

# Problem 1044: Longest Duplicate Substring

## Problem Information

**Difficulty:** Hard

**Acceptance Rate:** 30.97%

**Paid Only:** No

**Tags:** String, Binary Search, Sliding Window, Rolling Hash, Suffix Array, Hash Function

## Problem Description

Given a string `s`, consider all \_duplicated substrings\_ : (contiguous) substrings of s that occur 2 or more times. The occurrences may overlap.

Return \*\*any\*\* duplicated substring that has the longest possible length. If `s` does not have a duplicated substring, the answer is `""`.

**Example 1:**

**Input:** s = "banana" **Output:** "ana"

**Example 2:**

**Input:** s = "abcd" **Output:** ""

**Constraints:**

\* `2 <= s.length <= 3 \* 104` \* `s` consists of lowercase English letters.

## Code Snippets

**C++:**

```
class Solution {
public:
    string longestDupSubstring(string s) {
```

```
    }  
};
```

**Java:**

```
class Solution {  
    public String longestDupSubstring(String s) {  
        }  
    }
```

**Python3:**

```
class Solution:  
    def longestDupSubstring(self, s: str) -> str:
```