Programming Using C

week 0 practice session coding

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Write an algorithm and draw a flowchart to calculate the area and perimeter of a square

Algorithm

step 1: start

step 2: Get the length of the square from the user

step 3: compute the area of the square $A = S \times S$

step 4: compute the perimeter of the square $P = 4 \times S$

step 5: Print area and perimeter of square

step 6: stop

Flow chart

start

↓

get length of the square

↓

perimeter $= 4 \times S$
area $= S \times S$

↓

print area and perimeter

↓

stop
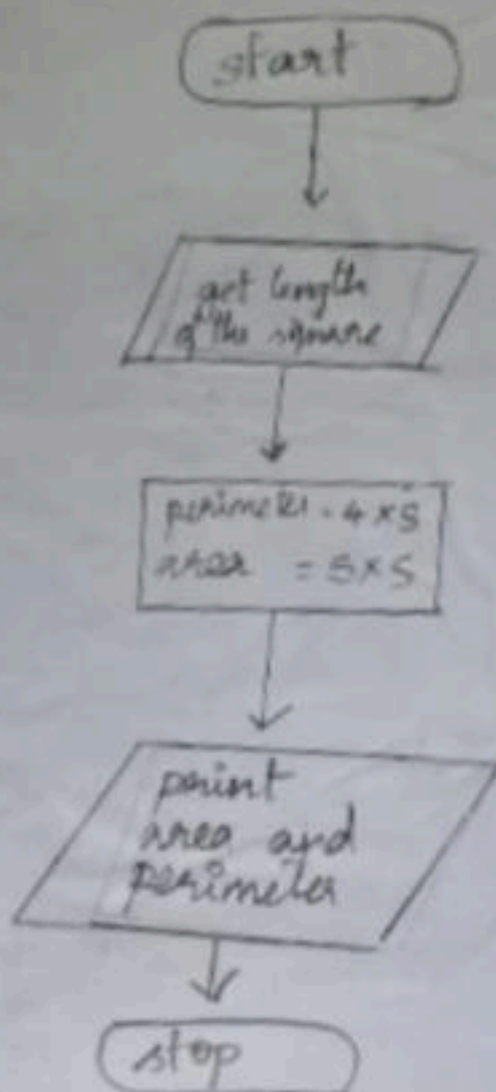
Sample output.
$S = 2$
perimeter $- 8 ; area = 4$

Write an algorithm and draw a flowchart to convert the given days into years and months

step1: Start

step2: Get the number of days from user as x

step3: Compute num number of years; years = $\dfrac{x}{365}$

step4: Compute % x to get remaining days

step5: Compute the remaining days to get number of months = $\dfrac{\% \, x}{30}$

step6: Print number of years and number of months

step7: stop

$x / 365$
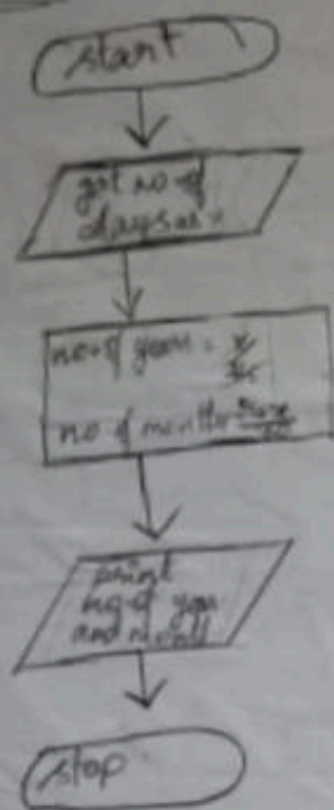
Flow chart

Sample output
$x = 395$
    1 year + 1 month

Write an algorithm and draw a flowchart to check whether the given number is prime or not

Algorithm:

step1: start

step2: Get a number from the user as x

step3: check whether $x <= 1$; otherwise go to 5

step4: Display x is not a prime number

step5: set $n = (x/2) + 1$, $K = 2$

step6: if $K <= n$ otherwise go to 10
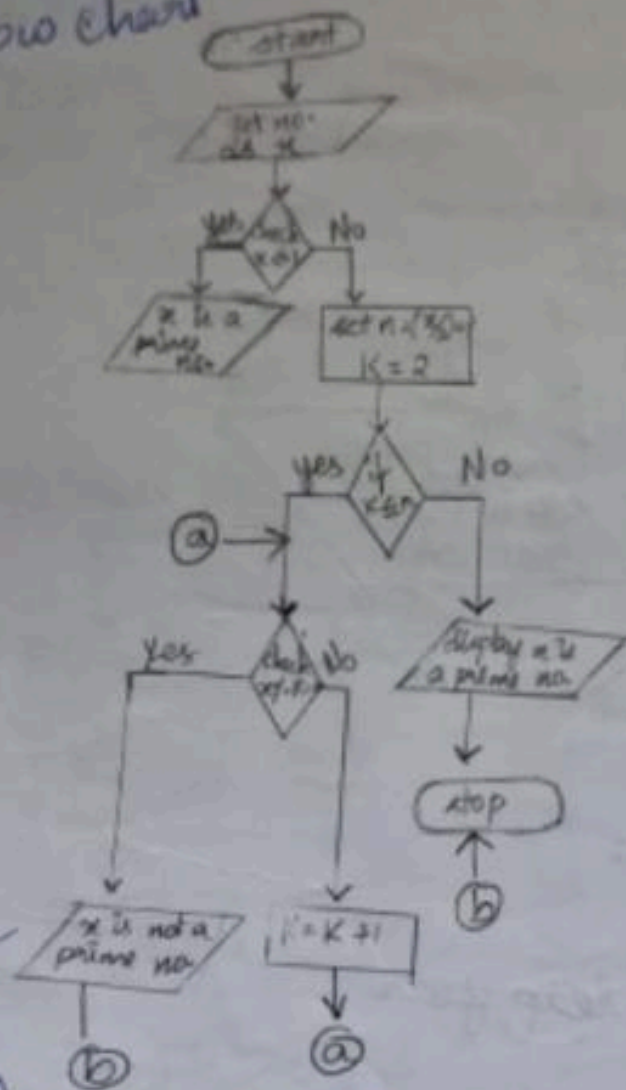
step7: check $x \% K = 0$, otherwise go to 9

step8: Display x is not a prime number, go to 11

step9: $K = K + 1$, go to 6

step10: display x is a prime number.

step11: stop

Flow chart

Sample output

$x = 5$; 5 is a prime number

Ex. No: 5

Write an Algorithm and draw a flowchart to check whether the given number is palindrome number or not

Algorithm:

step 1: start
step 2: get a number from the user as z
step 3: $x = z$; $rev = 0$
step 4: check whether x is not equal to 0, otherwise go to 8
step 5: compute $K = z \% 10$
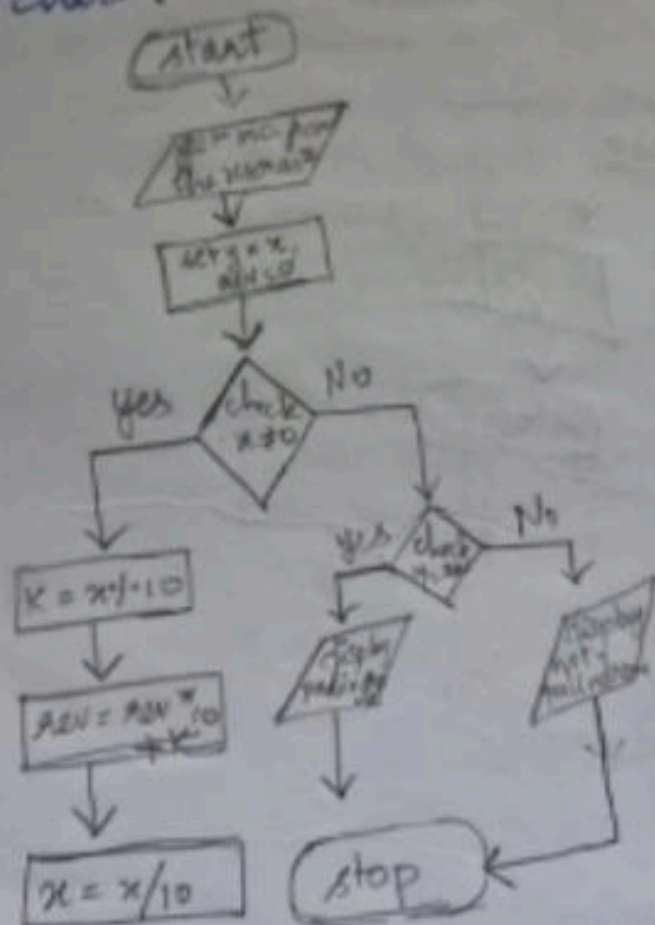step 6: $rev = rev * 10 + K$
step 7: $x = x / 10$, go to 4
step 8: check whether $z == rev$, otherwise go to 10
step 9: display given number is palindrome, go to 11
step 10: display given number is not palindrome
step 11: stop

Flow chart:

Sample output
$x = 1221$
x is palindrome

Ex. No: 6
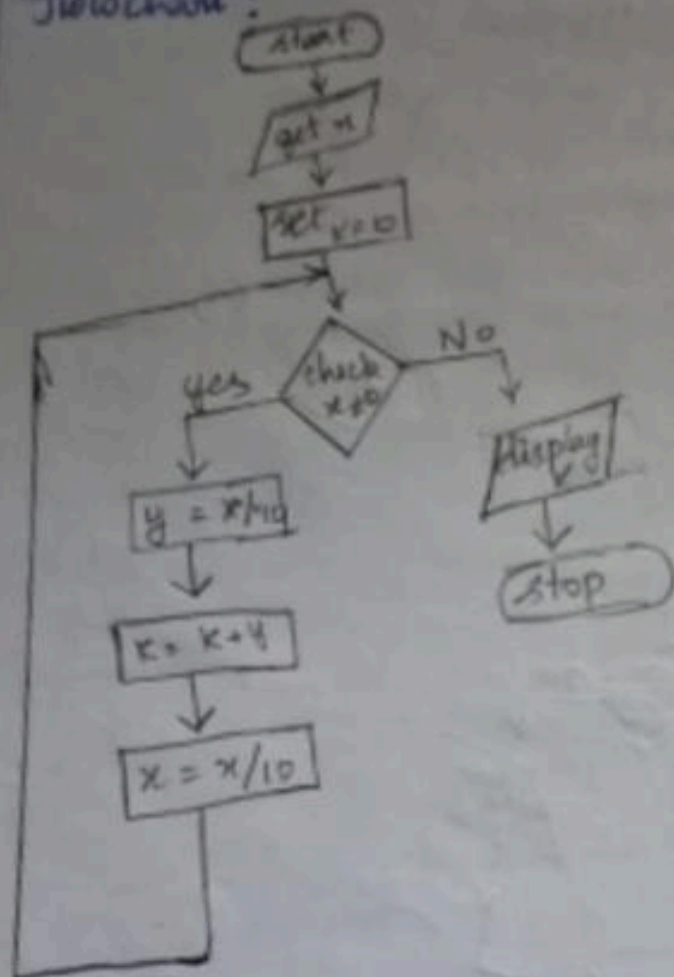
Write an algorithm and draw a flow chart to calculate the sum of digits in the given number

Algorithm

step 1: start

step 2: get the number from the user as x

step 3: set K=0

step 4: check whether x is not equal to 0, go to 8

step 5: compute $y = x \% 10$

step 6: $K = K + y$

step 7: compute $x = x/10$, go to 4

step 8: display K

step 9: stop

Flowchart:

Sample output

$x = 1234$

sum = 10

week 0

completed.

04/10/24