Programs-set 2

1. Using a switch statement, write a menu driven program to convert a given temperature from Fahrenheit to Celsius and vice versa. For an incorrect choic, an appropriate error message should be displayed. Accept the value from the user.

(Hint: Celcius=(F-32)\*(5/9)

F=(9/5)\*celcius+32)

2.Write a menu-driven program to accept a choice and perform the following :

Choice=1, accept a number and check whether it is a prime number

Choice=2, accept a number and check whether it is a automorphic number

Else display ‘Wrong choice’.

(An automorphic number is a number which is contained in the last digits of it’s square. Ex.25 is an automorphic number as it is the last 2 digits of 625, which is it’s square)

3.Compute and display the sum of the following series :

(1+2)/(1x2) +(1+2+3)/(1x2x3)+…(1+2+…n)/(1x2x…n)

4. .Sasha travels pvt ltd gives the following discount to it’s customers:

|  |  |
| --- | --- |
| **Ticket amt** | **Discount** |
| Above Rs.70000 | 18% |
| Rs 55001 to Rs70000 | 16% |
| Rs 35001 to Rs 55000 | 12% |
| Rs 25001 to 35000 | 10% |
| Less than 25001 | 2% |

WAP to input the name and ticket amt for the customer and calculate the discount amt and net amount to be paid in the following format:

Name Ticket charges Discount Net Amount

5.Write a menu-driven program to perform the following :

If choice=1, accept a sentence and count the number of words in it.

If choice=2, accept a string and reverse it.

Else display ‘Wrong choice’.

6. Write a class to represent a rt.angled triangle.A constructor should take the length of two shorter sides and calculate the length of the hypotenuse. Include a method to calculate the area of the triangle.

(hint: hypot=sqrt(side12+side22) )

7.Write a program to print the value of the following series :

1+x2 + x3 +…+ xn

3! 4! (n+1)!

where n is accepted from the user.

8.Write a program to generate the following series :

1 + 2 + 3 + 4 +……..+ n

1! 2! 3! 4! n!

9.Write a menu driven program to do the following :

Choice 1 :Count the number of times a character occurs in a string. Both the character and the string have to be accepted from the user.

Choice 2: Replace the character ‘a’ by ‘s’ in a string. Accept the string from the user.

Choice 3:Check whether a string accepted from the user is a palindrome or not.

10. Write a program to accept a number and check whether it is a perfect number.

(A number is a perfect number if the sum of all it’s divisors gives back the number itself. Ex. 28 is a perfect number as it’s divisors are 1, 2, 4, 7 and 14, and if you add them you will get back 28.)

11.Write a menu-driven program to :

Choice 1:Accept a string and convert all the alphabets to uppercase.

Choice 2:Accept a string and convert all the alphabets to lowercase.

Choice 3:Accept a string and convert all uppercase to lowercase and all lowercase to uppercase.

Else : error message

12. Write a menu-driven program to choose from various categories of cinema hall tickets. After the user selects a category, accept the number of tickets the user wishes to buy. Display the total cost of the tickets, by calculating as follows :

1. Lower Stall Rs.50/-
2. Upper Stall Rs.70/-
3. Balcony Rs.90/-
4. Box Rs.120/-

13. 26. Find the sum of the following series. N should be accepted from the user.

1+7+26+…+n terms

The terms are got by the cubes of natural numbers minus 1, except the first one.

14. Write a program to create a class Bank, which have the following member variables :

Account number

Account holder’s name

Balance amount

The class should have the following member functions :

A parameterized and a non-parameterized constructor

A function to update the balance amount on withdrawal of amount

A function to update the balance amount on deposit of amount

A function to display all the values

Call all the above functions from the main() function.

15. . Write a program to print the value of the following series, for n=8 :

(x+1)+(x+2)2 + (x+3)3 +…+(x+n)n

16. WAP to input any given string. Calculate the total number of digits, vowels and other characters present in the string.

17. Write a program to accept a string from the user, convert all the uppercase alphabets to lowercase and lowercase to uppercase. The remaining should be left as it is. Display the new string.

18. Define a class ‘Student’ described as below:

Data members: Name,Age,m1,m2,m3(marks in 3 subjects),max, avg

Member methods:a.A parameterized constructor to initialize the data members

b.To accept the details of a student.

c.To compute the average and the maximum out of 3 marks

d.To display the name, age, marks in 3 subjects and max and avg.

19.WAP to find the factorial of a given number.