Intensive Programming Unit

1. Write a program in C to calculate the sum of three numbers with getting input in one line separated by a comma.

*Expected Output* :

Input three numbers separated by comma : 5,10,15 The sum of three numbers : 30

1. Write a C program to find whether a given year is a leap year or not.

1. Write a C program to read the value of an integer m and display the value of n is 1 when m is larger than 0, 0 when m is 0 and -1 when m is less than 0.

Test Data : -5 *Expected Output* :

The value of n = -1

1. Write a C program to find the largest of three numbers Test Data : 12 25 52 *Expected Output* :

1st Number = 12, 2nd Number = 25, 3rd Number = 52 The 3rd Number is the greatest among three

1. Write a C program to calculate the root of a Quadratic Equation. Test Data : 1 5 7 *Expected Output* : Root are imaginary; No solution.
2. [Write a C program print total number of days in a month using switch case.](http://codeforwin.org/2015/06/c-program-to-print-number-of-days-in-month-using-switch-case.html)
3. [Write a C program to check whether an alphabet is vowel or consonant using switch case.](http://codeforwin.org/2015/06/c-program-to-check-vowel-or-consonant-using-switch-case.html)
4. [Write a C program to find maximum between two numbers using switch case.](http://codeforwin.org/2015/06/c-program-to-find-maximum-using-switch-case.html)
5. [Write a C program to check whether a number is even or odd using switch case.](http://codeforwin.org/2015/06/c-program-to-check-even-or-odd-using-switch-case.html)
6. [Write a C program to find roots of a quadratic equation using switch case.](http://codeforwin.org/2016/04/c-program-to-find-all-roots-of-quadratic-equation-using-switch.html)
7. [Write a C program to create Simple Calculator using switch case.](http://codeforwin.org/2015/06/c-program-to-create-simple-calculator-using-switch-case.html)
8. Write a program in C to display the pattern like right angle triangle with a number.

The pattern like :

12

123

1234

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

The pattern like :

1

22

333

4444

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

The pattern like :

1

* 1. 3

4 5 6

7 8 9 10

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

1

2 3

4 5 6

7 8 9 10

1. Write a program in C to make such a pattern like a pyramid with an asterisk.
   * + \*
     + \* \*
     + \* \* \*

1. 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

1. Write a program in C to display the n terms of even natural number and their sum. 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

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

1

* 1. 2
  2. 3 3
  3. 4 4 4

1. 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

1. Write a program in C to display the n terms of 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

1. Write a program in C to display the pattern like a pyramid using asterisk and each row contain an odd number of asterisks.

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1. 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

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

1

01

101

0101

10101

1. Write a program in C to display the sum of the series [ 1+x+x^2/2!+x^3/3!+....].

Test Data :

Input the value of x :3 Input number of terms : 5 *Expected Output* :

The sum is : 16.375000

1. 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

1. 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

1. 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.

1. Write a c program to find the perfect numbers within a given number of range.

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

1. 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.

1. 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

1. Write a program in C to display the pattern like a diamond.

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1. 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.

1. 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

1. 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

1. Write a program in C to display the first n terms of 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

1. Write a program in C to display the such a pattern for n number of rows using a number which will start with the number 1 and the first and a last number of each row will be 1.

1

121

12321

1. Write a program in C to display the number in reverse order.

Test Data :

Input a number: 12345 *Expected Output* :

The number in reverse order is : 54321

1. Write a program in C to check whether a number is a palindrome or not. Test Data :

Input a number: 121 *Expected Output* :

121 is a palindrome number.

1. Write a program in C to find the number and sum of all integer 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

1. Write a C Program to display the pattern like pyramid using the alphabet.

A

A B A

A B C B A

A B C D C B A

1. Write a program in C to convert a decimal number into binary without using an array.

Test Data :

Enter a number to convert : 25 *Expected Output* :

The Binary of 25 is 11001.

1. Write a program in C 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

1. Write a C program to find 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

1. Write a program in C to find 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

1. Write a program in C to find 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

1. Write a program in C to convert a binary number into a decimal number using math function.

Test Data :

Input the binary number :1010100 *Expected Output* :

The Binary Number : 1010100

The equivalent Decimal Number is : 84

1. 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.

1. Write a program in C 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

1. 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

1. Write a program in C to convert a decimal number to hexadecimal.

Test Data :

Input any Decimal number: 79 *Expected Output* :

The equivalent Hexadecimal Number : 4F

1. Write a program in C to Check Whether a Number can be Express as Sum of Two Prime Numbers.

Test Data :

Input a positive integer: 16 *Expected Output* :

16 = 3 + 13

16 = 5 + 11

1. Write a program in C to check Armstrong number of n digits.

Test Data :

Input an integer : 1634 *Expected Output* :

1634 is an Armstrong number

1. Write a program to produce the following output:

A B C D E F G F E D C B A

A B C D E F F E D C B A

A B C D E E D C B A

A B C D D C B A

A B C C B A

A B B A

A A

1. Write a program in C to store elements in an array and print it.

Test Data :

Input 10 elements in the array :

element - 0 : 1 element - 1 : 1 element - 2 : 2

.......

*Expected Output* :

Elements in array are: 1 1 2 3 4 5 6 7 8 9

1. Write a program in C to read n number of values in an array and display it in reverse order.

Test Data :

Input the number of elements to store in the array :3 Input 3 number of elements in the array :

element - 0 : 2 element - 1 : 5 element - 2 : 7

*Expected Output* :

The values store into the array are :

2 5 7

The values store into the array in reverse are :

7 5 2

1. Write a program in C to find the sum of all elements of the array. Test Data :

Input the number of elements to be stored in the array :3 Input 3 elements in the array :

element - 0 : 2 element - 1 : 5 element - 2 : 8

*Expected Output* :

Sum of all elements stored in the array is : 15

1. Write a program in C to copy the elements one array into another array.

Test Data :

Input the number of elements to be stored in the array :3 Input 3 elements in the array :

element - 0 : 15 element - 1 : 10 element - 2 : 12

*Expected Output* :

The elements stored in the first array are :

15 10 12

The elements copied into the second array are :

15 10 12

1. Write a program in C to count a total number of duplicate elements in an array.

Test Data :

Input the number of elements to be stored in the array :3 Input 3 elements in the array :

element - 0 : 5 element - 1 : 1 element - 2 : 1

*Expected Output* :

Total number of duplicate elements found in the array is : 1

1. Write a program in C to print all unique elements in an array. Test Data :

Input the number of elements to be stored in the array :3 Input 3 elements in the array :

element - 0 : 1 element - 1 : 5 element - 2 : 1

*Expected Output* :

The unique elements found in the array are :

5

1. Write a program in C to merge two arrays of same size sorted in descending order.

Test Data :

Input the number of elements to be stored in the first array :3 Input 3 elements in the array :

element - 0 : 1 element - 1 : 2 element - 2 : 3

Input the number of elements to be stored in the second array :3 Input 3 elements in the array :

element - 0 : 1 element - 1 : 2 element - 2 : 3

*Expected Output* :

The merged array in descending order is :

3 3 2 2 1 1

1. Write a program in C to count the frequency of each element of an array.

Test Data :

Input the number of elements to be stored in the array :3 Input 3 elements in the array :

element - 0 : 25

element - 1 : 12 element - 2 : 43

*Expected Output* :

The frequency of all elements of an array :

* 1. occurs 1 times

12 occurs 1 times

43 occurs 1 times

1. Write a program in C to find the maximum and minimum element in an array.

Test Data :

Input the number of elements to be stored in the array :3 Input 3 elements in the array :

element - 0 : 45 element - 1 : 25 element - 2 : 21

*Expected Output* :

Maximum element is : 45

Minimum element is : 21

1. Write a program in C to separate odd and even integers in separate arrays.

Test Data :

Input the number of elements to be stored in the array :5 Input 5 elements in the array :

element - 0 : 25 element - 1 : 47 element - 2 : 42 element - 3 : 56 element - 4 : 32

*Expected Output* :

The Even elements are :

42 56 32

The Odd elements are :

25 47

1. Write a program in C to sort elements of array in ascending order.

Test Data :

Input the size of array : 5 Input 5 elements in the array :

element - 0 : 2 element - 1 : 7 element - 2 : 4 element - 3 : 5 element - 4 : 9

*Expected Output* :

Elements of array in sorted ascending order:

2 4 5 7 9

1. Write a program in C to sort elements of the array in descending order.

Test Data :

Input the size of array : 3 Input 3 elements in the array :

element - 0 : 5 element - 1 : 9 element - 2 : 1

*Expected Output* :

Elements of the array in sorted descending order:

9 5 1

1. Write a program in C to insert New value in the array (sorted list )..

Test Data :

Input the size of array : 3

Input 3 elements in the array in ascending order:

element - 0 : 5 element - 1 : 7 element - 2 : 9 Input the value to be inserted : 8 *Expected Output* :

The exist array list is :

5 7 9

After Insert the list is :

5 7 8 9

1. Write a program in C to insert New value in the array (unsorted list ).

Test Data :

Input the size of array : 4

Input 4 elements in the array in ascending order:

element - 0 : 1 element - 1 : 8 element - 2 : 7 element - 3 : 10

Input the value to be inserted : 5

Input the Position, where the value to be inserted :2 *Expected Output* :

The current list of the array :

1 8 7 10

After Insert the element the new list is :

1 5 8 7 10

69. Write a program in C to delete an element at desired position from an array.

Test Data :

Input the size of array : 5

Input 5 elements in the array in ascending order:

element - 0 : 1 element - 1 : 2 element - 2 : 3 element - 3 : 4 element - 4 : 5

Input the position where to delete: 3

*Expected Output* :

The new list is : 1 2 4 5

1. Write a program in C to find the second largest element in an array.

Test Data :

Input the size of array : 5 Input 5 elements in the array :

element - 0 : 2 element - 1 : 9 element - 2 : 1 element - 3 : 4 element - 4 : 6

*Expected Output* :

The Second largest element in the array is : 6

1. Write a program in C to find the second smallest element in an array.

Test Data :

Input the size of array : 5

Input 5 elements in the array (value must be <9999) :

element - 0 : 0 element - 1 : 9 element - 2 : 4 element - 3 : 6 element - 4 : 5

*Expected Output* :

The Second smallest element in the array is : 4