时间限制：C/C++/Rust/Pascal 2秒，其他语言4秒
空间限制：C/C++/Rust/Pascal 512 M，其他语言1024 M
64bit IO Format: %lld

题目描述

The time limit has been changed from 4 seconds to 2 seconds for upsolving.

Given a binary string S of length n, you need to answer q queries, where each query is in one of the following two types:

1. Given two integers l, r $(1 \le l \le r \le n)$, flip the binary bit S_i for each $i \in [l, r]$.
2. Given three integers l, a, b $(1 \le l \le n, 1 \le a, b \le n - l + 1)$, you need to find the number of intervals $[u, v]$ $(1 \le u \le v \le l)$ such that $S_{a+x-1} = S_{b+x-1}$ holds for every integer $x \in [u, v]$, which are called symmetry intervals.

输入描述:

The first line contains two integers n and q $(1 \le n, q \le 10^6)$, indicating the length of the given string S and the number of queries.

The second line contains the given binary string S of length n.

The next q lines each contain a query, which is in one of the following two types:

- $1\ l\ r$ $(1 \le l \le r \le n)$, indicating that for each binary bit S_i $(i \in [l, r])$, flip the binary bit S_i for each $i \in [l, r]$.
- $2\ l\ a\ b$ $(1 \le l \le n, 1 \le a, b \le n - l + 1)$, indicating that you need to find the number of intervals $[u, v]$ $(1 \le u \le v \le l)$ such that $S_{a+x-1} = S_{b+x-1}$ holds for every integer $x \in [u, v]$.

It is guaranteed that the number of type-2 queries does not exceed $2\,500$.

输出描述:

For each type-2 query, output a line containing an integer, indicating the number of symmetry intervals.

示例1

输入 复制

```
10 3
1001001001
2 4 3 5
```

C++（clang++18）

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ACM模
请通过
入输出
出描述

运行结果 自测