ASSIGNMENT 13

Q1.WHAT IS PLATFROM DEPENDENT AND INDEPENDENT AMONG JDK, JRE, JVM?

Platform dependent

A Software that can run on any hardware platform (PC, Mac, SunSparc, etc.) or software platform (Linux, MacOS, Unix, Windows, etc.) is called as platform independent. Platform is nothing but a base.Hardware platform is determined by the processor.

independent amonj jdk, jre, jvm

JVM is a virtual machine or a program that provides run-time environment in which java byte code can be executed. JVM needs to be installed on your machine depending on what platform do you have and what version of it. JVMs are available for many hardware and software platforms. JVM, JRE and JDK are platform dependent because configuration of each OS differs.

The use of the same byte code for all JVMs on all platforms make java platform independent. Or java is platform independent because java does not run directly on operating system. It runs on the JVM which you have to install separately.
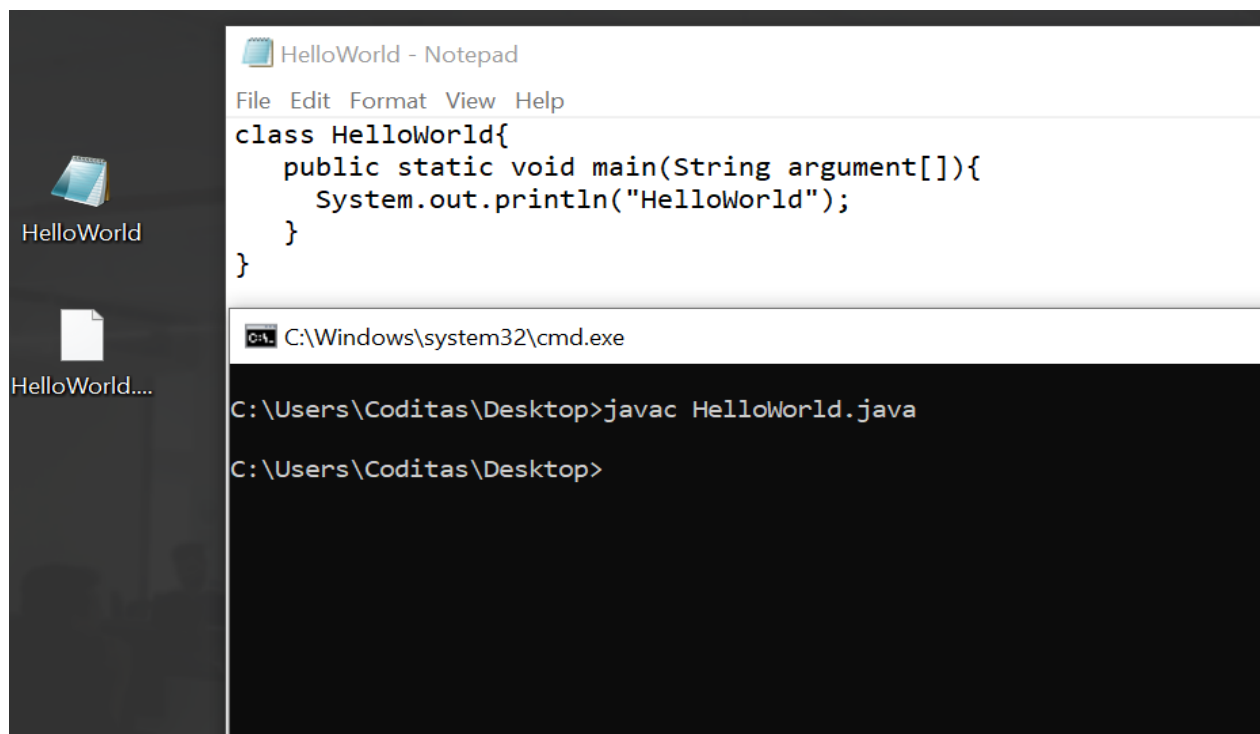
Q2CAN WE USE /DOWNLOAD JRE DIRECTLY WITHOUT DOWNLOADING JDK

It runs on your machine because you already do have JDK/JRE. It is not possible to run them without JDK/JRE installed on the target machine. This is the reason for the OS independency. ie. you can run the SAME code/app on Windows MacOS Linux (given that they have JDK/JRE installed).

Q3 CREATE A SIMPLE CLASS 'HelloWorld' AND PRINT "HELLO WORLD"

Before Compiling the programming There is only HelloWorld.java file

After Compiled Program we got HelloWorld.class file because of (javac HelloWorld.java)

```
C:\Users\Coditas\Desktop>javac HelloWorld.java

C:\Users\Coditas\Desktop>java HelloWorld
HelloWorld

C:\Users\Coditas\Desktop>
```

Output of the Above Program

Q4 Use the above-mentioned class and save this file as "HelloWorld_Batch2.java" and try to execute the code Add the execution Commands with proper Output

HelloWorld_Batch2 - Notepad

File Edit Format View Help

```
class HelloWorld{
    public static void main(String argument[]){
        System.out.println("HelloWorld Anuj Sundriyal");
    }
}
```

So In case That FileName(HelloWorld_Bacth2.java) is different and Entry Class Name(HelloWorld) is different than we have to compile program with FileName(javac HelloWorld_Batch2.java)

```
C:\Users\Coditas\Desktop>javac HelloWorld_Batch2.java
```

And Run With Entry Class Name(java HelloWorld)

```
C:\Users\Coditas\Desktop>java HelloWorld
HelloWorld Anuj Sundriyal
```

Q5. Create a simple Calculator Program

```java
// Simple Calculator for addition , multiplication, division, subtraction

class Simple_Calculator{

    int result;

    // for addtion

    static int addition(int first,int second)
    {

     return first+second;
    }

    //for subtraction

    static int subtraction(int first,int second)
    {

     return first-second;

    }

    //for multiplication

    static int multiplication(int first,int second)
    {

       return first*second;

    }
```

```java
    // for division

     static int division(int first,int second)
     {

     return first/second;

     }
}


class Simple_Calculator_Main extends Simple_Calculator
{
  public static void main(String argument[]){

     System.out.println("Sum of addition "+addition(12,13));

     System.out.println("Sum of subtraction "+subtraction(12,13));

     System.out.println("Sum of multiplication "+multiplication(12,13));

     System.out.println("Sum of division "+division(12,13));

    }
}
```

simple calculator for multiplication, addition, subtraction, division