Hurricane

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There's a hurricane headed toward Austin! You've been tasked with coordinating evacuation efforts at UT.

The city is composed of a set of intersections and roads between those intersections. For this problem, all roads are one-way and any number of roads can meet at an intersection. Your job is to determine whether it is possible for everyone at UT to get to one of the "safe" intersections (note that there can be many safe intersections).

Each road can only support a certain amount of traffic (in total, during the whole evacuation period). You are going to give directions to each evacuee giving his/her exact route (which roads to take and in which order). Before you begin, you want to know if such an assignment is even possible. Is there a way to give each evacuee a set of directions such that no road must handle more cars than its capacity?

Grading

Correctness & Efficiency: 80%

- Passes 11 test cases: 80%

- Passes 8 to 10 test cases: 60%

- Passes 4 to 7 test cases: 40%

- Passes 1 to 3 test case: 20%

- Passes 0 test cases: 0%

Code Quality: 20%

Input Format

The first line of each test case will contain integers N, M, S, and P: the number of intersections, the number of road segments, the number of safe intersections, and the number of people that need to be evacuated, respectively. The intersections are numbered 1 through N; UT is located at intersection 1. M lines follow, describing the road segments. The ith of these lines contains three integers U_i, V_i, and C_i. The road segment goes from intersection U_i to V_i, and it can support up to C_i cars. After this are S lines, each describing a safe intersection. The jth of these lines contains integer H_j. H_j is the intersection number of the safe intersection.

Constraints

$1 \leq T \leq 10$

$2 \leq N \leq 100$

$1 \leq M \leq 100$

$1 \leq S \leq N - 1$

$0 \le P \le 10000$

$1 \le U_i, V_i \le N$

$1 \le C_i \le 1000$

$2 \le H_j \le N$

Output Format

If all the people at UT can evacuate (one in each car), then print "YES". Otherwise, print "NO", then a space, then the number of people that will need to stay at UT during the hurricane.
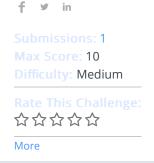
Sample Input 0

```
4 5 1 4
1 2 1
1 3 1
1 4 1
2 4 2
3 4 2
4
```

Sample Output 0

```
NO 1
```

Explanation 0

You can send people along the following paths: 1 -> 4 1 -> 2 -> 4 1 -> 3 -> 4

This only saves 3 people, but there are 4 that need to be evacuated. One unlucky soul will stay behind..

Current Buffer (saved locally, editable)

C++

```cpp
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

Upload Code as File

☐ **Test against custom input**

Run Code

Submit Code