Java Programming Brush up Tutorials

Day 1 Agenda:

- What is a computer?
- What is an Algorithm?
- What is flowchart?
- What is JDK, JVM and JRE?
- How to install and set up JDK?
- How to install and set up Eclipse IDE?
- Simple Hello World Java Program

What is a computer?

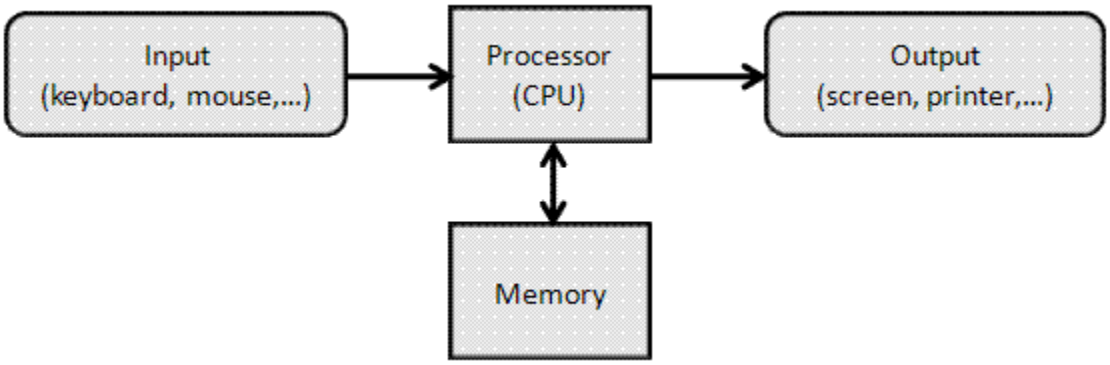
A computer is an electronic device that takes an input from the user and processes the data then gives processed data as an output.

For example: We are giving input into the system to print the paper and finally will get output from the printer.

Here, Input is click on print option through the mouse pad, touch or through the mouse

Output is the paper we are getting from the output device called printer.

CPU is the which processes the input from the mouse and sends an instruction to the concern output device to do the task.



What is an algorithm?

An algorithm is a step-by-step process to solve a problem.

For example: Let's create a word document for the Day 1 Questionnaire

Step 1: Turn on Laptop/Desktop

Step 2: Click on start or search for Word

Step 3: Open the word and choose blank document

Step 4: Paste each question from questionnaire and answer each question by typing the answers

Step 5: Save the file with proper name and in proper folder

Step 6: close the word.

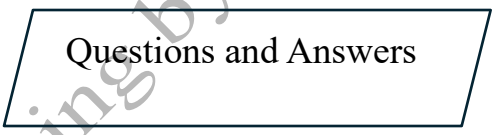
What is a flow chart?

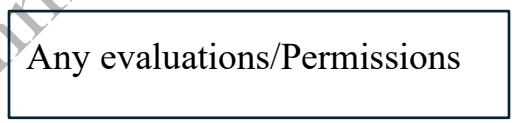
Flow chart is nothing but diagrammatic representation of an algorithm or pictorial representation or graphical representation of algorithm.

Example: Let's do a diagrammatic representation for the above algorithm example.

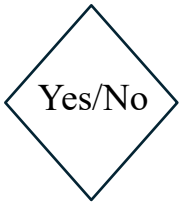
Symbols:

To start and stop / open and close - 

To write/print/input/scan - 

To process/evaluation - 

Flow/ Connections for one to one - 

Decision Making (condition) - 

Example 2: Write a Java Program to implement to check which number is greater than two numbers?

Algorithm:

Step 1: Start

Step 2: read two numbers (a=10, b=20)

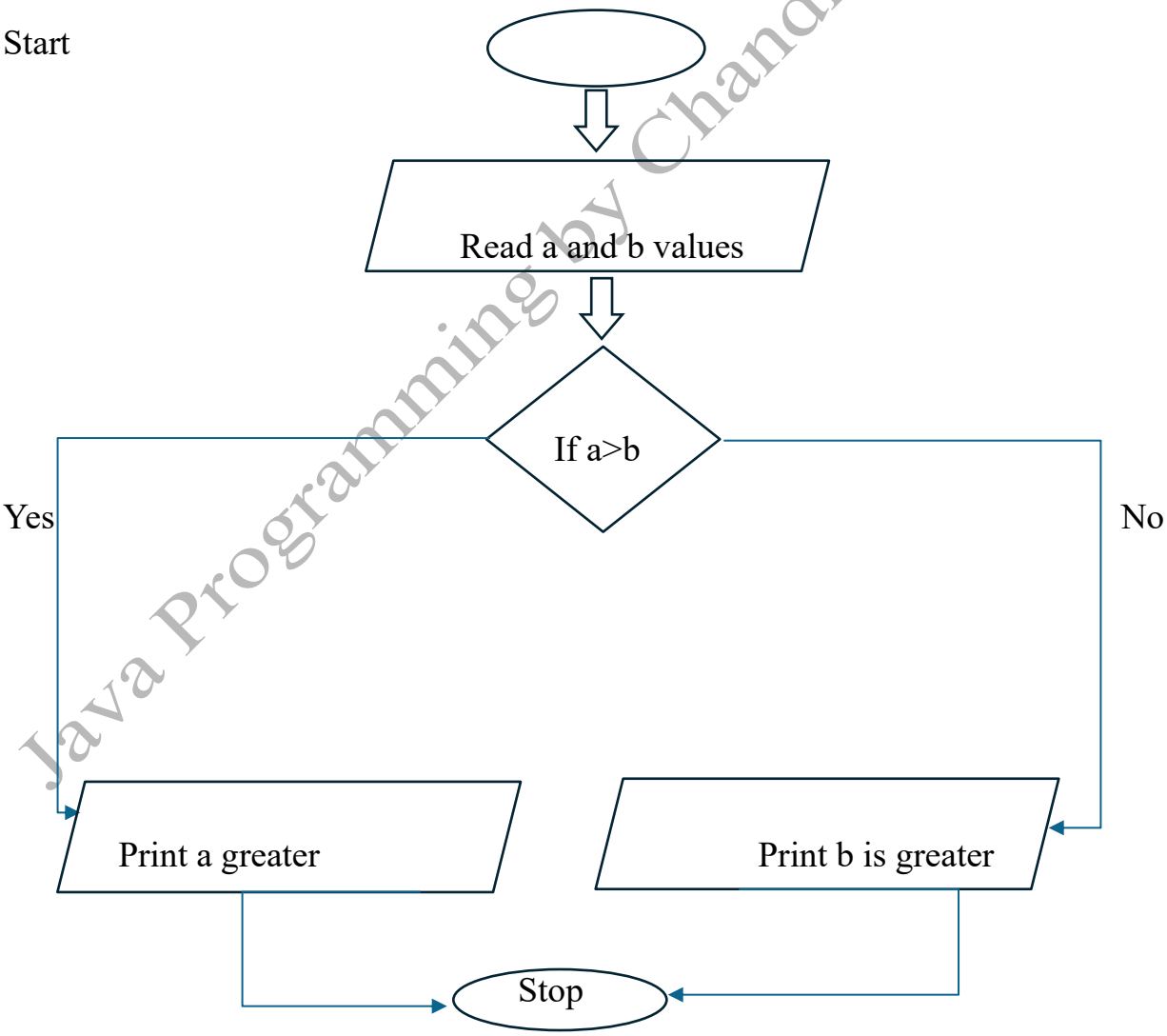
Step 3: write a condition where a is greater or b is greater than of two numbers

Step 4: if a is greater then print a is greater

Step 5: else b is greater then print b is greater

Step 6: Close

Flow chart:



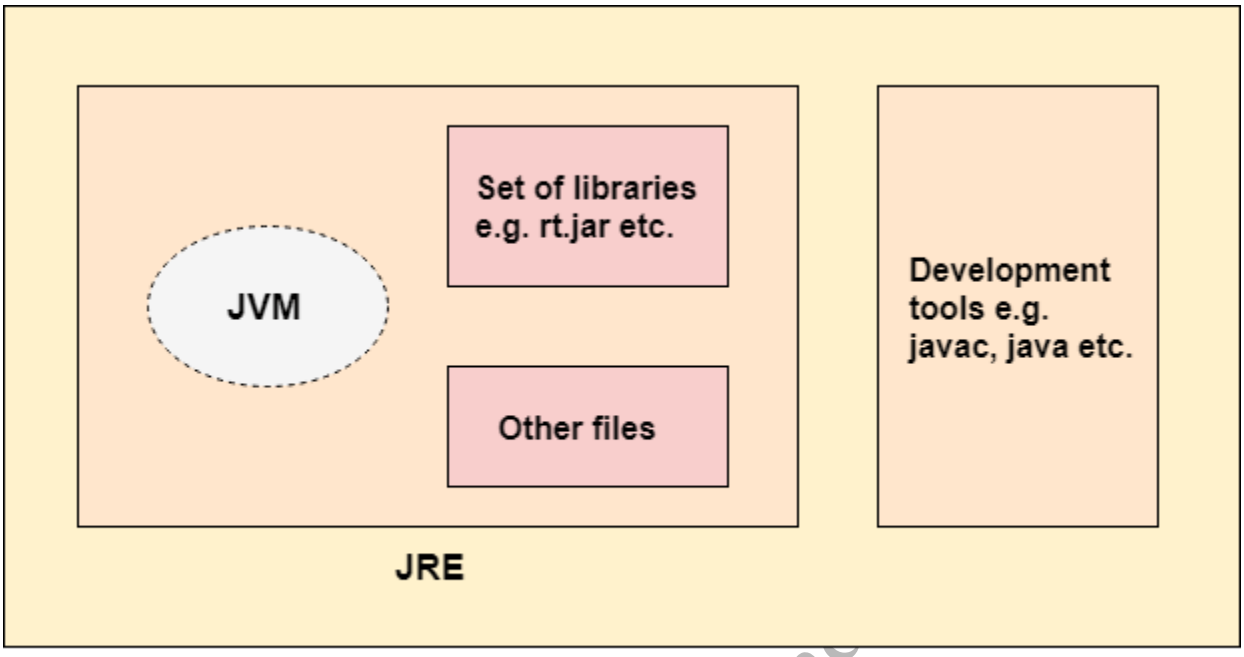
What are JDK, JVM and JRE?

JDK is nothing but Java Development Toolkit. To compile or execute or in simple words converting from high level (English) language to low level (Computer language/byte code), we require JDK.

JVM is nothing but java virtual machine, which means once we compile the java code through JDK we will get a byte code file or class file using this class we can run our java file to get output on virtual machine.

JRE is nothing but Java Runtime Environment sometimes we usually notate JRTE also. This JRE usually has a space that contains java libraries like utilities, .jar files and so on also which includes JVM too. Hence JRE is a implementation of JVM that physically exists.

Finally, JDK contains all JVM and JRE as well.



For more understanding about JDK, JRE and JVM, refer:

https://www.javatpoint.com/difference-between-jdk-jre-and-jvm

To install and execute the JDK:

https://www.oracle.com/java/technologies/downloads/#java17-windows

To install and set up eclipse IDE. Please refer,

https://www.eclipse.org/downloads/download.php?file=/oomph/epp/2024-12/R/eclipse-inst-jre-win64.exe

Write a simple java Program to print Hello World!!!

Syntax:

```
class ClassName{
public static void main (String args[]){
```

```
// statements, conditions and logic of the program as per requirement
}
}
```

Code:

```
class HelloWorld{
public static void main (String args[]){
System.out.println(“Hello World!!!”)
}
}
```