Problem 1202: Smallest String With Swaps

Problem Information

Difficulty: Medium
Acceptance Rate: 60.07%
Paid Only: No
Tags: Array, Hash Table, String, Depth-First Search, Breadth-First Search, Union Find, Sorting

Problem Description

You are given a string `s`, and an array of pairs of indices in the string `pairs` where `pairs[i] = [a, b]` indicates 2 indices(0-indexed) of the string.

You can swap the characters at any pair of indices in the given `pairs` **any number of times**.

Return the lexicographically smallest string that `s` can be changed to after using the swaps.

Example 1:

Input: s = "dcab", pairs = [[0,3],[1,2]] **Output:** "bacd" **Explaination:** Swap s[0] and s[3], s = "bcad" Swap s[1] and s[2], s = "bacd"

Example 2:

Input: s = "dcab", pairs = [[0,3],[1,2],[0,2]] **Output:** "abcd" **Explaination:** Swap s[0] and s[3], s = "bcad" Swap s[0] and s[2], s = "acbd" Swap s[1] and s[2], s = "abcd"

Example 3:

Input: s = "cba", pairs = [[0,1],[1,2]] **Output:** "abc" **Explaination:** Swap s[0] and s[1], s = "bca" Swap s[1] and s[2], s = "bac" Swap s[0] and s[1], s = "abc"

Constraints:

* `1 <= s.length <= 10^5` * `0 <= pairs.length <= 10^5` * `0 <= pairs[i][0], pairs[i][1] < s.length` * `s` only contains lower case English letters.

Code Snippets

C++:

```
class Solution {
public:
string smallestStringWithSwaps(string s, vector<vector<int>>& pairs) {

}
};
```

Java:

```
class Solution {
public String smallestStringWithSwaps(String s, List<List<Integer>> pairs) {

}
}
```

Python3:

```
class Solution:
def smallestStringWithSwaps(self, s: str, pairs: List[List[int]]) -> str:
```