Flood Forecasting (`rainstorm`)

Marco was recently hired by the Italian road-safety authority to oversee the rain storm forecasting operations. He was provided with a map of M bidirectional roads that connect N cities.

We know that, if there is no rain, we can traverse every road and it is *always possible* to reach any city starting from any other city. However, as the expected rain flooding (in millimeters) becomes higher, some of the roads become impossible to traverse and have to be closed to traffic. For each road, Marco knows exactly how many millimeters of rain flooding it can withstand at most.

As long as there is at least one way to reach every city starting from any other city (even if it means taking a longer-than-usual route), life can go on pretty much as usual. However, if the flooding causes any two cities to be disconnected, a state of emergency must be declared!

Help Marco calculate what is the maximum amount of rain flooding (in millimeters) that the whole network can withstand: that is, the highest amount of rain flooding that does not force the road-safety authority to declare a state of emergency and stop the traffic between any two cities.

> ☞ Among the attachments of this task you may find a template file `rainstorm.*` with a sample incomplete implementation.

Input

The first line contains two integers N and M. Each of next M lines contains three integers: A_i, B_i, R_i. These integers indicate that there is a road connecting city A_i to city B_i which can be traversed as long as the rain flooding level does not exceed R_i millimeters.

Output

You need to write a single line with an integer: the maximum amount of rain flooding that the network can withstand.

Constraints

- $1 \leq N \leq 100\,000$.
- $1 \leq M \leq 100\,000$.
- $0 \leq \texttt{A}[i], \texttt{B}[i] \leq N-1$, $\texttt{A}[i] \neq \texttt{B}[i]$ for each $i = 0, \ldots, M-1$.
- $1 \leq \texttt{R}[i] \leq 100\,000$ for each $i = 0, \ldots, M-1$.
- If there is no rain, it's always possible to reach any city from any other city.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (10 points) $M = N - 1$.

– **Subtask 3** (20 points) $N \leq 10$, $M \leq 15$.

– **Subtask 4** (50 points) $N \leq 1000$, $M \leq 2000$.

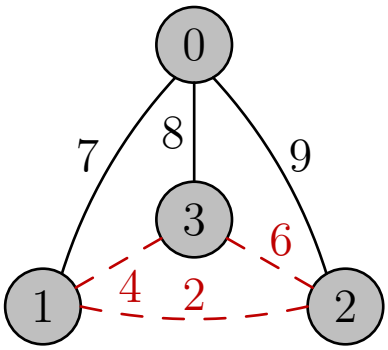
– **Subtask 5** (20 points) No additional limitations.

Examples

input	output
4 6 2 0 9 0 1 7 2 1 2 0 3 8 2 3 6 1 3 4	7
7 6 4 3 9 2 3 7 1 5 6 5 0 3 6 0 5 0 2 10	3

Explanation

In the **first sample case**, when the rain flood level reaches 7 there are only three city connections that are still usable (with $R_i = 7, 8, 9$), and these three connections are enough to reach any city starting from any other city.



If the flood level reaches 8, city 0 gets disconnected from the rest of the network, thus 7 is the maximum flood level that the network can withstand.

In the **second sample case**, losing any connection makes some city unreachable from some other city. Thus 3 is the maximum flood level sustained.