

# Problem 3292: Minimum Number of Valid Strings to Form Target II

## Problem Information

**Difficulty:** Hard

**Acceptance Rate:** 19.26%

**Paid Only:** No

**Tags:** Array, String, Binary Search, Dynamic Programming, Segment Tree, Rolling Hash, String Matching, Hash Function

## Problem Description

You are given an array of strings `words` and a string `target`.

A string `x` is called **valid** if `x` is a prefix of **any** string in `words`.

Return the **minimum** number of **valid** strings that can be `_concatenated_` to form `target`. If it is **not** possible to form `target`, return `-1`.

**Example 1:**

**Input:** `words = ["abc", "aaaaa", "bcdef"], target = "aabcdabc"`

**Output:** 3

**Explanation:**

The target string can be formed by concatenating:

\* Prefix of length 2 of `words[1]`, i.e. `"aa"`. \* Prefix of length 3 of `words[2]`, i.e. `"bcd"`. \* Prefix of length 3 of `words[0]`, i.e. `"abc"`.

**Example 2:**

**Input:** `words = ["abababab", "ab"], target = "ababaababa"`

**\*\*Output:\*\*** 2

**\*\*Explanation:\*\***

The target string can be formed by concatenating:

\* Prefix of length 5 of `words[0]`, i.e. `"ababa"`. \* Prefix of length 5 of `words[0]`, i.e. `"ababa"`.

**\*\*Example 3:\*\***

**\*\*Input:\*\*** words = ["abcdef"], target = "xyz"

**\*\*Output:\*\*** -1

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

\* `1 <= words.length <= 100` \* `1 <= words[i].length <= 5 \* 10^4` \* The input is generated such that `sum(words[i].length) <= 10^5`. \* `words[i]` consists only of lowercase English letters. \* `1 <= target.length <= 5 \* 10^4` \* `target` consists only of lowercase English letters.

## Code Snippets

**C++:**

```
class Solution {
public:
    int minValidStrings(vector<string>& words, string target) {

    }
};
```

**Java:**

```
class Solution {
    public int minValidStrings(String[] words, String target) {

    }
}
```

**Python3:**

```
class Solution:
    def minValidStrings(self, words: List[str], target: str) -> int:
```