

## Solution Review: Word Formation Using a Hash Table

This review provides a detailed analysis of the solution to the Word Formation Using a Hash Table Challenge.

We'll cover the following



- Solution: Iterative Word Matching
- Time Complexity

### Solution: Iterative Word Matching #

main.py
HashTable.py
HashEntry.py

```

1  from HashTable import HashTable
2
3
4  def is_formation_possible(lst, word):
5
6      if len(word) < 2 or len(lst) < 2:
7          return False
8
9      hash_table = HashTable()
10     for elem in lst:
11         hash_table.insert(elem, True)
12
13     for i in range(1, len(word)):
14         # Slice the word into two strings in each iteration
15         first = word[0:i]
16         second = word[i:len(word)]
17         check1 = False
18         check2 = False
19
20         if hash_table.search(first) is not None:
21             check1 = True
22         if hash_table.search(second) is not None:
23             check2 = True
24
25         # Return True If both substrings are present in the tr
26         if check1 and check2:
27             return True
28

```

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Output

True

0.455s

This is as efficient as the implementation as the trie implementation

(<https://www.educative.io/collection/page/5642554087309312/5634727314718720/566724008293>)



1712). We insert all the dictionary words into a hash table.

Just like before, a `for` loop begins and slices the word into two substrings in each iteration. Whenever both substrings are found in the hash table, the function returns `True`.

**Note:** The solution only works for two words and not more.

## Time Complexity #

We perform the insert operation **m** times for a list of size **m**. After that, we linearly traverse the word of size **n** once. Furthermore, we slice strings of size **n** in each iteration. Hence the total time complexity is  $O(m + n^2)$ .

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Next →

Challenge 7: Word Formation Using a ...

Challenge 8: Find Two Numbers that ...

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