

## Two Sum - using sorting

class Solution:

```
def two_sum(self, nums: List[int], target: int) -> List[int]:
```

```
    A = []
```

```
    for i, num in enumerate(nums):
```

```
        A.append([num, i])
```

```
    A.sort()
```

```
    i = 0
```

```
    j = len(nums) - 1
```

```
    while i < j:
```

```
        cur = A[i][0] + A[j][0]
```

```
        if cur == target:
```

```
            return [min(A[i][1], A[j][1]),  
                    max(A[i][1], A[j][1])]
```

```
        elif cur < target:
```

```
            i += 1
```

```
        else:
```

```
            j -= 1
```

return []

WTF: enumerate() function adds a counter as the key of the en. obj.

Step 1:

self  $\rightarrow$  solution instance

nums  $\rightarrow$  [3, 4, 5, 6]

target  $\rightarrow$  7

Step 2 (for i, num in enumerate(nums))

A  $\rightarrow$  [] - empty

i  $\rightarrow$  0

num  $\rightarrow$  3

Step 3 : (A.append([num, i]))

A  $\rightarrow$  [[3, 0]]

Step 4: (for i, num in enumerate(nums))

i  $\rightarrow$  1

num  $\rightarrow$  4

Step 5: (A.append([num, i]))

A  $\rightarrow$  [[3, 0], [4, 1]]

Step 6: for  $i, \text{num}$  in enumerate(nums)  
 $i \rightarrow 2$   
 $\text{num} \rightarrow 5$

Step 7: A.append([num, i])  
 $A \rightarrow [[3, 0], [4, 1], [5, 2]]$

Step 8: for  $i, \text{num}$  in enumerate(nums)  
 $i \rightarrow 3$   
 $\text{num} \rightarrow 6$

Step 9: A.append([num, i])  
 $A \rightarrow [[3, 0], [4, 1], [5, 2], [6, 3]]$   
<sub>0                      1                      2                      3</sub>

Step 10:  $i = 0, j = \text{len}(\text{nums}) - 1$   
 $i \rightarrow 0$   
 $j \rightarrow 3$

Step 11:  $\text{cur} = A[i][0] + A[j][0]$   
 $\text{cur} \rightarrow A[0][0] + A[3][0]$   
 $\Rightarrow 3 + 6 \Rightarrow$

$\text{cur} \rightarrow 9$  ( $A[0][0] \rightarrow \text{value}$  index 0, 7)

Step 12: ~~else:~~  
 $j-- = 1$   
 $j \rightarrow 2$

Step 13: while  $i < j$ :  
 $cur = A[i][0] + A[j][0]$   
 $cur \rightarrow A[0][0] + A[2][0]$   
 $cur \rightarrow 3 + 5 \Rightarrow 8$

Step 14: else:  $j-- = 1$   
 $j \rightarrow 1$

Step 15:  $cur = A[i][0] + A[j][0]$   
 $cur \rightarrow 7$

Step 16: if  $cur == target$   
 $7 == 7 \quad \checkmark$

Step 17: return  $[\min(A[i][1], A[j][1]),$   
 $\max(A[i][1], A[j][1])]$

result  $\rightarrow \min(A[0][1], A[1][1]),$

$$\max (A[0][1], A[1][1])$$

$$A \rightarrow [\underbrace{[3, 0]}_{\text{red}}, [4, 1], [5, 2], [6, 3]]$$

$$\min \left. \begin{array}{l} A[0][1] \rightarrow 0 \\ A[1][1] \rightarrow [4, 1] \rightarrow 1 \end{array} \right\} \min \Rightarrow 0$$

$$\max \text{ between } 0 \text{ and } 1 \Rightarrow 1$$

$$\text{result} \rightarrow [0, 1]$$