CS-49: Game Theory

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Problem 19.

We proved in class that no position in LR HACKENBUSH (AKA BLUE-RED HACKENBUSH) can be in the outcome class **N**. The proof seems to work even if some edges are green, but something's wrong here, because there are **N** positions in general LR HACKENBUSH .

1. Where does our classroom proof go wrong when green edges are present?

   Since green edges can be chopped by either player, if there's a single green edge with all the remaining edges (red or blue) held by the green edge then the position is in **N**.

2. Can you nonetheless extend our theorem to some situations when green edges are present?

   For the theorem to work, there must be an even number of green edges in the position.