# Problem 3. Matrix Operator

You are matrix operator chief, but you are tired of doing your job manually. You want to write a program, that will automate the process. The information you are processing comes from your boss, and he wants to see daily reports for the job.

You are given a **table of integers**. For that table you will need to execute some **commands**.

The **commands** are the following: remove, swap and insert. All commands come with 2 additional parameters.

* The **remove** command – **type** and **position**.
  + The **type** can be one of the following – **positive** / **negative** / **odd** / **even**. That means that you will need to **remove said elements** from the **given** **row** / **col**.
  + The position will be in the following format: {row / col index}.
* The **swap** command – the **2 rows** that you need to swap.
* The **insert** command – **row** and **number** that you need to **insert at the beginning** of the given row.
* The input stops once you receive the “**end**” command, and then you need to print the table after all operations.

### Input

* On the first line you will receive integer **r** – rows.
* On the next **r** lines, you will receive the elements for **each** **row**.
* On the next lines, you will receive commands in the **following** **format**:
  + remove {type} {position}
  + swap {firstRow} {secondRow}
  + insert {row} {element}
* The input stops when you receive the command “end”.

### Output

* The output should consist of the matrix after all commands have been executed.

### Constraints

* The rows of the table will be in range **[1…30]**.
* The columns of each row will be in range **[0…30]**.
* The elements of the table will be integers in the range **[-2,147,483,648…2,147,483,647]**.
* The commands will always be valid and in the given format.

### Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 4  1 5 2 -6 -2 54 -1  1 7 -3  -5 -3 1 5 6  5 6 -8 -8 -3  remove even row 3  remove odd col 5  swap 1 3  end | 1 5 2 -6 -2 54 -1  5 -3  -5 -3 1 5 6  1 7 -3 | The first command **removes all even elements** from the **row** with **index=3**. That leaves the row with {5, -3}.  The next command **removes all odd elements** from the **col** with **index=5**. The only row **that has 6 or more elements** is the row with **index=0**. In that row on col-5 the **element is even**, so we **leave** **it** there.  The last command is **swap row 1 and row 3**, so we just switch their positions and **print** **the result**. |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  -1 1 2 -2 3 -3  -6 -4 -5 -2 3 -1  1  1 2 3  -5 2 6 24  remove even row 3  remove negative row 0  remove odd row 3  swap 1 3  remove positive col 4  insert 1 50  end | 1 2 3  50  1  -6 -4 -5 -2 -1  -5 2 6 24 |