Navrachana University

School of Engineering and Technology

Department of Computer Science and Engineering

Course: CS1008 Introduction to Computer Programming

Programming Assignment – 1

Date : 1st Nov 2021

Instructions

- Implement the given Questions using C programming language.
- Use meaningful and descriptive variable/identifier names:
  Good variable names (camelCase): rollNo, studentName, empSalary, salesPrice, taxRate,
  Every Program should have header and footer having following information in multi-line comments
  '''
  @author: RollNo Firstname Lastname
  @description: Program No. - write short purpose/ description here
  '''
- Every Program should be with output of the Program in multi-line comment after the code of respective program.

- **Submission details:** Submit your assignment on **lms.nuv.edu.in** before the given submission date. Create one **.ZIP file** containing **all C/C++ programs** (.c and .cpp files) and **one word file.** Keep filename as **RollNo-Name-Assignment1.zip**.
- Programs submitted by a student should be the result of individual work based on his/her own efforts. Full or part of the code should not be copied from internet or from peer students or other sources. A student should not share/circulate the code/programs developed by them (for individual assignments) with their peers in any form. Violation of above will be considered as academic dishonesty and any such case will be strictly dealt with and liable to get zero in the evaluation.

Assignment-1
List of Practical

1	Write a program to print message: “Hello Programmers, Welcome to the world of C”.
2	WAP to print the following: ========== ********** | Hi, my name is XYZ | ********** | I am studying in 1st year | ********** | Studying in Navrachana University | ********** ==========
3	WAP to print a simple value.
4	WAP to print the sum of two numbers.
5	Write a program to do arithmetic operation on 2 values.
6	WAP to print average of 5 numbers.
7	Write a program of static arithmetic operation of 2 value.
8	Write a program to swap two values entered by user without using third variable.
9	Write a program to swap two values entered by user by using third variable.
10	Write a program to find area and circumference of circle, radius given by user.
11	Write a C Program to find area and circumference of the circle by taking radius from the user. Use symbolic constant for the value of PI.
12	Write a program to find out the area of Rectangle and Square.
13	Write a program to find out the area of Triangle.
14	Write a program to get a character from user and print ASCII value
15	WAP to display remainder from division of two numbers taken from user.
16	WAP to check whether year entered by user is leap year or not.
17	WAP to check whether no. entered by user is +ve, -ve or aero with the use of conditional operator.
18	WAP to find simple interest by getting principal, rate of interest and number of years from user.
19	WAP to convert Fahrenheit value entered by user into Celsius and vice versa.
20	WAP to accept marks of 3 subjects from the user, calculate average and print “Fail” if average is less than 35, print “Pass with 3rd grade” if average is between 35 and 48, print “Pass with 2nd grade” if average is between 49 and 59, print “ Pass with average grade” if average between 60 and 69, print “Pass with distinction” if average between 70 and 86, print “Pass with Honours” if average between 87 and 100. Use relational operators and decision making statements.
21	WAP C Program to find the smallest number between 3 numbers using conditional statement.

22	WAP C Program to find the smallest number between 3 numbers using conditional statement.
23	WAP to adding a character with an integer.
24	WAP to display the equation of line in the form of ax + by = c, for a = 6, b = 9, c = 18.
25	Write a program in C to calculate and print the Electricity bill of a given user. The User Id, User name and Unit consumed by the user should be taken from the keyboard and display the total amount to pay to the user. The charge is as follow: **Unit** — **Charge/unit** up to 100 — @1.50 **101** and above but less than 400 — @1.75 401 and above but less than 600 — @2.00 601 and above — @2.50 If bill exceeds Rs. 500 then a surcharge of 15% will be charged and the minimum bill should be of Rs. 150/- */
26	WAP to find square and cube of a given number
27	Write a program to read a floating point number from keyboard and print its integer and fractional part separately.
28	WAP to check whether a character is alphabet, digit or special character
29	WAP to prints the given three integers in ascending order using conditional statement (if – else).
30	WAP to show the working of a basic calculator by taking choice of operation from user. Use dynamic initialization of variables.
31	WAP to print day of week using switch case
32	WAP to calculate roots of a quadratic equation ax^2+bx + c using the formula for calculating roots = $\frac{-b \pm sqrt(b^2-4ac)}{2a}$ here $(b^2 - 4ac)$ is the discriminant.
33	Find the net salary of an employee. Net Salary = Basic Salary + DA + HRA+MA-PF-IT Where DA = 70% of basic salary, HRA = 15% of basic salary PF = 8% of basic salary IT = 12% of basic salary MA = Rs. 1000 fixed. Use symbolic constant.
34	WAP to display integer, float and double values from user using qualifiers short, long, signed and unsigned.
35	WAP to print numbers from 1 to n. The value of n is given by the user using while, do … while and for loop.

36	WAP to print multiplication table of a number entered by user using for loop and while loop.
37	WAP to print all even numbers between 1 to 100 using while loop and for loop.
38	WAP to print all odd numbers between 1 to 100 using do … while loop and for loop.
39	WAP to print sum of n numbers starting from 1 to n using loop. The value of n must be entered by user.
40	WAP to count the number of digits in a number. For instance, if the user enters 455, the answer should be 3.
41	WAP to print Factorial of number up till n using loop. Value of n will be given by user.
42	WAP to print Fibonacci Series up to n terms. Value of n will be given by user. (e.g., if user enters 5, it should be printed as 0 1 1 2 3)
43	WAP to print reverse of a number entered by user. E.g. if user enters 123, it should print 321.
44	WAP to check whether number entered by user is a palindrome using loop.
45	WAP to find summation of individual digits of a number using loop. (E.g. If user enters 503, answer should be 5+0+3 = 8).
46	WAP to check whether number entered by user is an Armstrong Number. (A positive number is said to be Armstrong number of the order n if $abc \ldots\ldots n = a^n + b^n + c^n + \ldots\ldots\ldots\ldots$, E.g. $153 = 1^3 + 5^3 + 3^3$).
47	WAP to check whether number entered by user is Prime number using loop.
48	WAP for program to read age of n persons and display only those persons whose age between 30 to 50.
49	WAP to Print the following pattern using loop: * ** *** **** ***** 1 12 123 1234 12345
50	WAP to print the following pattern using loop: ***** **** *** ** * 12345 1234 123 12 1
51	WAP to print the following pattern using loop. * *** ****** ******** 1 1 2 3 1 2 3 4 1 2 3 4 5
52	WAP to print a full pyramid of symbol $ up to height 5 using loop.
53	Distance between two points (x_1, y_1), (x_2, y_2) is given by the formula $D^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$. Write a program to compute D.
54	WAP to determine and print the sum of harmonic series for a given value of N: 1+ ½ + 1/3 + …… + 1/n. Where n is the value entered by user.
55	WAP to print ASCII values of characters from A to Z and a to z using loop.
56	WAP to convert upper case character entered by user into lowercase and vice versa.
57	WAP to print 1 to 10 using go to statement
58	A B B C C C

	D D D D E E E E E
59	1 2 3 4 5 6 7 8 9 10
60	WAP to Display Armstrong Number Between 100 to 5000 Intervals.
61	WAP to add numbers until the user enters zero using while loop.
62	WAP to find Sum of N Input Numbers by user using for loop.
63	WAP to find sum of the square of all natural numbers from 1 to N. Series: 1^2+2^2+3^2+4^2+..N^2
64	WAP to read an age of 10 person & find out how many of them fall under using while loop : a) Student- age 0 to 20 b) Doing College or job - age 21 to 50 c) Enjoy Retire life-age 51 & over
65	WAP to print Square, Cube and Square Root of all numbers from 1 to N using for loop.