

Greedy Algorithms

Select option that 'looks best'.

Prove optimality or 'near-optimality' of solution.

Partial solution is 'feasible' if it's contained in an optimal soln.
or 'promising'

Choice x_i is 'correct' if resulting partial soln. is feasible.

given n intervals (s_i, f_i) , select max # of mutually disjoint intervals. (Activity Selection).

idea: select shortest interval that works.

it doesn't work: .

better idea: select first finish time that works.

Proof: Induction that (x_1, \dots, x_i) is feasible.

(And that no more interval can be added to (x_1, \dots, x_k) .

\emptyset is feasible. And if (x_1, \dots, x_{i-1}) is feasible

then (x_1, \dots, x_i) is too.