

CS2302 - Data Structures

Spring 2023

Dictionaries

1. Write the function *most_common_substring*(*S*,*m*) that receives a string *S* and an integer *m* and returns the substring of length *m* that appears the most times in *S* and the number of times that substring appears. Your solution must use a dictionary and run in time $O(n)$.
2. The file *most_common_words.txt* contains the most common words in the English language, sorted by frequency. Write the function *word_rank_dictionary*(*L*) that receives a list *L* containing the words in the file *most_common_words.txt* and builds and returns a dictionary *D*, containing the ranking of each of the words in *L*. For example, *D*['the'] should be equal to 1.
3. Write the function *find_anagrams*(*L*) that receives the list of words *L* as in the previous question and builds and returns a dictionary *D* where the keys are the sorted characters in a word, and the values are the actual words in *L*. For example, *D*['aemt'] should be the list ['team', 'meat', 'mate'].