Basic Knowledge for JAVA Programmers

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JAVA as a programming language has evolved as a consequence of the subsequent changes in the business ecosystem. A well- stacked pack of APIs empowers JAVA developers to write better codes with fewer bugs, thereby minimizing the development time. Since JAVA is an Object Oriented Language, therefore each and every feature can leveraged for a better coding. With automatic memory management and garbage collections, development becomes easier. Endowed with reflection capabilities, JAVA has some basic features that differentiate it from its twin language c#. They are:

â€¢ JAVA has the ability to assemble and integrate with independent codes that runs in a controlled environment.

â€¢ JAVA does not have header files therefore minimizing the chances of problems arising from the declaration of classes.

â€¢ JAVA allows classes to descend from object thereby necessitating its allocation on the heap with the new keyword.

â€¢ JAVA enables thread support by locking objects as synchronized when entering code.

â€¢ JAVA does not have constants as everything belongs to a class.

â€¢ JAVA has arrays and strings with in-built bounds checking.

â€¢ JAVA has all the values initialized before use.

One of the most important aspects of JAVA development is its security model which protects users from the automatic download of hostile programs. This is owed to the availability of the Sandbox, a framework in which JAVA programs run. This feature prevents activities like reading or writing to the local disk, making network connections with the host, creating newer processes, and loading new dynamic libraries. It is important that JAVA programmers are aware of the finer nuances of JAVA development. This is a specific domain that calls for expertise in JAVA platforms such as J2SE, J2EE, Java Struts, Spring, JavaBeans (EJB),JDBC, Tomcat, JBoss, Web Logic, JNDI, JAAS, XDoclet, JavaMail, JNI, RMI, JMS, Sync4j.

It is important to Java Developers with awareness of the JAVA programming guidelines. Some of these guidelines are:

â€¢ Avoiding of serialization and de-serialization to prevent applications from slowing down.

â€¢ Using the â€˜transientâ€™ keyword to reduce the amount of data serialized.

â€¢ Assigning null to variables that are no longer required to help the garbage collector to reclaim parts of memory.

â€¢ Employing profiling tools and taking memory snapshots after each transaction to detect memory leaks.

â€¢ Declaring methods as final only if necessary.

â€¢ Using the keyword â€˜finalâ€™ for the purpose of program architecture and maintainability.

â€¢ Avoiding addition of finalizers to prevent the garbage collector from becoming expensive and unpredictable.

â€¢ Declaring all variables as â€˜finalâ€™ if they are not modified after being assigned value.

â€¢ Using JAVA collections framework for unsynchronized data structures.

Enterprises should hire JAVA programmers for increasing the performance of JAVA applications. The JAVA developers should:

â€¢ Use buffered I/O to avoid system calls for methods

â€¢ Re-use objects that have some notion of a state-resetting method

â€¢ Use native methods in JDK to have a faster implementation.

â€¢ Avoid the lengthy java.lang.String.hashCode() for the simple reason of avoiding the hash tables from turning into linked lists.

â€¢ Use the correct data structures for deriving a better performance.

â€¢ Break locks up into smaller locks to avoid contention locking.

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