

# Homework 7: Dictionaries & Functions

L435/L555

Due Thursday, November 10

1. Write a program that reads in the POS tagged text from file *vm.pos* and creates a POS lexicon that stores every POS tag and its frequency. Use a dictionary to store these data. Then print a list of the POS tags and their frequencies; the output should print the POS tags based on their frequency in descending order.

Note: do not use NLTK tools for this question.

2. At the top of a program, create a small dictionary of translations, e.g., 20 words from two of your favorite languages, e.g., an English-to-Spanish dictionary. Allow for multiple translations by having each key point to a list of possible translations. Write code which takes a L1-to-L2 dictionary and gives you an L2-to-L1 dictionary, e.g., Spanish-to-English.

Be sure to test it with one-to-many (one L1 with many L2 translations) and many-to-one (many L1 words with the same L2 translation) mappings.

3. Extend the program from question #4 on assignment 6, so that the dictionary values are more complicated. Specifically, the dictionary should have each word as a key, with its value being a **list** of all the words which appear immediately after the word in the original text.
4. Write a program that allows the users to create their own dictionaries. They should be able: a) to insert a new source word plus its translation into the dictionary, b) look up a word, c) look up all the source words, d) delete entries, and e) check whether a certain translation is in the dictionary. They should be presented with these options repeatedly until they select: f) an option to quit.

Some notes:

- The point is that you are providing an interface for users to choose an option, give the necessary input, and then the action is performed internally.
- Assume only one translation per word for this question.
- Use **functions** for each of the 5 main options (#a-#e).