

7. Write your code on a file named **program7.cc**.

**Please note!** Standard library components shall be used whenever possible, and always try to find “best fit”. Avoid hand-written loops (**for**, **while** or **do**, *including range for even if such could be a good alternative*), use standard algorithms when suitable. If user defined function is required, use lambda expression or function object, *not* a normal function.

Unordered positive and negative integer values are supposed to be given, in free format, on a text file. There is such an input file, **seven.txt**, in directory `given_files`. When the program is started, the name of the input file is to be given on the command line, for example:

```
a.out given/files/seven.txt
```

All output is to be printed to the standard output stream **cout**.

The program shall do the following, step by step, and in each step, *no more, no less than what is specified!* Mark the beginning of each step with a comment on the form `// 1`, `// 2`, and so on.

- 1) Check the command line. If not correct, print an error message and terminate the program.
- 2) Open an input file stream for the file named given on the command line. If the file cannot be opened, print an error message and end the program.
- 3) Read values from the input file and store in a suitable sequence container, regarding what to be done below, in the same order as the values are read from the file.
- 4) Print the values in the container, each followed by a space character.
- 5) Use standard algorithm **for\_each** and a component of your own to, at the same time, make all negative numbers in the container positive and count how many negative numbers there are.

Print how many negative numbers there were.

- 6) Print the element in the container, each followed by a space character.
- 7) Move the five smallest numbers to the beginning of the container, in ascending order; the order of the rest of the elements is arbitrary.

Print the five smallest elements in the container.

- 8) Remove the five smallest numbers from the container.

Print the remaining elements in the container, each followed by a space.

Program output should be as follows (as specified in step 4, 5, 6, 7, and 8):

```
Numbers read:
1 9 -17 -8 -4 -7 7 14 21 -1 -9 11 -12 10 1

7 negative values were found.

After making all numbers positive:
1 9 17 8 4 7 7 14 21 1 9 11 12 10 1

Five smallest numbers:
1 1 1 4 7

Five smallest numbers removed:
17 9 14 21 8 9 11 12 10 7
```