

Assignment - 1

1	Find out the average of n numbers.
2	Find out the sum of squares of first n numbers.
3	If the three sides of a triangle are entered through the keyboard, write a program to check whether the triangle is isosceles, equilateral, scalene or right angled triangle.
4	There are 9000 people in a town whose population increases by 15% each year. Write a program that displays the annual population and determines the number of years it will take for the population to surpass 50000.
5	Find out all the prime numbers below 1000.
6	Find the gcd and lcm of given two numbers.
7	A railway employee is paid 1200/- (rupees) per day for regular 8 hours of work. Any hours over that are paid overtime rate of 100/- per hour. From the employee's gross pay (total pay per month) 2% is deducted for professional tax, 10% for provident fund and 5% for income tax. However, the employee will get 2% (of the gross pay) for the education of a child. Write a program that will read the number of extra hours (which the employee worked during a month of 30 days) and the number of children the employee have. The program will output the employee's gross pay (total pay earned by the employee by working) and net take-home pay (after deductions and earning for child education) for a month of 30 days.
8	The distance between two cities (in KM) is input through the keyboard. Write a program to convert and print this distance in meters, feet, inches and centimeters.
9	Given 3-angles.write a program to check whether they form a triangle or not ($A+B+C = 180$). If yes check whether triangle is scalen, equilateral, isoceless or right angled triangle.
10	Find the minimum number of currency notes of different denominations for a given amount.
11	Write a program that asks the user to enter an input number and reverse it. Display the result of the reverse number in digits.
12	A user enters integers until end of input and wants to find the largest number in the list of integers entered and the number of times it was entered. For example, if the input is 5, 2, 15, 3, 7, 15, 8, 9, 5, 2, 15, 3, and 7, the largest is 15 and is repeated 3 times. Write an algorithm to compute frequency of the largest of the integers entered without storing them. Convert the algorithm to a function that displays the integers read and returns the largest number and its frequency.
13	An equation of the form $ax^2 + bx + c = 0$ is known as quadratic equation. The values of x that satisfy the equation are known as the roots of the equation. Write a program to find out the roots of the quadratic equation.
14	What squares consists of entirely maximum three digits.
15	Write a program that reads an integer -n (decimal number system) , and convert this decimal number to Binary, Octal, Hexadecimal form.
16	The Fibonacci numbers F_n are defined as follows . F_0 is 1 , F_1 is 1 and $F_{i+2}=F_i+F_{i+1}$ $i=0,1,...,n$ Write a program to find the Fibonacci value of the given number.

17	An integer number is said to be a perfect number if the sum of its factors, including 1 is equal to the number. Write a function perfect that determines whether the given number is perfect number or not.		
18	Given number 'n'. Write a program to print the number in words. Ex: 123 ---one hundred twenty three		
19	Write a program to print all the ASCII values and their equivalent characters using a while loop.		
20	A way to calculate the value of π is based on the use of a series defines as follows(N- number of terms). Write a program to find π value (up to n terms and display the result by correcting it to three decimal places): $\pi = 4 \sum_{i=0}^n (-1)^i / (2i + 1)$		
21	Write a program to find out the sum of the following series (up-to 30 th term): $x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \frac{x^9}{9!} - \dots$		
22	Write a program to print the respective color, for given first character of color " V I B G Y O R " ex: R – RED		
23	Write a program that accepts a year written as a four-digit numeral and outputs the year written in Roman numerals. Important Roman numerals are V –5 , X-10 , L-50 , C-100, D-500 and M-1,000.		
24	Enter your date of birth and today's date and determine the age.		
25	Write program to produce the following output: <table border="1" data-bbox="217 1359 1098 1910"> <tr> <td> 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 </td><td> C C+ C++ : : c++programming : : C++ C+ C </td></tr> </table>	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	C C+ C++ : : c++programming : : C++ C+ C
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