

Algorithm

→ procedure for solving a mathematical problem in finite no. of steps that frequently involves repetition of an operation to solve a computer process.

Characteristics :

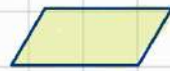
1. Each step/instruction should be precise and unambiguous.
2. Each instruction should be performed in finite time.
3. One or more instruction should not be repeated infinitely
4. After execution result must be obtained.

Example : add two numbers a and b

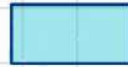
Step I : initialize ;
Step II : input/read/scan a & b ;
Step III : $c = a + b$;
Step IV : output / write / print c ;
Step V : terminate / stop.

Flow Chart :

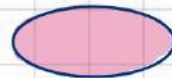
1. Input / Output



2. Process

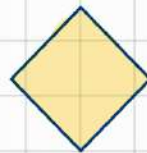


3. Termination
(Start / Stop)



→ "oval ; not circle"

4. Decision

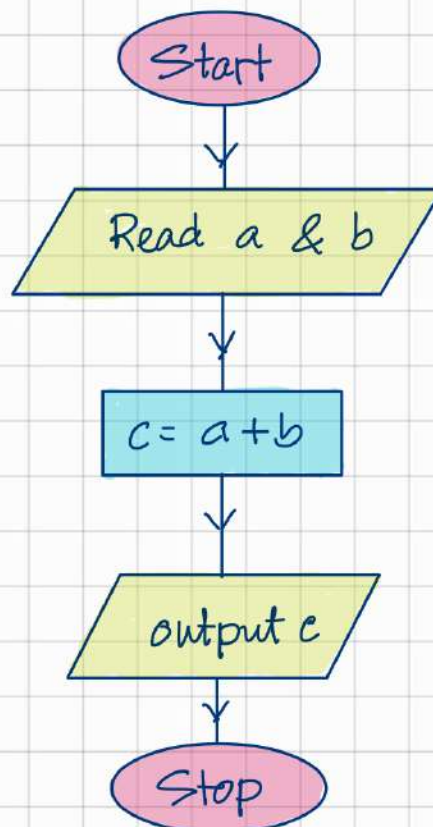


5. Connector

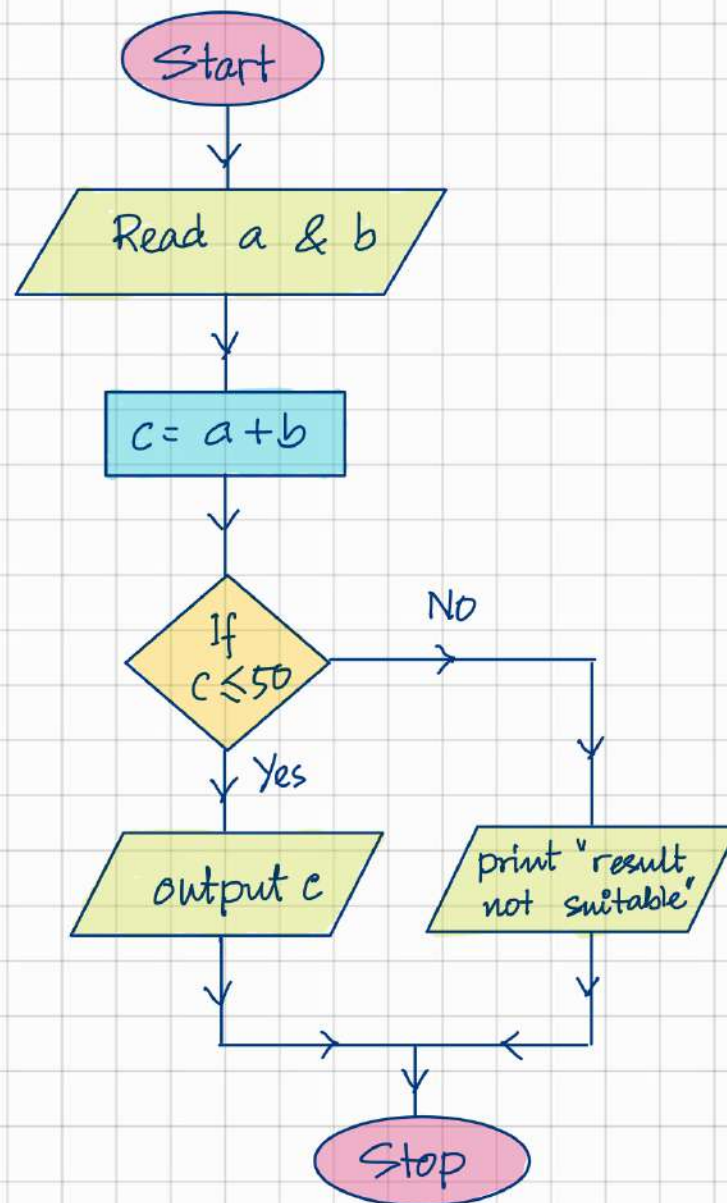


→ circle

Example : Add two numbers a & b .



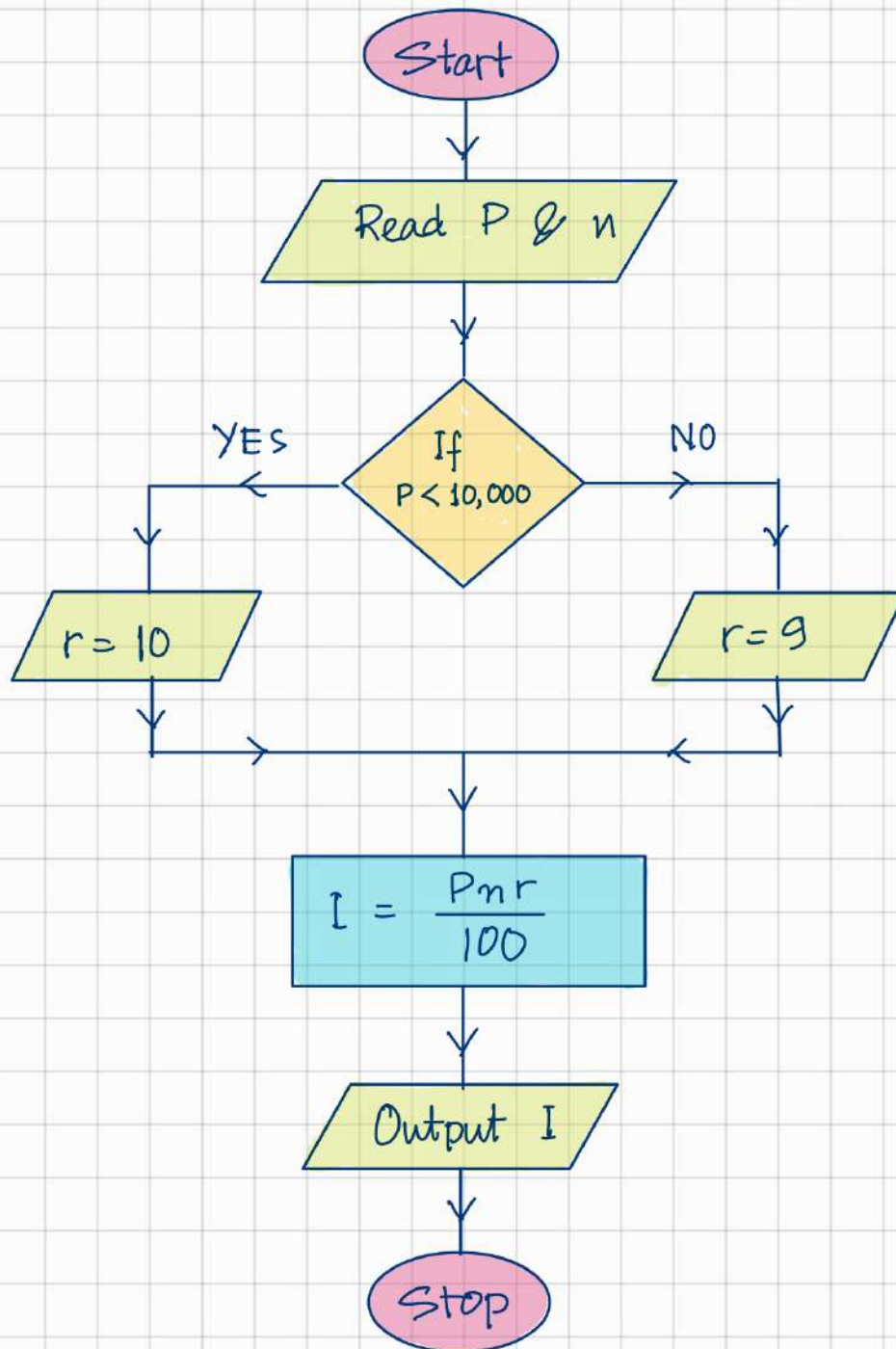
Example : Add two numbers a and b and display result if it is less than 50.



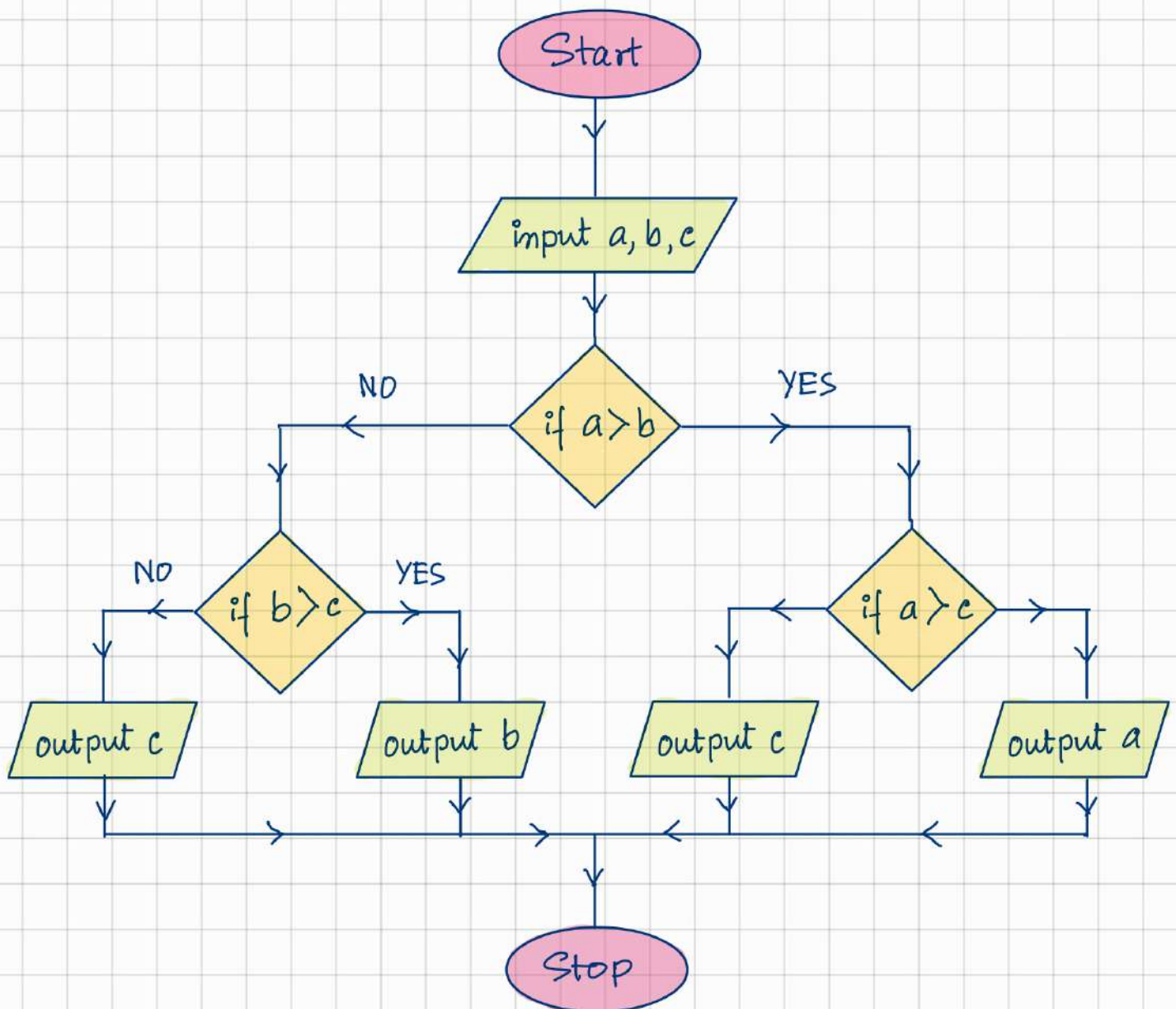
Example : Draw a flow chart to calculate simple interest for principal P ($S.I. = \frac{Pnr}{100}$)

if $P < 10,000$; then $r = 10\%$

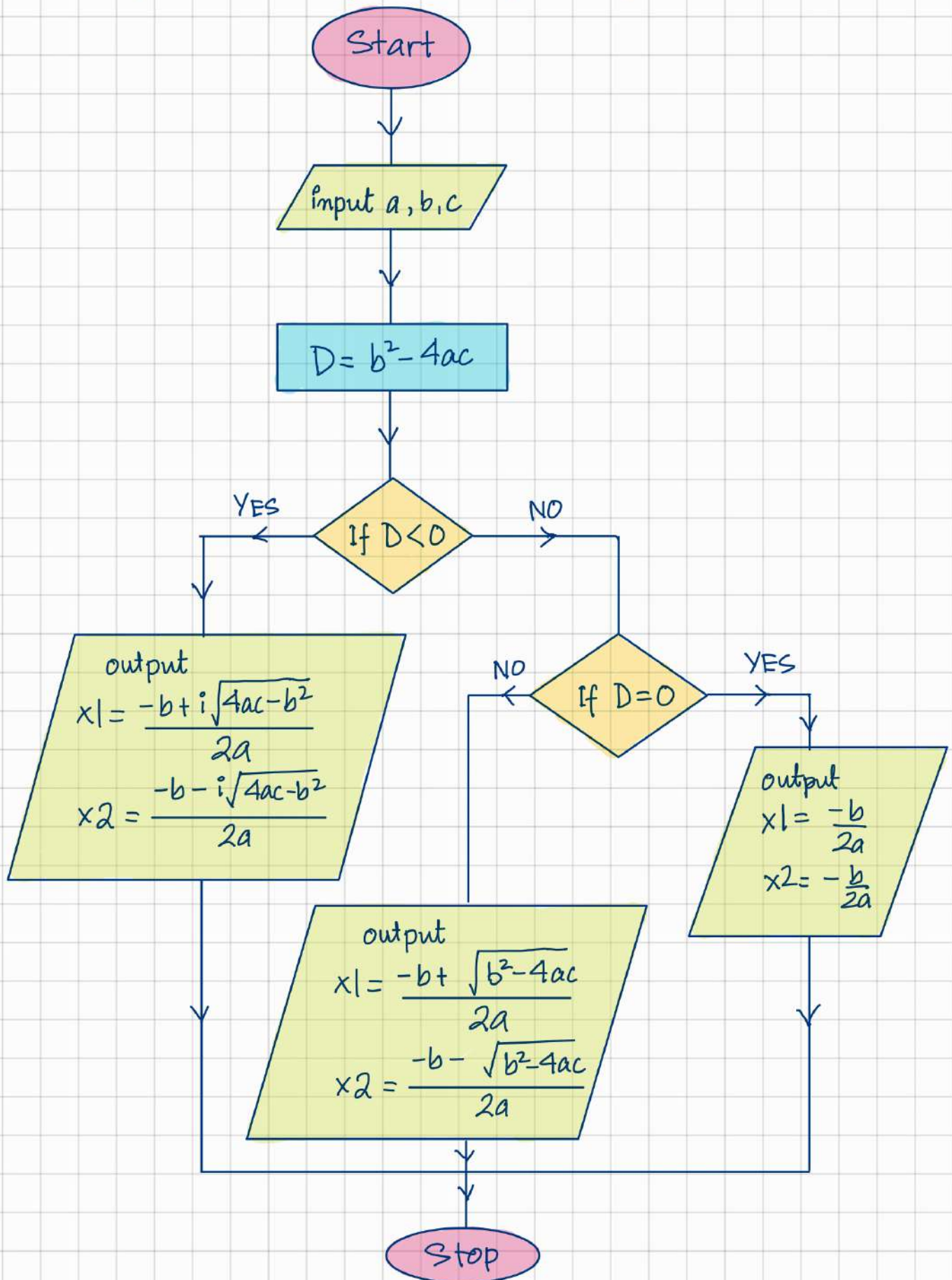
if $P \geq 10,000$; then $r = 9\%$



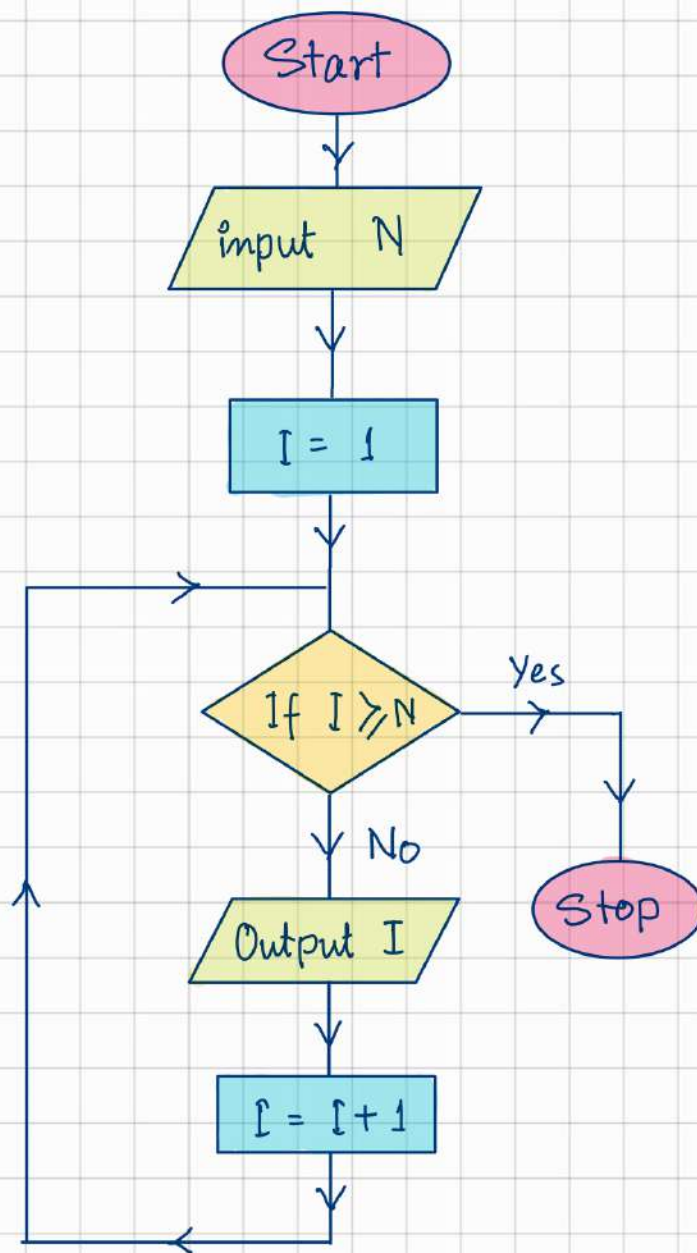
Example : Draw a flowchart to find the largest number among a , b & c .



Example : Draw a flowchart to find the roots of a quadratic equation of the form $ax^2 + bx + c = 0$



Example : Display first N natural numbers



Example : Write a flowchart to calculate the factorial of a number .

