QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

Department of computer systems engineering

ASSIGNMENT # 1

Subject: Object Oriented Programming | Batch: 17CS | Submission Date: 18-07-2017

I. Write steps (algorithms), draw flowcharts and write C++ programs along with their output to:

1. Input radius of circle and display its area. **(Hint: πr^2)**
2. Input value of voltage and current then display the resistance using ohm's law. **(Hint: V = I×R)**
3. Input total and obtained marks then display percentage
4. Input an integer value and find out that it is even or odd
5. Input a year and find out that the inputted year is leap year or not
6. Input a simple arithmetic equation and program should display its result
7. Input obtained and total marks and display percentage along with proper grade
8. Input an integer value and display its table
9. Generate Fibonacci series until user presses space bar **(i.e. 0 1 1 2 3 5 8 13 …)**
10. Input an integer value and display Ullam series **(e.g. 5 16 8 4 2 1)**
11. Input your name and count the number of characters using do-while loop.
12. Input an integer value and find out that it is prime or not
13. Input an integer value and find out that it is Armstrong number or not.
    (Hint: sum of each digit power by total number of digits in a number is the number itself)
14. Input an integer value and find out that it is perfect number or not.
    (Hint: sum of perfect divisors of a number is the number itself)
15. Input 2 integer values and find out that those are anagram or not.
    (Hint: occurrence of digits is same in both numbers)
16. Input 10 integer values in an array and find out the largest one
17. Input 10 integer values in an array and find out the number that has higher number of occurrences
18. Input a 3x3 matrix and display its transpose
19. Input 2 3x3 matrices and display its addition
20. Input 2 3x3 matrices and display its multiplication
21. Input a string and display same string in all uppercase letters and then in all lowercase letters.
    (Hint: Use ASCII codes)
22. Input a string and find out that it is palindrome or not.
    (Hint: Reverse of a string is same as original string)
23. Input 2 strings and find out that those are anagram or not.
    (Hint: characters and their occurrences is same in both strings)
24. Input length of a room in inches and feet using structures. The program should be able to add/subtract those and display those in proper format. **(Hint: 12 inch = 1 feet)**
25. Display a menu for user to convert decimal to binary and binary to decimal. The program should input a number and can convert into required number system using function.

II. Complete following exercises from "Object Oriented Programming in C++ by Robert Lafore":

1. Chapter # 2 (pg. 71 – 73)
2. Chapter # 3 (pg. 126 – 129)
3. Chapter # 4 (pg. 158 – 160)
4. Chapter # 5 (pg. 212 – 213)

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