Assignment No. 2

1)	JDK	JRE	JVM
(1)	The full form of JDK is Java Development kit	The full form of JRE is Java Runtime Environment	The full form of JVM is Java Virtual Machine
(2)	JDK is a software development kit to develop applications in Java.	It is a software bundle which provides Java class libraries with necessary components to run Java code.	JVM executes Java byte code and provides an environment for executing it.
(3)	It is the superset of JRE	It is subset of JDK	JVM is a subset of JRE
(4)	It contains tools for developing, debugging, and monitoring java code	It contains class libraries and other supporting files that JVM requires to execute the program.	Software development tools are not included in JVM.
(5)	JDK comes with the installer	JRE only contain environment to execute source code	JVM bundled in both software JDK and JRE

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2) The Just-In-Time (JIT) compiler is a component of the runtime environment that improves the performance of Java applications by compiling bytecodes to native machine code at run time.

3) The Java class loder is a part of the Java Runtime Environment that dyramically 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 classloaders. Java classes aren't loaded into memory all at once, but when required by an application. At this point Java class loader is called by the JRE and these classloaders load classes into memory dyramically.

4) 1) A logical partition (LPAR) is the division of a computer's memory and storage into multiple sets of resources so that each set of resources can be operated independently with its own operating system instance and applications.

2) The no. of logical pactions are used for different purposes such as database operative or client/server operation or the separate test and

production environment.

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

5) JVM (Java Virtual Machine) acts as a run-time engine to run time engine to ru Java applications. JVM is the one that actually calls the main method present in Java code. JVM is a part of the JRE (Java Runtime environment).

Java applications are called WORA (Write once Run anywhere). This means a programmer can develop Java code on on system and can expect it to run on any other Java-enabled system without any adjustment. This is all possible because of JVM.

6) Java is an Object-Oriented programming language developed by James Gosling in early 1990s. The team initiated this project to develop a language for digital devices such as set-top boxes, television, et Originally, c++ was considered to be used in the project but the idea was rejected for several reasons. Gosling endeavoured to alter and expand c++ however before long surrendered that for making another stage called Green. James Gosling and his team called their

project "Greentalk". and its file extensio
was .gt and later become to known as
'OAK'. Later They renamed as Java.
Java was created on the principles
like Robust, Portable, Platform
Independent, High Performance, multithr
, etc. Currently, java is used in
internet programming, mobile devices,
games, e-business solutions, etc.

7) The original name for Java was Oak.
created in 1991 by James Gosling.
He named it after an oak tree in
front of his office.
Oak was renamed in 1994 as Java as it
was found that a company called Oak
Technologies was already registered with
the name.

8) The primary objective of Java programmin
language creation was to make it
portable, simple and secure programming
language.
Apart from this, there are also some
execellent features which are
1) Simple
2) Object - Oriented
3) Portable
4) Platform Independent
5) Secured
6) Robust
7) Architecture neutral

8) Interpreted
9) High performance
10) Multithreaded
11) Distributed
12) Dynamic

9) There are two types of data types in Java

1) Primitive data types : The primitive data types include boolean, char, byte, short, int, long, float and double.

2) Non- primitive data types : The non-primitive data types include Classes, interfaces and Arrays, etc.

10) System.out.print => In this, we can print but the printed data is in the same line.

System.out.println => By using this, we can print and it will print the data in the next line by using println.

System.error.print is used for printing an error messages, which increases the readability for the programmer.

11) Java language was developed in such a way that it does not depend on any hardware or software due to the fact that the compiler compiles the code and then converts it to platform-independent byte code which can be run on multiple systems.

12) Java bytecode is the instruction set for the Java Virtual Machine. When java program is compiled, java bytecode is generated. Bytecode is an intermediate code between the source code and machine code. It is processed by JVM.
It is different from machine code. Machine code is a set of instruction that is directly machine understandable and it is processed by the Central Processing Unit (CPU).

13) The difference between a JAR file and a Runnable jar file is that a 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.

14) An exe file is an executable file that can be executed in Microsoft OS environment. Jar file is a container of Java class files, including other resources related to the project. Jar file can be executed only in Java run time environment.

15) C is platform dependent language because C compiler converts c program directly into machine level code and since machine level language of different os are different, thus C compiled code from one platform will not work on another platform.

16) The classPath is a parameter in the Java Virtual Machine (JVM) or the Java compiler that is used by a system or application classloder to locate and load compiled Java bytecodes stored in the ".class" file. On the other hand, the path is also an environment variable path that behaves as a mediator between the operating system and developer to inform binary file path.