C Programming Exercises, Practice, Solution : For Loop

Last update on June 11 2024 13:04:50 (UTC/GMT +8 hours)

C For Loop [61 exercises with solution]

[***An editor is available at the bottom of the page to write and execute the scripts.*** Go to the editor]

1. Write a program in C to display the first 10 natural numbers.
Expected Output :
1 2 3 4 5 6 7 8 9 10
Click me to see the solution

2. Write a C program to compute the sum of the first 10 natural numbers.
Expected Output :
The first 10 natural number is :
1 2 3 4 5 6 7 8 9 10
The Sum is : 55
Click me to see the solution

3. Write a program in C to display n terms of natural numbers and their sum.
Test Data : 7
Expected Output :
The first 7 natural number is :
1 2 3 4 5 6 7
The Sum of Natural Number upto 7 terms : 28
Click me to see the solution

4. Write a program in C to read 10 numbers from the keyboard and find their sum and average.

Test Data :
Input the 10 numbers :
Number-1 :2
...
Number-10 :2
Expected Output :
The sum of 10 no is : 55
The Average is : 5.500000
Click me to see the solution

5. Write a program in C to display the cube of the number up to an integer.
Test Data :
Input number of terms : 5
Expected Output :
Number is : 1 and cube of the 1 is :1
Number is : 2 and cube of the 2 is :8
Number is : 3 and cube of the 3 is :27
Number is : 4 and cube of the 4 is :64
Number is : 5 and cube of the 5 is :125
Click me to see the solution

6. Write a program in C to display the multiplication table for a given integer.
Test Data :
Input the number (Table to be calculated) : 15
Expected Output :
15 X 1 = 15
...
...
15 X 10 = 150
Click me to see the solution

7. Write a program in C to display the multiplier table vertically from 1 to n.
Test Data :
Input upto the table number starting from 1 : 8
Expected Output :
Multiplication table from 1 to 8
1x1 = 1, 2x1 = 2, 3x1 = 3, 4x1 = 4, 5x1 = 5, 6x1 = 6, 7x1 = 7, 8x1 = 8
...
1x10 = 10, 2x10 = 20, 3x10 = 30, 4x10 = 40, 5x10 = 50, 6x10 = 60, 7x10 = 70, 8x10 = 80
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8. Write a C program to display the n terms of odd natural numbers and their sum.
Test Data
Input number of terms : 10
Expected Output :
The odd numbers are :1 3 5 7 9 11 13 15 17 19
The Sum of odd Natural Number upto 10 terms : 100
Click me to see the solution

9. Write a program in C to display a pattern like a right angle triangle using an asterisk.

The pattern like :

```
*
**
***
****
```

Click me to see the solution

10. Write a C program to display a pattern like a right angle triangle with a number.

The pattern like :

```
1
12
123
1234
```

Click me to see the solution

11. Write a program in C to make such a pattern like a right angle triangle with a number which will repeat a number in a row.

The pattern like :

```
 1
 22
```

```
 333
 4444
```

Click me to see the solution

12. Write a program in C to make such a pattern like a right angle triangle with the number increased by 1.

The pattern like :

```
   1
   2 3
   4 5 6
   7 8 9 10
```

Click me to see the solution

13. Write a program in C to make a pyramid pattern with numbers increased by 1.

```
   1
  2 3
 4 5 6
7 8 9 10
```

Click me to see the solution

14. Write a C program to make such a pattern as a pyramid with an asterisk.

```
   *
  * *
 * * *
* * * *
```

Click me to see the solution

15. Write a C program to calculate the factorial of a given number.
Test Data :
Input the number : 5
Expected Output :
The Factorial of 5 is: 120
Click me to see the solution

16. Write a C program to display the sum of n terms of even natural numbers.
Test Data :
Input number of terms : 5
Expected Output :
The even numbers are :2 4 6 8 10
The Sum of even Natural Number upto 5 terms : 30
Click me to see the solution

17. Write a C program to make such a pattern like a pyramid with a number which will repeat the number in the same row.

```
   1
  2 2
 3 3 3
4 4 4 4
```

Click me to see the solution

18. Write a program in C to find the sum of the series [1-X^2/2!+X^4/4!- .....].
Test Data :
Input the Value of x :2
Input the number of terms : 5
Expected Output :
the sum = -0.415873
Number of terms = 5
value of x = 2.000000
Click me to see the solution

19. Write a program in C to display the n terms of a harmonic series and their sum.
1 + 1/2 + 1/3 + 1/4 + 1/5 ... 1/n terms
Test Data :
Input the number of terms : 5
Expected Output :
1/1 + 1/2 + 1/3 + 1/4 + 1/5 +
Sum of Series upto 5 terms : 2.283334
Click me to see the solution

20. Write a C program to display the pattern as a pyramid using asterisks, with each row containing an odd number of

asterisks.

```
    *
   ***
  *****
```

Click me to see the solution

21. Write a program in C to display the sum of the series [9 + 99 + 999 + 9999 ...].
Test Data :
Input the number or terms :5
Expected Output :
9 99 999 9999 99999
The sum of the saries = 111105
Click me to see the solution

22. Write a program in C to print Floyd's Triangle.

```
1
01
101
0101
10101
```

Click me to see the solution

23. Write a program in C to find the sum of the series [x - x^3 + x^5 + ...].
Test Data :
Input the value of x :3
Input number of terms : 5
Expected Output :
The sum is : 16.375000
Click me to see the solution

24. Write a program in C to find the sum of the series [x - x^3 + x^5 + ...].
Test Data :
Input the value of x :2
Input number of terms : 5
Expected Output :
The values of the series:
2
-8
32
-128
512
The sum = 410
Click me to see the solution

25. Write a C program that displays the n terms of square natural numbers and their sum.
1 4 9 16 ... n Terms
Test Data :
Input the number of terms : 5
Expected Output :
The square natural upto 5 terms are :1 4 9 16 25
The Sum of Square Natural Number upto 5 terms = 55
Click me to see the solution

26. Write a program in C to find the sum of the series 1 +11 + 111 + 1111 + .. n terms.
Test Data :
Input the number of terms : 5
Expected Output :
1 + 11 + 111 + 1111 + 11111
The Sum is : 12345
Click me to see the solution

27. Write a C program to check whether a given number is a 'Perfect' number or not.
Test Data :
Input the number : 56
Expected Output :
The positive divisor : 1 2 4 7 8 14 28
The sum of the divisor is : 64
So, the number is not perfect.
Click me to see the solution

28. Write a C program to find the 'Perfect' numbers within a given number of ranges.
Test Data :
Input the starting range or number : 1

Input the ending range of number : 50
Expected Output :
The Perfect numbers within the given range : 6 28
Click me to see the solution

29. Write a C program to check whether a given number is an Armstrong number or not.
Test Data :
Input a number: 153
Expected Output :
153 is an Armstrong number.
Click me to see the solution

30. Write a C program to find the Armstrong number for a given range of number.
Test Data :
Input starting number of range: 1
Input ending number of range : 1000
Expected Output :
Armstrong numbers in given range are: 1 153 370 371 407
Click me to see the solution

31. Write a program in C to display a pattern like a diamond.

```
    *
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *
```

Click me to see the solution

32. Write a C program to determine whether a given number is prime or not.
Test Data :
Input a number: 13
Expected Output :
13 is a prime number.
Click me to see the solution

33. Write a C program to display Pascal's triangle.
Test Data :
Input number of rows: 5
Expected Output :

```
        1
      1   1
    1   2   1
  1   3   3   1
1   4   6   4   1
```

Click me to see the solution

34. Write a program in C to find the prime numbers within a range of numbers.
Test Data :
Input starting number of range: 1
Input ending number of range : 50
Expected Output :
The prime number between 1 and 50 are :
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
Click me to see the solution

35. Write a program in C to display the first n terms of the Fibonacci series.
Fibonacci series 0 1 2 3 5 8 13 .....
Test Data :
Input number of terms to display : 10
Expected Output :
Here is the Fibonacci series upto to 10 terms :
0 1 1 2 3 5 8 13 21 34
Click me to see the solution

36. Write a C program to display a such a pattern for n rows using a number that starts with 1 and each row will have a 1 as the first and last number.

```
  1
 121
12321
```

Click me to see the solution

37. Write a program in C to display a given number in reverse order.
Test Data :
Input a number: 12345
Expected Output :
The number in reverse order is : 54321
Click me to see the solution

38. Write a C program to check whether a number is a palindrome or not.
Test Data :
Input a number: 121
Expected Output :
121 is a palindrome number.
Click me to see the solution

39. Write a program in C to find the number and sum of all integers between 100 and 200 which are divisible by 9.
Expected Output :
Numbers between 100 and 200, divisible by 9 :
108 117 126 135 144 153 162 171 180 189 198
The sum : 1683
Click me to see the solution

40. Write a C program to display the pyramid pattern using the alphabet.

```
        A
      A B A
    A B C B A
  A B C D C B A
```

Click me to see the solution

41. Write a program in C to convert a decimal number into binary without using an array.
Test Data :
Input a decimal number: 25
Binary number equivalent to said decimal number is: 00000000000000000000000000011001
Click me to see the solution

42. Write a C program to convert a binary number into a decimal number without using array, function and while loop.
Test Data :
Input a binary number :1010101
Expected Output :
The Binary Number : 1010101
The equivalent Decimal Number : 85
Click me to see the solution

43. Write a C program to find the HCF (Highest Common Factor) of two numbers.
Test Data :
Input 1st number for HCF: 24
Input 2nd number for HCF: 28
Expected Output :
HCF of 24 and 28 is : 4
Click me to see the solution

44. Write a C program to find the LCM of any two numbers using HCF.
Test Data :
Input 1st number for LCM: 15
Input 2nd number for LCM: 20
Expected Output :
The LCM of 15 and 20 is : 60
Click me to see the solution

45. Write a program in C to find the LCM of any two numbers.
Test Data :
Input 1st number for LCM: 15
Input 2nd number for LCM: 20
Expected Output :
The LCM of 15 and 20 is : 60
Click me to see the solution

46. Write a C program to convert a binary number into a decimal number using the math function.
Test Data :
Input the binary number :1010100
Expected Output :
The Binary Number : 1010100
The equivalent Decimal Number is : 84

Click me to see the solution

47. Write a C program to check whether a number is a Strong Number or not.
Test Data :
Input a number to check whether it is Strong number: 15
Expected Output :
15 is not a Strong number.
Click me to see the solution

48. Write a C program to find Strong Numbers within a range of numbers.
Test Data :
Input starting range of number : 1
Input ending range of number: 200
Expected Output :
The Strong numbers are :
1 2 145
Click me to see the solution

49. Write a C program to find the sum of an A.P. series.
Test Data :
Input the starting number of the A.P. series: 1
Input the number of items for the A.P. series: 10
Input the common difference of A.P. series: 4
Expected Output :
The Sum of the A.P. series are :
1 + 5 + 9 + 13 + 17 + 21 + 25 + 29 + 33 + 37 = 190
Click me to see the solution

50. Write a program in C to convert a decimal number into octal without using an array.
Test Data :
Enter a number to convert : 79
Expected Output :
The Octal of 79 is 117.
Click me to see the solution

51. Write a C program to convert an octal number to a decimal without using an array.
Test Data :
Input an octal number (using digit 0 - 7) :745
Expected Output :
The Octal Number : 745
The equivalent Decimal Number : 485
Click me to see the solution

52. Write a C program to find the sum of the G.P. series.
Test Data :
Input the first number of the G.P. series: 3
Input the number or terms in the G.P. series: 5
Input the common ratio of G.P. series: 2
Expected Output :
The numbers for the G.P. series:
3.000000 6.000000 12.000000 24.000000 48.000000
The Sum of the G.P. series : 93.000000
Click me to see the solution

53. Write a C program to convert a binary number to octal.
Test Data :
Input a binary number :1001
Expected Output :
The Binary Number : 1001
The equivalent Octal Number : 11
Click me to see the solution

54. Write a program in C to convert an octal number into binary.
Test Data :
Input an octal number (using digit 0 - 7) :57
Expected Output :
The Octal Number : 57
The equivalent Binary Number : 101111

Click me to see the solution

55. Write a C program to convert a decimal number to hexadecimal.
Test Data :
Input any Decimal number: 79
Expected Output :
The equivalent Hexadecimal Number : 4F

Click me to see the solution

56. Write a program in C to check whether a number can be expressed as the sum of two prime.
Test Data :
Input a positive integer: 16
Expected Output :
16 = 3 + 13
16 = 5 + 11
Click me to see the solution

57. Write a C program to print a string in reverse order.
Test Data :
Input a string to reverse : Welcome
Expected Output :
Reversed string is: emocleW
Click me to see the solution

58. Write a C program to find the length of a string without using the library function.
Test Data :
Input a string : welcome
Expected Output :
The string contains 7 number of characters.
So, the length of the string welcome is : 7
Click me to see the solution

59. Write a C program to check the Armstrong number of n digits.
Test Data :
Input an integer : 1634
Expected Output :
1634 is an Armstrong number
Click me to see the solution

60. Write a C program that takes user input and counts the number of characters until the end of the file.
Test Data :
Input characters : w3resource
Expected Output :
Input characters: On Linux systems and OS X EOF is CTRL+D. For Windows EOF is CTRL+Z. Number of Characters: 10
Click me to see the solution

61. Write a C program that takes input from the user and counts the number of uppercase and lowercase letters, as well as the number of other characters.
Test Data :
Input characters : w3resource
Expected Output :
Input characters: On Linux systems and OS X EOF is CTRL+D. For Windows EOF is CTRL+Z. Uppercase letters: 0 Lowercase letters: 9 Other characters: 1
Click me to see the solution

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