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Assignment - VI

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VI Assignment

Use functions in all coming programs.

1) Write a Geometry program, where display the menu like below
   1. Add and Sub
   2. Area of Rectangle
   3. Area of circle
   4. Average
   5. Modulus
   6. Exit

   Enter your choice….

   Based on the choice ask use to enter the required number, for option 1, user need to enter two number, for option 3 user need to enter radius, etc. calculate the Required information and display.

   This activity will continuous until user choice option 6.

2) Write a program to check whether a given number is perfect or not

   Discerption: A perfect number is a positive interger that is equal to the sum of its proper positive divisors, that is the sum of its positive divisors, excluding the number itself.

   Example: first perfect number is 6, because 1,2,3 are its proper positive divisors, and 1+2+3 = 6. Other perfect numbers are 28, 496, 8128.

   Your program should have following test conditions

Execution and test conditions:
   1) Program should ask for input.
   2) If number is perfect then display – Enter number is perfect number
   3) If entered number is negative and zero the display – Wrong input.

3) In above Question modify such that, it ask user to take last number till where we have to calculate perfect number and display all available perfect number between 0 and user entered number.

4) Find the factorial of a given number using recursion.

5) PIC to read three number a, r, n and Generate AP, GP, HP. Make menu function

   Description: AP – In mathematics, an arithmetic progression (AP) is the sequence of such that the difference between the consecutive terms in constant.

   For example 5, 7, 9, 11, 15 … is an arithmetic progression, with common difference of 2.GP – In mathematics a geometric progression is a sequence of number where each term after the first is found by multiplying the previous one by a fixed, non-zero number called the common ratio. Example The sequence 2, 6, 18, 54, ..common ratio is 3. sequence 10, 5,2.5, 1.25 … common ratio is ½.HP – A harmonic progression is formed by taking the reciprocals of an arithmetic progression.

Input needed: A, R, N where A = first number, R = common difference (AP&HP), common ratio (GP), N = number of terms. Validate then input number before using them, they should be less than 500.

Output:

Case 1 – positive inputs,
  Enter first number A = 2
  Enter common difference/ratio R = 3
  Enter the number of terms N = 5
  AP = 2, 5, 8, 11, 14
  GP = 2, 6, 18, 54, 162
  HP = 0.5, 0.2, 0.125, 0.0909091, 0.0714285

Case 2 – wrong input.

6) PIC take input of a day in year and display which day of the week it is. Input will be between 1 to 365 and output will be Monday or Tuesday or Wednesday etc. Also take input for which is first day. It is Monday or Tuesday etc from user. Make the Enum to save week days and use enum. After completion of program ask user do you want to continuous y/n. exit only when user say n, otherwise keep running program.

7) Find out the GST applicable on below items, ask user to enter the price of item, and tell them the total cost of price including GST. display the following item on menu, and ask user to choose item first.
  1) Vegetable
  2) LED TV
  3) Food order
  4) Rice
  5) Sofa-set

once user select item from menu, then ask for price of that item and show the rate of GST applicable on that time. Although rates are keep changing,
but current consider following rate of GST
1) Vegetable 0%
2) LED TV 18%
3) Food order 12%
4) Cloths 5%
5) Sofa-set 32%

All last display like " the item having price is XXXXXX, GST application on this itemwith the rate of XX% and total cost of this item will be XXXXXX".