

Problem 171: Emergency Update

Difficulty: Medium

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Originally Published: Code Quest 2022

Problem Background

Each year, Lockheed Martin employees are encouraged to update their emergency contact information. This information is most often used to warn employees of facility closures due to severe weather or other extreme situations, but can also be used to alert employees to situations they may need to be aware of when travelling, like transportation strikes or notices from local authorities.

It's time for the annual update, and the Human Resources department wants to make sure that they have a record of the changes that were made. Audits of this sort are important to ensure that data is correct; if any data is incorrect, they help investigators track down the source of the errors. As the department's new intern, you've been assigned the task of performing this audit, but you really don't want to have to do it all by hand. Let's write a program to do the work for us!

Problem Description

The HR department has provided you with a list of last year's emergency contact information, and the list of this year's. Most employees will likely leave their information the same, but some may have moved or gotten new phones, and needed to update their records. Additionally, some employees have left or joined the company during the past year, and their records need to be deleted or created, respectively. Your program will need to identify all of these changes and accurately report them.

Each record in the files you have lists the employee's name, address, and phone number. Employee names are unique (for the purposes of this problem). If a name appears in the "old" file but not the "new" file, that shows the employee left Lockheed Martin, and their record should be deleted. Conversely, a name that appears only in the "new" file represents a new employee, whose record should be created. When the same name appears in both files, the address and phone number will need to be compared between the two versions. If either (or both) are different, the record needs to be updated with the new information. If all the information for an employee is the same in both files, no changes were made, and nothing needs to be reported.

Sample Input

The first line of your program's input, received from the standard input channel, will contain a positive integer representing the number of test cases. Each test case will include:

- A line containing two positive integers separated by spaces, O and N, representing the number of old and new records, respectively.

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- O lines containing last year's emergency contact records. Each line contains the following values, separated by commas:
 - The employee's name, which may contain upper- and lower-case letters and/or spaces.
 - The employee's phone number, which will be a 10-digit positive integer
 - The employee's address, which may contain letters, upper- and lower-case letters, and/or spaces
- N lines containing this year's emergency contact records. Each line contains the following values, separated by commas:
 - The employee's name, which may contain upper- and lower-case letters and/or spaces.
 - The employee's phone number, which will be a 10-digit positive integer
 - The employee's address, which may contain letters, upper- and lower-case letters, and/or spaces

1

3 3

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John Doe,1234567890,123 Anywhere Street
Jane Doe,9876543210,456 Somewhere Road
Billy Bob Joe,1472583690,789 Nowhere Avenue
Jane Doe,9876543210,456 Somewhere Road
Joe Bob Bill,9638520147,159 Over There Lane
John Doe,1597538462,123 Anywhere Street
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Sample Output

For each test case, your program must print a list of those employees who had records created, updated, or deleted. One employee should be listed per line, in alphabetical order by name (as presented; first name first). Lines should be formatted as follows:

- If an employee's record was created or deleted, print the employee's name, followed by the phrase "CREATED" or "DELETED", as applicable.
- If an employee's record was updated, print the employee's name, followed by the phrase "UPDATED ", then by "PHONE NUMBER", "ADDRESS", or "BOTH", as applicable.

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Billy Bob Joe DELETED
Joe Bob Bill CREATED
John Doe UPDATED PHONE NUMBER
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