# Taxi Passengers

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 3 seconds |
| Memory limit: | 256 megabytes |

In the bustling streets of Santo Domingo, a group of $n$ passengers is waiting in line at a "Núñez de Cáceres"station. Each passenger has a specific destination represented by a number from 1 to $n$. Conveniently, the passenger going to destination $i$ is at the $i$-th position in line.

Each passenger belongs to one of two rival baseball teams: Licey (L) or Águilas (A).The drivers are very superstitious and have two strict rules for filling their cars:

- *Rivalry Rule: To prevent fights, no two passengers from the same team can sit next to each other in the car. They must alternate (L-A-L-A or A-L-A-L).*
- *Seniority Rule: Passengers are very respectful of "Seniority"based on their destination. In any given car, a passenger can only be seated if their destination number is smaller than the passenger who got in just before them.*

The station manager receives $q$ requests. Each request $(l, r)$ involves only the passengers whose destinations are between $l$ and $r$ inclusive. The manager must send all these passengers to their destinations using the minimum number of cars possible while following the rules.

## Input

On the first line, we'll have $n$ and $q$ representing, the total number of passengers and the total number of requests. On the second line, we'll have a string of length $n$ consisting of 'L' and 'A'. $q$ lines follow, each with $l$ and $r$.

## Output

Please output the minimum number of cars for each request.

## Scoring

This problem is divided into the following subtasks:

| Subtask | Points | Additional Restrictions |
|---|---|---|
| 0 | 0 | Example test cases |
| 1 | 35 | $1 \leq n, q \leq 10$ |
| 2 | 15 | $1 \leq n, q \leq 1000$ |
| 3 | 26 | There will be at most 20 Licey passengers |
| 4 | 24 | No additional restrictions |

## Examples

| standard input | standard output |
|---|---|
| 7 4<br>LLALLAA<br>1 7<br>1 5<br>3 7<br>4 5 | 3<br>3<br>2<br>2 |
| 6 2<br>AAAAAA<br>1 6<br>2 5 | 6<br>4 |
| 16 1<br>LLLALAAAAAALLLLL<br>1 16 | 6 |

## Note

In the second example, all $n = 6$ passengers are fans of the Águilas (A) team. According to the Rivalry Rule, no two passengers from the same team can sit in the same car. Since there are no Águilas (A) fans available to sit between them and break the sequence, it is impossible to put more than one passenger in any single car.

For the first query $(l = 1, r = 6)$, there are 6 passengers. Since each car can only hold 1 passenger, 6 cars are required.For the second query $(l = 2, r = 5)$, there are 4 passengers. Similarly, each must be sent in their own car, requiring 4 cars.