Deduction Systems
Tutorial ASP (on June 5th)

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Exercise 1:
Given the program P_i, determine the stable models of P_i by applying the *Gelfond-Lifschitz-Reduct.*

$$P_1 = \{a \leftarrow not\ b, c;\quad b \leftarrow not\ a;\quad c \leftarrow not\ b\}$$

$$P_2 = \{a \leftarrow not\ b;\quad b \leftarrow not\ c;\quad c \leftarrow not\ a\}$$

$$P_3 = \{a \leftarrow a;\quad b \leftarrow c, d;\quad c \leftarrow not\ d;\quad d \leftarrow not\ c, a\}$$

Exercise 2:
Apply the CDNL Algorithm to the program P_4 to trace the stable model $\{b, c, d, e\}$. Highligth the steps of the nogood propagation, unfounded set checking and (if needed) conflict analysis.

$$P_4 = \{a \leftarrow not\ b;\quad b \leftarrow not\ a;\quad c \leftarrow a;\quad c \leftarrow b, d;\quad d \leftarrow b, c;\quad d \leftarrow e;\quad e \leftarrow b, not\ a;\quad e \leftarrow c, d\}$$