

Sample Programming Exercise Example

In this problem, you are asked to compute the maximum element in a sequence of elements. The input consists of a list of integer numbers and the output is the highest element as well as how many instances of the highest element there are in the sequence.

The input is specified in a file whose name is the first argument of the program. The first line contains an integer N specifying how many datasets are in the file. The reminder of the file encodes the datasets. Each dataset starts with an integer M specifying how many numbers are in the set. The following M lines each contain one integer number.

Here is an example:

```
3
4
50
20
50
10
0
3
10
15
10
```

In this example, there are 3 datasets. First consists of 4 numbers {50, 20, 50 10}, the second one is empty, and the third one consists of 3 numbers {10, 15, 10}.

The output is a file called whose name is the second argument of the program.: Each line contains the answer of one of the datasets in the order in which they were read form the input file. If the dataset is empty the line consists of the word "EMPTY". Otherwise the line contains two numbers separated by one space. The first one is the value of the maximum number and the second one is how many times this number appeared in the sequence.

For example, the output corresponding to the input above is as follows:

```
50 2
EMPTY
15 1
```

You have to implement your program in plain C/C++ in a file called *main.cpp* that has no dependency other than the standard C/C++ libraries available in a standard Linux system such as the one in the graduate labs. The program should be able to compile just by using the command *g++ main.cpp*.