

List of Simple Loop Programs

1. Write a program to calculate overtime pay of 10 employees. Overtime is paid at the rate of Rs. 12.00 per hour for every hour worked above 40 hours. Assume that employees do not work for fractional part of an hour.
2. Write a program to find the factorial value of any number entered through the keyboard.
3. Two numbers are entered through the keyboard. Write a program to find the value of one number raised to the power of another.
4. Write a program to print all the ASCII values and their equivalent characters using a while loop. The ASCII values vary from 0 to 255.
5. Write a program to print out all Armstrong numbers between 1 and 500. If sum of cubes of each digit of the number is equal to the number itself, then the number is called an Armstrong number. For example, $153 = (1 * 1 * 1) + (5 * 5 * 5) + (3 * 3 * 3)$
6. Write a program for a matchstick game being played between the computer and a user. Your program should ensure that the computer always wins. Rules for the game are as follows:
There are 21 matchsticks. – The computer asks the player to pick 1, 2, 3, or 4 matchsticks. – After the person picks, the computer does its picking. – Whoever is forced to pick up the last matchstick loses the game.
7. Write a program to enter the numbers till the user wants and at the end it should display the count of positive, negative and zeros entered.
8. Write a program to find the octal equivalent of the entered number.
9. Write a program to find the range of a set of numbers. Range is the difference between the smallest and biggest number in the list.

10. Write a C program to print all natural numbers from 1 to n. using while loop
11. Write a C program to print all natural numbers in reverse (from n to 1). - using while loop
12. Write a C program to print all alphabets from a to z. - using while loop
13. Write a C program to print all even numbers between 1 to 100. - using while loop
14. Write a C program to print all odd number between 1 to 100.
15. Write a C program to find sum of all natural numbers between 1 to n.
16. Write a C program to find sum of all even numbers between 1 to n.
17. Write a C program to find sum of all odd numbers between 1 to n.
18. Write a C program to print multiplication table of any number.
19. Write a C program to count number of digits in a number.
20. Write a C program to find first and last digit of a number.
21. Write a C program to find sum of first and last digit of a number.
22. Write a C program to swap first and last digits of a number.
23. Write a C program to calculate sum of digits of a number.
24. Write a C program to calculate product of digits of a number.
25. Write a C program to enter a number and print its reverse.
26. Write a C program to check whether a number is palindrome or not.
27. Write a C program to find frequency of each digit in a given integer.
28. Write a C program to enter a number and print it in words.
29. Write a C program to print all ASCII character with their values.
30. Write a C program to find all factors of a number.
31. Write a C program to find HCF (GCD) of two numbers.
32. Write a C program to find LCM of two numbers.
33. Write a C program to check whether a number is Prime number or not.
34. Write a C program to print all Prime numbers between 1 to n.
35. Write a C program to find sum of all prime numbers between 1 to n.
36. Write a C program to find all prime factors of a number.
37. Write a C program to check whether a number is Armstrong number or not.
38. Write a C program to print all Armstrong numbers between 1 to n.
39. Write a C program to check whether a number is Perfect number or not.
40. Write a C program to print all Perfect numbers between 1 to n.

41. Write a C program to check whether a number is Strong number or not.
42. Write a C program to print all Strong numbers between 1 to n.
43. Write a C program to print Fibonacci series up to n terms.
44. Write a program to print all prime numbers from 1 to 300. (Hint: Use nested loops, break and continue)
45. Write a program to fill the entire screen with a smiling face. The smiling face has an ASCII value 1.
46. Write a program to generate all combinations of 1, 2 and 3 using for loop.
47. According to a study, the approximate level of intelligence of a person can be calculated using the following formula:

$$i = 2 + (y + 0.5x)$$

Write a program, which will produce a table of values of i, y and x, where y varies from 1 to 6, and, for each value of y, x varies from 5.5 to 12.5 in steps of 0.5

48. Write a program to fill the entire screen with diamond and heart alternatively. The ASCII value for heart is 3 and that of diamond is 4.
49. Write a program to print the multiplication table of the number entered by the user. The table should get displayed in the following form. 29 * 1 = 29 29 * 2 = 58 ...
50. A machine is purchased which will produce earning of Rs. 1000 per year while it lasts. The machine costs Rs. 6000 and will have a salvage of Rs. 2000 when it is condemned. If 12 percent per annum can be earned on alternate investments what would be the minimum life of the machine to make it a more attractive investment compared to alternative investment?
51. When interest compounds q times per year at an annual rate of r % for n years, the principle p compounds to an amount a as per the following formula

$$a = p (1 + r / q)^{nq}$$

Write a program to read 10 sets of p, r, n & q and calculate the corresponding a.