

(Adv.) Competitive Programming

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Problem: algorithmic-spellcasting (2.5 second timelimit)

A new year of school just started at Hogwarts and Hermione needs to decide what classes to take. Unfortunately the ministry of magic does not allow her the use of time turners anymore to take multiple classes at the same time, so she has to use more conventional ways of maximizing the number of classes. This year, one problem she faces is that two of the classrooms are far away from each other, so she would have to skip *Algorithmic Spellcasting* just because it is impossible to get there in time.

After a long search, deeply hidden in the forbidden section of the library, she found a book with detailed descriptions of all the secret passages in Hogwarts. To her surprise there is one between nearly all pairs of classrooms and all of them can only be used in one direction. However, the direct passage is not always the fastest, because they were built for secrecy not for speed. Often it is possible to save time by going through other classrooms instead. Now she wants to find out the length of the shortest path between her classrooms, so she will know if she can take *Algorithmic Spellcasting*.

Input First, there is a line with $1 \leq n \leq 3000$, the number of classrooms and m , the number of secret passages. The following m lines each describe a passage: They contain the indices $0 \leq a, b < n$ of the connected classrooms and the length of the passage $1 \leq l \leq 50000$. The passage can only be used from a to b , not the other way around.

Output Print the length of the shortest path between classroom 0 and classroom $n - 1$.

Sample input

```
3 5
0 1 10
1 2 5
2 0 3
2 1 4
0 2 1
```

Sample output

```
1
```