

Problem -2: Given an array of N integers, your task is to find unique quads that add up to give a target value. In short, you need to return an array of all the unique quadruplets [arr[a], arr[b], arr[c], arr[d]] such that their sum is equal to a given target

```
def find_unique_quadruplets(arr, target):  
    n = len(arr)  
    arr.sort()  
    result = []  
  
    for a in range(n - 3):  
        # Skip duplicate elements for a  
        if a > 0 and arr[a] == arr[a - 1]:  
            continue  
  
        for b in range(a + 1, n - 2):  
            # Skip duplicate elements for b  
            if b > a + 1 and arr[b] == arr[b - 1]:  
                continue  
  
            left = b + 1  
            right = n - 1  
  
            while left < right:  
                quad_sum = arr[a] + arr[b] + arr[left] + arr[right]  
  
                if quad_sum == target:  
                    result.append([arr[a], arr[b], arr[left], arr[right]])  
  
                    # Skip duplicate elements for left and right  
                    while left < right and arr[left] == arr[left + 1]:  
                        left += 1  
                    while left < right and arr[right] == arr[right - 1]:
```

```
right -= 1
```

```
left += 1
```

```
right -= 1
```

```
elif quad_sum < target:
```

```
left += 1
```

```
else:
```

```
right -= 1
```

```
return result
```

```
arr1 = [1, 0, -1, 0, -2, 2]
```

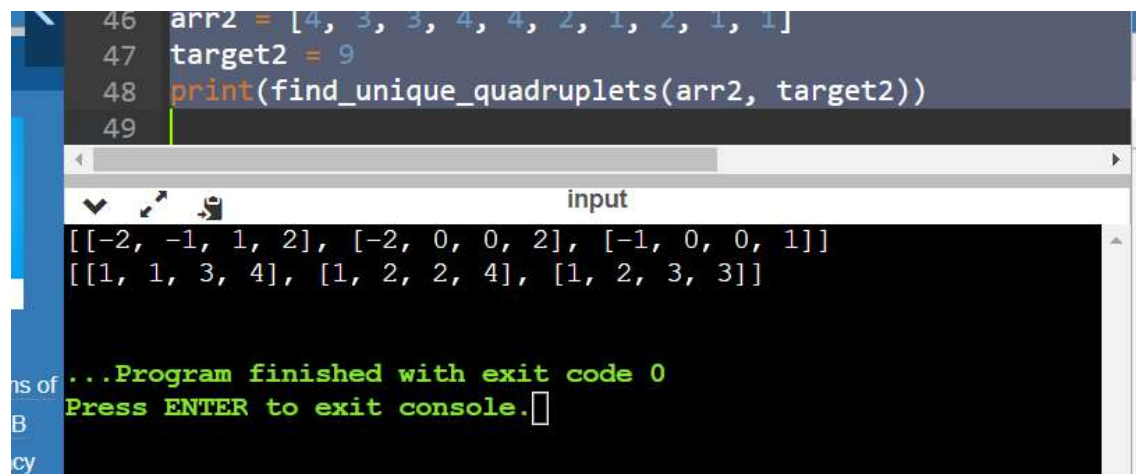
```
target1 = 0
```

```
print(find_unique_quadruplets(arr1, target1))
```

```
arr2 = [4, 3, 3, 4, 4, 2, 1, 2, 1, 1]
```

```
target2 = 9
```

```
print(find_unique_quadruplets(arr2, target2))
```



The screenshot shows a code editor with the following Python code:

```
46 arr2 = [4, 3, 3, 4, 4, 2, 1, 2, 1, 1]
47 target2 = 9
48 print(find_unique_quadruplets(arr2, target2))
49
```

Below the code editor is a console window titled "input". It displays the output of the program:

```
[[-2, -1, 1, 2], [-2, 0, 0, 2], [-1, 0, 0, 1]]
[[1, 1, 3, 4], [1, 2, 2, 4], [1, 2, 3, 3]]
```

At the bottom of the console, it says:

```
...Program finished with exit code 0
Press ENTER to exit console.
```