AlgoTutor

# 100 JAVA
# INTERVIEW QUESTIONS

Java

+91-7260058093
www.algotutor.io

1. What is Java?
2. Who developed Java and when was its first release?
3. Explain JDK, JRE, and JVM.
4. How is Java platform-independent?
5. What is bytecode in Java?
6. Differentiate between a local variable and an instance variable.
7. Explain the concept of Object-Oriented Programming (OOP).
8. Describe the main principles of OOP.
9. What are constructors in Java?
10. What's the difference between the == operator and the equals() method?
11. Explain method overloading.
12. What is garbage collection in Java?
13. List the access modifiers in Java.
14. Differentiate between final, finally, and finalize.
15. Contrast an array and an ArrayList.
16. Explain inheritance in Java.
17. What is the role of the super keyword?
18. Contrast abstract classes and interfaces.
19. Explain exception handling in Java.
20. Differentiate between checked and unchecked exceptions.
21. Describe method overriding.
22. What are packages in Java?
23. Define multithreading.

**24.** Explain the difference between a process and a thread.

**25.** How is synchronization achieved in Java?

**26.** Describe the Java memory model.

**27.** Define deadlock. How can you prevent it?

**28.** What are Java annotations?

**29.** Explain the Java Stream API.

**30.** List the different types of inner classes.

**31.** What is reflection in Java?

**32.** Describe the Singleton design pattern.

**33.** Contrast a shallow copy and a deep copy.

**34.** What is the Java ClassLoader?

**35.** Differentiate between fail-fast and fail-safe iterators.

**36.** Describe lambda expressions.

**37.** Define the Factory design pattern.

**38.** What is serialization? How to serialize and deserialize an object in Java?

**39.** Explain Java Generics.

**40.** Contrast Comparable and Comparator.

**41.** What is Java's metaspace?

**42.** Describe the Just-In-Time (JIT) compiler.

**43.** Define the volatile keyword in Java.

**44.** Contrast Count DownLatch and CyclicBarrier.

**45.** Differentiate between Semaphore and ReentrantLock.

**46.** Describe the Proxy design pattern.

**47.** Explain Java agents.

**48.** How to address memory leaks in Java?

**49.** Enumerate the new features introduced in Java 8, 9, 10, and 11.

**50.** Describe the Java Module System.

**51.** What is @SafeVarargs annotation?

**52.** Explain the AWT event handling model.

**53.** Define Type Annotations.

**54.** Discuss the use of the Optional class.

**55.** Describe the Decorator design pattern.

**56.** How to create custom exceptions in Java?

**57.** Contrast HashMap, TreeMap, and LinkedHashMap. 58. Differentiate Stream from ParallelStream.

**59.** Describe the Observer design pattern.

**60.** How to implement a thread-safe Singleton in Java?

**61.** Explain Java's Memory Fence or Memory Barrier.

**62.** Describe how the Object hashCode() method works in Java.

**63.** Go in-depth about the Java Memory Model and "happens- before" relationships.

**64.** Discuss the intricacies of Java's double-checked locking pattern.

**65.** Contrast Pessimistic and Optimistic locking.

**66.** Explain the String intern pool.

**67.** Discuss the wait-notify mechanism in Java.

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**88.** What is JPA? How does it relate to Hibernate?

**89.** Describe the benefits of using Spring Data.

**90.** What is the role of the @RestController annotation in Spring?

**91.** Explain the use of the @Autowired annotation.

**92.** What are Spring Boot starters? Provide a few examples.

**93.** How do you handle exceptions in a Spring MVC application?

**94.** What is the Spring Security framework? Describe its core components.

**95.** Describe the difference between @Entity and @Table in JPA/Hibernate.

**96.** What is the difference between JdbcTemplate and Named ParameterJdbcTemplate in Spring?

**97.** Explain the concept of lazy loading in Hibernate.

**98.** Describe how caching works in Hibernate.

**99.** What is the Thymeleaf templating engine and how does it integrate with Spring?

**100.** Explain how transactions work in a Spring application.