

Homework – Algorithms

Due: **April 17, 2019 (no exceptions)**

There are a number of wrestlers wrestling professionally in a wrestling federation. Between any pair of wrestlers, there might be a rivalry (or not). The wrestling federation wants to invent a cover story that divides the wrestlers into the “Jets” and the “Sharks”. The two gangs are “mortal” enemies, so a wrestler can only belong to one gang. Also, the cover story has to be consistent with the existing rivalries. A rival cannot belong to the same gang as his rival.

Give an effective ($O(|E| + |V|)$) algorithm that determines whether an assignments of wrestlers to gangs is possible given the rivalry graph. In case it is possible, it should print out such an algorithm.

Deliverables:

A short description of the idea of your algorithm.

Your algorithm in pseudo-code or in python

How your algorithm works on the following graphs:



