Java Interview Questions and Answers

Question

What is Java ?

What is the interviewer looking for?

- Familiarity with the language
- Comparison with other languages

Answer

- ✓ Object oriented programming language
- ✓ Portable – write once run anywhere
- ✓ Very popular today in server-side applications

Question

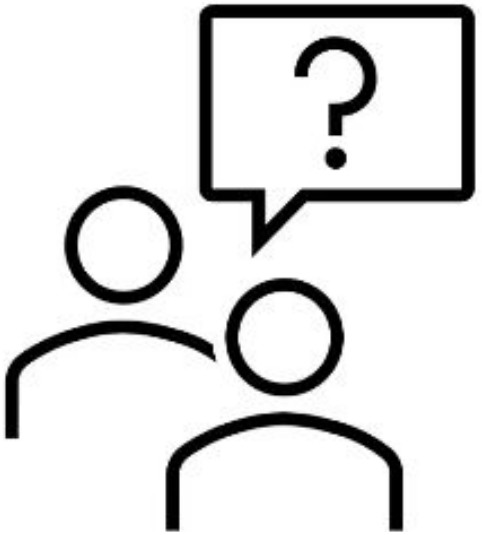
What are some features of Java?

What is the interviewer looking for?

- Awareness of what the language has to offer
- Comparison with other languages
- Important language characteristics

Answer

- Simple, object-oriented, and familiar
- Robust and secure
- Architecture-neutral and portable
- High performance
- Interpreted, threaded, and dynamic



Question

What is JVM?

What is the interviewer looking for?

- Difference between JVM and JRE
- Characteristics of JVM
- Role it plays in the execution

Answer

- Stands for Java Virtual Machine
- It's the runtime VM in which a Java program is run
- Takes the compiled Java bytecode and runs it
- Has a specification that outlines how it should work
- Different implementations available
- Essential in making Java platform agnostic

Question

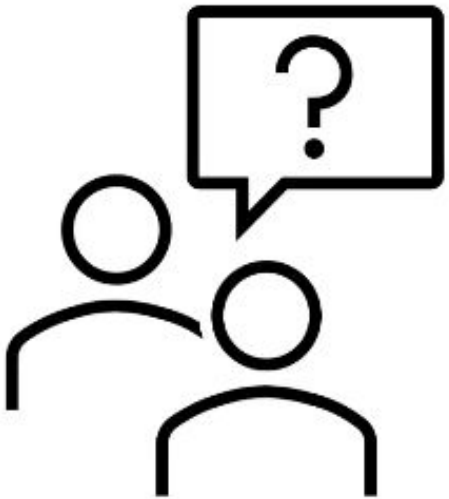
What is JRE?

What is the interviewer looking for?

- Difference between JVM and JRE
- Characteristics of JRE
- Role it plays in the execution

Answer

- Stands for Java Runtime Environment
- It is a set of software elements that together run a Java application on a machine
- Consists of
  - Class loader
  - JVM
  - Libraries and utilities
- The JRE orchestrates activities between these software elements
- Installed on machines that need to run Java applications



Question

What is JDK?

What is the interviewer looking for?

- Difference between JRE and JDK
- Characteristics of JDK
- Role it plays in the development workflow

Answer

- Stands for Java Development Kit
- It is a set of tools to help developers write Java programs
- Comes with the JRE (because you need to run what you develop)
- Based off the Java language specification
- Includes
  - Java compiler
  - Class libraries
  - Utilities

Question

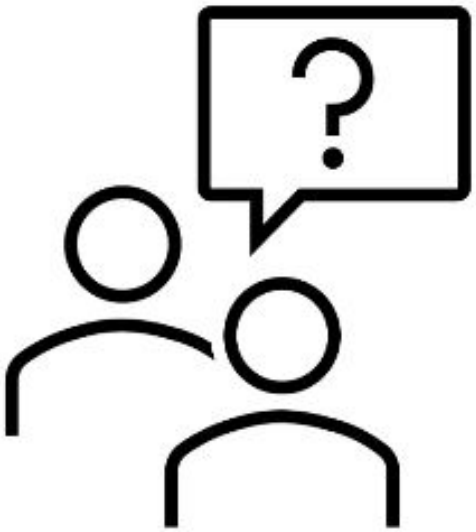
What is the difference between JVM, JRE, and JDK?

What is the interviewer looking for?

- Characteristics of each
- How they work together

Answer

- JDK – software used for building Java applications
- JRE – software used for running Java applications
- JVM – abstract virtual machine that the JRE spins up to run Java applications in



Question

What is Java byte code?

What is the interviewer looking for?

- Understanding of how it's created / the compilation process
- How it supports portability
- Relation with JVM

Answer

- Instruction set for Java virtual machine
- Generated by the process of compilation of a Java program
- JVM takes this and executes it
- Cannot be run natively on a machine
- Bytecode is consistent across machines. But JVM implementations may vary
- This enables the “write-once-run-anywhere” feature of Java

Question

What is the difference between PATH and CLASSPATH?

What is the interviewer looking for?

- Understanding system variables
- Understanding of classpath concept
- Why we need to set these variables

Answer

- Both are environment variables
- Path is an operating system specific variable that influences what binaries are available for running
- Classpath is a Java construct to indicate where all the compiled classes and jars are available. This could be multiple locations
- Java runtime – example: java command -> Path
- Bytecode picked up and loaded by the java compiler and runtime -> classpath

Question

What is the difference between source path and class path?

What is the interviewer looking for?

- Understanding project structure
- Java IDE folder structure

Answer

- Sourcepath is where the classes reside (that you write and compile)
- Source root in your IDE for example
- Classpath is where your dependencies – libraries / jars go
- Compiler loads these when required for compilation. Runtime can use these to load bytecode – class path scan