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Weekend away

🧑 by Han_V

Problem	Submissions	Leaderboard	Discussions

Pete is tired of spending his weekends at home and wants to leave his apartment for a nice weekend getaway. After checking Villas.com for inspiration, he found a lot of countryside accommodations in locations $L = [L_1 .. L_N]$. Now he plans to go to L_{start}, rent a car, travel to a few other locations from his list along the way until he reaches his final destination, location L_{end}, return the car there and head back home.

It doesn't matter to Pete which locations he visits, as long as the total distance that he drives in his rental car is minimal. However, his friends suggest that he not waste time and visits at least three locations. Help Pete plan a route in which both his conditions and his friends' suggestions are satisfied.

Note:

- Pete can start and finish his route at any locations - L_{start}, $L_{end} \in L$ as long as there is a route from L_{start} to L_{end}.

- Pete wants to minimize the total driving distance of his route.

- Following his friends' suggestions, Pete wants to visit at least 3 locations.

Pete isn't worried about the distance from his apartment to L_{start} or the distance from L_{end} back to his apartment, so you only need to minimize Pete's driving distance between L_{start} to L_{end}.

Input Format

The first line contains integer T, T test-cases follow. The first line of each test-case contains integer N that specifies the number of locations, followed by integer M that specifies the number of roads between locations. Locations have an id $[1..N]$. Each of the next M lines contains three space separated integers A, B and D, which correspond to a bi-directional road between A and B that has a length of D km.

Constraints

$1 <= T <= 10$
$3 <= N <= 10^5$
$2 <= M <= 4 \times 10^5$
$1 <= D <= 100$

Output Format

T lines, each representing the minimal distance Pete needs to drive in km for test case $i \in [1..T]$. Note that there always will be a valid solution.

Sample Input

```
1
4 6
```

```
1 2 2
1 3 4
1 4 8
2 3 3
2 4 3
3 4 1
```

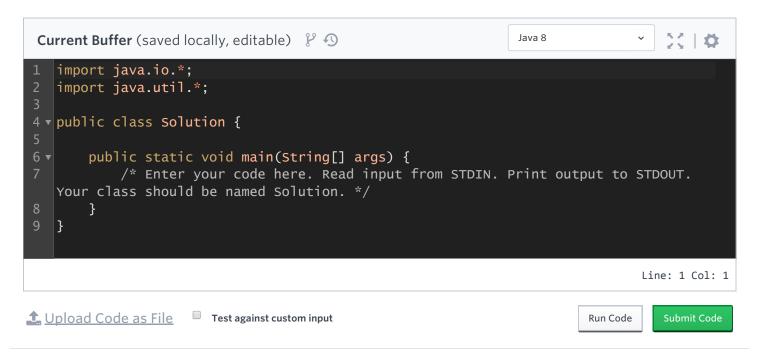**Sample Output**

```
4
```

Explanation

In this case, there are two possible routes that are minimized in terms of driving distance: 2 -> 3 -> 4 and 2 -> 4 -> 3, they both sum up to a total driving distance of 4. They both contain 3 different locations.

Submissions: 597

Max Score: 100

Difficulty: Moderate

More

Current Buffer (saved locally, editable)   Java 8

```java
1  import java.io.*;
2  import java.util.*;
3
4  public class Solution {
5
6      public static void main(String[] args) {
7          /* Enter your code here. Read input from STDIN. Print output to STDOUT.
   Your class should be named Solution. */
8      }
9  }
```

Line: 1 Col: 1

Upload Code as File   ☐ Test against custom input   Run Code   Submit Code

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