

F. Wi-Fi

time limit per test: 2 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

You work as a system administrator in a dormitory, which has  $n$  rooms one after another along a straight hallway. Rooms are numbered from 1 to  $n$ .

You have to connect all  $n$  rooms to the Internet.

You can connect each room to the Internet directly, the cost of such connection for the  $i$ -th room is  $i$  coins.

Some rooms also have a spot for a router. The cost of placing a router in the  $i$ -th room is also  $i$  coins. You cannot place a router in a room which does not have a spot for it. When you place a router in the room  $i$ , you connect all rooms with the numbers from  $\max(1, i - k)$  to  $\min(n, i + k)$  inclusive to the Internet, where  $k$  is the range of router. The value of  $k$  is the same for all routers.

Calculate the minimum total cost of connecting all  $n$  rooms to the Internet. You can assume that the number of rooms which have a spot for a router is not greater than the number of routers you have.

Input

The first line of the input contains two integers  $n$  and  $k$  ( $1 \leq n, k \leq 2 \cdot 10^5$ ) — the number of rooms and the range of each router.

The second line of the input contains one string  $s$  of length  $n$ , consisting only of zeros and ones. If the  $i$ -th character of the string equals to '1' then there is a spot for a router in the  $i$ -th room. If the  $i$ -th character of the string equals to '0' then you cannot place a router in the  $i$ -th room.

Output

Print one integer — the minimum total cost of connecting all  $n$  rooms to the Internet.

Examples

input	Copy
5 2 00100	
output	Copy
3	
input	Copy
6 1 000000	
output	Copy
21	
input	Copy
4 1 0011	
output	Copy
4	
input	Copy
12 6 000010000100	

Codeforces Round #587 (Div. 3)

Finished

Practice

Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Submit

Problem tags

data structures dp greedy \*2300

No tag edit access

Contest materials

Announcement #1 (en)

Announcement #2 (ru)

Tutorial #1 (en)

Tutorial #2 (ru)

**output**

Copy

15

**Note**

In the first example it is enough to place the router in the room 3, then all rooms will be connected to the Internet. The total cost of connection is 3.

In the second example you can place routers nowhere, so you need to connect all rooms directly. Thus, the total cost of connection of all rooms is  $1 + 2 + 3 + 4 + 5 + 6 = 21$ .

In the third example you need to connect the room 1 directly and place the router in the room 3. Thus, the total cost of connection of all rooms is  $1 + 3 = 4$ .

In the fourth example you need to place routers in rooms 5 and 10. Then all rooms will be connected to the Internet. The total cost of connection is  $5 + 10 = 15$ .

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