**DAY-2 TASK**

Problem-1

**Question 5: Find the homeless**

**Problem Statement -:**There are N Homeless people in the community and N houses in the community. It will be given in the array (people), the height of the person, and in the array house capacity of the house is given.

The government decided to give homes to people on the basis of the following conditions:

* Priority is given to the people from left to right of the array
* Each person is allotted to a house if and only if the capacity of the house is greater than or equal to the person’s height
* Nearby empty Houses are allotted to the person( starting from the extreme left)

You need to find the number of homeless people who have not been allotted any home if the government follows the above conditions. So that government will have an idea of how many people they need to allot homes for next time.

**Constraints:**

* 1 <= N <= 10^3
* 1 <= people[i] <= 10^5
* 1 <= house[i] <= 10^5

**Input Format for Custom Testing:**

* The first line contains an integer, N, denoting the number of  people and number of houses.
* Each line i of the N subsequent lines (where 0 <= i <= N) contains an integer describing peoplei.
* Each line i of the N subsequent lines (where 0 <= i <= N) contains an integer describing housei.

**Sample Test Cases**

* **Sample Input 1**3    
  4  
  2  
  7  
  3  
  5  
  10
* **Sample Output 1**0
* **Explanation**people=[4,2,7]  
  house=[3,5,10]  
  People[0] has more priority , from left to right order in houses 5 is the nearest one which fits for people[0]  
  people[1]=2 will fit in 3 which is nearer from left  
  people[2]=7 will fit in remaining house of capacity of 10  
  So no homeless people left so return 0
* **Sample Input 2**3  
  3  
  8  
  5  
  1  
  9  
  4
* **Sample Output 2**2
* **Explanation**people=[3,8,5]  
  house=[1,9,4]  
  people[0]=3 can fit in 9 which is nearest from left in array house  
  people[1]=8  cannot fit in any home which is left (i.e, 1 and 4)  
  people[2]=5 cannot fit in any home which is left (i.e, 1 and 4)  
  So return 2,which is number of homeless people

Problem-2

**Problem Statement –**Nobel Prize-winning Austrian-Irish physicist Erwin Schrödinger developed a machine and brought as many Christopher Columbus from as many parallel universes as he could. Actually, he was quite amused by the fact that Columbus tried to find India and got America. He planned to dig it further.

Though totally for research purposes, he made a grid of size n X m, and planted some people of America in a position (x,y) [in 1 based indexing of the grid], and then planted you with some of your friends in the (n,m) position of the grid. Now he gathered all the Columbus in 1,1 positions and started a race.

Given the values for n, m, x, y, you have to tell how many different Columbus(s) together will explore you as India for the first time.

Remember, the Columbus who will reach to the people of America, will be thinking that as India and hence wont come further.

**Function Description:**

Complete the markgame function in the editor below. It has the following parameter(s):

**Parameters**:

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Description** |
| n | Integer | The number of rows in the grid. |
| m | Integer | The number of columns in the grid. |
| x | Integer | The American cell’s Row. |
| y | Integer | The American cell’s Column. |

**Constraints:**

* 1 <= n <= 10^2
* 1 <= m <= 10^2
* 1 <= x <= n
* 1 <= y <= m

**Input Format:**

* The first line contains an integer, n, denoting the number of rows in the grid.
* The next line contains an integer m, denoting the number of columns in the grid.
* The next line contains an integer, x, denoting the American cell’s row.
* The next line contains an integer, y, denoting the American cell’s column.

**Sample Cases**

**Sample Input 1**

2

2

2

1

**Sample Output 1**

1

**Explanation**

The only way possible is (1,1) ->(2,1) -> (2,2), so the answer is 1.