
Java Interview Questions

1.What is JVM?

The Java interpreter along with the runtime environment required to run the Java application is called as Java virtual machine.

2. What is the most important feature of Java?

Java is a platform independent language.

3. What do you mean by platform independence?

Platform independence means that we can write and compile the java code in one platform (eg Windows) and can execute it on any platform eg (Linux,Solaris,etc).

4. What is the difference between a JDK and a JVM?

JDK is Java Development Kit which is for development purpose and it includes execution environment also. But JVM is pure Java Virtual Machine. You will not be able to compile your source files using a JVM.

5. What is the base class of all classes?

java.lang.Object

6. What are the access modifiers in Java?

There are 3 access modifiers. Public, protected and private, and the default one if no identifier is specified is called friendly identifier explicitly.

7. What are packages?

A package is a collection of related classes and interfaces providing access protection and namespace management.

8. What is meant by Inheritance and what are its advantages?

Inheritance is the process of inheriting all the features from a class. The advantages of inheritance are reusability of code and methods of the super class by subclasses.

9. What is the difference between superclass and subclass?

A super class is a class that is inherited whereas sub class is a class that does the inheriting.

10. What is an abstract class?

An abstract class is a class designed with implementation gaps for subclasses to fill in and is deliberately incomplete.

11. What are the states associated in the thread?

Thread contains ready, running, waiting and dead states.

12. What is synchronization?

Synchronization is the mechanism that ensures that only one thread is accessed the resources at a time.

13. What is deadlock?

When two threads are waiting each other and can't precede the program is said to be deadlock.

14. What is an applet?

Applet is a dynamic and interactive program that runs inside a web page displayed by a java capable browser

15. What is the lifecycle of an applet?

init() method - Can be called when an applet is first loaded

start() method - Can be called each time an applet is started.

paint() method - Can be called when the applet is minimized or maximized.

stop() method - Can be used when the browser moves off the applet's page.

destroy() method - Can be called when the browser is finished with the applet.

16. How do you set security in applets?

using setSecurityManager() method

17. What is a layout manager and what are different types of layout managers available in java AWT?

A layout manager is an object that is used to organize components in a container. The different layouts are available are CardLayout, GridLayout and GridBagLayout

18. What is JDBC?

JDBC is a set of Java API for executing SQL statements. This API consists of a set of classes and interfaces to enable program applications.

19. What are drivers available?

- a) JDBC-ODBC Bridge driver b) Native API Partly-Java driver
- c) JDBC-Net Pure Java driver d) Native-Protocol Pure Java driver

20. What is stored procedure?

Stored procedure is a group of SQL statements that forms a logical unit and performs a particular task. Stored Procedure operations or queries to execute on database. Stored procedures can be compiled and executed with different parameter combination of input/output parameters.

21. What is the Java API?

The Java API is a large collection of ready-made software components that provide many useful capabilities, such as graphics.

22. Why there are no global variables in Java?

Global variables are globally accessible. Java does not support globally accessible variables due to following reasons:

- 1)The global variables breaks the referential transparency
- 2)Global variables creates collisions in namespace.

23. What are Encapsulation, Inheritance and Polymorphism?

Encapsulation is the mechanism that binds together code and data it manipulates and keeps both safe from outside interference by which one object acquires the properties of another object. Polymorphism is the feature that allows one interface to have multiple forms.

24. What is the use of bin and lib in JDK?

Bin contains all tools such as javac, appletviewer, awt tool, etc., whereas lib contains API and all packages.

25. What is method overloading and method overriding?

Method overloading: When a method in a class having the same method name with different arguments is said to be method overloading. When a method in a class having the same method name with same arguments is said to be method overriding.

26. What is the difference between this() and super()?

this() can be used to invoke a constructor of the same class whereas super() can be used to invoke a super class constructor.

27. What is Domain Naming Service(DNS)?

It is very difficult to remember a set of numbers(IP address) to connect to the Internet. The Domain Naming Service(DNS) maps one particular IP address to a string of characters. For example, www.mascom.com implies com is the domain name, mascom is the name of the company and www is the name of the specific computer, which is mascom's server.

28. What is URL?

URL stands for Uniform Resource Locator and it points to resource files on the Internet. URL has four components: http:// where http - protocol name, address - IP address or host name, 80 - port number and index.html - file path.

29. What is RMI and steps involved in developing an RMI object?

Remote Method Invocation (RMI) allows java object that executes on one machine and to invoke the method of a Java object on another machine. The steps involved in developing an RMI object are: a) Define the interfaces b) Implementing these interfaces c) Compile the implementations with the java compiler d) Compile the server implementation with RMI compiler e) Run the RMI registry

30. What is RMI architecture?

RMI architecture consists of four layers and each layer performs specific functions: a) Application layer - contains the actual application code. b) Stub and Skeleton layer - consists of stub and skeleton. c) Remote Reference layer - gets the stream of bytes from the transport layer and sends it to the application layer. d) Transport layer - responsible for handling the actual machine-to-machine communication.

31. What is a Java Bean?

A Java Bean is a software component that has been designed to be reusable in a variety of different environments.

32. What are checked exceptions?

Checked exceptions are those which the Java compiler forces you to catch. e.g. IOException are checked Exceptions.

33. What are runtime exceptions?

Runtime exceptions are those exceptions that are thrown at runtime because of either wrong input data or because of wrong logic checked by the compiler at compile time.

34. What is the difference between error and an exception?

An error is an irrecoverable condition occurring at runtime. Such as OutOfMemory error. These JVM errors and you can not recover from them. Exceptions are conditions that occur because of bad input etc. e.g. FileNotFoundException will be thrown if the specified file does not exist. NullPointerException will take place if you try using a null reference. In most of the cases it is possible to recover from an exception (e.g. by providing feedback for entering proper values etc.).

35. What is the purpose of finalization?

The purpose of finalization is to give an unreachable object the opportunity to perform any cleanup processing before the object is garbage collected. For example, closing an opened file, closing an opened database Connection.

36. What is the difference between yielding and sleeping?

When a task invokes its yield() method, it returns to the ready state. When a task invokes its sleep() method, it returns to the waiting state.

37. What is the difference between preemptive scheduling and time slicing?

Under preemptive scheduling, the highest priority task executes until it enters the waiting or dead states or a higher priority task becomes available. In time slicing, a task executes for a predefined slice of time and then reenters the pool of ready tasks. The scheduler then picks the next task to execute, based on priority and other factors.

38. What is mutable object and immutable object?

If an object's value is changeable then we can call it a mutable object. (Ex., StringBuffer, ...) If you are not allowed to change the value of an object, it is an immutable object. (Ex., String, Integer, Float, ...)

39. What is the purpose of Void class?

The Void class is an uninstantiable placeholder class to hold a reference to the Class object representing the primitive Java type void.

40. What is JIT and its use?

Really, just a very fast compiler... In this incarnation, pretty much a one-pass compiler — no offline computations. So you can compile the expressions according to which ones are re-used the most, and then generate code. In theory terms, it's an on-line compiler.

41. What is nested class?

If all the methods of an inner class are static then it is a nested class.

42. What is HashMap and Map?

Map is an interface and HashMap is a class that implements that.

43. What are different types of access modifiers?

public: Any thing declared as public can be accessed from anywhere. private: Any thing declared as private can't be seen thing declared as protected can be accessed by classes in the same package and subclasses in the other packages. default: Any thing declared as default can be accessed by classes in the same package.

44. What is the difference between Reader/Writer and InputStream/Output Stream?

The Reader/Writer class is character-oriented and the InputStream/OutputStream class is byte-oriented.

45. What is servlet?

Servlets are modules that extend request/response-oriented servers, such as java-enabled web servers. For example, a servlet can process data in an HTML order-entry form and applying the business logic used to update a company's order database.

46. What is Constructor?

A constructor is a special method whose task is to initialize the object of its class.

It is special because its name is the same as the class name.

They do not have return types, not even void and therefore they cannot return values.

They cannot be inherited, though a derived class can call the base class constructor.

Constructor is invoked whenever an object of its associated class is created.

47. What is an Iterator ?

The Iterator interface is used to step through the elements of a Collection.

Iterators let you process each element of a Collection.

Iterators are a generic way to go through all the elements of a Collection no matter how it is organized.

Iterator is an Interface implemented a different way for every Collection.

48. What is the List interface?

The List interface provides support for ordered collections of objects.

Lists may contain duplicate elements.

49. What is memory leak?

A memory leak is where an unreferenced object that will never be used again still hangs around in memory and doesn't get garbage collected.

50. What is the difference between the prefix and postfix forms of the ++ operator?

The prefix form performs the increment operation and returns the value of the increment operation. The postfix form returns the value of the expression and then performs the increment operation on that value.

51. What is the difference between a constructor and a method?

A constructor is a member function of a class that is used to create objects of that class. It has the same name as the class and is invoked using the new operator.

A method is an ordinary member function of a class. It has its own name, a return type (which may be void), and is invoked using the dot operator.

52. What will happen to the Exception object after exception handling?

Exception object will be garbage collected.

53. Difference between static and dynamic class loading.

Static class loading: The process of loading a class using new operator is called static class loading. Dynamic class loading: The process of loading a class at runtime is called dynamic class loading.

Dynamic class loading can be done by using `Class.forName(....).newInstance()`.

54. Explain the Common use of EJB

The EJBs can be used to incorporate business logic in a web-centric application.

The EJBs can be used to integrate business processes in Business-to-business (B2B) e-commerce applications. In Enterprise applications, EJBs can be used to house processing and mapping between different applications.

55. What is JSP?

JSP is a technology that returns dynamic content to the Web client using HTML, XML and JAVA elements. JSP page looks like a text file that contains Presentation logic and business logic of a web application.

56. What is the purpose of apache tomcat?

Apache server is a standalone server that is used to test servlets and create JSP pages. It is free and open source that is fast, reliable server to configure the applications but it is hard to install. It is a servlet container that includes tools to run the applications. It can also be configured by editing XML configuration files.

57. Where pragma is used?

Pragma is used inside the servlets in the header with a certain value. The value is of no-cache that tells that a servlet is requested. Pragma directives allow the compiler to use machine and operating system features while keeping the overall functionality. These are different for different compilers.

58. Briefly explain daemon thread.

Daemon thread is a low priority thread which runs in the background performs garbage collection operation for the java runtime.

59. What is a native method?

A native method is a method that is implemented in a language other than Java.

60. Explain different way of using thread?

A Java thread could be implemented by using Runnable interface or by extending the Thread class. The Runnable is more for multiple inheritance.

61. What are the two major components of JDBC?

One implementation interface for database manufacturers, the other implementation interface for application and applet

62. What kind of thread is the Garbage collector thread?

It is a daemon thread.

63. What are the different ways to handle exceptions?

There are two ways to handle exceptions,

1. By wrapping the desired code in a try block followed by a catch block to catch the exceptions. and
2. List the desired exceptions in the throws clause of the method and let the caller of the method handle those exceptions.

64. How many objects are created in the following piece of code?

```
MyClass c1, c2, c3;  
c1 = new MyClass ();  
c3 = new MyClass ();
```

Answer: Only 2 objects are created, c1 and c3. The reference c2 is only declared and not initialized.

65. What is UNICODE?

Unicode is used for internal representation of characters and strings and it uses 16 bits to represent each other.

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