CSC-101 – HW6

Q1 (25 Points)

1. Define an enumeration type `triangleType` that has the values `scalene`, `isosceles`, `equilateral`, and `noTriangle`.
2. Write a function `triangleShape` that takes as parameters three numbers, each of which represents the length of a side of the triangle. The function should return the shape of the triangle. (*Note:* In a triangle, the sum of the lengths of any two sides is greater than the length of the third side.)
3. Write a program that prompts the user to input the length of the sides of a triangle and outputs the shape of the triangle.

Q2 (25 Points) Write a program that prompts the user to enter a string. The program outputs the sum of the values (collating sequence or ASCII value) of the characters in the string. For example, if the string is `"spring"`, then the sum of the values of the characters is **115 + 112 + 114 + 105 + 110 + 103 = 659**.

Q3 (25 points) Write a program that lets the user perform arithmetic operations on fractions. Fractions are of the form *a/b*, in which _a_ and _b_ are integers and $b \neq 0$. Your program must be menu driven, allowing the user to select the operation *(+, –, *, or /)* and input the numerator and denominator of each fraction. Furthermore, your program must consist of at least the following functions:

- Function `menu`: This function informs the user about the program's purpose, explains how to enter data, and allows the user to select the operation.
- Function `addFractions`: This function takes as input four integers representing the numerators and denominators of two fractions, adds the fractions, and returns the numerator and denominator of the result. (Notice that this function has a total of six parameters.)
- Function `subtractFractions`: This function takes as input four integers representing the numerators and denominators of two fractions, subtracts the fractions, and returns the numerator and denominator of the result. (Notice that this function has a total of six parameters.)
- Function `multiplyFractions`: This function takes as input four integers representing the numerators and denominators of two fractions, multiplies the fractions, and returns the numerators and denominators of the result. (Notice that this function has a total of six parameters.)

- Function `divideFractions`: This function takes as input four integers representing the numerators and denominators of two fractions, divides the fractions, and returns the numerator and denominator of the result. (Notice that this function has a total of six parameters.) Some sample outputs are:
    - **3 / 4 + 2 / 5 = 23 / 20**
    - **2 / 3 * 3 / 5 = 6 / 15**

Your answer need not be in the lowest terms.

Q4 (25 Points) Write a program that prompts the user to input a string. The program then uses the function `substr` to remove all the vowels from the string. For example, if `str = "There"`, then after removing all the vowels, `str = "Thr"`. After removing all the vowels, output the string. Your program must contain a function to remove all the vowels and a function to determine whether a character is a vowel.