6.892: Algorithmic Lower Bounds, Spring 2019

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Problem Set 3

Due: Tuesday, February 26, 2019 at noon

Problem 3.1 [Set Splitting]. Prove that the following problem is NP-complete.

> Set Splitting: Given a finite set S and a collection C of subsets of S, is there a partition of S into disjoint sets S_1 and S_2 such that no set in C is a subset of S_1 or S_2?

Hint: The reduction is straightforward if you choose the right problem to reduce from.