An anagram is a permutation of the letters of a word that produces another word. Your task for this lab consists of writing a program that asks a user to input a word and then prints all the anagrams of that word. For example, if the user enters the word *spot*, your program should output the following words: *opts, post, pots, spot, stop, tops*.

Your program should first read the words in the file [https://raw.githubusercontent.com/dwyl/english-words/master/words_alpha.txt](https://raw.githubusercontent.com/dwyl/english-words/master/words_alpha.txt), which contains over 466000 words in the English language. As the words are read, they should be stored in a set (see section 13.24 in the online textbook). Your program should then use a recursive function, similar to the ones seen in class and described in the textbook, to find the anagrams. The anagrams should be displayed in alphabetical order and contain no duplicates. Your program should also display the time it took to find the anagrams.

This a possible run of your program:

```
Enter a word or empty string to finish:
Word: spot
The word spot has the following 6 anagrams:
  opts
  post
  pots
  spot
  stop
  tops
It took 0.001242 seconds to find the anagrams

Enter a word or empty string to finish:
Word: on
The word on has the following 2 anagrams:
  no
  on
It took 0.000011 seconds to find the anagrams

Enter a word or empty string to finish:
Word: 
Bye, thanks for using this program!
```

Write a report describing your programs and experiments, as described in the syllabus.