AN INTRODUCTION ON ALGORITHMS FOR PARTIALLY ORDERED SETS

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Abstract

A *partially ordered set* P (or simply an *order*) is a pair (E, R), where E is a finite set of elements, called the *ground set* of P. while R is a binary relation on E, which satisfies reflexivity, anti-symmetry and transitivity. The set E is the *relation set* of P.

We describe some basic concepts involving orders and show its relationship with the study of graphs. We discuss some algorithmic problems on orders and complexity results. In particular we consider the problem of generating extensions of an order. An *extension* of an order P with ground set E and relation set R ia another order P' having the same ground set E and relation set $R' \supseteq R$.