1. **Pseudo code for finding the maximum of three numbers:**
   * Begin
   * Input: num1, num2, num3
   * If num1 >= num2 AND num1 >= num3 Then
   * Output: num1 is the maximum
   * Else If num2 >= num1 AND num2 >= num3 Then
   * Output: num2 is the maximum
   * Else
   * Output: num3 is the maximum
   * End fdsdaasfgx
2. **Comparison of Python and Java:**

**Python**:

o **Strengths**:

* + - * Simple syntax, easy to learn.
      * High-level language, great for rapid development.
      * Extensive libraries and community support.
      * Suitable for tasks like data science, AI, web development, and scripting. o **Weaknesses**:
      * Slower performance compared to statically-typed languages like Java.
      * Not ideal for mobile development.
      * Less optimized for large-scale applications compared to Java.

**Java**:

o **Strengths**:

* + - * Strong performance and scalability, well-suited for large applications.
      * Object-oriented and platform-independent (Write Once, Run Anywhere).
      * Strong community, robust frameworks, and libraries (e.g., Spring, Hibernate).

o **Weaknesses**:

* + - * More verbose syntax, harder to learn than Python.
      * Slower development time compared to Python for quick projects.
      * Requires more memory compared to Python for similar tasks.

1. **Compilation vs. Interpretation**:

o **Compilation**: A compiler translates the entire source code into machine code in one go before execution. The compiled program is independent of the source code and can be run multiple times. Example: C, C++.

* + - * **Advantages**: Faster execution after compilation, optimized machine code.
      * **Disadvantages**: Compilation step is time-consuming.

o **Interpretation**: An interpreter translates the source code into machine code line-by-line during execution. The program must be re-interpreted every time it runs. Example: Python, JavaScript.

* + - * **Advantages**: Easier debugging and testing, no separate compilation step.
      * **Disadvantages**: Slower execution because the code is translated every time.

# FACTORIAL OF A NUMBER

**START**

INPUT NUMBER (N)

YES

NO

N = 0 ?

FACT = 1

i=1

YES

i <= N

FACT = FACT\*i

I = I+1

FACT = 1

PRINT FACT

**STOP**

**5 Function to calculate the area of a rectangle in Python:**

def calculate\_area(length, width):

return length \* width

# Example usage

length = 5 width = 10 area = calculate\_area(length, width)

print(f"The area of the rectangle is: {area}")