

## 389 Find the Difference

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### Question:

Given two strings *s* and *t* which consist of only lowercase letters.

String *t* is generated by random shuffling string *s* and then add one more letter at a random position.

Find the letter that was added in *t*.

### Example:

Input:

*s* = "abcd"

*t* = "abcde"

Output:

e

Explanation:

'e' is the letter that was added.

来自 <<https://leetcode.com/problems/find-the-difference/description/>>

给定两个字符串 *s* 和 *t*，它们只包含小写字母。

字符串 *t* 由字符串 *s* 随机重排，然后在随机位置添加一个字母。

请找出在 *t* 中被添加的字母。

### Solution for Python3:

```
1  class Solution1:
2      def findTheDifference(self, s, t):
3          """
4              :type s: str
5              :type t: str
6              :rtype: str
7          """
8          p = 0
9          for c in s:
10             p ^= ord(c)
11          for c in t:
12             p ^= ord(c)
13          return chr(p)
14
15  class Solution2:
16      def findTheDifference(self, s, t):
17          """
18              :type s: str
19              :type t: str
20              :rtype: str
21          """
22          import functools
23          return chr(functools.reduce(operator.xor, map(ord, s + t)))
24
25  class Solution3:
26      def findTheDifference(self, s, t):
27          """
28              :type s: str
```

```
29         :type t: str
30         :rtype: str
31         """
32         import collections
33         return list(collections.Counter(t) - collections.Counter(s))[0]
```

## Solution for C++:

```
1  class Solution {
2  public:
3      char findTheDifference(string s, string t) {
4          int p = 0;
5          for (char c : s)
6              p ^= c;
7          for (char c : t)
8              p ^= c;
9          return p;
10     }
11 };
```