

## 2976. Minimum Cost to Convert String I

Solved ●

Medium  Topics  Companies  Hint

You are given two **0-indexed** strings `source` and `target`, both of length `n` and consisting of **lowercase** English letters. You are also given two **0-indexed** character arrays `original` and `changed`, and an integer array `cost`, where `cost[i]` represents the cost of changing the character `original[i]` to the character `changed[i]`.

You start with the string `source`. In one operation, you can pick a character `x` from the string and change it to the character `y` at a cost of `z` **if** there exists **any** index `j` such that `cost[j] == z`, `original[j] == x`, and `changed[j] == y`.

Return the **minimum** cost to convert the string `source` to the string `target` using **any** number of operations. If it is impossible to convert `source` to `target`, return `-1`.

**Note** that there may exist indices `i`, `j` such that `original[j] == original[i]` and `changed[j] == changed[i]`.

### Example 1:

**Input:** `source = "abcd"`, `target = "acbe"`, `original = ["a","b","c","c","e","d"]`, `changed = ["b","c","b","e","b","e"]`, `cost = [2,5,5,1,2,20]`

**Output:** 28

**Explanation:** To convert the string "abcd" to string "acbe":

- Change value at index 1 from 'b' to 'c' at a cost of 5.
- Change value at index 2 from 'c' to 'e' at a cost of 1.
- Change value at index 2 from 'e' to 'b' at a cost of 2.
- Change value at index 3 from 'd' to 'e' at a cost of 20.

The total cost incurred is  $5 + 1 + 2 + 20 = 28$ .

It can be shown that this is the minimum possible cost.

### Example 2:

**Input:** `source = "aaaa"`, `target = "bbbb"`, `original = ["a","c"]`, `changed = ["c","b"]`, `cost = [1,2]`

**Output:** 12

**Explanation:** To change the character 'a' to 'b' change the character 'a' to 'c' at a cost of 1, followed by changing the character 'c' to 'b' at a cost of 2, for a total cost of  $1 + 2 = 3$ . To change all occurrences of 'a' to 'b', a total cost of  $3 * 4 = 12$  is incurred.

### Example 3:

**Input:** `source = "abcd"`, `target = "abce"`, `original = ["a"]`, `changed = ["e"]`, `cost = [10000]`

**Output:** -1

**Explanation:** It is impossible to convert source to target because the value at index 3 cannot be changed from 'd' to 'e'.

### Constraints:

- $1 \leq \text{source.length} == \text{target.length} \leq 10^5$
- `source`, `target` consist of lowercase English letters.
- $1 \leq \text{cost.length} == \text{original.length} == \text{changed.length} \leq 2000$
- `original[i]`, `changed[i]` are lowercase English letters.
- $1 \leq \text{cost}[i] \leq 10^6$
- `original[i] != changed[i]`

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Yes No

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