

DAILY PROGRAMMING CHALLENGE



Longest Common Prefix

You are given an array of strings `strs[]`, consisting of lowercase letters. Your task is to find the longest common prefix shared among all the strings. If there is no common prefix, return an empty string `""`.

A common prefix is a substring that appears at the beginning of all the strings in the array. The task is to identify the longest such prefix that all strings share.

Input:

An array of strings `strs[]` where each string consists of lowercase English letters.

Output:

- A string representing the longest common prefix. If no common prefix exists, return an empty string `""`.

Examples:

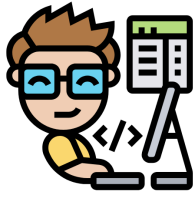
- Example 1
Input: `strs[] = ["flower", "flow", "flight"]`
Output: `"fl"`
Explanation: The longest common prefix among the strings "flower", "flow", and "flight" is "fl".
- Example 2
Input: `strs[] = ["dog", "racecar", "car"]`
Output: `""`
Explanation: There is no common prefix among the strings "dog", "racecar", and "car", so the output is an empty string.

Constraints:

- $1 \leq \text{strs.length} \leq 200$ (The array can contain up to 200 strings)
- $0 \leq \text{strs}[i].\text{length} \leq 200$ (Each string can be up to 200 characters long)
- All strings in `strs[]` consist of lowercase English letters.

Test Cases:

1. Input: `strs[] = ["flower", "flow", "flight"]`
Output:



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2. Input: `strs[] = ["dog", "racecar", "car"]`
Output: `""`
 3. Input: `strs[] = ["apple", "ape", "april"]`
Output: `"ap"`
 4. Input: `strs[] = [""]`
Output: `""`
 5. Input: `strs[] = ["alone"]`
Output: `"alone"`

Edge Cases:

1. Empty array: If the array is empty, the output should be an empty string.
2. Single string: If the array contains only one string, the output should be the string itself.
3. No common prefix: If the strings have no common prefix, return an empty string.