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Assignment 2

Q What is difference between JDK, JRE & JVM.

JDK (Java Development Kit)

It is Kit that provides the environment to develop and execute (run) the Java program. It includes two thing: Development Tools and JRE.

JRE (Java Runtime Enviroment)

It is an installation package that provides an enviroment to only run (not deploy) the java program onto your machine.

JVM (Java Virtual Machine)

Java program you run using JRE or JDK goes into JVM. It is responsible for Executing java program line by line also known as interpreter.

Q What is JIT compiler?

JIT (Just In Time) Compiler.

It is a component of the runtime environment that improves the performance of Java application by compiling bytecodes to native machine code at run time.

Q What is class Loader?

The Java class Loader is a part of the Java Runtime Environment that dynamically loads Java classes into the Java Virtual machine. The Java run time system does not need to know about files and file systems because of class loaders. It is abstract class.

Q Explain various memory logical partitions

Memory partitioning is the system by which the memory of a computer system is divided into sections for use by the resident programs. These memory divisions are known as partitions.

Q Whitat gives Java its "write once and run anywhere nature".

Java compiler compiles a java program and converts it into class file (.class) that contain bytecodes, which is intermediate language between sourcode and machine code. These bytecodes are not platform specific, so with the help of JVM, the java program can run on wide variety of platform. The JVM is platform

dependant i.e its implementation differs from platform to platform but these all JVMs can execute the java bytecode which are same. So termed as 'write once and run anywhere'.

Q Explain History of Java? Who invented Java?

Java was originally designed for interactive television, but it was too advanced technology for digital cable television industry at the time. The history of Java starts with the Green Team.

Java was developed by James Gosling, who is known as the Father of Java. He and his team members started the project in the early 90's. It is invented at Sun microsystems. and released in 1995.

Q What was original name of Java? why it was renamed?

James Gosling initiated Java language with his small team of sun engineers called Green Teams. Firstly it was called "Green talk" by James, and file extension was .gt. After that it was called "Oak" and was developed as part of the Green project. Oak was renamed as "Java" because it was already a trademark by Oak Technologies.

Q List features of Java?

A list of most important features of Java languages is given below.

- Simple
- Object-Oriented
- Portable
- Platform independent
- Secured
- Robust
- Architecture Neutral
- Interpreted
- High Performance
- Multithreaded
- Distributed
- Dynamic

Q List various Datatype in Java.

Datatype specify the different sizes and values that can be stored in the variable.

Primitive Data Types:

- boolean
- char
- byte
- short
- int
- long
- float
- double

Non Primitive Datatype
- Classes
- Interfaces
- Array

Q What is difference between

System.out.println()

System is a class in java.lang package.
out is a member of System class and object of Print Stream.
println() is method of PrintStream which print whatever is passed to it on the standard output screen. It print on nextLine.

System.out.print()

It is same as above only difference is it print on same line.

System.~~out~~ err.println()

It is used to print the standard error.
System is class in java.lang package.
err is a member of System class and object of Print Stream.

Q How is Java platform independent

The bytecode produced by the java compiler which can be run on variety of Operating System.
Java produces bytecode simply requires the JVM. The operating system has no impact on it. You can write and execute the code on any platform as long as java compiler is present.

Q What is bytecode? How is it different from machine code?

A bytecode acts as an intermediate code present between a machine code and a source code. It is platform independant. Virtual machine first executes the bytecode and only then the CPU can process it.

Machine Code is set of various instructions that a machine can read and understand directly. It is low-level code. binary code contains 0's and 1's. It is platform dependant. CPU can directly understand as well as process this type of code. Don't need of virtual machine for execution.

Q What is difference between Jar file and Runnable jar file.

Jar file is a Java application which requires a command line to run.
Runnable jar file can be directly executed by double clicking it.

Q What is difference between Runnable jar file and Exe file.

Runnable jar file can be directly Executed by double clicking it.
Executable file is also be combination of compiled java classes with main class.

Q How is C platform dependant languages.

The Executable file that is generated at the end for the running the C program may depend on platform.
C program as .c extension. and when we compile object file generated .obj . .o extension. When we run it generate executable file. Extension and type of executable file depends on compiler. On Window .exe while on Unix .out is generated.
So Executable file formed is dependent on the platform of C language.

Q What is difference between path & class path.

The main difference between Path and class path is that Path is a set for java tools in java program like java and javac which are used to compile your code, whereas class path is used by System or Application class loader to locate and load compile Java byte codes stored in the .class file.