Junior Knights Assignments: Frequency List

Problem A: Counting Letters

Write a program that reads the content of a text file and counts how frequently each letter of the alphabet appears.

The program should be case-insensitive, meaning that a capital A and lowercase a are the same. It should also only count alphabetic characters, ignoring numbers and punctuation symbols.

File Input Specification

The file will contain a blurb of text.
It is NOT guaranteed that there will only be alphabetic characters in the file.

Output Specification

Output the frequency of each letter that appears in the input file. The frequencies should appear in alphabetic order and also display the frequency of letters that aren't used (0).

Sample Input File (blurb.txt)

Peter Piper picked a peck of pickled peppers

Sample Output (Corresponding to Sample Input File)

1
0
3
2
8
1
0
0
3
0
3
1
0
0
1
9
0
3
1
1

0
0
0
0
0
0

Problem B: Histogram of Numeric Test Scores

This is the same problem as last week, but instead of calculating the average grade of each student you will use the frequency list shown in lecture to track letter grades.

In this problem, you are given a number of students and grades for each student. Your task is to track how many of each letter grades were achieved in the class in order to assess how the class is doing as a whole.

File Input Specification

Note: It is guaranteed that the file you read from will adhere to these specifications. This means that you do NOT have to check them!

1. The first line of the input file will contain two positive integers (separated by a space), ***s*** *(**s** < 25),* specifying the number of students in the class and ***g*** *(**g** < 10),* specifying the number of grades per student.
2. The next ***s*** lines will each contain ***g*** positive integers <= 100 (separated by a space) representing a grade they got in class.

Output Specification

Output the frequency of letter grades in the class as a whole. The first line should be the number of A's achieved, followed by the number of B's on the next line, and so on.

An A will be a grade >= 90, a B is >= 80, and so on.

Sample Input File (scores.txt)

3 3
77 90 85
94 91 68
82 78 47

Sample Output (Corresponding to Sample Input File)

3
2
2
1
1

Problem C: Histogram of Numeric Test Scores

This is the same problem as the previous one, but instead of only having to assess numeric grades, there was an error in the database and you now have to deal with numeric and letter grades.

In this problem, you are given a number of students and grades for each student. Your task is to track how many of each letter grades were achieved in the class in order to assess how the class is doing as a whole.

File Input Specification

Note: It is guaranteed that the file you read from will adhere to these specifications. This means that you do NOT have to check them!

3. The first line of the input file will contain two positive integers (separated by a space), ***s*** *(**s** < 25),* specifying the number of students in the class and ***g*** *(**g** < 10),* specifying the number of grades per student.
4. The next ***s*** lines will each contain ***g*** positive integers <= 100 or letters {A, B, C, D, F} (separated by a space) representing a grade they got in class.

Sample Input File (scores2.txt)

```
3 3
C 90 85
94 A 68
82 78 F
```

Sample Output (Corresponding to Sample Input File)

```
3
2
2
1
1
```