Programming Fundamentals LAB – BSDSF24

(Both Morning and Afternoon)

Lab 07 – 01-11-2024

use notepad++ and developer command prompt for the following tasks

Task 01 (08 marks each)

1. Create a struct named **Ratio** with two integer components named **num** and **den**. The Ratio variables are used to store rational numbers which pair of integers p and q and are of the form p/q, where q cannot be 0. Later, create functions inRatio and outRatio to input and output Ratio variables in some appropriate way. The display of the Ratio should be like num/den. Lastly, practice the Ration variables and values in the main function.

2. Create the following functions/functionalities for above mentioned Ratio structure. Later, test them in the main function.
    a. To take additive inverse of a Ration object
    b. To take reciprocal of a Ratio object
    c. To multiply two Ratio objects
    d. To add an integer with a Ratio object
    e. To simplify the Ratio object (2/3 is the simplified form of 10/15, 24/36, etc)
    f. To convert an integer into a Ratio object
    g. To convert a Ratio object to a float
    h. Comparing two Ratio objects for equality
    i. Comparing two Ratio objects as first is less than second

Task 02 (10 marks each)

1. Write a program that creates an array of 25 integers. Input random values of your choice into it using loop. Then output all its pairs (consecutive values) which are in order, means the previous number is less than or equal to the next number. E.g., for the sequence 26, 12, 6, 17, 14, 18, 21, 32, 17, 19: the output should be 6 and 17, 14 and 18, 18 and 21, 21 and 32, 17 and 19, one pair per line.
   It is better to make use of appropriate functions instead of everything is in main.

2. Using the functions created in subtasks of task 1, and more but appropriate functions you need to demonstrate the computation of product of several Ratio objects stored in an array.

-- End of Lab --