

Contest Duration: 2025-07-19(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250719T2100&p1=248>) - 2025-07-19(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250719T2240&p1=248>) (local time) (100 minutes)

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## F - Max Combo

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Time Limit: 4 sec / Memory Limit: 1024 MiB

Score : 525 points

### Problem Statement

There is a string  $S$  of length  $N$  consisting of lowercase English letters. Process a total of  $Q$  queries as follows:

- Type 1 : Change the  $i$ -th character of  $S$  to  $x$ .
- Type 2 : Let  $t$  be the substring of the current  $S$  from the  $l$ -th character through the  $r$ -th character. Find  $f(t)$  defined as follows for this string:
  - $f(t)$  is the maximum length of consecutive identical characters in  $t$ .
  - More precisely, when choosing integers  $a, b$  such that  $1 \leq a \leq b \leq |t|$  and all characters from the  $a$ -th through the  $b$ -th character of  $t$  are equal,  $f(t)$  is the maximum possible value of  $b - a + 1$ .
  - For example,  $f(\text{aaaccbbbbb}) = 4, f(\text{bbaaabb}) = 3, f(\text{x}) = 1$ .

### Constraints

- $N$  is an integer between 1 and  $5 \times 10^5$ , inclusive.
- $S$  is a string of length  $N$  consisting of lowercase English letters.
- $Q$  is an integer between 1 and  $5 \times 10^5$ , inclusive.
- Type 1 queries satisfy the following constraints:
  - $i$  is an integer between 1 and  $N$ , inclusive.
  - $x$  is a lowercase English letter.
- Type 2 queries satisfy the following constraints:

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- $l, r$  are integers satisfying  $1 \leq l \leq r \leq N$ .

## Input

The input is given from Standard Input in the following format:

```
N Q
S
Query1
Query2
⋮
QueryQ
```

Here, Query <sub>$i$</sub>  represents the  $i$ -th query.

Type 1 queries are given in the following format:

```
1 i x
```

Type 2 queries are given in the following format:

```
2 l r
```

## Output

Every time a type 2 query appears, output the answer on one line.

The use of fast input and output methods is recommended because of potentially large input and output.

### Sample Input 1

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```
10 5
babaacczcc
2 1 4
1 3 a
2 1 10
1 8 c
2 1 10
```

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### Sample Output 1

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```
1
4
5
```

This input contains five queries.

- Initially, the string  $S$  is babaacczcc.
- The 1st query is type 2 with  $l = 1, r = 4$ .
  - The extracted string is baba, and  $f(\text{baba}) = 1$ .
- The 2nd query is type 1 with  $i = 3, x = \text{a}$ .
  - The string  $S$  after the change is baaaacczcc.
- The 3rd query is type 2 with  $l = 1, r = 10$ .
  - The extracted string is baaaacczcc, and  $f(\text{baaaacczcc}) = 4$ .
- The 4th query is type 1 with  $i = 8, x = \text{c}$ .
  - The string  $S$  after the change is baaaaccccc.
- The 5th query is type 2 with  $l = 1, r = 10$ .
  - The extracted string is baaaaccccc, and  $f(\text{baaaaccccc}) = 5$ .

## Sample Input 2

[Copy](#)

```
1 1
a
1 1 z
```

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## Sample Output 2

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The output may be empty.

/#telegram)

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