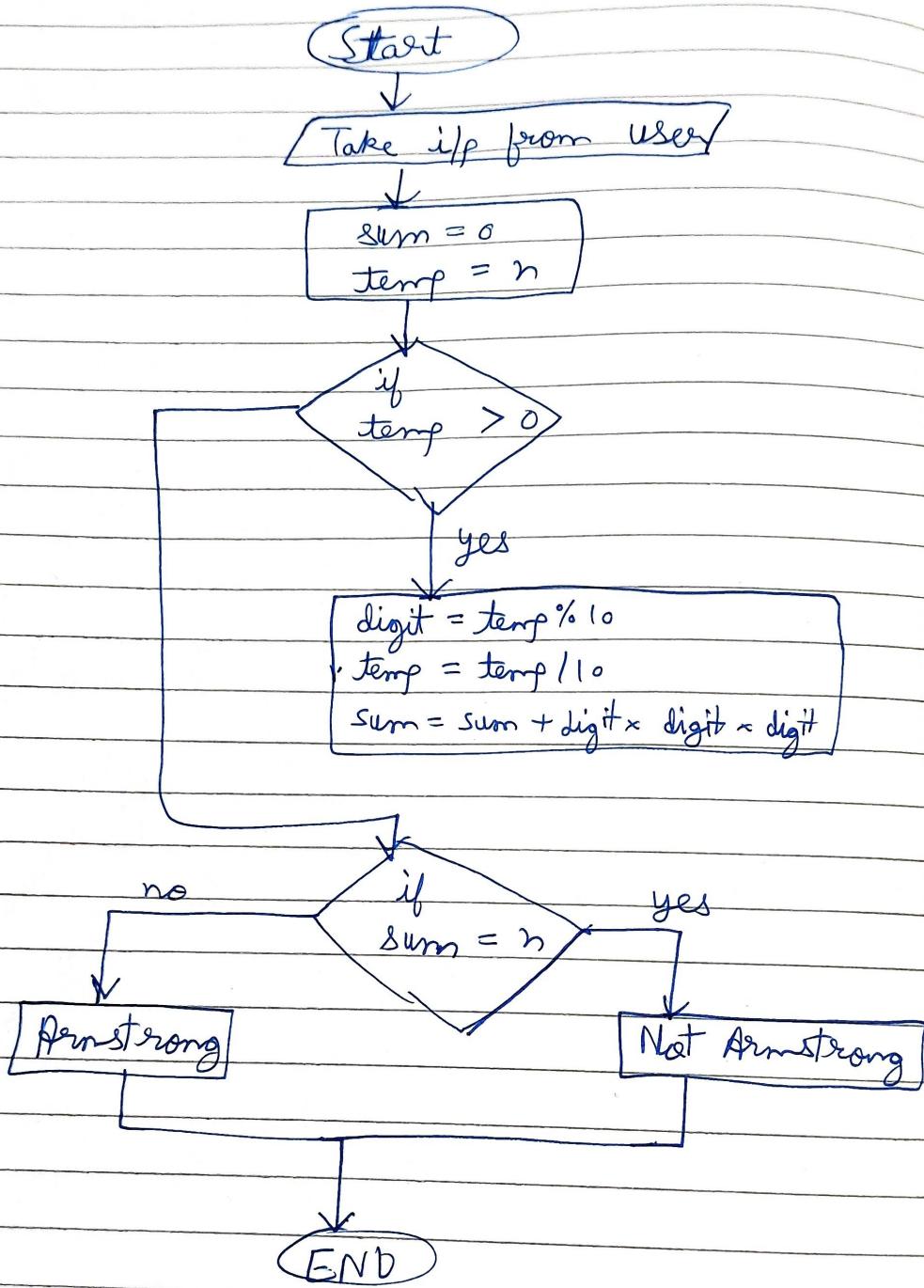


Assignment - 1

CLASSMATE
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Q.1)

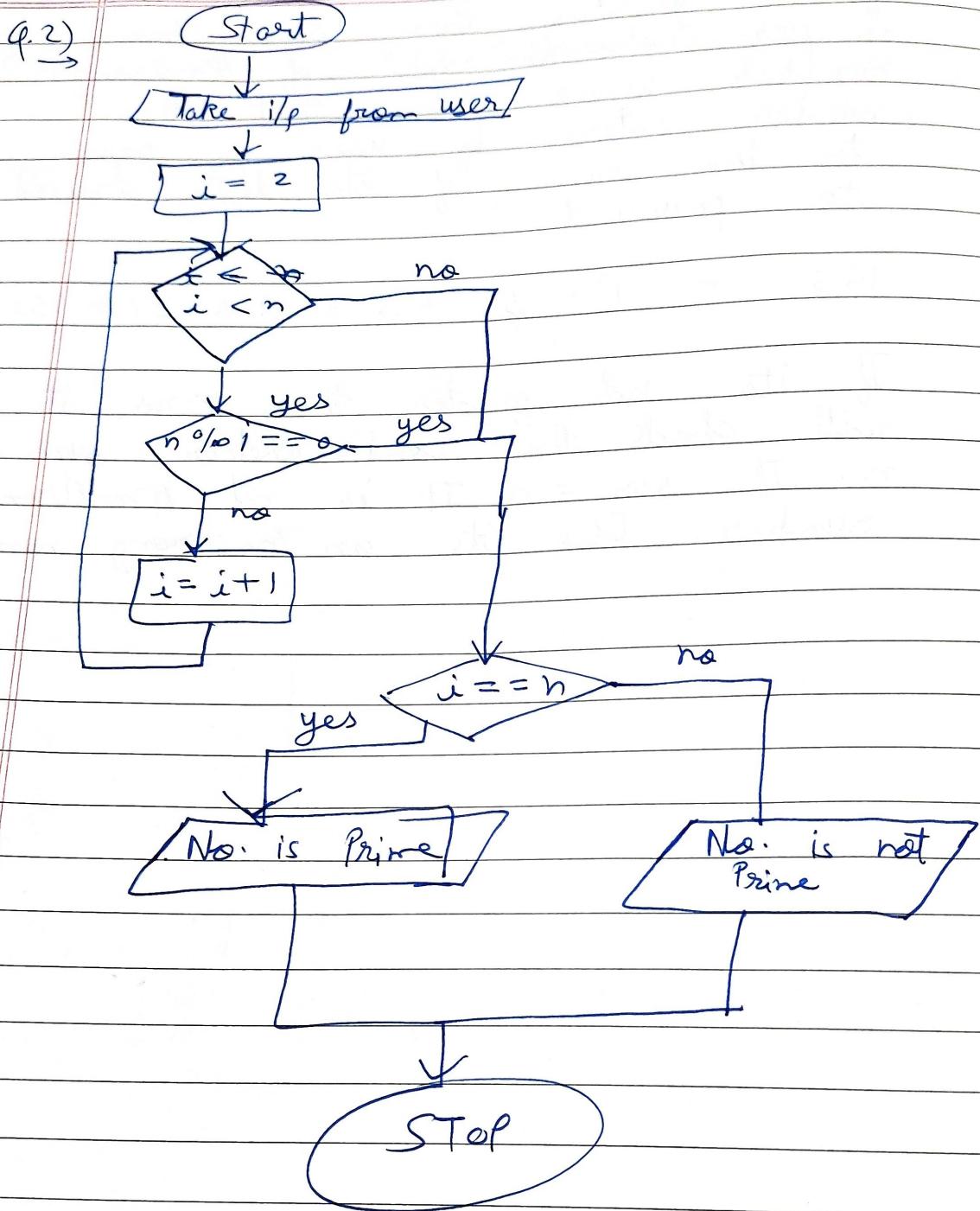


In this flowchart, we have taken i/p from user. We have initialised $sum = 0$, & $temp$ var. which is $= n$. Then we have put on a condition whether $temp$ is greater than zero.

If its greater than zero then as per algorithm def'n of Armstrong number which states that the number entered by user is equal to the sum of its digits raised to power. *

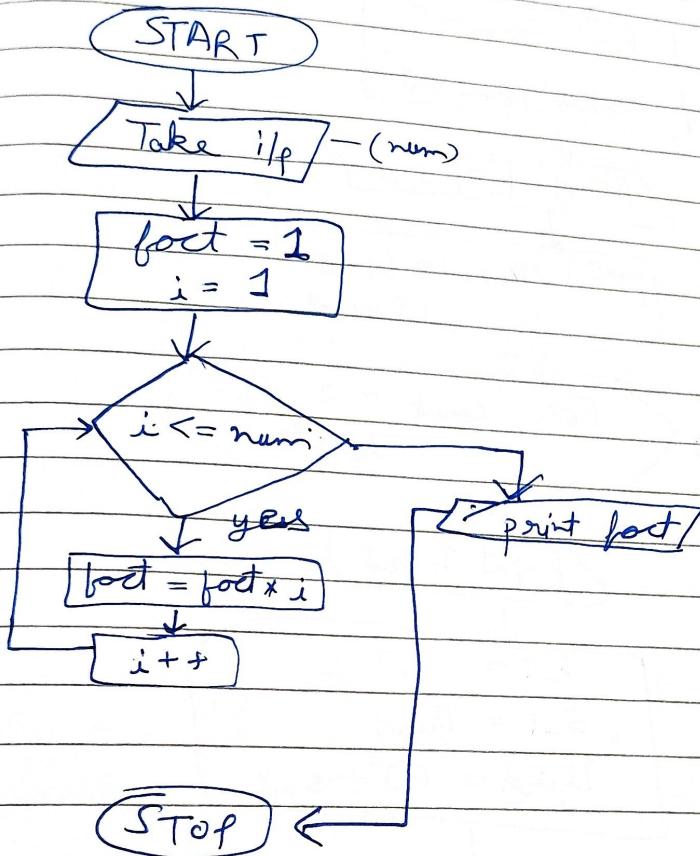
$$\text{eg: } 153 = 1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153$$

If its not greater than zero, it will check the cond'n whether sum is = n. If sum = n It is not Armstrong number. Else its an Armstrong number



A prime number is a number which is divisible by only 1 and itself.
 2 is the only even prime number.
 \therefore We have initialised i with 2 . Checking the number greater than ' $i=2$ '. If ~~yes~~ then using modulo checking prime no. cond. If 'yes' check whether $i=n$

If its then not prime. But no. is prime else division we will after doing modulo check about the increment cond. " for i < n.



A factorial is a mathematical concept in which the no. entered by user is used to get the product of all the numbers including that no.

e.g.: $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$. It is denoted by !

(Fact in this flowchart). Initialized it with 1

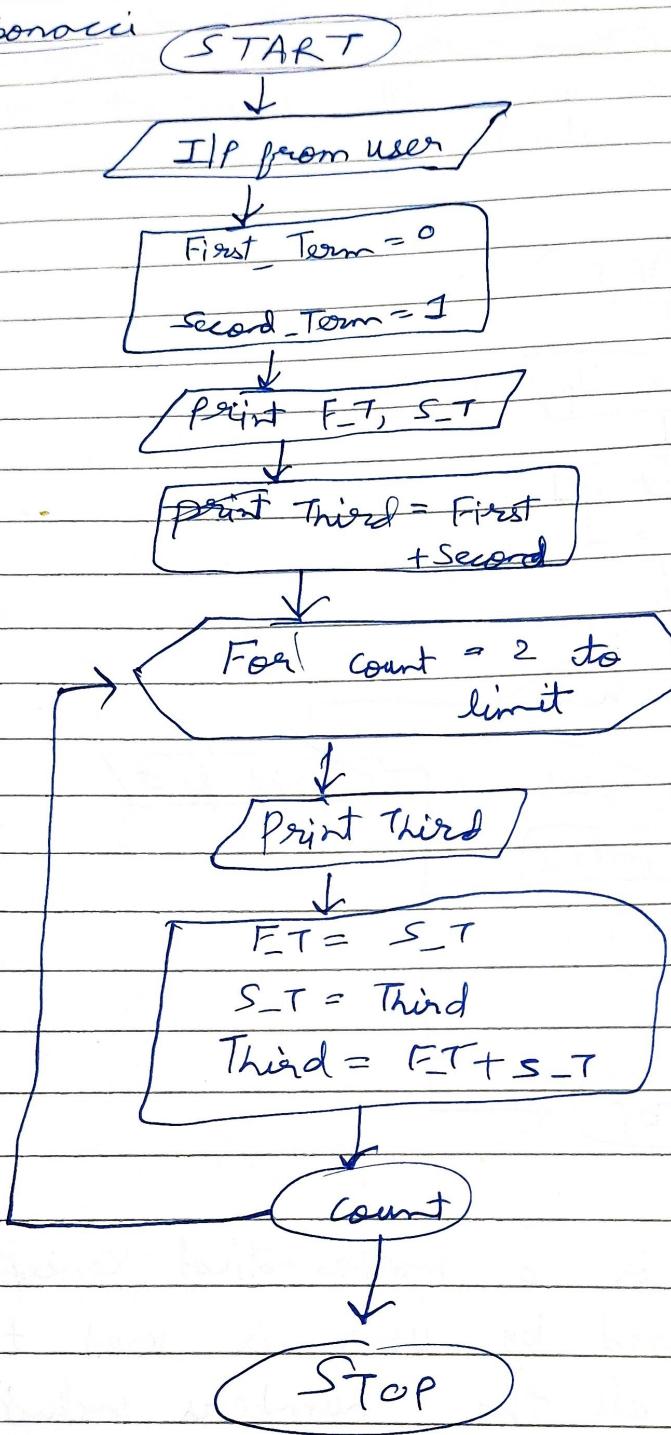
Check whether is it less than or equal to num then $fact = fact * i$. Increment the value of i till it reaches n. Once it reaches n then print fact.

Q.4)

Fibonacci

Page _____

Q.5)



Fibonacci series is a range / series of number where first num is zero , second num is 1 third num is the sum of first two
 In the flowchart, we use count variable to the n - no. in the series. sum of first with second , second with third , third = first + second and so on ...

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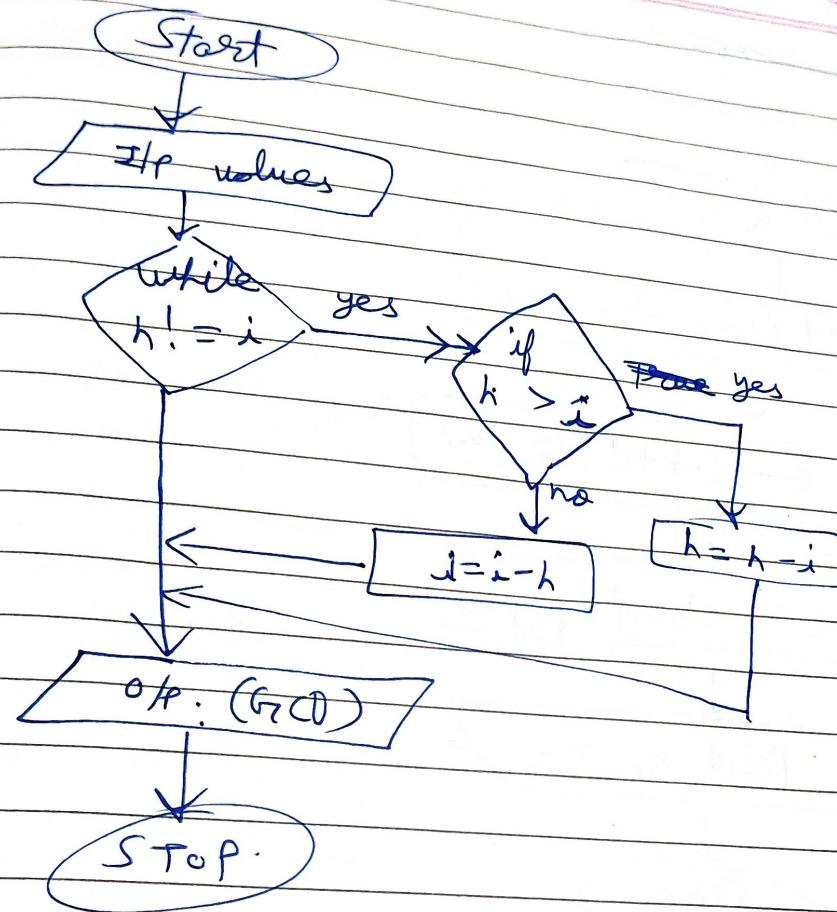
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GCD

classmate

Date _____

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The GCD stands for Greatest Common Divisor. It tells the greatest common factor number that divides them exactly.

In other words, it is also called HCF viz Highest Common Factor.

e.g.: The GCD of 10 & 15 is 5.

P6

Start

I/P a, b, c

$\sqrt{b \times b - 4 \times a \times c}$

Roots

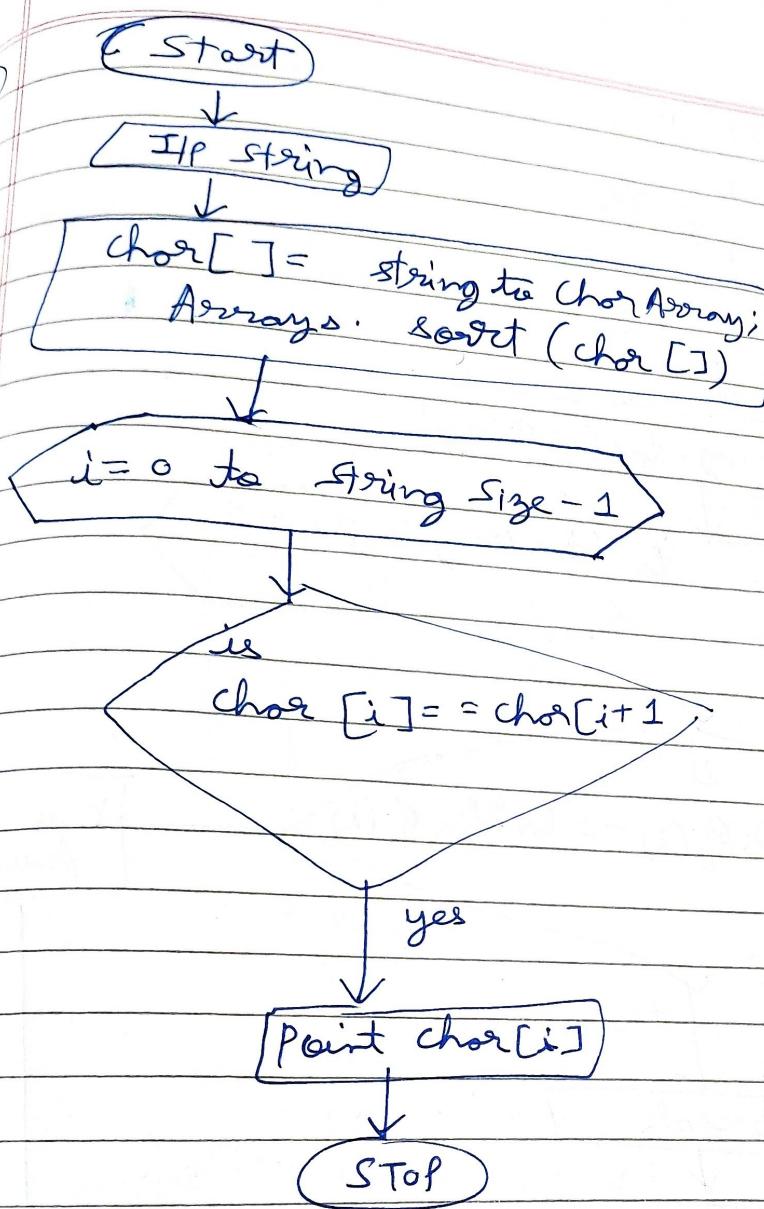
$x_1 \leftarrow (-b + d) / (2 + a)$

$x_2 \leftarrow -b - d / (2 + a)$

Print x_1, x_2

Stop

This is the basic formula to calculate roots of any quadratic eq.
But in actual code, I have used Math.sqrt() method to get square root with ease.



1) \rightarrow I/P String

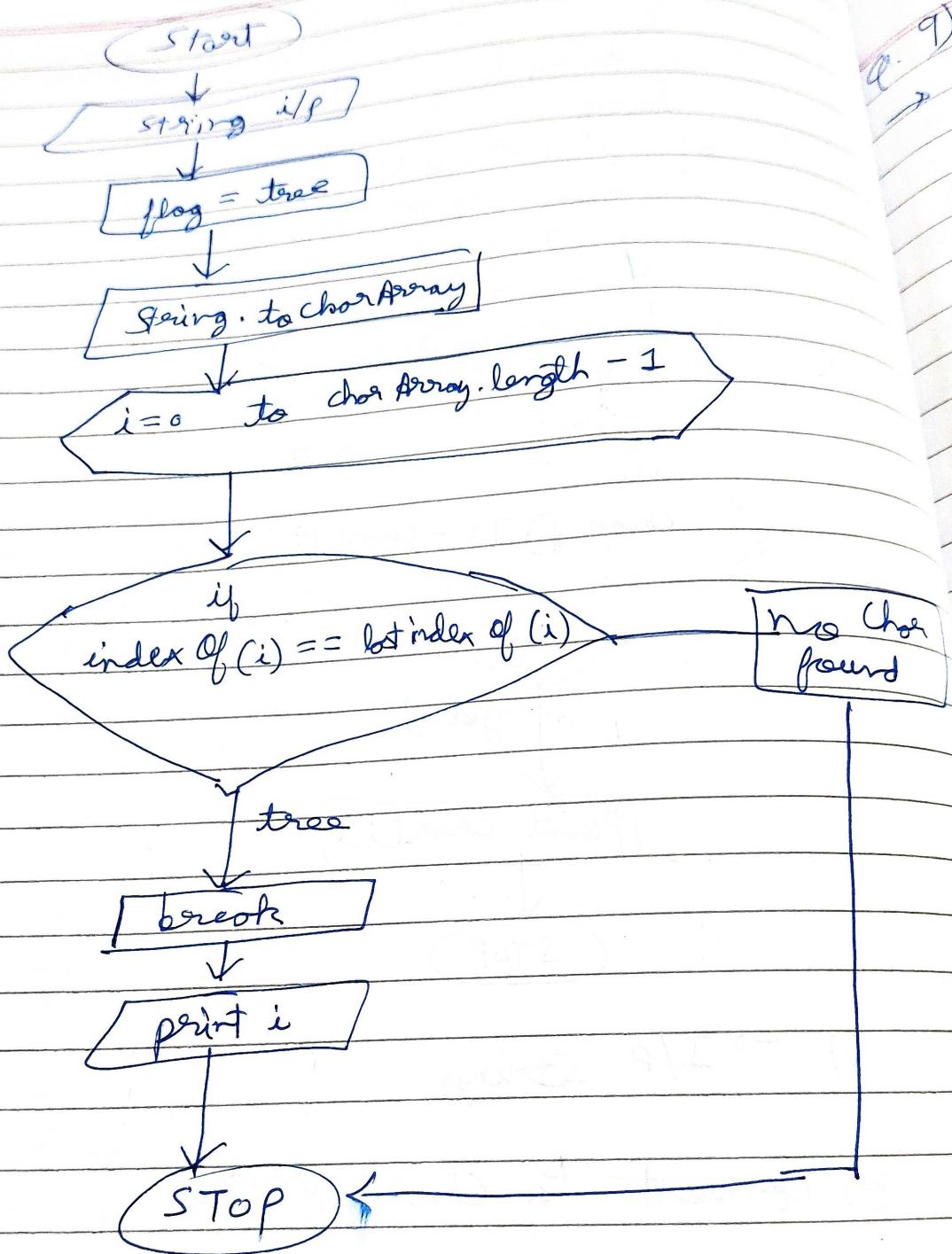
2) Convert to Chor. array

3) Sort Chor Array

4) If $\text{chorAt}(i) == \text{chorAt}(i + 1)$

5) print $\text{chorAt}(i)$

Q. 8)



Steps

1) I/P String

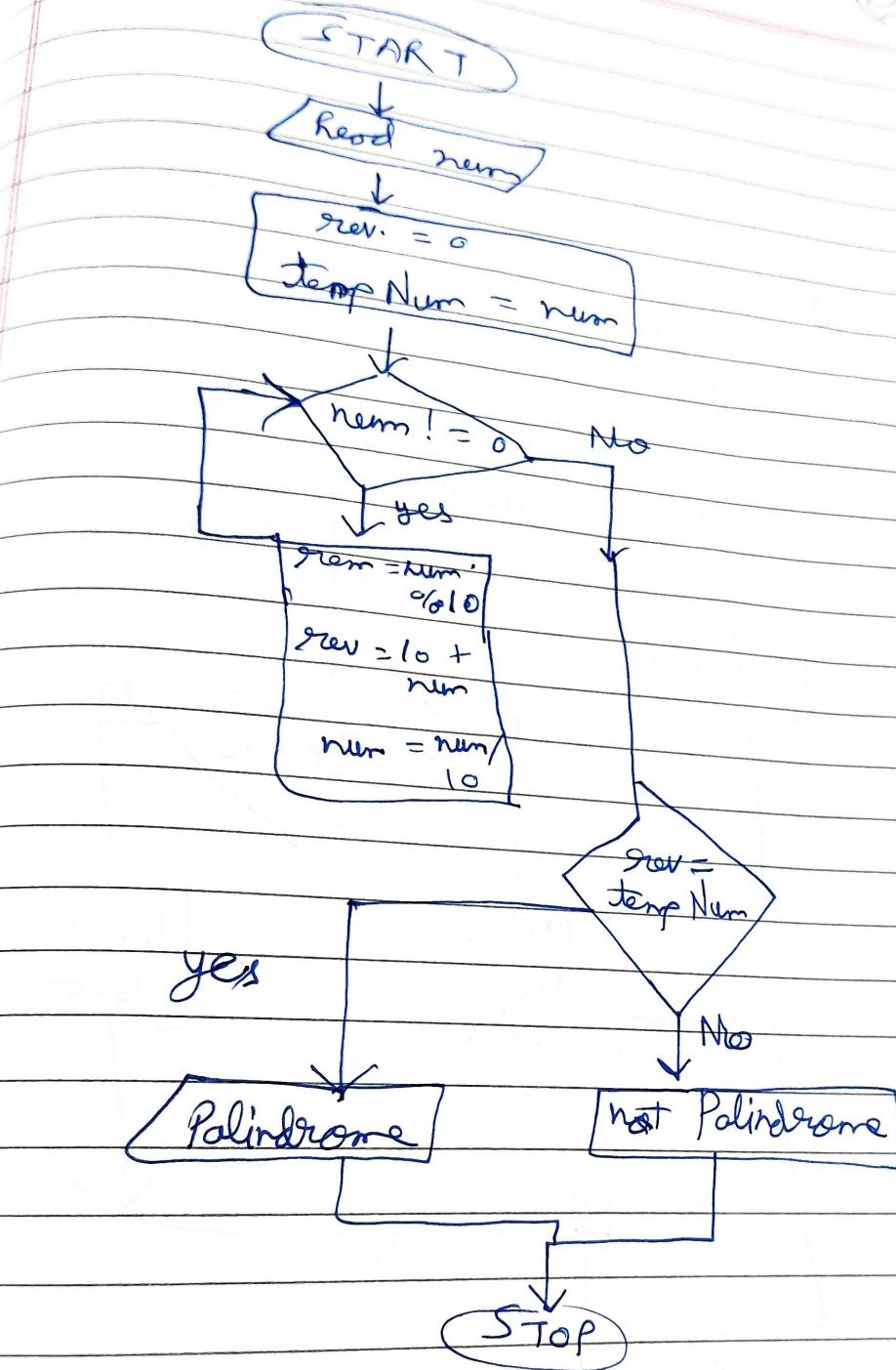
2) Convert to CharArray

3) Iterate using for loop

4) if (index of (i)) ==
last index of (i)

5) break the loop
6) print (i).

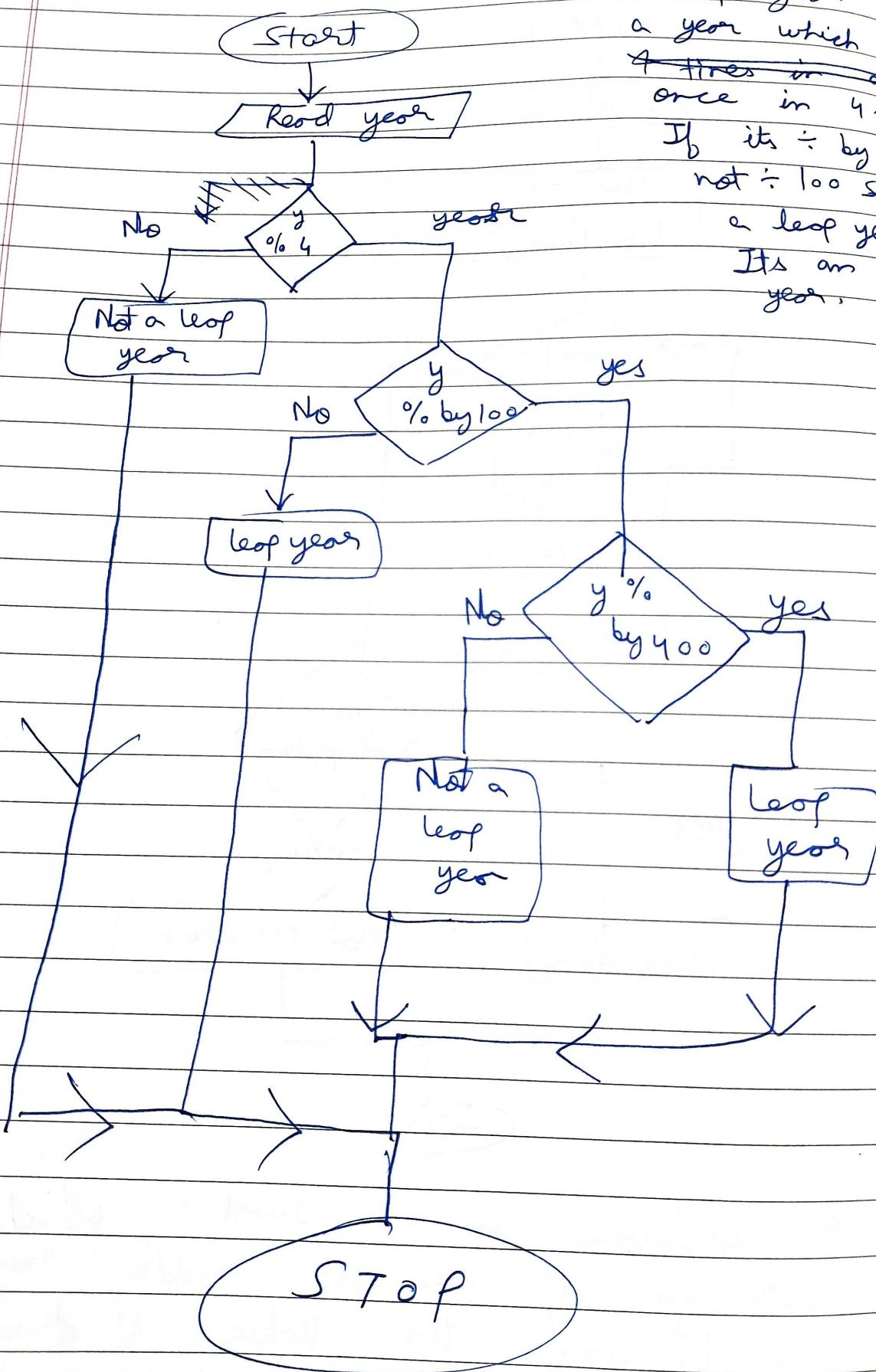
Palindrome



A palindrome is a number which looks similar even if we put middle number same and interchange the value of others. e.g: 12321
 If the no. does not look similar & seem to alike from each other then it is not a palindrome number

Q.10)

leap year.



A leap year is a year which comes once in 4 times. If its \div by 400 but not \div 100 still it's a leap year. Else It's an ordinary year.