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On List Colouring and List Homomorphism of Permutation and Interval Graphs

List colouring is an NP-complete decision problem even if the total number of colours is three. It is hard even on planar bipartite graphs. We give a sketch of a polynomial-time algorithm for solving list colouring of permutation graphs with a bounded total number of colours. This generalises to a polynomial-time algorithm that solves the list-homomorphism problem to any fixed target graph for a large class of input graphs including all permutation and interval graphs.