Problem 3614: Process String with Special Operations II

Problem Information

Difficulty: Hard
Acceptance Rate: 0.00%
Paid Only: No

Problem Description

You are given a string

s

consisting of lowercase English letters and the special characters:

'*'

,

'#'

, and

'%'

.

You are also given an integer

k

.

Build a new string

result

by processing

s

according to the following rules from left to right:

If the letter is a

lowercase

English letter append it to

result

.

A

'*'

removes

the last character from

result

, if it exists.

A

'#'

duplicates

the current

result

and

appends

it to itself.

A

'%'

reverses

the current

result

.

Return the

k

th

character of the final string

result

. If

k

is out of the bounds of

result

, return

'.'

.

Example 1:

Input:

s = "a#b%*", k = 1

Output:

"a"

Explanation:

i

s[i]

Operation

Current

result

0

'a'

Append

'a'

"a"

1

'#'

Duplicate

result

"aa"

2

'b'

Append

'b'

"aab"

3

'%'

Reverse

result

"baa"

4

'*'

Remove the last character

"ba"

The final

result

is

"ba"

. The character at index

k = 1

is

'a'

.

Example 2:

Input:

s = "cd%#*#", k = 3

Output:

"d"

Explanation:

i

s[i]

Operation

Current

result

0

'c'

Append

'c'

"c"

1

'd'

Append

'd'

"cd"

2

'%'

Reverse

result

"dc"

3

'#'

Duplicate

result

"dcdc"

4

'*'

Remove the last character

"dcd"

5

'#'

Duplicate

result

"dcddcd"

The final

result

is

"dcddcd"

. The character at index

k = 3

is

'd'

.

Example 3:

Input:

s = "z*#", k = 0

Output:

"."

Explanation:

i

s[i]

Operation

Current

result

0

'z'

Append

'z'

"z"

1

'*'

Remove the last character

""

2

'#'

Duplicate the string

""

The final

result

is

""

. Since index

k = 0

is out of bounds, the output is

'.'

.

Constraints:

1 <= s.length <= 10

5

s

consists of only lowercase English letters and special characters

'*'

,

'#'

, and

'%'

.

0 <= k <= 10

15

The length of

result

after processing

s

will not exceed

10

15

.

Code Snippets

C++:

```
class Solution {
public:
char processStr(string s, long long k) {

}
};
```

Java:

```
class Solution {
public char processStr(String s, long k) {

}
}
```

Python3:

```
class Solution:
def processStr(self, s: str, k: int) -> str:
```

Python:

```
class Solution(object):
def processStr(self, s, k):
"""
:type s: str
:type k: int
:rtype: str
"""
```

JavaScript:

```
/**
* @param {string} s
* @param {number} k
* @return {character}
*/
var processStr = function(s, k) {

};
```

TypeScript:

```
function processStr(s: string, k: number): string {

};
```

C#:

```
public class Solution {
public char ProcessStr(string s, long k) {
```

```
}
}
```

C:

```
char processStr(char* s, long long k) {

}
```

Go:

```
func processStr(s string, k int64) byte {

}
```

Kotlin:

```
class Solution {
fun processStr(s: String, k: Long): Char {

}
}
```

Swift:

```
class Solution {
func processStr(_ s: String, _ k: Int) -> Character {

}
}
```

Rust:

```
impl Solution {
pub fn process_str(s: String, k: i64) -> char {

}
}
```

Ruby:

```
# @param {String} s
# @param {Integer} k
# @return {Character}
def process_str(s, k)

end
```

PHP:

```
class Solution {

/**
* @param String $s
* @param Integer $k
* @return String
*/
function processStr($s, $k) {

}
}
```

Dart:

```
class Solution {
String processStr(String s, int k) {

}
}
```

Scala:

```
object Solution {
def processStr(s: String, k: Long): Char = {

}
}
```

Elixir:

```
defmodule Solution do
@spec process_str(s :: String.t, k :: integer) :: char
def process_str(s, k) do
```

```
end
end
```

Erlang:

```
-spec process_str(S :: unicode:unicode_binary(), K :: integer()) -> char().
process_str(S, K) ->
.
```

Racket:

```
(define/contract (process-str s k)
(-> string? exact-integer? char?)
)
```

Solutions

C++ Solution:

```
/*
* Problem: Process String with Special Operations II
* Difficulty: Hard
* Tags: string
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

class Solution {
public:
char processStr(string s, long long k) {

}
};
```

Java Solution:

```
/**
* Problem: Process String with Special Operations II
```

```
* Difficulty: Hard
* Tags: string
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

class Solution {
public char processStr(String s, long k) {

}
}
```

Python3 Solution:

```
"""
Problem: Process String with Special Operations II
Difficulty: Hard
Tags: string

Approach: String manipulation with hash map or two pointers
Time Complexity: O(n) or O(n log n)
Space Complexity: O(1) to O(n) depending on approach
"""

class Solution:
def processStr(self, s: str, k: int) -> str:
# TODO: Implement optimized solution
pass
```

Python Solution:

```
class Solution(object):
def processStr(self, s, k):
"""
:type s: str
:type k: int
:rtype: str
"""
```

JavaScript Solution:

```
/**
* Problem: Process String with Special Operations II
* Difficulty: Hard
* Tags: string
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

/**
* @param {string} s
* @param {number} k
* @return {character}
*/
var processStr = function(s, k) {

};
```

TypeScript Solution:

```
/**
* Problem: Process String with Special Operations II
* Difficulty: Hard
* Tags: string
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

function processStr(s: string, k: number): string {

};
```

C# Solution:

```
/*
* Problem: Process String with Special Operations II
* Difficulty: Hard
* Tags: string
```

```
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

public class Solution {
public char ProcessStr(string s, long k) {

}
}
```

C Solution:

```
/*
* Problem: Process String with Special Operations II
* Difficulty: Hard
* Tags: string
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

char processStr(char* s, long long k) {

}
```

Go Solution:

```
// Problem: Process String with Special Operations II
// Difficulty: Hard
// Tags: string
//
// Approach: String manipulation with hash map or two pointers
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

func processStr(s string, k int64) byte {

}
```

Kotlin Solution:

```
class Solution {
fun processStr(s: String, k: Long): Char {

}
}
```

Swift Solution:

```
class Solution {
func processStr(_ s: String, _ k: Int) -> Character {

}
}
```

Rust Solution:

```
// Problem: Process String with Special Operations II
// Difficulty: Hard
// Tags: string
//
// Approach: String manipulation with hash map or two pointers
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

impl Solution {
pub fn process_str(s: String, k: i64) -> char {

}
}
```

Ruby Solution:

```
# @param {String} s
# @param {Integer} k
# @return {Character}
def process_str(s, k)

end
```

PHP Solution:

```
class Solution {

/**
* @param String $s
* @param Integer $k
* @return String
*/
function processStr($s, $k) {

}
}
```

Dart Solution:

```
class Solution {
String processStr(String s, int k) {

}
}
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Scala Solution:

```
object Solution {
def processStr(s: String, k: Long): Char = {

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defmodule Solution do
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