# DMOPC '17 Contest 5 P2 - Mimi and Binary

**Time limit:** 2.0s **Memory limit:** 64M

Mimi is playing with a string $S$, consisting of only `0`s and `1`s. Her little sister comes along and being very curious, asks $Q$ questions about the binary string:

> If we consider the substring starting from the $x_i$th index, what is the leftmost index such that there are $y_i$ occurrences of the digit $z_i$?

Help Mimi write a program to answer these queries.

## Constraints

Let $|S|$ denote the length of string $S$.

For all subtasks:

$1 \leq x_i, y_i \leq |S|$

$0 \leq z_i \leq 1$

**Subtask 1 [20%]**

$1 \leq |S|, Q \leq 1\,000$

**Subtask 2 [80%]**

$1 \leq |S|, Q \leq 200\,000$

## Input Specification

The first line will contain the string $S$.
The next line of input will contain a single integer, $Q$.
The next $Q$ lines will each contain three space-separated integers: $x_i$, $y_i$, and $z_i$, the $i$th query.

## Output Specification

The output should contain $Q$ integers, each on a new line. The $i$th integer should be either the leftmost index such that there are $y_i$ occurrences of the digit $z_i$, or `-1` if no such index exists.

## Sample Input

```
010100
3
1 2 0
1 2 1
1 3 1
```

## Sample Output

```
3
4
-1
```