

# Problem 1616: Split Two Strings to Make Palindrome

## Problem Information

**Difficulty:** Medium

**Acceptance Rate:** 31.91%

**Paid Only:** No

**Tags:** Two Pointers, String

## Problem Description

You are given two strings `a` and `b` of the same length. Choose an index and split both strings **at the same index**, splitting `a` into two strings: `aprefix` and `asuffix` where `a = aprefix + asuffix`, and splitting `b` into two strings: `bprefix` and `bsuffix` where `b = bprefix + bsuffix`. Check if `aprefix + bsuffix` or `bprefix + asuffix` forms a palindrome.

When you split a string `s` into `sprefix` and `ssuffix`, either `ssuffix` or `sprefix` is allowed to be empty. For example, if `s = "abc"`, then `"" + "abc"`, `"a" + "bc"`, `"ab" + "c"`, and `"abc" + ""` are valid splits.

Return `true` if it is possible to form a palindrome string, otherwise return `false`.

**Notice** that `x + y` denotes the concatenation of strings `x` and `y`.

**Example 1:**

**Input:** `a = "x", b = "y"` **Output:** `true` **Explanation:** If either `a` or `b` are palindromes the answer is true since you can split in the following way: `aprefix = ""`, `asuffix = "x"` `bprefix = ""`, `bsuffix = "y"` Then, `aprefix + bsuffix = "" + "y" = "y"`, which is a palindrome.

**Example 2:**

**Input:** `a = "xbdef", b = "xecab"` **Output:** `false`

**Example 3:**

**\*\*Input:\*\*** a = "ulacfd", b = "jizalu" **\*\*Output:\*\*** true **\*\*Explanation:\*\*** Split them at index 3: aprefix = "ula", asuffix = "cfd" bprefix = "jiz", bsuffix = "alu" Then, aprefix + bsuffix = "ula" + "alu" = "ulaalu", which is a palindrome.

**\*\*Constraints:\*\***

\* `1 <= a.length, b.length <= 105` \* `a.length == b.length` \* `a` and `b` consist of lowercase English letters

## Code Snippets

### C++:

```
class Solution {
public:
    bool checkPalindromeFormation(string a, string b) {

    }
};
```

### Java:

```
class Solution {
    public boolean checkPalindromeFormation(String a, String b) {

    }
}
```

### Python3:

```
class Solution:
    def checkPalindromeFormation(self, a: str, b: str) -> bool:
```