Assignment #1 COMP 2006

Disclaimer: The goal of this assignment is to accomplish a given set of instructions using the programming concepts seen in class to date. Therefore you are not permitted to use any "advanced" concepts, but may use any premade functions that are available in C++ even if they have not been used in class to date.

Description: In the main program create a menu system that will allow a user to choose from 3 option.

1. Fraction calculator
2. Grading schema
3. Biggest integer

Program #1 Fraction calculator: You will start by prompting the user for two fractions in the main. The inputs should be two strings in the form #/#. You must account for both positive and negative numerators. Therefor -#/# is also a valid input.   In a separate function create a program that will calculate the following. Addition, Subtraction, Multiplication and Division of the two fractions. Then display the results in a formatted table. All outputted fractions must be in lowest terms or whole numbers if possible.

Program #2 Grading Schema: In a separate function you will implement a grading schema. Write a program that reads a student's name together with his or her test score from a file given by the user. The first two values in the file will represent the number of students followed by the number of tests. The program should then compute the average test score for each student and assign the appropriate grade (A, B, C, D, E or F) as well as the average of each test. Your program must perform the following functions.

a) A void function calculateAverage, to determine the average of the test scores for each student.
b) A value-returning function, calculateGrade, to determine and return each student's grade letter.
c) A void function calculateTestAvg that calculates the average of all tests and overall average of students.
d) A void function printGrades that prints the grades values, average marks and grade letter followed by the average of all tests and students.

Program #3 Write a function that given a list of non-negative integers in the range of 1-99 from the user, arranges them such that they form the largest possible number. For example, given [50, 2, 1, 9], the largest formed number is 95021. You may assume that you will not receive more than 10 numbers. You must use vectors throughout the program without any uses of arrays.

Sample output files are located on blackboard, you may differ from the files if needed.

Evaluation Criteria (max 36 marks)

Criteria	0-2	3-4	5-6	7-8	Marks
Program1	Program does not exist	Program does not function properly	Program is mostly functional	Program is fully functional	8
Program2	Program does not exist	Program does not function properly	Program is mostly functional	Program is fully functional	8
Program3	Program does not exist	Program does not function properly	Program is mostly functional	Program is fully functional	8
Main	- No single main	- Main does not call all functions needed	- Main calls all functions but does not obtain proper results	- Main calls all functions and obtains desired results	4
Comments	- No comments	- Some comments in functions and Main	- Most functions and Main are properly commented	- All functions and Main properly commented	4
Output / error messages	- No outputs	- Some attempt at outputs	- Most of outputs work properly	- All outputs correct and formatted properly	4
Total					36