Shortest road construction

An `N` km long road is reconstructed in `M` stages. We know from which kilometer (`Bᵢ`) they start, and which kilometer they reach (`Eᵢ`) at each stage.

Write a program that gives the length of the shortest reconstruction.

Input

The first line of the *standard input* contains the length of the road ($1 \leq N \leq 10000$), and the count of stages ($1 \leq M \leq 100$). The next `M` lines contain the data of each stage ($0 \leq B_i < E_i \leq N$).

Output

The first line of the *standard output* should contain the length of the shortest reconstruction.

Example

Input	Output
100 5	1
0 10	
0 5	
75 95	
12 17	
13 14	