Assignment –1

1. Difference b/w SDK and JDK?

   -> SDK stands for software development kit whereas JDK stands for Java development kit. SDK is a set of software or development tools used to create an application or a program on any platform. In contrast, JDK is a set of development tools that allows a programmer to write a program using java language.

2. What is runtime and compile time error?

   -> A compile-time error generally refers to the errors that correspond to the semantics or syntax. A runtime error refers to the error that we encounter during the code execution during runtime.

3. What is Space and Time complexity?

   -> Time complexity of an algorithm quantifies the amount of time taken by an algorithm to run as a function of the length of the input. Similarly, Space complexity of an algorithm quantifies the amount of space or memory taken by an algorithm to run as a function of the length of the input.

4. Different tools to compile Java code?
   - JDK (Java Development Kit) ...
   - Eclipse IDE. ...
   - NetBeans. ...
   - IntelliJ IDEA 13.1. ...
   - Oracle JDeveloper. ...
   - JUnit. ...
   - Apache ANT™ ...
   - JRat (Java Runtime Analysis Toolkit)

5. Which is better among Quick and Merge Sort?

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->Merge sort is more efficient and works faster than quick sort in case of larger array size or datasets. Quick sort is more efficient and works faster than merge sort in case of smaller array size or datasets.

6. Different datatypes in Java?
- Int
- Double
- Long
- Short
- Char
- String
- Byte
- Boolean
- float

7. How is Java portable?

-> Java programs are portable, which means that the same bytecode program can run on any computer system that has a Java interpreter. Also, a source program can be compiled into bytecodes on any computer that has a Java compiler.

8. Difference b/w Open Source and Closed Source?

-> WWith closed source software (also known as proprietary software), the public is not given access to the source code, so they can't see or modify it in any way.

-> But with open source software, the source code is publicly available to anyone who wants it, and programmers can read or change that code if they desire.

9. Difference b/w Global and Local variable in Java?

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Global Variable	Local Variable
Global variables are declared outside all the function blocks.	Local Variables are declared within a function block.
The scope remains throughout the program.	The scope is limited and remains within the function only in which they are declared.

Any change in global variable affects the whole program, wherever it is being used.	Any change in the local variable does not affect other functions of the program.
A global variable exists in the program for the entire time the program is executed.	A local variable is created when the function is executed, and once the execution is finished, the variable is destroyed.

10. What is JVM and what if JVM is not present in the system?

-> A Java virtual machine is a virtual machine that enables a computer to run Java programs as well as programs written in other languages that are also compiled to Java bytecode.