

Code Test Mafia

The FBI has captured some Mafia internal records dating from 1985 until the present. They wish to use these records to map the entire mafia organization so they can put their resources towards catching the most important members. We need to track closely who reports to who in the organization because if a boss has more than 50 people under him he should be put under special surveillance.

During these years there have been restructurings, murders and imprisonment. Based on previous investigations, we know how the mafia works when one of these events takes place:

— When an organization member goes to jail, he temporarily disappears from the organization. All his direct subordinates are immediately relocated and now work for the oldest remaining boss at the same level as their previous boss. If there is no such possible alternative boss the oldest direct subordinate of the previous boss is promoted to be the boss of the others.

— When the imprisoned member is released from prison, he immediately recovers his old position in the organization (meaning that he will have the same boss that he had at the moment of being imprisoned). All his former direct subordinates are transferred to work for the recently released member, even if they were previously promoted or have a different boss now.

You are asked to create a computer system for the FBI that allows them to store and manipulate all the records found. Please make sure to write a method to find out whether a boss has more than 50 people under him.

Keep in mind good design considerations applicable to the problem such as extensibility, maintainability, and modularity, among others. Try to develop the most optimal data structure and algorithms possible to implement the rules described.

Bonus: Write a method that given two mafia members identifies which one ranks higher in the organization.

If possible we would like to you to do the test in PHP. If you are not familiar with PHP please use another mainstream language, such as Java, Python ...

Please don't use any framework or third party libraries as all the code must be written by you. Also note that no UI development is required.

patrimoine administratif

memories de la police

probable Mafia
de elf 2222
actual binary
a → d → g

[Older Mafia Member]

best
only 1/2
per 1/2
de 1/2
to 1/2
to 1/2

best
to 1/2
to 1/2

Orig
Pb
Memb
Abs tr