Logo

STUDENT REPORT

DETAILS

Name

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EXPERIMENT

Title

TARGET SUM

Description

You are given a list of integers, and your task is to write a function that finds the two numbers in the list that add up to a specific target sum. You need to return the indices of these two numbers.

Write a function that takes a list of Integers and a target sum as input and returns a list of two indices (0-based) of the numbers that add up to the target sum. Assume that there is exactly one solution, and you cannot use the same element twice

Sample Input:

2 7 11 15

9

Sample Output:

[0, 1]

Source Code:

```python
def two_sum(nums, target):
    # Create a dictionary to store the numbers and their indices
    num_to_index = {}

    # Iterate through the list of numbers
    for index, num in enumerate(nums):
        # Calculate the complement that would add up to the target
        complement = target - num

        # Check if the complement is already in the dictionary
        if complement in num_to_index:
            # If found, return the indices of the complement and the current number
            return [num_to_index[complement], index]

        # Otherwise, store the current number with its index
        num_to_index[num] = index

    return []  # Return an empty list if no solution is found

# Example usage
input_nums = [2, 7, 11, 15]
target_sum = 9
result = two_sum(input_nums, target_sum)
print(result)  # Output: [0, 1]
```

RESULT

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