
Filling the bag

P98123_en

Ali Baba is hidden in the cave of the treasure, watching how the forty thieves leave jewels and take away jewels all the time. When the thieves depart, Ali Baba will fill his bag with the most valuable jewels, but he will have to make it quickly, so that the thieves cannot catch him. Therefore, at every moment he wants to know which are the jewels that he will have to take if he has the chance. Help him!

Input

Input begins with the number of jewels that fit in the bag (a number between 1 and 10^5). Follow the actions of the thieves: If they leave a jewel, there is the word “leave” followed by the value of the jewel. If they take a jewel, there is the word “take” followed by the value of the jewel. The values are natural numbers, all different.

Output

For every action of the thieves, print the maximum value of the jewels that Ali Baba could take if the thieves left at that moment.

Sample input 1

```
3
leave 1000
leave 100
leave 400
leave 2000
take 1000
leave 50
leave 3000
take 100
take 2000
leave 1500
take 400
take 1500
```

Sample output 1

```
1000
1100
1500
3400
2500
2500
5400
5400
3450
4900
4550
3050
```

Sample input 2

```
5
leave 1000000000
leave 1000000001
leave 1000000002
leave 1000000003
leave 1000000004
leave 1000000005
```

Sample output 2

```
1000000000
2000000001
3000000003
4000000006
5000000010
5000000015
```

Problem information

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Generation : 2018-10-18 09:48:17

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