Battleship

Battleship is a popular 2-player game that takes place a 10 x 10 board. Ships of various sizes are placed on the 10 x 10 board either horizontally or vertically. The position of the ships are hidden to the user. Your task is to sink all the ships.

Ships of the following size are given to each player.

- Submarine (1 x 1) - 2 nos
- Destroyer (2 x 1) - 2 nos
- Cruiser (3 x 1) - 1 nos
- Battleship(4 x 1) - 1 nos
- Carrier (5 x 1) - 1 nos

In this version of the game, you will initially specify the positions of your ships in a specific format and then start attacking the positions of your opponent.

Note

You can place the ships side by side.

Input Format

The very first move would be a 4 letter word "INIT* which indicates that you are to place your ships. The next set of moves follow the format as mentioned below.

First line contains **N** indicating the size of the board. **N** lines follow each line contains 10 characters. If a cell is *hit*, it is denoted by character *h* (ascii value 104), if a cell is a *miss* it is denoted by character *m* (ascii value 109), if all the positions of a ship is destroyed, each of its position of the board is denoted by character *d* (ascii value 100). If a cell is not attacked by the player, it is denoted by the character - (ascii value 45).

The board is indexed according to Matrix Convention

Constraints

N = 10

Output Format

For the very first move. Print the ships in the following format. In ascending order of the size of each ship, print the start and end position of the ship. For submarines, just print the start position. Sample output for ship positions is shown below.

```
0 0
4 2
6 4:7 4
3 7:3 8
7 7:7 9
1 4:4 4
4 0:8 0
```

For the next set of moves,

Output the cell to be hit in your current move. The output consists of two integers R and C separated by a single space.

Sample Input:1

```
INIT
```

Sample Output:1

```
0 0
4 2
6 4:7 4
3 7:3 8
7 7:7 9
1 4:4 4
4 0:8 0
```

Explanation

Two submarines are positioned at (0,0) and (4,2). Each destroyer is positioned inbetween (6,4)->(7,4) and (3,7)->(3,8) respectively. 1 cruiser is positioned horizontally from (7,7)->(7,9). 1 battleship is positioned vertically from (1,4)->(4,4). 1 carrier is positioned vertically from (4,0)->(8,0).

Start and end position of the ships can be interchanged.

Sample Input:2

```
10
----------
----------
--------m-
----------
--d-----m-
---m-m----
------m---
-m---mmhh-
--m-------
------m---
```

Sample Output:2

```
7 9
```

Resultant Board

```
10
----------
----------
--------m-
----------
--d-----m-
---m-m----
------m---
-m---mmddd
--m-------
------m---
```

Here, a ship was hit at row 7 and column 9. As the ship was completely destroyed, (7,7), (7,8) and (7,9) each are represented by character *d*.