

# Field

Andy is a successful farmer. He has a field sized  $1 \times N$  tiles, where each tile can be planted a plant. Andy has 26 kind of plants, which is represented by the letter 'a' - 'z'.

Each month Andy has to pay tax to the government. The government in his place is very picky. He wants the tax in the form of a block of tiles. He also demands that the block must contain at least  $X_i$  number of plant type  $Y_i$ . A block of tiles is all the tile from range  $a$  to  $b$ . To minimize the loss, Andy will pay in the smallest block possible. Help Andy to find the length of the smallest block to satisfy the government.

## Input

Starts with a number  $N$ . The next line is a string of length  $N$  containing the letter 'a' to 'z'. The next line is a number  $K$ , and for the next  $K$  lines are the  $X_i$  and  $Y_i$ , number and type of plants that must be fulfilled.

## Output

Minimum length of block to pay the tax. If Andy can't pay the tax, output "Andy rapopo".

### Sample Input 1

```
5
aabac
3
1 a
1 b
1 c
```

### Sample Output 1

```
3
```

### Sample Input 2

```
5
aabac
3
1 a
1 b
2 c
```

### Sample Output 2

```
Andy rapopo
```

## Constraint

- $1 \leq N \leq 100000$

- $1 \leq K \leq 26$
- $1 \leq X \leq 100000$
- $Y_i$  is a character from 'a' to 'z'
- Each  $Y_i$  type will not appear more than once

**Time limit is very strict, some language might not be able to pass.**