

JAVA

INTERVIEW QUESTIONS

PART-1

1. What is Java?

→ Java is the high-level, object-oriented, robust, secure programming language, platform independent, high-performance, multithreaded and portable programming language. It was developed by James Gosling in June 1991. It can also be known as the platform as it provides own JRE and API.

@codeus_notes

2. Why is Java a platform Independent language?

⇒ Java language was developed in such a way that it does not depend on any hardware or software due to the fact that the compiler compiles the code and then convert it to platform independent byte code which can be run on multiple systems.

* The only condition to run that byte code is for the machine to have a runtime environment {JRE} installed in it.

3. Why is Java not a pure object oriented language?

⇒ Java supports primitive data types - byte, boolean, char, short, int, float, long and double and hence it is not a pure object oriented language.

4. Difference between Heap and Stack Memory in Java.
And how Java utilizes this.

⇒ Stack memory is the portion of memory that was assigned to every individual program. And it was fixed. On the other hand, Heap memory is the portion that was not allocated to the Java program but it will be available for use by the Java program when it is required, mostly during the runtime of program.

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5. How is Java different from C++? @ Codeus_notes

- ⇒ * C++ is only a compiled language, whereas Java is compiled as well as interpreted language
- * Java programs are machine-independent whereas a C++ program can run only in the machine in which it is compiled.
- * C++ allows users to use pointers in the program. Whereas Java doesn't allow it. Java internally uses pointers.
- * C++ supports the concept of Multiple Inheritance whereas Java doesn't support this. And it is due to avoiding the complexity of name ambiguity.

6. Pointers are used in C/C++. Why does Java not make use of pointers?

⇒ Pointers are quite complicated and unsafe to use by beginner programmers. Java focused on code simplicity, and the usage of pointers can make it challenging. Pointer utilization can also cause potential errors. Moreover, security is also compromised if pointers are used because the users can directly access memory with the help of pointers.

Thus, a certain level of abstraction is furnished by not including pointers in Java. Moreover, the usage of pointers can make the procedure of garbage collection quite slow and erroneous. Java make use of references as these cannot be manipulated, unlike pointers.

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7. What do you understand by an instance variable and a local variable?

⇒ Instance variables :- Are those variable that are accessible by all the methods in the class. They are declared outside the methods and inside the class. These variables describe the properties of an object and remain bound to it at any cost.

All the objects of the class will have their copy of the variables for utilization.

Example :-

```
Class Athlete {  
    public String athleteName;  
    public double athleteSpeed;  
    public int athleteAge;  
}
```

Local variables :- Are those variables present within a block, function or constructor and can be accessed only inside them. The utilization of the variable is restricted to the block scope. Whenever a local variable is declared inside a method, the other class methods don't have any knowledge about the local variable.

Example :-

```
→ void  
class Athlete {  
    Public String athleteName;  
    Public double athleteSpeed;  
    Public int athleteAge;  
}
```

@coders_note

8- What are the default values assigned to variables and instances in java?

⇒ * There are no default values assigned to the variables in Java. We need to initialize the value before using it.
* Otherwise, it will throw a compilation error of (Variable might not be initialized).

- * But for instance, if we create the object, then the default value will be initialized by the default constructor depending on the data type.
- * If it is a reference, then it will be assigned to null.
- * If it is numeric, then it will assign to 0.

9. What do you understand by JVM?

⇒ JVM stands for Java Virtual Machine. It is a virtual machine that enables the computer to run the Java Program. JVM is the specification which must be implemented in the computer system. Its implementation is known as JRE.

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10. Define JRE and JDK. @coders-note

⇒ JRE :- JRE stands for Java Runtime Environment. It is the implementation of JVM. The Java Runtime Environment is a set of software tools which are used for developing Java applications. It is used to provide the runtime environment.

JDK :- JDK is an acronym for Java Development Kit. It is a software development environment which is used to develop Java application and applets. It physically exists. It contains JRE + development tools.