

Phonetic Search

The Task

Your program must read a list of surnames from standard input (the console), one per line. The command-line arguments to your program will be one or more surnames. For each of those surnames you must print out all of the names in the input list that match those on the command-line. If the command-line arguments were "Smith" and "Jones", and each matched three names in the input data, then you should print out (with the appropriate punctuation as shown):

```
Smith: Smidt, Smith, Smyth
Jones: Johns, Jonas, Jones
```

The matching algorithm is as follows:

1. All non-alphabetic characters are ignored
2. Word case is not significant
3. After the first letter, any of the following letters are disregarded: A, E, I, H, O, U, W, Y.
4. The following sets of letters are considered equivalent
 - A, E, I, O, U
 - C, G, J, K, Q, S, X, Y, Z
 - B, F, P, V, W
 - D, T
 - M, N
 - All others have no equivalent
5. Any consecutive occurrences of equivalent letters are considered as a single occurrence

The rules should be applied in that order. So, given a file "surnames.txt" that contains the following data:

```
Smith
Smyth
Smythe
Smid
Schmidt
Smithers
Jonas
Johns
Johnson
Macdonald
Nest O'Malett
Ericsson
Erikson
Saunas
Van Damme
```

Running your program from the command-line like this:

```
MyProgram Jones Winton < surnames.txt
```

Should print out:

```
Jones: Jonas, Johns, Saunas
Winton: Van Damme
```

The Rules

- Your submitted program code may consist of multiple source files but you must include a prominent “README” file that gives instructions for building and running your program. You can also include with your program code any other data files, unit tests and so on to demonstrate that it works – but do not include any pre-compiled files (e.g. `.jar`, `.class`, `.obj`, `.exe` etc.)
- Where possible, avoid operating system-specific assumptions such line ending characters or filename path delimiters.
- It must be hosted on a public git repository, such as github.com
- You will not automatically “fail” if we uncover bugs or limitations in your program. However, please be prepared to be challenged over improvements and possible fixes when we discuss your code with you.
- You are free to take inspiration and even small code snippets from other sources, but you must acknowledge if you do so with appropriate comments. In any event you will be expected to be able to explain how every part of your program works.