The following programs are due at the beginning of class on **Thursday, December 5**. You can submit your programs online via NYU Classes. Please submit a separate .py file for each program, and put your name and the problem/assignment number in a comment at the top of the program.

1. In the English language, a verb can be converted from infinitive form to third person singular form by following these simple rules:

   1. If the verb ends in y, remove it and add ies
   2. If the verb ends in o, ch, s, sh, x or z, add es
   3. By default just add s

   For example, the third person singular form of *run* is *runs* and the third person singular form of *brush* is *brushes*. Write a function `make_third_singular` that takes a verb in the infinitive form as an argument and returns the third person singular form of that verb. Use this function to write a program that asks the user for a verb in the infinitive form and converts it to third person singular for them.

2. As wikipedia explains,

   Pig Latin is a constructed language game where words in English are altered according to a simple set of rules. Pig Latin takes the first consonant (or consonant cluster) of an English word, moves it to the end of the word and suffixes an ay (IPA [e]) (for example, pig yields igpay, banana yields ananabay, and trash yields ashtray).

   Write a program that asks the user for a word and then translates it to Pig Latin.

3. Write a function `count_char_freq` that takes a list of words as an argument, counts how many times each word appears in the list, and then returns this frequency listing as a Python dictionary. Use your function to write a program that counts how many times each word appears in the file 'receipt.txt' and prints the results to the screen.

4. In cryptography, a *Caesar cipher* is a very simple encryption technique in which each letter in the plain text is replaced by a letter some fixed number of positions down the alphabet. For example, with a shift of 3, the letter 'A' would be replaced by 'D', 'B' would become 'E', and so on. The method is named after Julius Caesar, who used it to communicate with his generals. ROT-13 ("rotate by 13 places") is a widely used example of a Caesar cipher where the shift is 13. In Python, the key for ROT-13 may be represented by means of the following dictionary:
Write a function decode that takes two arguments, a secret message stored as a string and a key like the one above stored as a dictionary, and returns the decoded string. Use your function to write a program that decodes the following secret message:

```
Pnrfne pvcure? V zhpu cersre Pnrfne fnynq!
```

Note that since English has 26 characters, your ROT-13 program will be able to both encode and decode texts written in English.