

CPSC 433: Lab Exercise

Set-Based Search

Assume we are going to write a program to solve an arbitrary set of equations over the natural numbers (N) by Set-Based search. For example, given the set of equations:

$$\{ A = 2, B + A > 6, C + A < 5 \}$$

solve for A, B and C.

Design a set-based model $A=(S,T)$ by defining the types and definitions of S, and T, together with any auxiliary definitions as are used in search paradigm. (Your answers may be in text; they do not necessarily have to be in formal notation, although full marks will only be given if the answer includes formal definitions.)

Define your search process $P=(A, Env, K)$ by defining the types and definitions of Env, and K, together with any auxiliary definitions as are used in search paradigm.

Define G and s_0 for the equation set $\{ X - Y = 2, X + Y > 5, Y < 3 \}$. Draw the generations that your search process generates for s_0 . You may assume the domain for both X and Y is $\{0..5\}$.