Business Problem

Description

In ASTU, there are many professors working very hard to recruit new staff. A number of them go abroad to find new faculty. However, due to an outbreak of emergency situation, the President of ASTU called for professors to return immediately. The President sent the message “Come back to ASTU as fast as you can!”. After sending the message, the president wanted to calculate how long it would take for all professors arrive at ASTU.

Assume that every professor got the message at the same time and there is one professor at each city. Some faculties do not have direct flights, so they have to have stopovers. Still, every professor must take the shortest path possible.

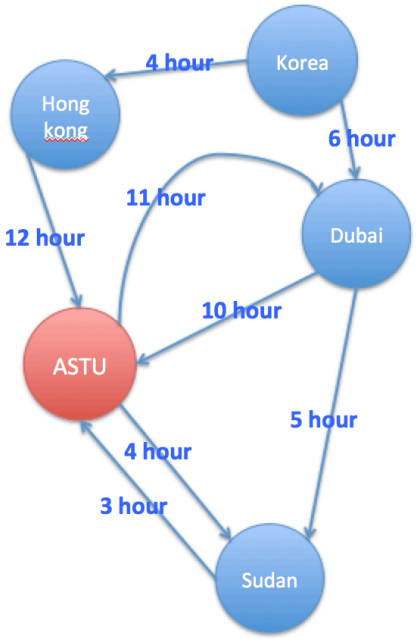

Figure 1 example

For example, ASTU sends four professors to four different countries, Hong Kong, Korea, Dubai and Sudan. The president LEE called for all professors who are abroad. The professor in Hong Kong takes 12 hours. The professor in Korea takes 14 hours, by going through Dubai and Sudan. The professor in Dubai takes 10 hours. The professor in Sudan takes 3 hours. So, all faculty members gather around when the professor from Korea arrives, taking 14 hours.

Find the country the last professor arrives from and the time the president should wait to have all professors in one place.

Input

Your program is to read from standard input. In first line of input you are given three numbers, the number of vertices ***V*** ($1 \le V \le 1000$), the number of edges ***E*** ($1 \le E \le 10000$), label of ASTU vertex ***a,*** each separated by a space. On the following lines, the edges are given. On each line, two vertices are given by their labels, source vertex followed by the destination vertex, and the weight of the edge ***z*** ($1 \le z \le 100$) between the two vertices is given, each separated by a space. ***V*** is the number of

countries, including ASTU. ***E*** is the number of routes among ***V*** countries. ***a*** is the location of ASTU. ***z*** is the time taken to travel between two countries.

Output

Your program is to write to standard output. Print the label of vertex that would take the longest time to reach ***a*** from, and the time that the president would wait.

Sample

Input1	Output1
5 8 3 1 3 12 2 1 4 2 4 6 3 4 11 3 5 4 4 3 10 4 5 5 5 3 3	2 14

Input2	Output2
4 5 4 1 2 4 1 4 78 2 3 41 2 4 71 3 1 52	3 127