

222. Count Complete Tree Nodes

We will count all nodes by recursion, if the most left side is equal to right side height, we will return $\text{pow}(2, \text{height})$. If not, we will return $1 + \text{count}(\text{root.left}) + \text{count}(\text{root.right})$. TC is $O(\log n * \log n)$

import math

class Solution:

```
def countNodes(self, root: TreeNode) -> int:
    if not root:
        return 0
    l, r = root, root
    h_l, h_r = 0, 0
    while l:
        h_l += 1
        l = l.left
    while r:
        h_r += 1
        r = r.right
    if h_l == h_r:
        return int(math.pow(2, h_l)) - 1
    return 1 + self.countNodes(root.left) + self.countNodes(root.right)
```

1119. Remove Vowels from a String

We will iterate all chars in string and add letters which not belong to vowels to result. TC is $O(n)$

class Solution:

```
def removeVowels(self, S: str) -> str:
    result = ""
    for c in S:
        if c not in 'aeiou':
            result += c
    return result
```

1165. Single-Row Keyboard

We will calculate all differences among neighbored letters' indexes and accumulate them. TC is $O(n)$

class Solution:

```
def calculateTime(self, keyboard: str, word: str) -> int:
    cur_index = 0
    time = 0
    for i in word:
        next_index = keyboard.index(i)
        time += abs(next_index - cur_index)
        cur_index = next_index
```

```
    return time
```

1108. Defanging an IP Address

We will split our string by '.' and join by '[.]', TC is $O(n)$

class Solution:

```
    def defangIPAddr(self, address: str) -> str:
        return '[.]'.join(address.split('.'))
```

760. Find Anagram Mappings

We will use a dict to memorize all indexes of the second list, Then iterate all elements in A and append all associated element's index in B to result. TC is $O(n)$

from collections import defaultdict

class Solution:

```
    def anagramMappings(self, A: List[int], B: List[int]) -> List[int]:
        memo = defaultdict(int)
        result = []
        for idx, c in enumerate(B):
            memo[c] = idx
        for i in A:
            result.append(memo[i])
        return result
```