

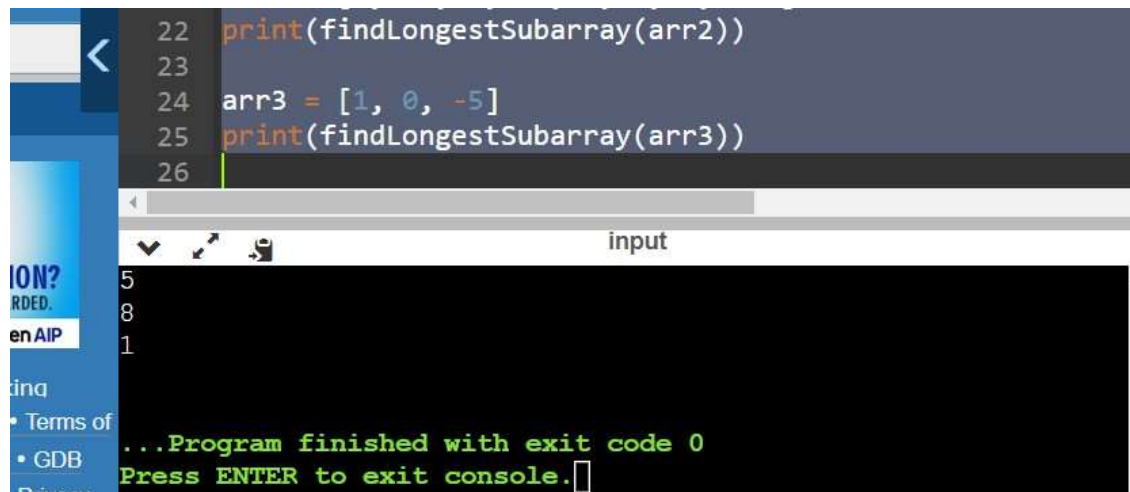
Problem 4: Given an array containing both positive and negative integers, we have to find the length of the longest subarray with the sum of all elements equal to zero.

```
def findLongestSubarray(arr):  
    maxLen = 0  
    curSum = 0  
    sumDict = {}  
  
    for i in range(len(arr)):  
        curSum += arr[i]  
  
        if curSum == 0:  
            maxLen = i + 1  
  
        if curSum in sumDict:  
            maxLen = max(maxLen, i - sumDict[curSum])  
        else:  
            sumDict[curSum] = i  
  
    return maxLen  
  
arr1 = [9, -3, 3, -1, 6, -5]  
print(findLongestSubarray(arr1))  
  
arr2 = [6, -2, 2, -8, 1, 7, 4, -10]
```

```
print(findLongestSubarray(arr2))
```

```
arr3 = [1, 0, -5]
```

```
print(findLongestSubarray(arr3))
```



The image shows a screenshot of a code editor and a terminal window. The code editor has a dark background with light blue and green text. It shows the following code:

```
22 print(findLongestSubarray(arr2))
23
24 arr3 = [1, 0, -5]
25 print(findLongestSubarray(arr3))
26
```

Below the code editor is a terminal window with a black background and green text. It shows the output of the program:

```
5
8
1
...Program finished with exit code 0
Press ENTER to exit console.
```

The terminal window also has a title bar that says "input".