Foundation of Computer Science (CS60001)

Tutorial-11

November 13, 2010

1. Let IS-HAM-CYCLE denote the computational problem that, given an undirected graph G, decides whether G contains just those edges necessary to form a Hamiltonian cycle in G (no more, no less). Prove or disprove: IS-HAM-CYCLE is NP-Complete.

2. Let $EQ_{REX} = \{\langle R, S \rangle \,|R$ and S are equivalent regular expressions\}. Show that $EQ_{REX} \in$ PSPACE.

3. Suppose you have to colour the following graph in 3-Colours(Red, Green, Blue). Give a CNF-formulation of the colouring problem for the given graph so that it will compatible to SAT-solver.(Home Work)

4. Formulate the $TIC\text{-}TAC\text{-}TO$ game in QBF form(Home Work).