can you add a null element into a TreeSet or HashSet?
- 40. What is a priority queue in Java?
- 41. Differentiate between HashSet and HashMap?
- 42. Explain fail-fast and fail-safe iterators. Differentiate between them?
- 43. Describe an internal implementation of HashMap?
- 44. How many types of collection frameworks are there in Java?

Lesson-12-Exception Handling

- 45. Speak to how exception handling is done in Java.
- 46. Differentiate between Checked Exception and Unchecked Exceptions in Java?
- 47. How are the keywords final, finally and finalize different from each other?
- 48. Explain Java Exception Hierarchy?
- 49. Explain volatile and transient variables in Java? (Not Covered in FPP – But prepare it)

Lesson-13-Files and Databases

- 50. What are character streams in Java, and how do they differ from byte streams?
- 51. How do InputStreamReader and BufferedReader work together in Java I/O operations?
- 52. What are the advantages of using Scanner over BufferedReader for reading input in Java?
- 53. What is the role of OutputStreamWriter in Java, and how does it differ from FileWriter?
- 54. What are the main steps involved in connecting to a database using JDBC?
- 55. What is a PreparedStatement in JDBC, and how does it help prevent SQL injection attacks?
- 56. What is the difference between executeQuery(), executeUpdate(), and execute() methods in JDBC?
- 57. Why Are Data Streams Important?
- 58. How you work with Object Stream? (Not Covered in FPP, in MPP – Prepare it)

Coding: Practice Coding questions from **leetcode.com**, **Neet code**, or **Hacker Rank**

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<https://www.pathrise.com/guides/133-java-interview-questions-from-top-tech-companies/>