

## Question 1

Read formatted number values from a text file (Q1.txt). Take these formatted number values and write the corresponding number values to another text file (formattedValues.txt). This includes removing commas, removing \$ symbols, and treating values inside parenthesis as negative.

## Question 2

Continually asks user for double-type input and returns the harmonic mean. Terminates if the return value is 0.

### Example

Enter a pair of doubles

The program will terminate when the harmonic mean of the numbers is equal to 0.

Enter first number: *1*

Enter second number: *2*

The harmonic mean of 1 and 2 is: 1.33333

Enter first number: *100*

Enter second number: *-8*

The harmonic mean of 100 and -8 is: -17.3913

Enter first number: *0*

Enter second number: *4*

The harmonic mean of 0 and 4 is: 0

Harmonic mean is zero, program terminating.

## Question 3

Continually polls user for input, and converts all characters in the input to upper case. Continues until user inputs 'q'.

### Example

Enter a string to be converted to upper case.

Press 'q' to quit

Input: *Here's some text.*

Upper case string: HERE'S SOME TEXT.

Input: *Special characters: !@#*

Upper case string: SPECIAL CHARACTERS: !@#

Input: *q*

Upper case String: Q

Program terminating.

## Question 4

Implements the rand() function in C++ to simulate the reliability of a system with four components. Each component has a reliability of 0.95, and the configuration is as follows:

$$\text{Output} = (C1) \text{ or } (C1) \text{ or } ((C3) \text{ and } (C4)).$$

When run, there is no user prompt. The application simply returns the percentage of simulations in which the system passes after 5000 simulations.