**The Elevator**

Texas State wants to install a new elevator at the library, but wants to implement a more efficient way of how it visits each floor. Each person waiting on the elevator will also input what floor they wish to go to. The elevator then takes the most optimal path in order to make everyone go where they need to go. The elevator has the following rules:

* The elevator begins on the ground floor (0).
* The elevator only goes up or down.
* The elevator doesn’t change directions until there are no more people wanting to get on/off in the current direction its travelling.
* If it’s going up, it may continue to go up until to collect the highest floor person wanting to go down.
* If it’s going down, it may continue to go down to collect the lowest floor person wanting to go up.
* The elevator has a capacity, meaning there can not be more people in the elevator than the capacity.
* When called, the lift will stop at a floor even if it’s full!
* Whenever it has finished, it will return back to the ground floor (0).

**Input:** The first line of input contains two integers, **F** the number of floors, and **C**, the capacity of the elevator. There will be at least 2\***F** lines that will follow. Each floor will be represented in pairs of at least two lines.

The floors will be given in order of ground floor (0) to (**F** – 1). The first line contains **P**, the number of people on that given floor. The next line contains **P** space separated integers. Each integer represents a person and the floor they wish to go to. In the case that there are 0 people on that floor, then there will NOT be a second line of input to that floor.

**Output:** The order that the floors were visited.

**Example Input:**

7 5

0

1

**Note:** The boxes are meant to illustrate each floor better as they would appear in the input.

3

1

4

0

1

5

0

0

**Example Output:**

0 1 2 3 4 5 0

**Explanation:** At the beginning, the floors will appear as such (from 0 – (**F**-1)):

[{}, {3}, {4}, {}, {5}, {}, {}]

We start from floor 0, travel up to floor 1, and pick up the person who wants to go to floor three. We then stop at floor 2 to pick up the person wanting to go to floor three. We then stop at floor 3 to drop off the person wanting to stop there. We stop at floor 4 to pick up the person who wants to go to floor 5, and to also drop off the person who wanted to get off there. We then get to floor 5, drop off the person, then travel back down to floor 0. In the end, the floors will look like this:

[{}, {}, {}, {3}, {4}, {5}, {}]

And the order that we visited each floor will be: 0, 1, 2, 3, 4, 5, 0.