Dear Candidate:

Thanks for your interest in joining the nOps engineering team! We pride ourselves on recruiting the strongest engineering talent globally to join us in our journey of innovation in the Cloud Management space! As part of our interview process, we ask all engineers to participate in a coding exercise that will allow you to demonstrate your coding skill, solving problems with efficiency and elegance in-mind.

Please reply to this email with the following assets:

- A brief description of your approach in solving the problem
- Source code that can be executed without the use of an IDE
- Any instructions to execute your application
- The output of the program which includes:
    - The count of words in the document that can be comprised of other words
    - The longest two words contained in the input file that can be comprised of other words

Please see the instructions below that describe the challenge. If you have any questions about the problem, please feel free to email us back.

Thank you.

The nOps Engineering Team

The Longest Word Challenge

Goal: Write a program that will take a formatted list of words as input and output the logest *n* words and also the total count of words that are comprised of other words in the list.

Details: Your program should read from a file specified as input a sorted list of words (one word per line, no spaces, all lower case). The program will parse the list and keep a count of all words that can be comprised of other words in the file and place them in a data structure that allows it to quickly output the longest words in order. At the end of execution, your program should output the longest *n* words contained in the input file and the total count of words comprised of other words.

For example, if the file contained:

boar

cat

cats

catsdogcats

catxdogcatsrat

dog

dogs

dogcatsdogsboar

hippopotamuses

rat

ratcatdogcat

A sample input might look like:

Please specify the input file location: /tmp/words.txt

Please specify the number of longest words to output (default 2): 2

Sample output should look like:

Longest 2 words:

dogcatsdogsboar

Ratcatdogcat

Number of words comprised of other words: 3

Please send your solution in source code, written in one of the following languages: Python, Ruby, Javascript, or Go. This is not just a puzzle or classroom assignment; it is your opportunity to demonstrate your engineering judgment in a way that you cannot do in a personal interview. **Performance matters!** The program should return results quickly even for very large lists (100,000+ items) in a matter in something that can be measured in seconds and/or milliseconds.

Please find attached a file, words.tar.gz, containing a word list, words.txt, with 173k rows, for testing purposes.