

Flowchart and Problem Solving

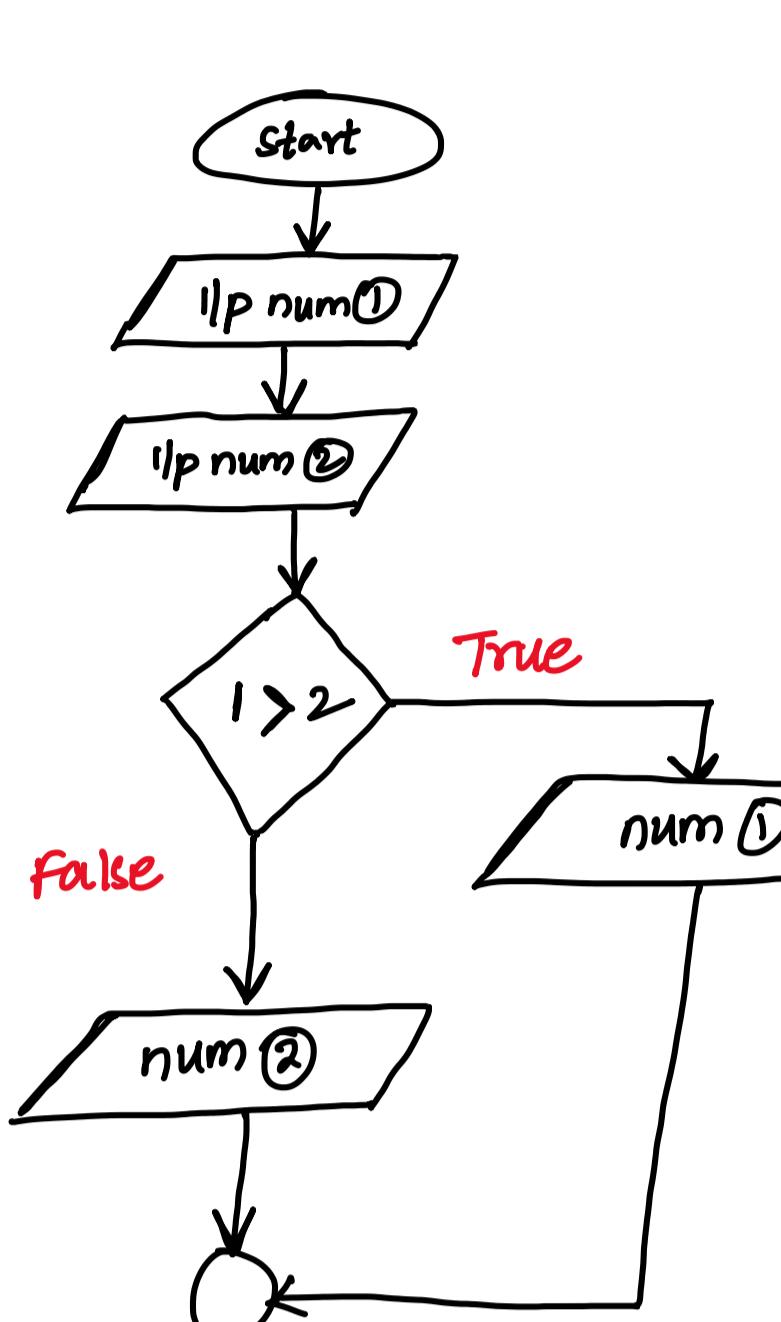
Tuesday, December 9, 2025

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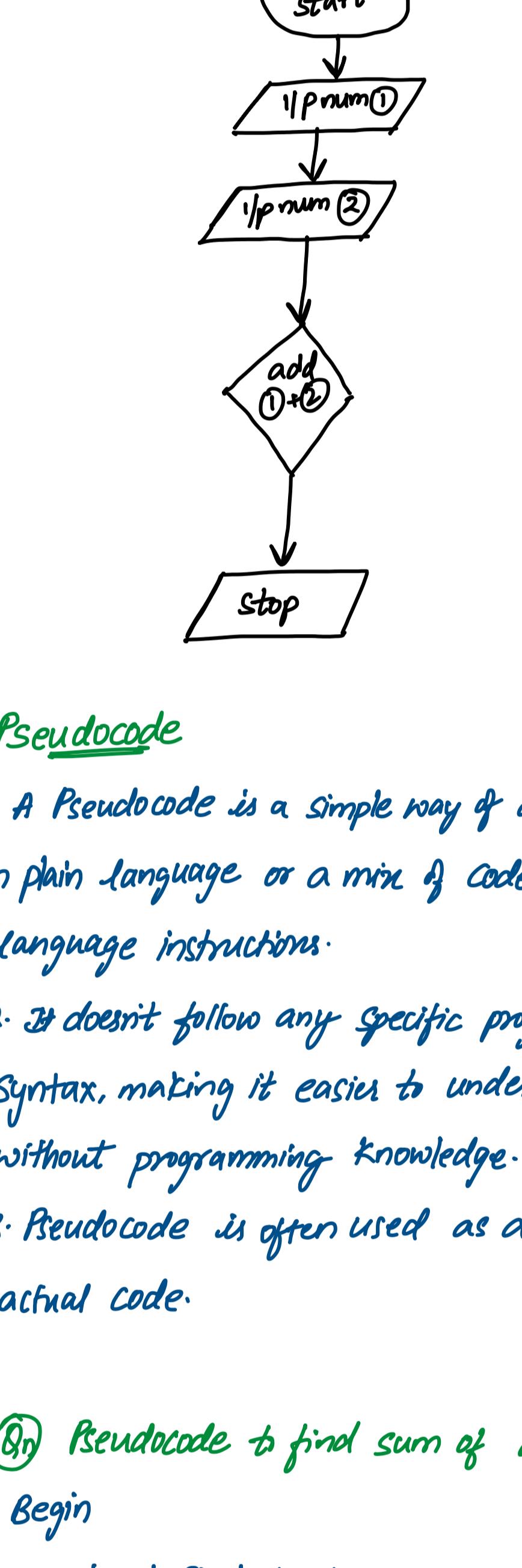
Basics of problem solving

Flowchart

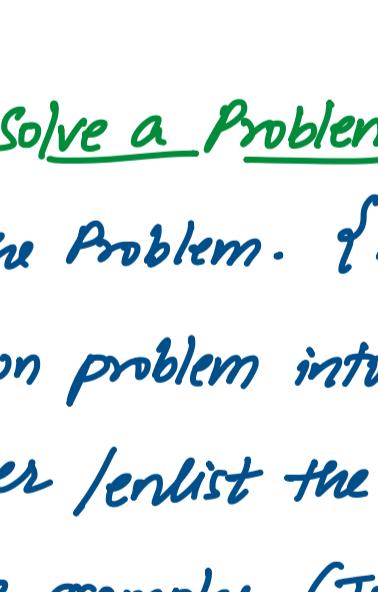
1. A flowchart is a graphical representation of a process, system (or) algorithm.
2. It uses symbols and arrows to show the sequence of steps needed to complete a task.
3. Flowcharts are useful in visualizing how to solve a problem and make the process easier to follow.



Qn) Flowchart to display maximum of 2 numbers.



Qn) Flowchart to add 2 numbers



Pseudocode

1. A Pseudocode is a simple way of describing an algorithm in plain language or a mix of code like and natural language instructions.

2. It doesn't follow any specific programming language syntax, making it easier to understand, even for those without programming knowledge.

3. Pseudocode is often used as a step before writing actual code.

Qn) Pseudocode to find sum of 2 numbers

Begin

 Input First Number

 Input Second Number

 Sum = First Number + Second Number

 print sum

End

Process to Solve a Problem

1. Analyze the Problem. {Input, Output, Constraint?}

2. Break down problem into smaller subparts.

3. Remember /enlist the concept.

4. Take 2-3 examples. (To clear out confusion/gap).
5. Write the pseudocode on a paper.
6. Dry run it once.
7. Write down your solution.
8. look out for edge cases / boundary conditions. *

④ Boundary condition

A Boundary Condition is a state (or) input that lies at the extreme limit of the expected input range. It is the line where the behaviour of the system might change.

- Definition: The specific values at the upper and lower limits of the input domain.

- Example: If a function accepts integers from 1 to 100, the boundary conditions are exactly 1 and 100.

⑤ Edge case

An Edge Case is a problem (or) situation that occurs only at an extreme (max or min) operating parameter. It is a specific scenario that tests the robustness of your code.

- Definition: A scenario that occurs at the "edge" of normal operation, often involving the boundary condition themselves (or) unexpected inputs.

- Example: In that same 1-100 function, an edge case might be passing 1 (the minimum boundary), 101 (just over the boundary), (or) 0 (just under the boundary).