Submitted by

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1. Write a simple algorithm for finding the maximum of three numbers using pseudo code.

Start:
Read a,b,c
If a>b and a>c
Print “a is the biggest number among three”
Else if b>a and b>c
Print “b is the biggest number among three”
Else
Print “c is the biggest number among three”
:End

2. Compare and contrast two different programming languages, highlighting their strengths and weaknesses.

PYTHON	**JAVA**
High-level, object oriented, interpreted programming language that executes code line by line	High-level, class-based, object-oriented programming language for developing web applications.
Has large, enormous library support making the implementation of various programs and algorithms easy	Java has a comprehensive standard library used to build large-scale enterprise applications.
Platform Dependent	Platform Independent
Python is an interpreted language	Java is faster than Python as it is a compiled language
Python code is directly executed without prior compilation, which can cause issues during runtime	Java code must be compiled before running, ensuring that errors are detected before the code is executed
Advantage of shorter development time, as the code can be written and executed without the need for compilation	Disadvantage of longer development time, as the compilation step adds extra time and complexity to the coding process.
More flexibility, as the dynamic typing allows the use of multiple paradigms	Less flexibility, as the static typing restricts the use of some features

3. Explain the compilation process and how it differs from interpretation.

The **compilation** is the process of transforming source code into object code. It is accomplished with the help of the compiler. The compiler checks the source code for syntactical or structural errors, and if it is error-free, it produces the object code. Compiled languages are converted directly into machine code that the processor can execute. As a result, they tend to be faster and more efficient to execute than interpreted languages.

An **interpreter** is a program that directly executes the instructions in a high-level language, without converting it into machine code. Interpreters run through a program line by line and execute each command.

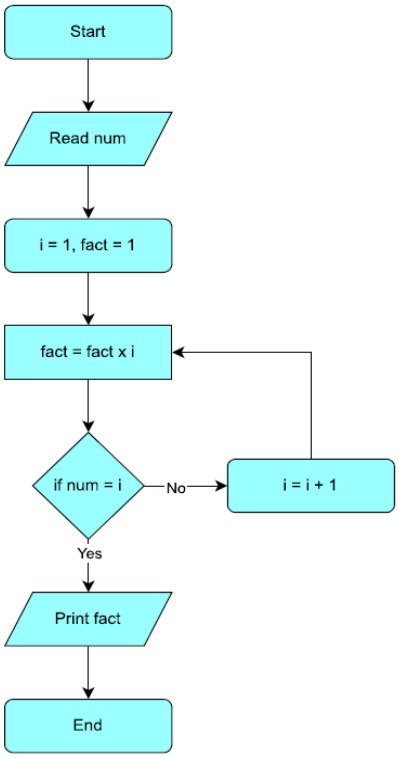
Advantages of Compiled languages
Programs that are compiled into native machine code tend to be faster than interpreted code. This is because the process of translating code at run time adds to the overhead and can cause the program to be slower overall.

Disadvantages of Compiled languages
Additional time is needed to complete the entire compilation step before testing. Generated binary code is platform dependent.

Advantages of interpreted languages
Interpreted languages tend to be more flexible, and often offer features like dynamic typing and smaller program size. Also, because interpreters execute the source program code themselves, the code itself is platform independent.

Disadvantages of Interpreted languages
They are slow and resource-intensive. This is because the interpreter has to read, analyse, and execute the source code every time it runs, which adds an extra layer of overhead and complexity.

4. Create a flowchart for a program that calculates the factorial of a given number.



5. Write a function in your preferred programming language to calculate the area of a rectangle.

```java
import java.util.Scanner;
public class Rectangle_area {

    static void Find_area(float l,float b) {
        float area=l*b;
        System.out.println("area="+area);
    }

    public static void main(String[] args) {

        float l,b;
        Scanner sc=new Scanner(System.in);
        l=sc.nextFloat();
        b=sc.nextFloat();
        sc.close();
        Find_area(l,b);

    }

}
```

```
4
5
area=20.0
PS D:\Govind\UST\Practice>
```