

76. Minimum Window Substring

Hint

Given two strings s and t of lengths m and n respectively, return the minimum window substring of s such that every character in t (including duplicates) is included in the window. If there is no such substring, return the empty string `""`.

The testcases will be generated such that the answer is unique.

Example 1:

Input: $s = \text{"ADOBECODEBANC"}, t = \text{"ABC"}$

Output: `"BANC"`

Explanation: The minimum window substring `"BANC"` includes 'A', 'B', and 'C' from string t .

Example 2:

- **Input:** $s = \text{"a"}, t = \text{"a"}$
- **Output:** `"a"`
- **Explanation:** The entire string s is the minimum window.

Example 3:

- **Input:** `s = "a", t = "aa"`
- **Output:** `""`
- **Explanation:** Both 'a's from t must be included in the window.
 - Since the largest window of s only has one 'a', return empty string.

Constraints:

- `m == s.length`
- `n == t.length`
- `1 <= m, n <= 105`
- s and t consist of uppercase and lowercase English letters.

Follow up: Could you find an algorithm that runs in $O(m + n)$ time?