

multiply string

```
public String multiply(String num1, String num2) {
    int[] ans = new int[num1.length()+num2.length()];
```

```
for(int i = num1.length()-1;i>=0;i--){
    for(int j = num2.length()-1;j>=0;j--){
```

```
int idx1 = i+j;  
int idx2 = i+j+1;
```

```
int val = (num1.charAt(i)-'0')*(num2.charAt(j)-'0');
val = val + ans[idx2];
```

```
int quo = val / 10;  
int rem = val % 10;
```

```
ans[idx2] = rem;
ans[idx1] += quo;
```

3

```
StringBuilder sb = new StringBuilder();
```

```
for(int i=0;i<ans.length;i++){
    if(sb.length()==0 && ans[i] == 0){
        continue;
    }
}
```

```
sb.append(ans[i]);
}
```

```
if(sb.length()==0){
    return "0";
}
```

	0	1	2	3
0	00	01	02	03
1				
2				
3				

int \rightarrow

00	11	22	33	08
0	1	2	3	4

~~6~~ 6 8 88 →

6888

$$\begin{aligned} \text{idr1} &= i + j \\ \text{idr2} &= i + j + 1 \end{aligned}$$
$$|dx| = 0$$
$$1202 = 1$$
$$val = 5 + 1 = 6$$

2

man sum non-over

non-over

b) all possible L size m size subarrays



$O(n)$

$L=3$
 $m=2$

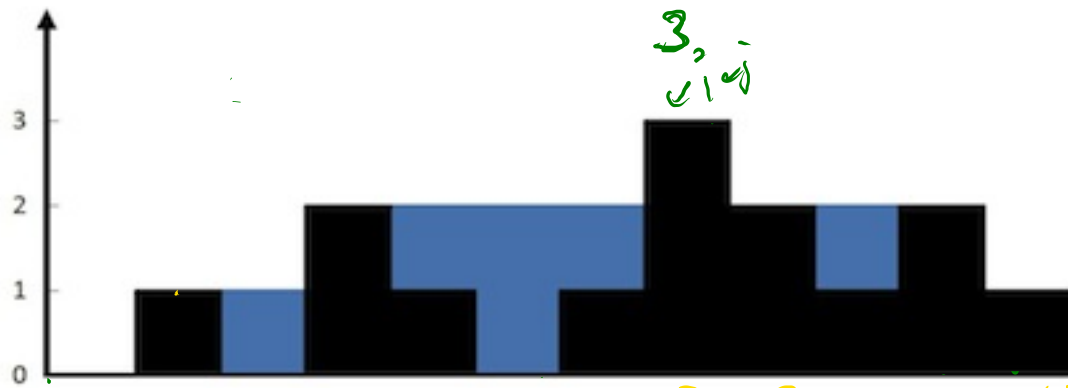
① m size prefix sum & suffix sum

② L bin \rightarrow m size

↓
man

	L	2	3	4	5
0					
7	10	3	18	5	7
$\sim \infty$	17	17	21	23	23
$-\infty$	17	13	21	23	12
23	23	23	23	12	$-\infty$
17	13	21	23	12	$-\infty$

0 man = -4347



$$\min(\underbrace{\text{Prefixmax}}_7, \underbrace{\text{Suffixmax}}_7) - \text{height}[i]$$

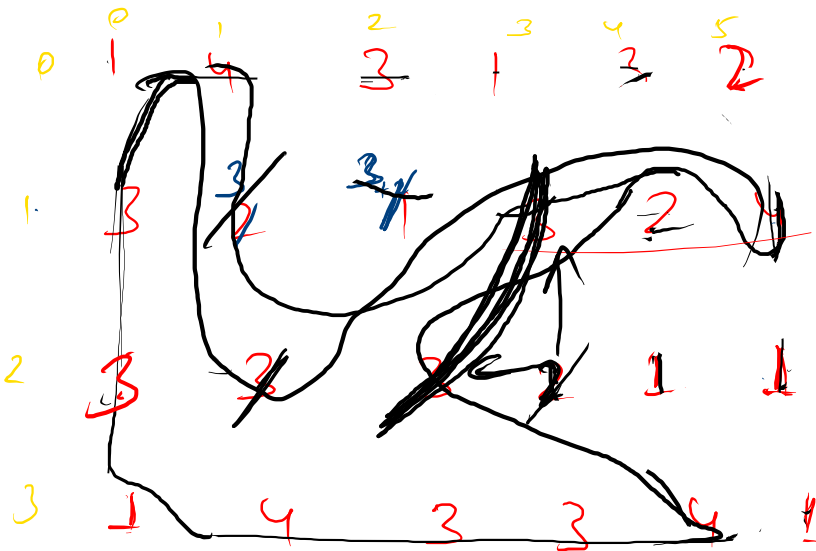
Prefixmax:

i	0	1	2	3	4	5	6	7	8	9	10	11
Prefixmax	0	1	1	2	2	2	2	3	3	3	3	3
Suffixmax	3	3	3	3	3	3	3	3	2	2	2	1

Suffixmax:

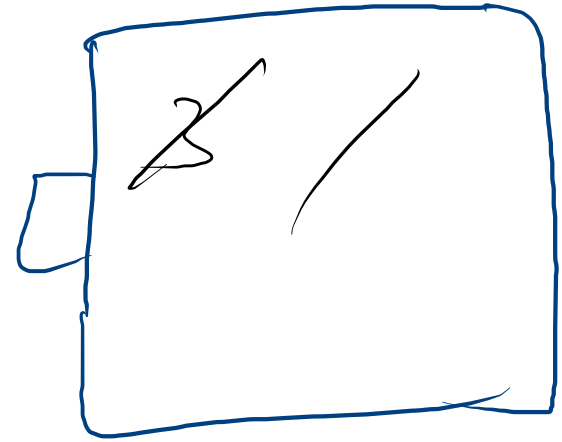
$$\text{ans} = 0 + 1 + 0 + 0 + 1 + 2 + 1 + 1 + 0 = 6$$

TRV-2



	0	1	2	3	4	5
0	T	T	T	T	T	T
1	T	T	T	T	T	T
2	T	T	T	T	T	T
3	T	T	T	T	T	T

Pair (i, j, val) min



ans = 0 + 2 + 1

sum

k=3

$O(n)$

$O(n)$

$+ O(n)$

	0	1	2	3	4	5	6	7
arr:	1	3	-1	-3	5	3	6	7
ans:	3	3	5	5	6	7	6	7
Prefix max:	1	3	3	-3	5	5	6	7
Suffix max:	7	7	-1	5	5	3	7	7

Suf

Partition array

$\begin{matrix} 0 & 1 & 2 & 3 \\ 5 & 8 & 9 & 3 \end{matrix}$
 $\begin{matrix} i & i & i \\ 12 & 14 & 16 \end{matrix}$

\checkmark $\text{Cmax} = 89$

\checkmark $\text{oman} = 888121416$

\checkmark $\text{Pida} = 3$

$\text{left} < = \text{right}$

\Downarrow

$\text{leftmax} < = \text{rightmin}$

Push dominoes

L . L - R . . . L R . . L . . R

L L L e R

L

L

→ L L L L L L L

R

R

→ R R R R R R R

L

R

→ L R

R

L

odd → R R R R , L L L

even → R R R L L L