

Travelling Couples

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Problem

Submissions

Leaderboard

Discussions

AlgoLand has N cities. There are M pairs of cities connected by bidirectional trains. For travelling between any of the M pairs of cities, one can buy any of 3 types of train tickets which have the same cost irrespective of cities you are travelling between.

- Ticket Type I : It costs C_1 but only males can buy and travel using it.
- Ticket Type II : It costs C_2 but only females can buy and travel using it.
- Ticket Type III : It costs C_3 but only couples in the same city travelling together can buy and travel using it.

A man is currently in city 1 while his wife is at city 2 . Find the minimum cost they both need to collectively spend to reach their home which is in city N . They can both reach at different times or together, but they both have to reach home.

Input Format

The first line contains five space-separated integers in this order: C_1 C_2 C_3 N M .

The next M lines describe pairs of cities connected by a bidirectional train route.

Constraints

$$1 \leq C_1, C_2, C_3 \leq 4 \cdot 10^4$$

$$3 \leq N \leq 4 \cdot 10^4$$

Every city is reachable from every other city through some combination of train routes.

Initially, the man is at city 1 while his wife is at city 2 ; and they both have to reach city N .

Output Format

A single integer - the minimum collective cost of tickets they both will need to buy to reach their home city.

Sample Input 0

```
4 4 5 8 8
1 4
2 3
3 4
4 7
2 5
5 6
6 8
7 8
```

Sample Output 0



Submissions: 16
Max Score: 100
Difficulty: Medium

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C++20



```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
```

Line: 1 Col: 1

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Run Code

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