Foundations of Logic Programming
Tutorial 7 (on January 31st)

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Exercise 7.1:
Given the positive program P_i, apply the T_{P_i} operator until you read a fixpoint.

$$P_1 = \{\quad b \leftarrow a.$$
$$c \leftarrow b, a.$$
$$d \leftarrow b.$$
$$f \leftarrow c, d.$$
$$a \leftarrow \quad \}$$

$$P_2 = \{\quad f \leftarrow e.$$
$$d \leftarrow a, b.$$
$$a \leftarrow c.$$
$$b \leftarrow . \; c \leftarrow . \quad \}$$

$$P_3 = \{\quad a \leftarrow b.$$
$$b \leftarrow a.$$
$$c \leftarrow a, b. \quad \}$$

Exercise 7.2:
Consider the following program

$$P = \{a \leftarrow b;$$
$$b \leftarrow a, not\ c;$$
$$a \leftarrow d;$$
$$d \leftarrow not\ c\}$$

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) $\{\mathbf{T}a, \mathbf{F}d\}$