Project 3(Due date: 07/17/2016)

Program 1:

1. Write a program Count that takes a file as an argument. Read the file and gather statistics to be printed (using java HashMap). Find the total unique words. Add them to a Map and then count the size of the keyset. Store a count for each word and increment it every time you see that word. Hint (get() the count and then put() an updated count. Use this count to find the most and least common words.

2. Keep track of the length of words using another Map. Use the length as a key and increment the number of words of that length. Sort the keyset for the map and then get the values when iterating over the sorted keyset. You can use new ArrayList(map.keySet()) to get an ArrayList of the keys. You can also use Collections.sort to sort the ArrayList.

Output

```
Total unique words: 2183
Most common word "the" used 697 times
Least common word "omens" used 1 time(s)
```

Program 2:

(Spell Checker) Write a SeparateChainingHastST client called Spell that takes a command-line argument specifying the name of the _le containing common misspellings (a line- oriented _le with each comma-separated line containing a misspelled word and the correct spelling), then reads text from standard input and prints out the misspelled words in the text along with the line numbers where they occurred and their correct spellings.

```
$ java Spell misspellings . txt < war_and_peace . txt
unconciousness :16122 -> unconsciousness
leaded :21907 -> led
wont :39087 -> won't
wont :50591 -> won 't
Ukranian :58064 -> Ukrainian
wont :59650 -> won 't
conciousness :59835 -> consciousness
occuring :59928 -> occurring
```