DATE 9 3 23

Assignment - 2

Que ① What is difference between JDK, JRE & JVM ?

	JDK	JRE	JVM
①	Java development kit	Java Runtime environment	Java virtual m/c.
②	It is often coalled as superset of JRE	It is a set of software tools responsible for execution of Java program or Apps.	JVM loads, verifies & executes Java bytecode.
③	It is the foundational component that enables Java application & Java applet development	It uses heap space for dynamic memory allocation for java objects	It is known as interpreter.
④	JDK contains all the tools required to compile, debug & run a program developed using the java platform	JRE is composed a variety of other supporting software tools & features to get the most out of Java Appli	It is specially responsible for converting bytecode to m/c specific code & is necessary in both JDK & JRE It is also platform dependent

Que·02. What is JIT compiler?

→ 1. JIT is an integral part of JVM (Java in time)
2. It is a long running, computer intensive program that provides the best environment performance.
3. It optimizes the performance of the java application at compile or runtime.

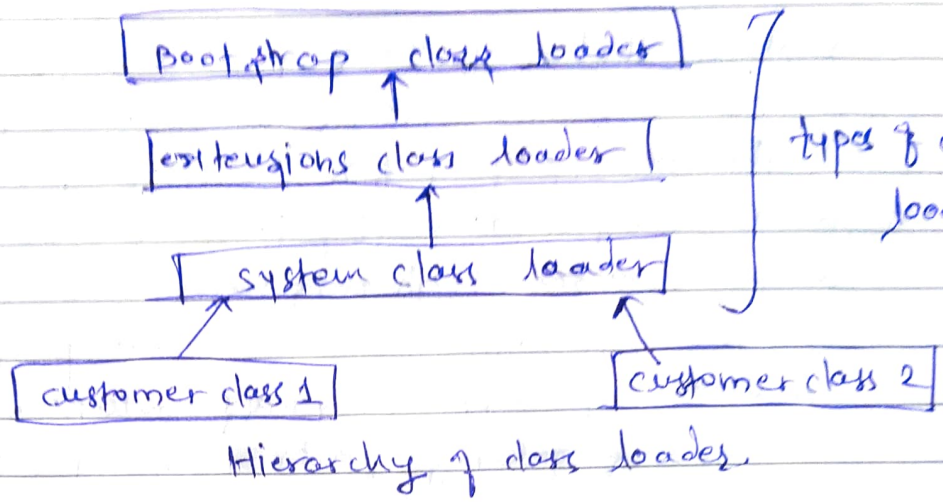
Adv → ① It requires less memory usages.
② The code optimization is done at run-time
③ It uses different level of optimization.
④ It reduces the page faults.

Disadv → ① It increases the complexity of program
② The program with less line of code does not take the benefit of the JIT compiler.
③ It uses lots of cache memory.

Que·03- What is class loader?:-

⇒ ① Java class loader is an abstract class.
② It belongs to a java.lang package.
③ It is used to load the classes at run time.
④ Java class loader is based on 3 principle.

ⓐ delegation:- It forwards the request for class loading to parent class loader.
ⓑ visibility :- It allows child class loaders to see all the classes loaded by parent class loaders, but the parent class loader cannot see classes loaded by child class loader.
ⓒ uniqueness :- It allows to load a class once it is achieved by delegation principle. It ensures that child class loader doesn't reload the class, which is already loaded by the parent.



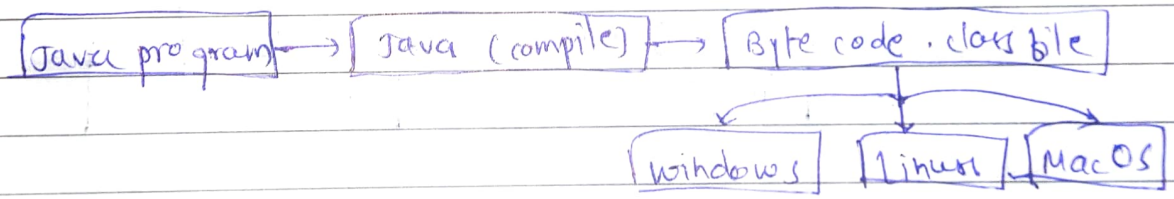
Hierarchy of class loaders.

Que (4) What gives java it's "write once & run anywhere" nature?

⇒ (1) Java applications are called WORA.

(2) this means programmers can develop java code on one system & can expect it to run on any other Java enabled system without any adjustment.

(3) this is all possible because of JVM.



(4) In java the program is not converted to code directly understood by Hardware rather it is converted to byte code which is interpreted by JVM so once compiled it generates bytecode file which can be run anywhere (any m/c) which has JVM & hence it get's nature of write once & run anywhere.

Que. 05 Explain History of Java & who invented Java?

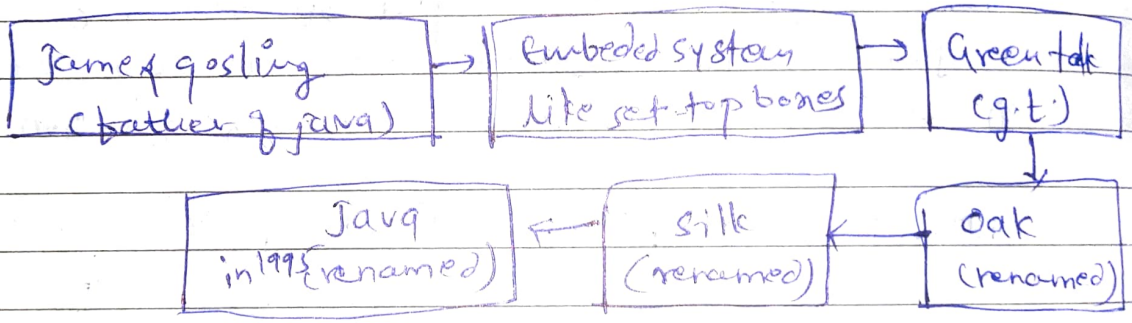
⇒ ① History of Java start with Green Java.

② The principles for creating java programming were "simple, Robust, Portable, platform-independent, secured, High performance etc.

③ Java is used in internet programming, mobile devices, games, e-business solutions, etc.

④ James gosling, Mike sheridan, patrick Naughton initiated java language project in June 1991. this small team of sun engineers called "Green Team".

⑤ Java was developed by "James gosling" who is known as father of Java in 1995.



Que. 06 What was the original name of java? why it was renamed?

⇒ ① The original name of java was "Oak" which was developed by a small team of engineers working for sun microsystems.

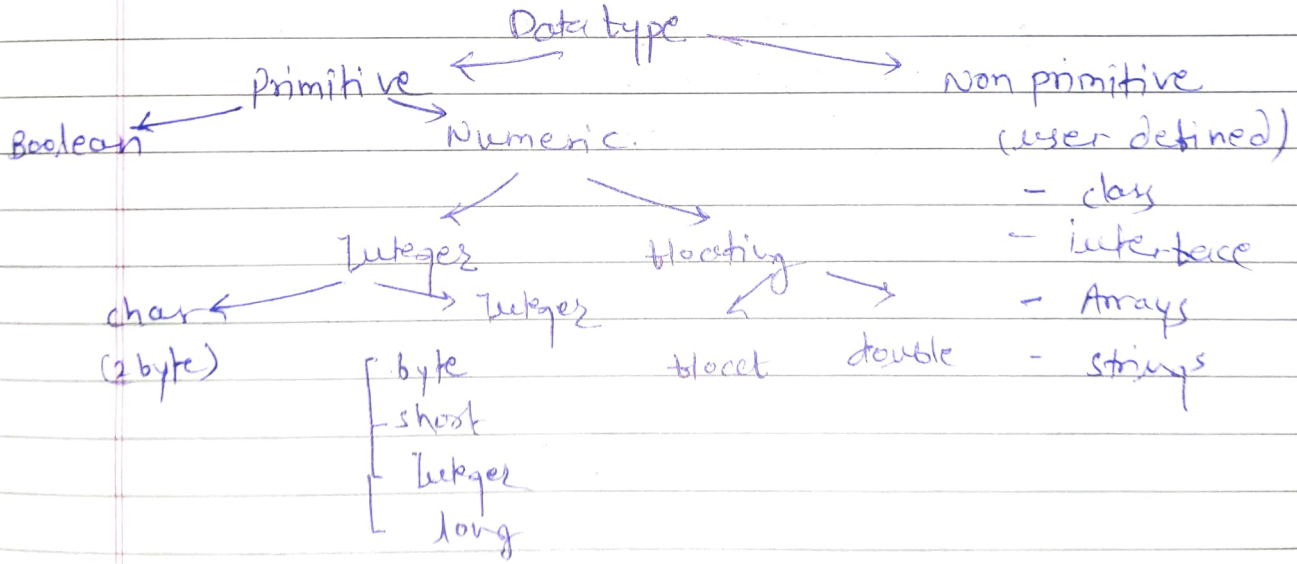
② They called themselves Green team.

③ The oak name was renamed due to the fact that Oak was already registered as part of another trade mark.

Que 07 List features of Java?

⇒ (1) simple
(2) object - oriented
(3) portable
(4) platform - independent
(5) secured
(6) robust
(7) Architecture neutral
(8) interpreted
(9) High performance
(10) multi thread
(11) distributed
(12) dynamic.

Que 08 list various datatypes in Java.



Que 09 What is difference between system.out.print();
system.out.println();, system.err.print()

System.out.print()	System.out.println()	System.err.p
① The control or cursor remains on the same line after printing	the control/cursor moved to the next line after printing	System.err.p is used to error mess

The output displayed colour.

Que. ⑩ How is java platform independent?

⇒ ① when you compile java programs using javac compiler it generate bytecode.

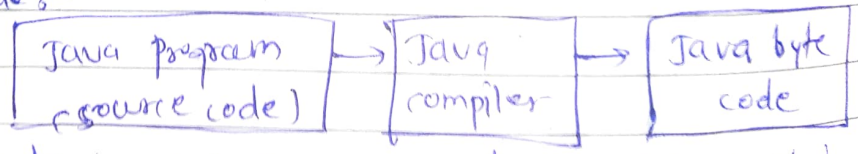
② we can execute the bytecode in any platform which has JDK installed i.e. Java development kit

③ with the help of JVM which is present in the java bytecode is translated into m/c understandable code.

④ Hence, Java is platform independent but it is purely depend on JDK.

Que. ⑪ What is bytecode? How it is different from machine code?

⇒ Bytecode:-



1. bytecode is sort of command that is suited for software translation operation.
2. commonly known as 'P-code' due to portability that it provide
3. It is a intermediate code compiled into a low level code from the source code for efficient execution by a software interpreter

	Bytecode	machine code.
①	It is an intermediate code designed to run on a virtual m/c instead of a CPU.	It is computer program made up of the native instructions associated with that particular computer.
②	The function of bytecode is to be a format that can be executed efficiently by the virtual machies interpreter.	machine code is the language which all programs must be converted into before they can be run.
③	It is platform independent because it can be executed on any platform using the virtual m/c.	It is not platform independent meaning it can't be run on just any platform with the same OS.

Que (12) Explain various memory logical partitions?

⇒ ① A logical partition (LPR) is the division of computer's memory & storage into multiple sets of resources so that each set of resources can be operated independently with its own OS instance & applications.

② The number of logical partitions are used for different purpose of such as database operation client / server operation or the separate test & production environment.

③ Each partitions can communicate with the other partitions as it other partition is in a separate machine.

Que. (13) What is difference bet^n Jar file & Runnable Jar file

⇒ Jar file

(1) Jar file is java application which requires a command line to run, a runnable jar file can be directly executed by double clicking.

Runnable jar file

Runnable jar file allows a user to run java classes without having to know class name & type them in command prompt rather the user can just double click on the jar file the program will fire up.

(2) A Jar (Java archive) is a package file format typically used to aggregate many java class files associated metadata & resources into one file to distribute application software or libraries on the java platform.

A runnable jar allows java classes to be loaded just like when a user click on the exe. file

Que. (14) What is difference bet^n Runnable jar file & exe. file

⇒ Runnable jar file

(1) Jar file are like dead body

exe. file are like living men.

(2) Jar file is the combination of compiled java classes

Executable jar file is also combination of compiled java classes with main class.

Que (15) How is C platform dependent language?

⇒ (1) C is a portable programming language because it is not tied to any hardware & system.

(2) we can say it is a hardware independent language or platform or platform independent language.

(3) That is why C is called - Portable language

(4) C programs does not depend on actually but the executable file that is generated at the end for running the C program may depend on a platform

(5) when you use os you get other extensia for executable files.

Que (16) What is difference beth path & class path

⇒

Path	class Path
(1) Path variable is used to set the path for all java software tool like javac.exe, java.exe, javadoc.exe, & so on	class path variable is used to set the path for java classes
(2) variable name :- PATH variable value :- C:\program file \java\jdk 1.7.0.21\bin;	(2) variable name :- class path variable value :- C:\Program files\Java\jre 1.6.0\jre\lib\rt.jar