

Java Questions & Answers

1. What is Java?

- Java is a high-level, object-oriented programming language developed by Sun Microsystems.

2. What are the features of Java?

- Platform independence, Object-oriented, Robust, Secure, Multithreaded, High performance, etc.

3. What is JVM?

- JVM (Java Virtual Machine) is an engine that provides a runtime environment to execute Java bytecode.

4. What is JDK?

- JDK (Java Development Kit) is a software development kit used to develop Java applications.

5. What is JRE?

- JRE (Java Runtime Environment) provides the libraries and JVM required to run Java applications.

6. What is an object in Java?

- An object is an instance of a class that contains state and behavior.

7. What is the difference between == and .equals()?

- '==' compares memory addresses, while '.equals()' compares content.

8. What is method overloading?

- Method overloading allows multiple methods with the same name but different parameters.

9. What is method overriding?

- Method overriding allows a subclass to provide a specific implementation of a method already defined in the superclass.

10. What is inheritance?

- Inheritance allows a class to inherit fields and methods from another class.

11. What is polymorphism?

- Polymorphism allows methods to have different implementations based on the object calling them.

12. What is an interface in Java?

- An interface is a reference type that contains abstract methods which must be implemented by classes.

13. What is an abstract class?

- An abstract class is a class that cannot be instantiated and contains abstract methods.

14. What is encapsulation?

- Encapsulation is the process of wrapping data and methods into a single unit (class).

15. What is the difference between ArrayList and LinkedList?

- ArrayList provides fast access but slow insertions, whereas LinkedList provides fast insertions but slow access.

16. What is the final keyword?

- 'final' is used to declare constants, prevent method overriding, and prevent inheritance.

17. What is static in Java?

- 'static' means the method or variable belongs to the class rather than any instance.

18. What is a constructor?

- A constructor is a special method used to initialize objects.

19. What is garbage collection?

- Garbage collection automatically removes unused objects from memory.

20. What is the difference between checked and unchecked exceptions?

- Checked exceptions are checked at compile time, while unchecked exceptions occur at runtime.

21. What is a thread in Java?

- A thread is a lightweight process for multitasking.

22. How do you create a thread in Java?

- By extending the Thread class or implementing the Runnable interface.

23. What is synchronization in Java?

- Synchronization prevents multiple threads from accessing the same resource at the same time.

24. What is a lambda expression?

- A lambda expression is a concise way to represent an anonymous function in Java.

25. What is functional programming in Java?

- Functional programming treats computation as the evaluation of mathematical functions.

26. What is Stream API?

- Stream API allows processing collections of data in a functional style.

27. What is Optional in Java?

- Optional is a container object that may or may not contain a non-null value.

28. What is a HashMap?

- HashMap is a data structure that stores key-value pairs and allows fast retrieval.

29. What is a Singleton class?

- A Singleton class ensures only one instance exists in the JVM.

30. What is dependency injection?

- Dependency injection is a design pattern that allows objects to be injected rather than instantiated inside a class.