

Foundations of Logic Programming

Tutorial 8 (on January 24th)

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Exercise 8.1:

Given the positive program P_i , apply the T_{P_i} operator until you reach a fixpoint.

$$\begin{array}{lll}
 P_1 = \{ & & \\
 & b \leftarrow a. & \\
 & c \leftarrow b, a. & \\
 & d \leftarrow b. & \\
 & f \leftarrow c, d. & \\
 & a \leftarrow \quad \} & \\
 P_2 = \{ & & \\
 & f \leftarrow e. & \\
 & d \leftarrow a, b. & \\
 & a \leftarrow c. & \\
 & b \leftarrow . c \leftarrow . \quad \} & \\
 P_3 = \{ & & \\
 & a \leftarrow b. & \\
 & b \leftarrow a. & \\
 & c \leftarrow a, b. \quad \} &
 \end{array}$$

Exercise 8.2:

Consider the following program

$$\begin{array}{l}
 P = \{ a \leftarrow b; \\
 \quad b \leftarrow a, \text{ not } c; \\
 \quad a \leftarrow d; \\
 \quad d \leftarrow \text{not } c \}
 \end{array}$$

- a) Give all nogoods one can obtain from program completion.
- b) Is the set $U = \{a, b\}$ unfounded with respect to the following (partial) assignments?
Justify your answer.
 - i) $\{\mathbf{F}c\}$
 - ii) $\{\mathbf{T}c\}$
 - iii) $\{\mathbf{T}a, \mathbf{F}d\}$