

Solution Review: A Sublist with a Sum of 0

This review provides a detailed analysis of the solution to the A Sublist with a Sum of 0 Challenge.

We'll cover the following



- Solution: Iterative Hashing
- Time Complexity

Solution: Iterative Hashing

```
1 def find_sub_zero(my_list):
2     # Use hash table to store the cumulative sum as key
3     # and the element as value till which sum has been calculated
4     # Traverse the list and return true if either
5     # elem == 0 or sum == 0 or hash table already contains the sum
6     # If you completely traverse the list
7     # and haven't found any of the above three
8     # conditions then simply return false
9     ht = dict()
10    total_sum = 0
11    # Traverse through the given list
12    for elem in my_list:
13        total_sum += elem
14        if elem is 0 or total_sum is 0 or ht.get(total_sum) is not None:
15            return True
16        ht[total_sum] = elem
17    return False
18
19
20 my_list = [6, 4, -7, 3, 12, 9]
21
22 print(find_sub_zero(my_list))
23
```



The naive solution would be to iterate the list in a nested loop, summing each element with all the elements succeeding it.

A hash table makes things much simpler.

We basically have to check for 3 conditions:

- If 0 exists in the list
- If the sum becomes zero in the iteration

- If the sum reverts back to a value which was already a key in the hash table. This means that there was a sublist that has a sum of zero making the overall sum to go back to a previous value.



Any of these three conditions confirms the existence of a sublist that sums up to be zero.

Time Complexity

As always, a linear iteration over **n** elements means that the algorithm's time complexity is $O(n)$.

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Challenge 6: A Sublist with a Sum of 0

Challenge 7: Word Formation Using a ...



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