Surya M

Practice Questions for Students:

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

Input: Three numbers, A, B, C

Output: Maximum of A, B, and C

Step 1: If A >= B and A >= C, then

Output "A is the maximum"

Step 2: Else if B >= A and B >= C, then

Output "B is the maximum"

Step 3: Else

Output "C is the maximum"

Step 4: End

| **Python** | **Java** |
| --- | --- |

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

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| --- | --- | --- |
| Ease of Learning | Very easy to learn due to simple syntax and readability. | Harder to learn due to verbose syntax and strict rules. |

|  |  |  |
| --- | --- | --- |
| Typing | Dynamically typed (no need to declare variable types). | Statically typed (requires explicit variable type declaration). |

|  |  |  |
| --- | --- | --- |
| Performance | Slower at runtime (interpreted and dynamically typed). | Faster (compiled into bytecode and executed by JVM). |

print("Hello, World!") public class HelloWorld {

public static void main(String[] args) { System.out.println("Hello, World!"); } }

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

Compilation:

* Translates the entire source code into machine code before execution.
* Produces an executable file.
* Faster during runtime since code is precompiled.
* Example languages: C, Java (bytecode compiled).

Interpretation:

* Translates code line-by-line during execution.
* No separate executable file.
* Slower during runtime due to real-time translation.
* Example languages: Python, JavaScript.

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

1. **Start**
2. **Input the number N**
3. **Initialize Factorial = 1**
4. **If N > 0:**

**Multiply Factorial = Factorial \* N**

**Decrease N = N - 1**

**Repeat step 4.**

**Output Factorial**

1. **End**

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

l =int(input("lenght:"))

b= int(input("breath:"))

area = l\*b

print(area)