Marquee

Exercises

You are tired of the simple block lettering on marquees. So, you decided to create a custom set of letters for people to use. It's a way to spice up those DIY advertisement boards. However, you don't know how many of each letter you should include in a package. I mean, you'll need more e's than x's, but by how much.

Count the number of times every letter occurs in a speech. Then print out a list of all 26 letters in alphabetical order. Next to each letter should be its frequency count and its percentage. Do not count spaces or punctuation in your total frequency counts.

Finally, based on the percentages, print a list of how many of each letter should be included in a 180 pack of letters. Every letter must be represented. Don't worry if the pack ends up being between 175 and 185. Punctuation tiles will make the package an even 200 tiles.

Heres Some Pseudocode:

```
//Create three 26-element arrays.  These will keep track of the letter
   counts, percentages and final letter tile count.  These 3 will be
   aligned arrays (index 0 is for a, 1 for b...).

//Scan in the entire speech into a single String.  It's not all on one
   line, so here's how I did it.

   Scanner inFile = new Scanner(new File(
                                "src/labs/Speech_1.txt"));
   String speech = "";
   while(inFile.hasNext())
      speech += inFile.nextLine();
```

Continue…

Continued

```
//Convert the speech to all lower case (there is a method for this)

//Scan through the letters in the speech incrementing the appropriate
   element in the integer array you created.  There are several ways of
   doing this: using charAt, substring, converting to a char array…

//Then calculate everything one at a time (the total number of letters,
   the percent for each letter, how many of each to include...). Note:
   the percent for each letter is based on the number of letters in the
   speech without punctuation and spaces.

//Print everything out.
```

Hint: Use the char's value to map it to its index in the array. Example:

```
'a' - 97 = 0
'b' - 97 = 1
```

Data for `Speech_1.txt` "The Gettysburg Address" by Abraham Lincoln

Letter	Count	Percent	#To Include
a:	102	8.88%	16
b:	14	1.22%	2
c:	31	2.70%	5
d:	58	5.05%	9
e:	165	14.36%	26
f:	27	2.35%	4
g:	28	2.44%	4
h:	80	6.96%	13
i:	68	5.92%	11
j:	0	0.00%	1
k:	3	0.26%	1
l:	42	3.66%	7
m:	13	1.13%	2
n:	77	6.70%	12
o:	93	8.09%	15
p:	15	1.31%	2
q:	1	0.09%	1
r:	79	6.88%	12
s:	44	3.83%	7
t:	126	10.97%	20
u:	21	1.83%	3
v:	24	2.09%	4
w:	28	2.44%	4
x:	0	0.00%	1
y:	10	0.87%	2
z:	0	0.00%	1
Totals:	1149		185

Continue…

Continued

Data for `Speech_2.txt` "Freedom or Death" by Emmeline Pankhurst

Letter	Count	Percent	#To Include
a:	817	7.87%	14
b:	162	1.56%	3
c:	232	2.24%	4
d:	349	3.36%	6
e:	1383	13.33%	24
f:	217	2.09%	4
g:	228	2.20%	4
h:	561	5.41%	10
i:	722	6.96%	13
j:	8	0.08%	1
k:	58	0.56%	1
l:	385	3.71%	7
m:	282	2.72%	5
n:	752	7.25%	13
o:	871	8.39%	15
p:	154	1.48%	3
q:	11	0.11%	1
r:	546	5.26%	9
s:	539	5.19%	9
t:	1083	10.44%	19
u:	293	2.82%	5
v:	157	1.51%	3
w:	312	3.01%	5
x:	12	0.12%	1
y:	239	2.30%	4
z:	4	0.04%	1
Totals:	10377		184

Data for `Speech_3.txt` "I Have A Dream" by Dr. Martin Luther King

Letter	Count	Percent	#To Include
a:	556	7.72%	14
b:	114	1.58%	3
c:	183	2.54%	5
d:	260	3.61%	6
e:	885	12.28%	22
f:	224	3.11%	6
g:	175	2.43%	4
h:	386	5.36%	10
i:	566	7.86%	14
j:	21	0.29%	1
k:	51	0.71%	1
l:	341	4.73%	9
m:	188	2.61%	5
n:	477	6.62%	12
o:	608	8.44%	15
p:	96	1.33%	2
q:	6	0.08%	1
r:	412	5.72%	10
s:	427	5.93%	11
t:	670	9.30%	17
u:	175	2.43%	4
v:	81	1.12%	2
w:	165	2.29%	4
x:	5	0.07%	1
y:	126	1.75%	3
z:	6	0.08%	1
Totals:	7204		183