CPP Module 09

Ex00: You have to create a program which outputs the value of a certain amount of bitcoin
on a certain date.
This program must use a database in csv format which will represent bitcoin price over time. This database is provided with this subject.
The program will take as input a second database, storing the different prices/dates to evaluate.
Your program must respect these rules:
• The program name is btc.
• Your program must take a file as argument.
• Each line in this file must use the following format: "date | value".
• A valid date will always be in the following format: Year-Month-Day.
• A valid value must be either a float or a positive integer, between 0 and 1000.

You must use at least one container in your code to validate this
exercise. You should handle possible errors with an appropriate
error message.

Your program should display on the standard output the result of the value multiplied by the exchange rate according to the date indicated in your database.

Ex01: You must create a program with these constraints:
• The program name is RPN.
• Your program must take an inverted Polish mathematical expression as an argument.
• The numbers used in this operation and passed as arguments will always be less than 10. The calculation itself but also the result do not take into account this rule.
• Your program must process this expression and output the correct result on the standard output.
• If an error occurs during the execution of the program an error message should be displayed on the standard output.
• Your program must be able to handle operations with these tokens: "+ - / *".

You must use at least one container in your code to validate this
exercise.

Ex02: You must create a program with these constraints:
• The name of the program is PmergeMe.
• Your program must be able to use a positive integer sequence as argument.
• Your program must use the merge-insert sort algorithm to sort the positive integer sequence.

To clarify, yes, you need to use the Ford-Johnson algorithm.

• If an error occurs during program execution, an error message should be displayed on the standard output.

You must use at least two different containers in your code to validate this exercise. Your program must be able to handle at least 3000 different integers.

It is strongly advised to implement your algorithm for each container and thus to avoid using a generic function.

Here are some additional guidelines on the information you should display line by line
on the standard output:
• On the first line you must display an explicit text followed by the unsorted positive integer sequence.
• On the second line you must display an explicit text followed by the sorted positive integer sequence.
• On the third line you must display an explicit text indicating the time used by your algorithm by specifying the first container used to sort the positive integer sequence.
• On the last line you must display an explicit text indicating the time used by your algorithm by specifying the second container used to sort the positive integer sequence.

The format for the display of the time used to carry out your sorting
is free but the precision chosen must allow to clearly see the
difference between the two containers used.