CSE 1103 – Introduction to Programming

PROJECT 1

Write a program that performs the corresponding operations through the below menu, according to the selected option.

0. Exit
1. Solving the mathematical equation
2. Seasons and day counts according to month number
3. Printing keybord inputs in reverse
4. About

Enter your selection :

You should ask the selection until the user enters his selection correctly (between 0-4). When the user enters an option between 1-4, corresponding operation in the menu should be performed and the menu should be printed again after the operation ends. If the user enters 0, you should ask whether he really wants to exit the program. If he is sure, exit the program; otherwise, display the menu again. If the user enters an invalid option (not between 0-4), you should print a warning message and display the menu again.

Use functions to modularize your program !

Clarifications

1. Write a C program that solves the following equation. You must get the "N", "R" and "S" values from the user. These values must be all positive.(If the user enters a negative value warn him and get the value again). According to these values, your program must print the result to the screen.

$$\sum_{i=1}^{N} \frac{\prod_{k=1}^{R} \frac{3k^3+5}{k^2}}{\sum_{j=1}^{S} \frac{\sqrt{3j^3+j+2}}{2j}}$$

2. You must get the month number(1-12) and say the season and the number of the days that the month has. If the user enters an invalid value, warn him. If the month number is 2(for February), you must ask the year in order to determine day count. Because if the year is a leap year, February has 29 days, otherwise 28)

For example

If the user enters 3 as the month number, you must say : The season is Spring and day count is 31.

If the user enters 2 as the month number and 2012 as the year number, you must say : The season is Winter and day count is 29. (Beware If the year was entered as 2011, the day count would be 28 !)

3. You must reverse the sentence that the user enters from the keyboard. The sentence finishes when the user press "enter". You can only use techniques that we learned so far(for example you cannot use arrays !). *(Hint : Use a recursion technique for your solution.)*

For example

If the user enters *Hello World!* and press enter, you must print :

!dlroW olleH

4. Print the author of the program(your number and name).

P.S.: You must submit a report which includes the pseudocode, flow chart, and C code of your program. Submit your report and C source code of yor program to R.A. Emre ŞATIR on **12 December 2013 Thursday** at the LAB hour. Every student will have to explain his/her solutions on that day.

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