Problem

During a class assignment a teacher proposes the following problem to his students. Given a weighted and directed graph and the minimum distances computed by a student from a source node to all the other nodes, are these distances correct?

* Input data

The input file graph.in will have the following format:
  - the first line will contain N, M and S which represent the number of nodes, the number of edges
    and the source node, respectively.
  - the second line will contain the minimum distances computed by the student D1 D2 ... DN from the source node S to
    all other nodes.
  - the following M lines will contain 3 integers a, b and c which symbolize that between nodes a
    and b there is an edge of cost c.

* Output data

The output file graph.out should contain a single word representing whether all the distances computed by the student are correct
or not. YES means they are correct, while NO means they are not. Write the words in capital letters exactly
as they are YES and NO, without any other characters.

* Restrictions
  - $1 <= a, b, S <= N <= 50000$
  - $N <= M <= N^2$
  - $0 <= c <= 1000$
  - The graph may be either dense or sparse and the most efficient solution to each of them is needed to pass all the
tests!

* Example 1

graph.in

```
5 6 1
0 1 7 3 6
1 2 1
1 3 7
1 4 3
3 4 4
2 5 5
4 5 6
4 4 2
```

graph.out
YES

* Example 2
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graph.in

```
4 4 2
1 0 2 3
1 2 1
2 3 1
2 4 1
3 4 1
```

graph.out
NO

The deadline for receiving the homework is 12th January 2011, at 23:59.

Rules for assignments: http://adcfils.wordpress.com/assignements/