Prompt | Scratchpad | Solutions | Video Explanation

Difficulty: 🟢 **Category:** Strings **Successful Submissions:** 47,758+

Caesar Cipher Encryptor 🟢 ☆

Given a non-empty string of lowercase letters and a non-negative integer representing a key, write a function that returns a new string obtained by shifting every letter in the input string by k positions in the alphabet, where k is the key.

Note that letters should "wrap" around the alphabet; in other words, the letter `z` shifted by one returns the letter `a`.

Sample Input

```
string = "xyz"
key = 2
```

Sample Output

```
"zab"
```

Hints

Hint 1 ▲

Most languages have built-in functions that give you the Unicode value of a character as well as the character corresponding to a Unicode value. Consider using such functions to determine which letters the input string's letters should be mapped to.
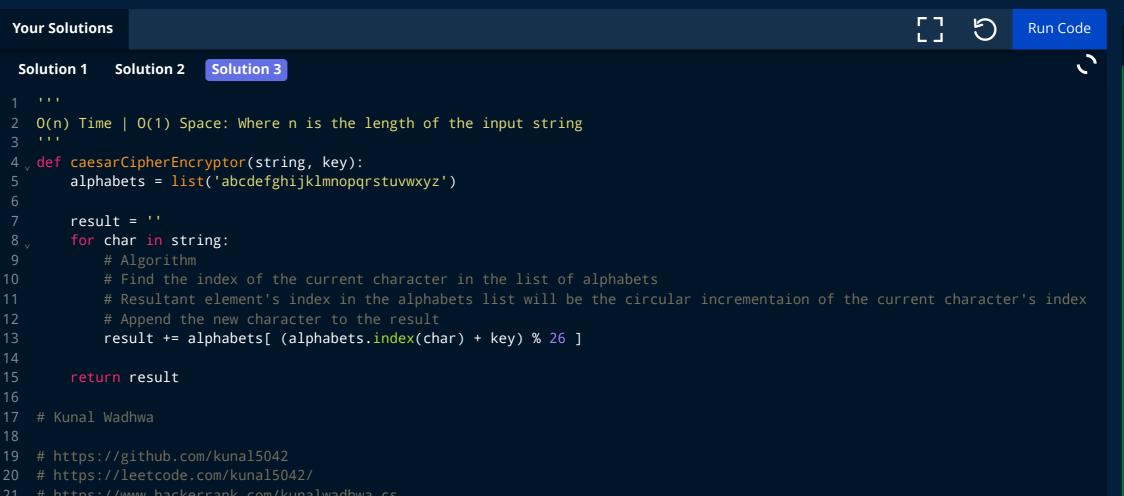
Hint 2 ▲

Try creating your own mapping of letters to codes. In other words, try associating each letter in the alphabet with a specific number - its position in the alphabet, for instance - and using that to determine which letters the input string's letters should be mapped to.

Hint 3 ▲

How do you handle cases where a letter gets shifted to a position that requires wrapping around the alphabet? What about cases where the key is very large and causes multiple wrappings around the alphabet? The modulo operator should be your friend here.

Optimal Space & Time Complexity ▲

O(n) time | O(n) space - where n is the length of the input string

Your Solutions

Solution 1 | Solution 2 | **Solution 3**

Run Code

```python
1  '''
2  O(n) Time | O(1) Space: Where n is the length of the input string
3  '''
4  def caesarCipherEncryptor(string, key):
5      alphabets = list('abcdefghijklmnopqrstuvwxyz')
6
7      result = ''
8      for char in string:
9          # Algorithm
10         # Find the index of the current character in the list of alphabets
11         # Resultant element's index in the alphabets list will be the circular incrementaion of the current character's index
12         # Append the new character to the result
13         result += alphabets[ (alphabets.index(char) + key) % 26 ]
14
15     return result
16
17 # Kunal Wadhwa
18
19 # https://github.com/kunal5042
20 # https://leetcode.com/kunal5042/
21 # https://www.hackerrank.com/kunalwadhwa_cs
22 # https://www.linkedin.com/in/kunal5042/
23
```

Custom Output | Raw Output | Submit Code

Yay, your code passed all the test cases!

12 / 12 test cases passed.

- ✓ Test Case 1 passed! ▼
- ✓ Test Case 2 passed! ▼
- ✓ Test Case 3 passed! ▼
- ✓ Test Case 4 passed! ▼
- ✓ Test Case 5 passed! ▼
- ✓ Test Case 6 passed! ▼
- ✓ Test Case 7 passed! ▼
- ✓ Test Case 8 passed! ▼
- ✓ Test Case 9 passed! ▼
- ✓ Test Case 10 passed! ▼
- ✓ Test Case 11 passed! ▼
- ✓ Test Case 12 passed! ▼