Assignment 2

Q Difference betn JDK, JRE & JVM

JDK - JDK is a kit that provides the environment to develop & execute the Java program.
JDK includes 2 things - developement tools & JRE

JRE - JRE is an installation package that provides an environment to only run the java program onto your machine. JRE is only used by those who only want to run Java programs that are end-users of your system

JVM - JVM is a very important part of both JDK & JRE because it is inbuilt in both. Whatever Java program you run using JRE or JDK goes into JVM & JVM is responsible for executing the Java program line by line hence it is also known as interpreter.

Q What is JIT compiler.

Just in time compiler is an essential part of JRE. It is responsible for performance optimization of java based application at run time. The compiler is one of the key aspects in deciding the performance of an application for both parties iesthe end user & the application developer

Q What is class loader

Class loader is a part of JRE that dynamica loads Java classes into JVM. Java classes are loaded in memory when required by applicatio The java classloader is called by the JRE & these Class loader loads classes into memory dynomically

Types of class louder-

Bootstrap classloader - Bootstrap classloader in a machine code which starts the operation when JVM calls it

Extension classloader - The extension class loader is a child of Bootstrap classloader & loads the extensions of core java classes from the respective JDK extension library

System classloader - It is also called application class louder. It loads the application type classes found in the environment variable classpath, -classpath or -cp command line option. The application class loader is a child class of ~~extentio~~ extension class loader.

Q Explain various memory logical partitions.

Memory management technigues -

1) Contiguous
2) Non-Contiguoas

Contiguous can be classified as -

1) Fixed partitioning (static)
2) Variable partitioning (dynamic)

Fixed partitioning - In this partitioning the number of partitions in RAM is fixed but the size of each partition may or may not be the same. It is contiguous allocation no spanning is allowed Partitions are made before execution or during system configuration.

Variable partitioning -. In this method initially RAM is empty and partitions are made during the runtime according to process need instead of partitioning during system configure. The size of partition varies according to the need of the process so that internal fragmentation can be avoided.

Non-contiguous Memory allocation- In this method operating system needs to maintain the table is called page table. The different parts of a process are allowed to different places in memory. Spanning is allowed in non-contiguous allocation.

Types of non-contiguous allocation-

1) Paging
2) Multilevel paging
3) Inverted Paging
4) Segmentation
5) Segmentated Paging.

Q What gives java its write once & run anywhere nature

The bytecode generated by the compiler is not platform-specific and hence takes the help of JVM to run on a wide range of machines so we call Java program as write once & run anywhere nature.

Q Explain History of Java? who invented Java?

Java was invented by James Gosling, Patrick Naughton, Chris Warth, Ed Frank and Mike Sheridan at sun microsystems, Inc. in 1991.

Java is related to C++ which is inherited from the language C. The characters of Java is inherited from C & C++ language. It took approximetly 18 months to develop the first working version. It was first named as "Oak" but was renamed as "Java" in 1995. The basic idea behind creating this language is to create a platform independent language that is used to develop software for consumer electronic devices such as microwave oven, remote controls etc. initially it was not designed for internal application

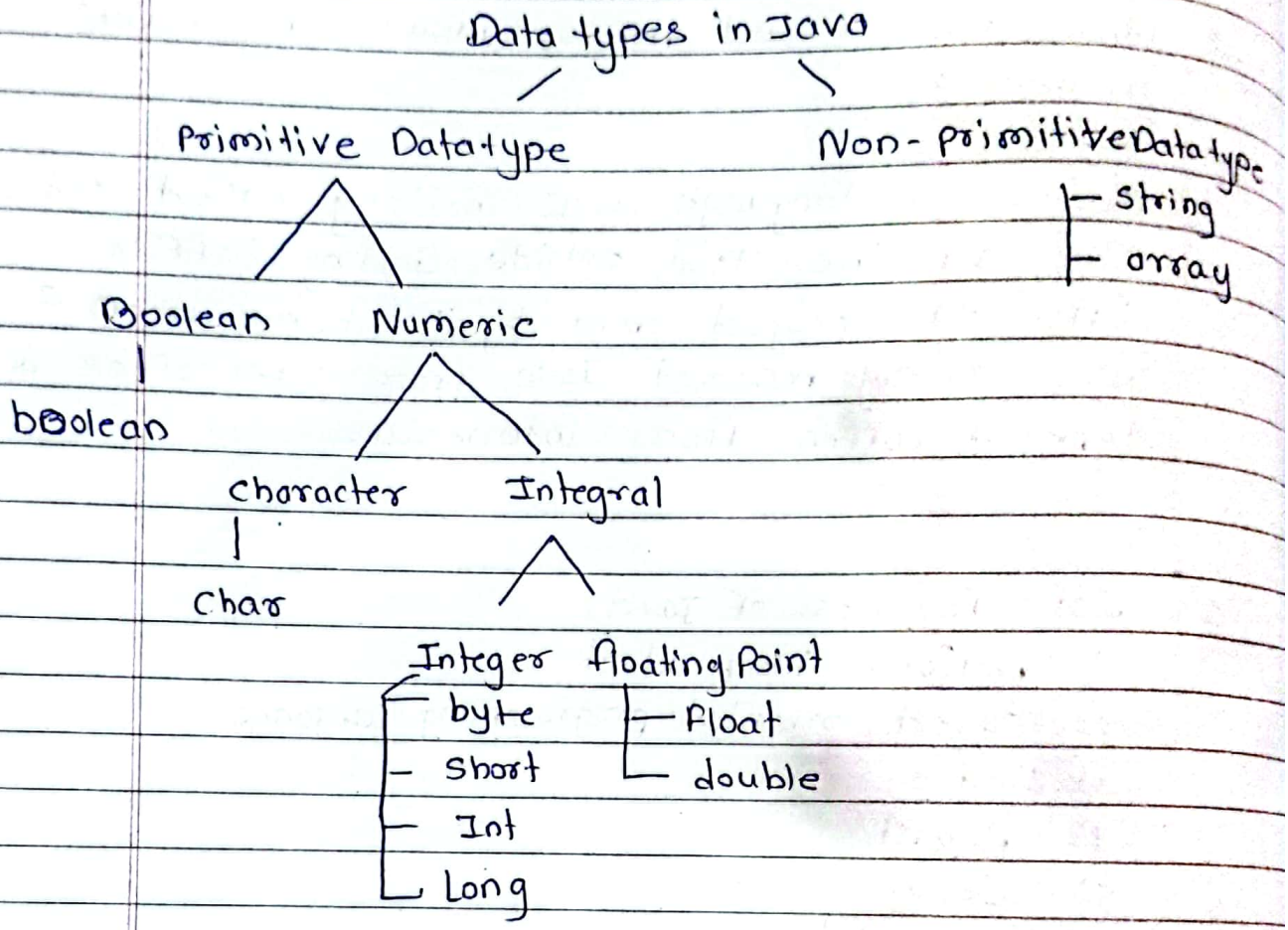
Q What was original name of Java? why it was renamed?

The Java language was initially called Oak. The oak tree stood outside Gosling's office. later the project went by the name Green & was finally renamed Java from Java coffee a type of coffee from indonesia.

Q List features of Java.

1) Platform independent
2) Object oriented programming language
3) Simple
4) Robust
5) Secure
6) Distributed
7) Multithreading
8) Portable
9) High Performance
10) Dynamic flexibility
11) Sandbox execution
12) Write once run anywhere
13) Power of compilation & interpretation

Q Various Datatypes in Java.



Q what is difference between
System.out.print
System.out.println
System.err.print

System.out.println	System.err.println
Print standard out of the System	will print standard error
used to display result.	used to output error texts
output on the console with black color	output on the console with bta red color to

Q How is java platforms independent.

Java is platform independent because it uses a virtual machine. The Java programming language and all API's are compiled into bytecode. Bytecodes are effectively platform independent. The virtual machine takes care of the differences between the bytecodes for the different platforms.

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

Byte code - A byte code acts as an intermediate code present between a machine code and a source. A byte code is basically a low-level code that results from the compilation of source code that might be present in a high-level language. JVM processes bytecode.

Machine cannot understand a bytecode. It is a non-runnable type of code that becomes machine understandable after an interpreter translates it into a machine code. one needs to compile it to run on a JVM. Thus any systems that already has JVM can easily run such a code irrespective of the OS. Therefore Java is independent Bytecode also called as portable code.

The difference betn byte code & machine code is bytecode is intermediate code while the machine code is the final code that CPU processes

Q What is difference betn Jar file & runnable Jar

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

Q What is diff. betn Runnable jar file & executable

An exe file in an executable file that can be executed in microsoft os environment.
Jar file is container of java class files, including other resources related to the project. Jar file can be executed only if java run time environment.

Q How is C platform dependent language

C is language is not platform independent language, the compiler generates an .exe file which is OS dependent. When we try to run the .exe file on another OS it does not run since it is OS dependent & hence is not compatible with other OS.

Q What is difference betn path & class path

	Path	Class Path
1)	A environment variable is used by the operating system to find the executable files	An environment variable is used by the Java compiler to find the path of classes
2	Path setting up an environment for the operating system operating system will look in this path for executables	Classpath setting up the environment for Java. Java will use to find compiled classes.
3	Refers to the OS	Refers to the Developing Environment.
4	In path variable, we must place .\bin folder path	In classpath, we must place .\libljar file or directory path in which .java file is available.
5	Path is used by CMD prompt to find binary files	classpath is used by the compiler & JVM to find library files.