**Problem 5 – Bohemcho the Bad Ghost**

Bohemcho is a really bad ghost. He loves to switch the lights **on** and **off** in the building where he lives. Because there were no lights on, Trifon uploaded the exam tasks for C# Basic in the wrong instance.

However, that's not your concern. Bohemcho does not give a …. thing so he roams around the building and plays with the switchers.

He dwells in a huge building with unknown number of floors and 32 apartments on every floor. There is some kind of pattern that this bad ghost follows: he starts from the **lowest** floor (because we are programmers **FLOOR 0**) and he is playing with the lights (turning them **on** or **off**). Bohemcho always switches **on/off** the lights **at least** at **one** apartment on every floor. In addition, he can switch the lights in an apartment **more than once**. He is doing this **until** Lelq Alex shouts at him: "Stop, God damn it".

Bohemcho thinks that this is kind of a game so he **counts** his score **after** he gets bored switching the lights on current floor. He scores a point for every apartment with **lights on**. Unfortunately, he is really bad with math so you have to do this for him. You have to **go through** every floor and count the apartments with the lights on and print, on the console, the result after Lelq Alex gets mad. In addition, every floor **represents** some integer number. After you convert the light state (0 for off and 1 for on) you will get a number that is the points Bohemcho gets from this floor.

You will be given a sequence of input rows. Every even **row** will represent the **initial** state of the floor. Every **odd** row will contain a sequence of integers, separated by a space -> the apartments that Bohemcho visits on that floor.

**Input**

* Until the command “**Stop, God damn it**” is received, you will be given pair of lines
* **Floor** – a single integer number
* **Apartments –** a sequence of integers, separated by space

**Output**

* There is a single line of output, in format:
* “**Bohemcho left { lightsOnCount } lights on and his score is { bohemchoFinalScore }"**

**Constraints**

* **Floor** is an integer number in range [0 … 232]
* **Apartment numbers** are integers in range [0 … 31]
* Allowed memory: 16 MB
* Allowed time: 0.1s

**Examples**

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 0  0  Stop, God damn it | Bohemcho left 1 lights on and his score is 1 | Bohemcho went through one floor where all the lights were OFF (that is why the initial state is 0). He switched the lights in apartment 0 so the current state of the lights is:  **00000000000000000000000000000001.**  Then he gets the command to stop. The count of lights on is **1** and the number you get is **1**. |

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 0  0 0  32  0 1 6 11 5 0  Stop, God damn it | Bohemcho left 3 lights on and his score is 2114 | On the first floor initial state is:  **00000000000000000000000000000000.**  He switches the lights on in apartment 0 and then off in the same apartment, so he gets **0** lights **0** and **0** points from this floor.  On the second floor initial state is:  **00000000000000000000000000100000.**  Bohemcho switches the lights on like this:  **00000000000000000000000000100001**  **00000000000000000000000000100011**  **00000000000000000000000001100011**  **00000000000000000000100001100011**  **00000000000000000000100001000011**  **00000000000000000000100001000010**  Here there are 3 apartments with lights on and the number that he gets is 2114 which is added to the score from the previous floor (which was 0) and the final result is 2114 |