

## B. « The Parrots of Tortuga »

### Problem

Now that the loot has been shared, the pirates decided to stop for a while in Tortuga to spend their share as pirates do. Tortuga, a pirate haven, has the best parrots trainers in the world, this animal being the pirate's best friend.

As a great captain, you decide to add to your crew the biggest number of pirate parrots that you can offer, because you found out that they can be useful both for their combat skills (thanks to their formidable aerial attacks) and their capacity to chip up the ship.



*Pirate Parrot* artwork by Wiebke Scholz

Therefore, you decide to visit the  $N$  best parrot trainers in Tortuga. Each trainer wants  $P_i$  gold coins per parrot, plus a commission  $C_i$  that you pay only once.

You want to find out which trainer will sell you the biggest number of parrots for the  $G$  gold coins you have.

### Input

- On the first line, two integers  $1 \leq G \leq 10^9$  and  $1 \leq N \leq 1000$  : the number of gold coins you have, and the number of trainers you're going to visit ;
- On the  $N$  following lines, an alphanumeric string  $S_i$  followed by two integers  $1 \leq P_i \leq 10^5$  et  $0 \leq C_i \leq 10^5$  : the name of the  $i$ -th trainer, the price that the  $i$ -th trainer wants per parrot and the commission wanted by the  $i$ -th trainer. You will visit the trainers in the given order.

### Output

If you can't afford any parrot, display on one line : **Impossible**  
Otherwise, display :

- On one line, an integer : the maximum number of parrots you can afford ;

- On a second line, a string : the name of the first trainer you visited who allows you to buy this maximal number of parrots.

## Examples

### Example 1

Input
100 3 Frances 20 15 Gibbs 10 30 Sybil 60 5

Output
7 Gibbs

### Example 2

Input
70 2 Janet 10 32 Jack 4 57

Output
3 Janet

### Example 3

Input
11 3 Edward 61 77 Tobias 49 106 Dorothy 80 76

Output
Impossible