

GlobeX Cup '19 J3 - Codex

Time limit: 2.0s **Memory limit:** 64M

Alex is creating a codex (list), S , of all the planets known in the universe and their sizes. However, since there are so many of them, he wants to remove all planets such that $|S_i - S_j| \leq K$, where i and j are arbitrary indices.

Input Specification

The first line will contain two integers, N ($1 \leq N \leq 10^5$) and K ($1 \leq K \leq 10^{15}$).

The next N lines will each contain a string, P ($1 \leq |P| \leq 100$), the planet's name, followed by a space, followed by an integer, S ($1 \leq S \leq 10^{15}$), the diameter in kilometers of the planet.

Output Specification

The output will contain the space separated names of all the planets in Alex's codex, in lexicographical order.

Sample Input

```
4 2
Planet 100
AnotherPlanet 50
3rdPlanet 2
4thPlanet 3
```

Sample Output

```
AnotherPlanet Planet
```