



# Challenge 4: Word Formation From a Dictionary Using Trie

This is a word matching problem regarding tries.

## We'll cover the following



- Problem Statement
  - Input
  - Output
  - Sample Input
  - Sample Output
- Coding Exercise

## Problem Statement#

You have to implement the `is_formation_possible()` function which will find whether a given word can be formed by combining two words from a dictionary. We assume that all words are in lower case.

## Input#

A dictionary and a query word containing lowercase characters.

## Output#



Returns **True** if the given word can be generated by combining words from the dictionary.



## Sample Input#

```
dictionary = ["the", "hello", "there", "answer", "any", "by", "world", "their", "abc"]
word = "helloworld"
```

## Sample Output#

True

### Dictionary:

the	hello	there	answer	any	by	world	their	abc
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Word to be formed: **helloworld**      Output: **True!**

## Coding Exercise #

Design a step-by-step algorithm first before jumping on to the implementation. Try to think whether a recursive or an iterative approach would be better.

If you get stuck, you can always refer to the solution review.

Good luck!



Trie.py

TrieNode.py

```
from Trie import Trie
from TrieNode import TrieNode

# Create Trie => trie = Trie()
# TrieNode => {children, is_end_word, char}
# Insert a Word => trie.insert(key)
# Search a Word => trie.search(key) return true or false
# Delete a Word => trie.delete(key)

def is_formation_possible(dictionary, word):
    # Write your code here
    pass
```



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