Title: AmusementPark

This question is graded for 1%

Problem Statement:

It's the summer vacation and you are taking your whimsical and indecisive little brother to a trip to Rocketland, a world famous theme park! Your goal is to determine for all days, which rides you are going to take with your little brother, judging from his various commands. Rides have ids in the range [1, 2^31 - 1].

Your little brother will shout out a list of commands:

Command	Meaning
`START RIDE: A`	Only called once at the start of each day, A will be the first ride you go to.
`NEXT RIDE: A`	After your last ride, you have to directly go to ride A as your next ride.
`DELETE FRONT RIDE: X`	Your brother suddenly decided that the first X rides are now uninteresting, and wants to remove them. First X elements of the list are now gone.
`DELETE BACK RIDE: X`	Same as above, but final X rides are now deleted.
`CHANGE FRONT RIDE: X A`	Sets the Xth element from the front to A, and deletes X-1 elements from the front.
`CHANGE BACK RIDE: X A`	Sets the Xth element from the back to A, and deletes X-1 elements from the back.
`NEXT DAY`	Moves on to the next day.
`END`	End of all commands. Output your final list of rides for each day.

(1 < X <= 100, as your brother cannot remember more than 100 things)

After all the commands, your task is to output the final list of rides in order. If your brother tells you to delete or change more rides than you have in your list for that day, print **"`Invalid command`"** and ignore that particular command.

Total commands do not exceed 10^6.

Input:

A list of commands each separated by a newline, with START RIDE being called once at the start of each day, and END being called at the end of all commands.

Output:

Print a single line, **"`Invalid command`"** for each invalid command.

For each day, print the final list of rides, in order, in this format: **"`Day i: [a, b, … c]`"** Each day's rides is on a single line.

Example 1 + Explanation:

Input	Current list:
START RIDE: 1	[1]
NEXT RIDE: 2	[1, 2]
NEXT RIDE: 3	[1, 2, 3]
DELETE FRONT RIDE: 1	[2, 3]
DELETE BACK RIDE: 1	[2]
NEXT RIDE: 5	[2, 5]
NEXT RIDE: 8	[2, 5 ,8]
CHANGE FRONT RIDE: 2 1	[1, 8]
CHANGE BACK RIDE: 1 5	[1, 5]
END	Output: Day 1: [1, 5]

Example 2:

Input:

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START RIDE: 1
NEXT RIDE: 2
NEXT RIDE: 3
DELETE FRONT RIDE: 8
NEXT DAY
START RIDE: 4
NEXT RIDE: 5
END
```

Output:

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Invalid command
Day 1: [1, 2, 3]
Day 2: [4, 5]
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