

Lab 5 Problem

Zulu, a software company is planning to expand from its headquarters to a new office space. It asks its employees to opt-in if they would wish to shift to the new office location. You are a software engineer working at Zulu and you have been tasked to make this split. So far, you already have the data split into two parts – the records of the employees at Zulu headquarters, and the employee IDs of workers who have opted to shift. Your job is to return the updated employee records for the headquarters and the new office. There is one important constraint: You can only move at the most **k** employees from the headquarters to the new office space (where $0 \leq k \leq n/2$, and **n** is the total employees before the split at Zulu's headquarters). If there are more than k employees who have opted to shift to the new office space, you will prioritize by tenure, and then by their salary (more tenure and higher salary gets preference).

Employee Data:

You will read the employee data from a file. The first line will tell you the number **n** ($0 \leq n \leq 10000$). This will be followed by **n** employee records. Each employee record consists of four fields: Id (a 6 digit number), Name (can have space), Tenure ($1 \leq \text{Tenure} \leq 6$), and Salary ($50000 \leq \text{Salary} \leq 300000$). The fields are separated by a comma (.). This is followed by two space separated integers: **m k** (m is the number of employees opting for the new office space, and k is the maximum limit of employees that can be shifted). Each of the next **m** lines contain an employee Id, corresponding to the employee who opted for the shift.

Output:

Output the updated employee records (each on a separate line) for the headquarters [should be (**n** – **min(m, k)**)], and then for the new office space [should be **min(m, k)**]. Simply print the employee Ids. Before starting to print for Headquarters (print a single line HQ), same for new office space.

Example:

Sample Input

```
3
123002, Xia Ming, 4, 100000
134234, Tim Lee, 5, 99000
145345, Ashish Kumar, 3, 120000
2 1
123002
134234
```

Sample Output

HQ
123002
145345
NEW
134234

Explanation: $m=2$, and $k=1$. Two employees have applied to shift to the new office. However, only one employee can be shifted to the new office. Xia Ming and Tim Lee applied for shifting to the new office. Since Tim has more experience (5 years) as compared to Xia (4 years), Tim is preferred.

Visualization

