

TLE '16 Contest 7 P6 - Everyone Hates Reading

Time limit: 0.6s **Memory limit:** 256M

Your neighbourhood fox has another English project. There's only one problem ... it involves reading. ~~Foxen~~ Everyone hates reading and will do anything to avoid it.

Your neighbourhood fox is given a long article of text, containing N words. He is then given M root words which he must research, and a range $[l, r]$ in the text to use. **Of the words from l to r , please help him count the number of words that either has the root word as a prefix or is a prefix of the root word.**



Your brain after reading certain books.

Constraints

$$N \leq 100\,000$$

$$M \leq 100\,000$$

The total length of all words in the article of text and the root words will each be no greater than 100 000.

Input Specification

2 integers, N and M .

N lines, each with a string of lowercase English letters.

M lines, each with a string of lowercase English letters and 2 integers l and r .

Output Specification

N lines, each with an integer: the answer to each of the queries.

Sample Input

```
3 3
a
ab
abc
a 1 3
abcerhfgdryrtjfhgshdj 2 3
aaaaaaaaa 1 3
```

Sample Output

```
3
2
1
```