

18.11.21 Introduction to Programming, Algorithm, and Flowchart

1) Algorithm for interchanging numeric values of 2 variables.

Ans Step 1: Start

Step 2: Declare variables a, b, and c.

Step 3: Initialize a and b

Step 4: Assign $c = a$

Assign $a = b$

Assign $b = c$

Step 5: Print a and b

Step 6: Stop

$$\begin{array}{l} \text{c} = 10 \\ \text{a} = 10 \\ \text{b} = 20 \\ \text{c} = 10 \\ \rightarrow \text{a}, \text{b} \\ \downarrow \\ 20, 10 \end{array}$$

2) Algorithm that compares 2 numbers and prints message that identifies the greater number or states both numbers are equal.

Ans Step 1: Start

Step 2: Declare variables num1 and num2

Step 3: Initialize num1 and num2

Step 4: If num1 > num2

Print num1

Else

If num2 > num1

Print num2

Else

Print num1 and num2 are equal

Step 5: Stop

3) Algorithm to check whether a year is a leap year or not.

Ans Step 1: Start

Step 2: Read year

A tree known as the grows in Australia's rainforest.

Ever wondered why 'berserk' comes from? 'Berserkers' was some terrifying Vikings who wore bear skins and howled like animals!

Among the many believed in various forms of thunder, lightning, mischief-making, shape-shifting, different kinds of

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Step 3: If $\text{year} \% 4 = 0$ and $\text{year} \% 100 \neq 0$
Print leap year

Else

If $\text{year} \% 4 = 0$ and $\text{year} \% 400 = 0$
Print not a leap year

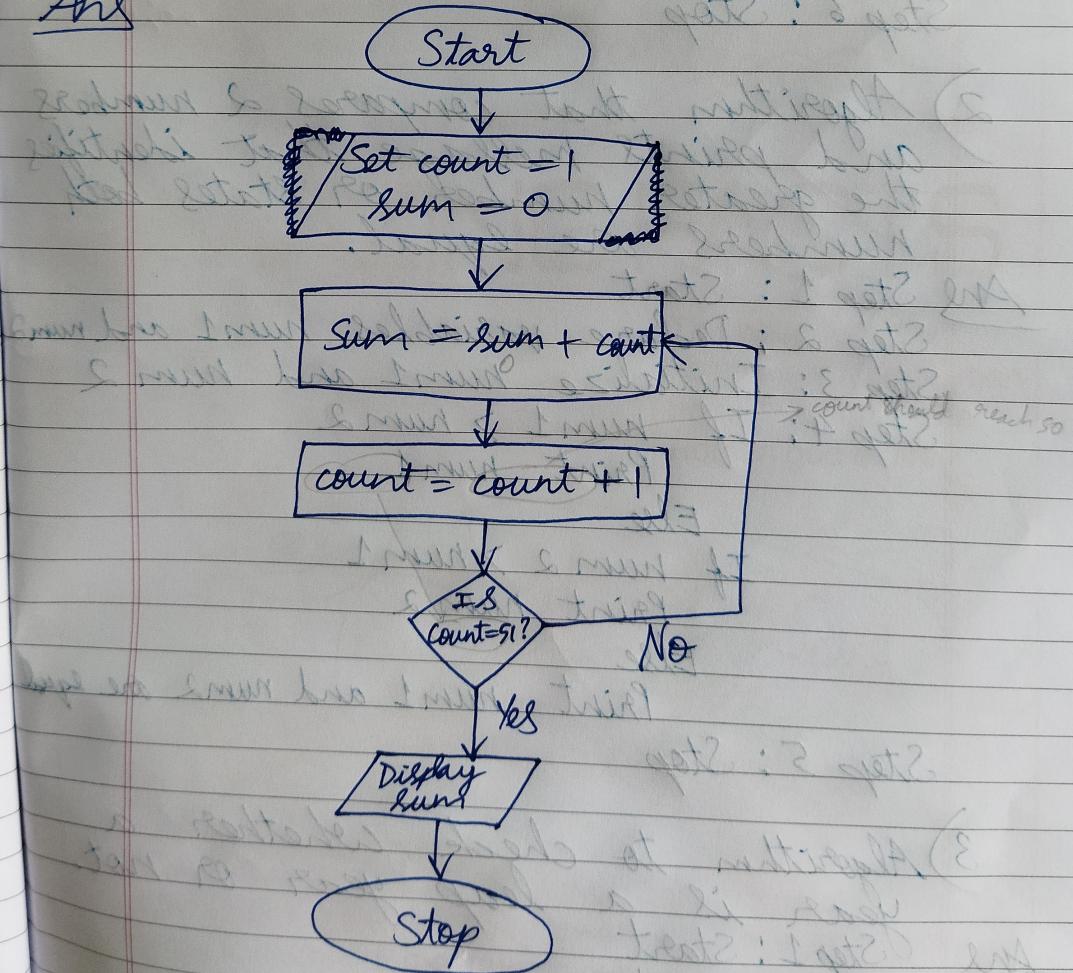
Else

Print not a leap year

Step 4: Stop

4) Flowchart to find sum of first 50 natural numbers.

Ans



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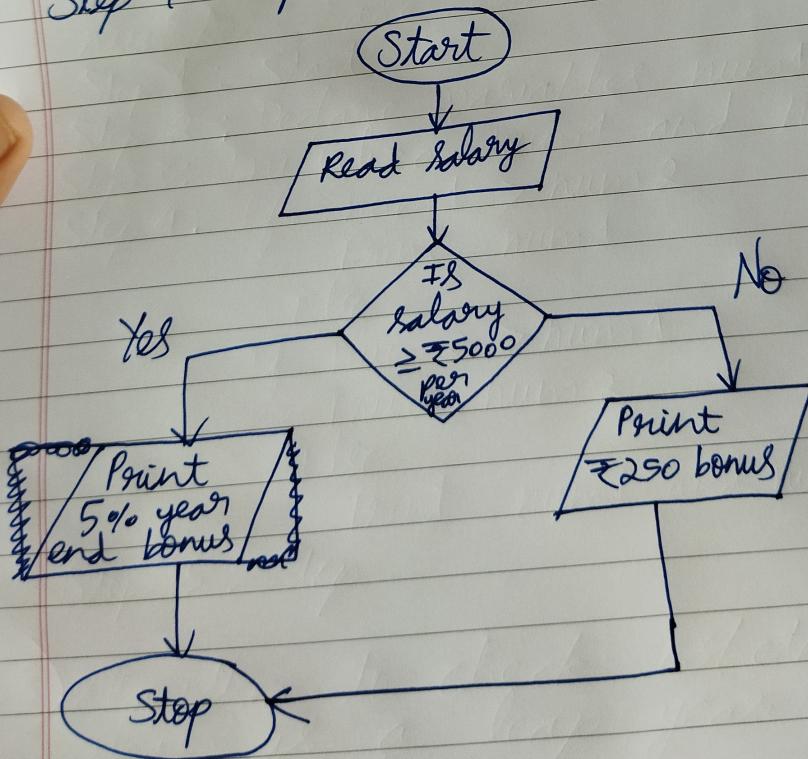
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5) The XYZ construction company plans to give a 5% year-end bonus to each of its employees earning ₹ 5,000 or more per year, and a fixed bonus of ₹ 250 to all other employees. Draw a flow chart and write step-form algorithm for printing the bonus of any employee.

Ans Step 1: Start
Step 2: Read salary
Step 3: If $\text{Salary} \geq ₹ 5000 \text{ per year}$
Print 5% year-end bonus
Else
Print ₹ 250 bonus

Step 4: Stop



Step 3: If

Step 4

Step 4

4) Flowchart

Ans

Start here
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