Project #5: Processing strings

Task description:

In this project, you must solve one of two tasks, depending on how your program is executed.

For the first task, you will be given a phoneword (a phone number that spells a word by using the letters on your telephone keypad – see the picture below), and you must print its respective phone number. For instance, the phoneword 1-800-FLOWERS refers to the phone number 1-800-3569377.

For the second task, you will be given a letter and a phrase, and you must print the percentage of words in this phrase that contains this letter. For instance, the letter 'a' appears in 33.3% of the words in the sentence "you will pass".

Execution specification:

For this project, your program will be run with command-line arguments. For the first task, a program named *"a.out"* will be executed as follows:

```
./a.out phone
```

where the first argument *"phone"* indicates that the current test case is a valid input for the first task. For the second task, a program named *"a.out"* will be executed as follows:

```
./a.out phrase [a-z]
```

where the first argument *"phrase"* indicates that the current test case is a valid input for the second task, and the second argument is the letter for which you must count the words.

Input specification:

For the first task, the input contains a single line with the phone word, which has at most 15 characters. It only contains digits ('0' to '9'), hyphens ('-') and uppercase letters ('A' to 'Z').

For the second task, the input contains a single line with a phrase. A phrase is a sequence of words separated by a single space. There will be no consecutive spaces. The minimum number of characters in a sentence is 1 and the maximum is 1000. All words are composed of lowercase letters only.

Output specification:

For the first task, your program must print a single line with the phone number for the given phoneword. Digits and hyphens in the input are also part of the output. Do not forget the new-line character in the end.

For the second task, your program must print a single line with a number representing the percentage of words in the input phrase that contains the letter provided as a command-line argument. This value must have a single digit after the decimal point. Do not forget the new-line character in the end.

Example #1:

Command	
./a.out phone	
Input	**Output**
APP-OQI-LNX-THF	277-674-569-843

Example #2:

Command	
./a.out phone	
Input	**Output**
1234-5678	1234-5678

Example #3:

Command	
./a.out phone	
Input	**Output**
JF-CD-SHQ	53-23-747

Example #4:

Command	
./a.out phrase a	
Input	**Output**
you will pass	33.3

Example #5:

Command	
./a.out phrase k	
Input	**Output**
tusafydaxofazi aoybeme ibiranupu jufynosomop yyaoxikisajyuacug iluqu lajubadykyyem aoipot oeytu imua otabybaqyly vijofem anoaaco yfyzyt epayoiut eotegic aemopyz agouyaye emyxueuoovauewun ysyoaqihitycoviwe oyzib edetejaiovud geeykak	13.0

Example #6:

Command	
./a.out phrase e	
Input	**Output**
you will pass	0.0