R1.4 What is the Java virtual machine?

A-> As its name suggest, JVM is virtual machine which allows to run the compiled .java code (.class/.jar) on any of the intended machine which have the JVM installed without the need of physical machine. .class/.jar files are high-level code which could be understood by machine using JRE (Java Run Time Environment). Also, it runs on the virtual machine so it is less likely to disrupt the user’s system.

R1.5 What is an applet?

A-> Applet is an Java program which is ready to use small application and meant to be run in Web Browser. It provides interactive features to the web applications which is beyond the scope of HTML.

R1.6 What is an integrated programming environment?

A-> IDE is full-fledged editor which have the rich GUI and comprehensive features to develop a program. It has source code editor, auto completion, intellisense, debugging and testing features. It may support one or more languages i.e., Java, c++, Perl etc. We can say that writing a good program will be nightmare without integrated development environment where integrated signifies that it has the feature of design, code, debug and run the program from one tool only.

R1.7 What is a console window?

A-> Java console is a debugging aid which shows the system.out and system.err information at run time which can help to understand the execution of program and also help in the debugging.

R1.12 What do the following statements print? Don't guess; write programs to find out.

a. System.out.println("3 + 4");

b. System.out.println(3 + 4);

c. System.out.println(3 + "4");

A->

package r1\_12;

public class PrintTest {

public static void main(String[] args) {

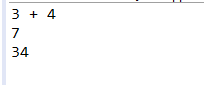
System.out.println("3 + 4");

System.out.println(3 + 4);

System.out.println(3 + "4");

}

}

Output: 

P1.5 Write a program that computes the sum of the first ten positive integers, 1+2+...+10.

Hint: Write a program of the form

A->

package p1\_5;

public class Sum10 {

public static void main(String[] args) {

int sum = 0;

for (int i = 1; i <= 10; i++) {

sum += i;

//System.out.println(sum);

}

System.out.println(sum);

}

}

Output: 

P1.6 /\* Write a program that computes the sum of the reciprocals 1/1 + 1/2 + ...+1/10.

\* This is harder than it sounds. Try writing the program, and check the result.

\* The program's result isn't likely to be correct. Then write the denominators as

\* floating-point numbers, 1.0, 2.0, ..., 10.0, and run the program again.

\* Can you explain the difference in the results? We will explore this phenomenon in Chapter 4.

\*/

package p1\_6;

public class SumOfReciprocals {

public static void main(String[] args) {

int sum = 0;

double sum1 = 0;

sum = 1/1 + 1/2 + 1/3 + 1/4 + 1/5 + 1/6 + 1/7 + 1/8 + 1/9 + 1/10;

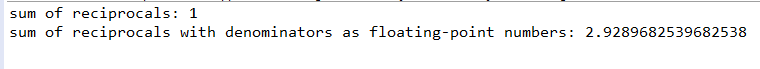
System.out.println("sum of reciprocals: " + sum);

sum1 = 1/1.0 + 1/2.0 + 1/3.0 + 1/4.0 + 1/5.0 + 1/6.0 + 1/7.0 + 1/8.0 + 1/9.0 + 1/10.0;

System.out.println("sum of reciprocals with denominators as floating-point numbers: " + sum1);

}

}

Output: 

P1.7 //Type in and run the following program:

//Then modify the program to show the message "Hello, your name!".

package p1\_7;

import javax.swing.JOptionPane;

public class DialogTester {

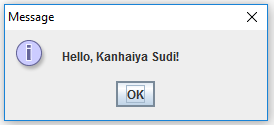
public static void main(String[] args) {

JOptionPane.showMessageDialog(null, "Hello, Kanhaiya Sudi!");

System.exit(0);

}

}

Output: 

P1.8 //Type in and run the following program:

//Then modify the program to show the message "Hello, name!", displaying the name that the user typed in.

package p1\_8;

import javax.swing.JOptionPane;

public class DialogTester {

public static void main(String[] args) {

String name = JOptionPane.showInputDialog("What is your name?");

System.out.println("Hello " + name + "!");

System.exit(0);

}

}

Output: 