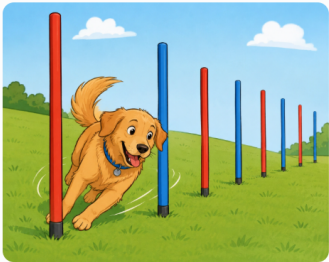




Puppies and Posts

Time Limit: 1.0 s | Memory Limit: 512 MiB

The New Zealand Puppy Championship (NZPC) is the nation’s most beloved canine agility competition, open to dogs of every breed from svelte Greyhounds to stocky Labradors. Sarah, the owner of a puppy school, has entered several of her clients’ dogs this year and wants to find out which of them are ready to compete.



At her school, Sarah has set up a practice course of a series of posts that are of varying widths apart. When the puppies arrive for training on a Saturday morning, part of their routine is to walk between the posts, in sequence. They weave from one side to the other as in a ski slalom.

Unfortunately Sarah has set the course based on her own very slim rescue Greyhound and not given thought to the Beagles and Labradors.

Write a program that outputs the name of the puppy who fits between the most posts. If at any point a dog can’t fit between two posts, it tries the next pair of posts, and so on until it finds a gap it can fit through.

If there is more than one dog that achieves the same maximum number of gaps, the names should be printed in alphabetical order.

Input

The first line contains a sequence of at most 10^4 space-separated integers. Each integer represents the width in cm between 2 adjacent posts ($1 \leq w \leq 10^4$).

The second line contains an integer, n ($1 \leq n \leq 10$), representing the number of puppies.

The following n lines each begins with a single word describing a puppy’s name, followed by a space and an integer p ($1 \leq p \leq 10^4$) which is the width in cm of the puppy at their widest part.

Output

Output the name of the dog who fits between the most posts. If there is more than one dog that fits between the most posts, output the names, one per line, in alphabetical order. If no dog fits through any of the gaps, output the single line

No dogs fit!

Sample Input 1	Sample Output 1
23 35 41 27 55 33 8 Freddie 43 Mercury 38 Ringo 33 Star 34 Germain 40 Bret 30 Clement 55 Mackenzie 35	Bret Ringo
Sample Input 2	Sample Output 2
12 14 16 18 1 Alpha 19	No dogs fit!

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