CSO-102 : Data Structures – Task 4.

Sheldon has now completely lost faith in his laptop. But he strongly believes **“Fun with Flags”** should go on. Therefore, he comes up with a new plan to store the names of the countries whose flags he talks about during the **N-minutes** long podcast.

He decides to store the data in the form of a **linked list** instead of an array. He sets up the linked list in such a way that instead of storing all the nodes in his laptop’s memory only, he would be storing each node on any one of the devices connected to his WiFi. This way, no foreign program running on his laptop would be able to access all the nodes.

Little did Sheldon know that Penny’s laptop across the hallway is also connected to his WiFi after Leonard told her the password (PennyAlreadyEatsOurFoodSheCanPayForWiFi). Penny’s laptop is infected with viruses because of untrusted online games she plays. As a result, her laptop restarts by itself at any arbitrary time – causing the nodes stored on her laptop to be lost forever. Thus, when Sheldon prints the linked list, some of the nodes are absent – making Sheldon furious.

Your task is to simulate the linked list on your laptop, delete the nodes that were supposed to be on Penny’s laptop whenever her laptop restarts, and print the list whenever required.

Input:

The first line contains an integer N (number of minutes for which the podcast runs) (1 <= N <= 100).

The second line contains an integer M (number of operations required to be done by you) (1 <= M <= 200).

The next M lines can be any of the following :-

i) ADD <Country_Name> <P/NP>
ii) DEL
iii) DISPLAY

<Country_Name> will be replaced by a valid country name.
<P/NP> stands for Penny (this node is stored on Penny’s laptop) and NotPenny (this node is not stored on Penny’s laptop).
DEL will delete all the nodes so far stored on Penny’s laptop.
DISPLAY should output all the nodes in the linked list starting the traversal from the head.

It is guaranteed that there will be exactly N ADD operations.

Look at the sample test case for more details.

Output:

For every DISPLAY command entered, print the elements of the linked list separated by whitespace in a single line. If the linked list is empty, print a blank line.

Instructions:

1. You have to format the output as expected.
2. Write the code preferably in C. If you use C++, you are not allowed to use the linked list/vector library.

Sample Input:

5
9
ADD INDIA NP
ADD CHINA P
DISPLAY
ADD RUSSIA P
ADD USA NP
DISPLAY
DEL
ADD CANADA P
DISPLAY

Sample Output:

INDIA CHINA
INDIA CHINA RUSSIA USA
INDIA USA CANADA

Explanation:

After each of the operations -
INDIA(NP)
INDIA(NP) --> CHINA(P)
<DISPLAY>
INDIA(NP) --> CHINA(P) --> RUSSIA(P)
INDIA(NP) --> CHINA(P) --> RUSSIA(P) --> USA(NP)
<DISPLAY>
INDIA(NP) --> USA(NP)
INDIA(NP) --> USA(NP) --> CANADA(P)
<DISPLAY>