Database Theory
Winter Term 2016/17
Prof. Dr. W. May

3. Unit: Well-founded and Stable Semantics

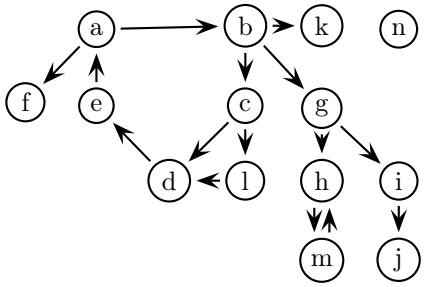
Discussion by 4./6.2.2014

Exercise 1 (Well-Founded Model) a) Show that there are non-stratifiable Datalog$^\neg$ programs that have a total well-founded model (i.e., no atoms undefined).

b) Are there (non-ground) non-stratifiable Datalog$^\neg$ programs that have a total well-founded model for *all* EDB instances?

Exercise 2 (Well-Founded Model) Give an instance of the win-move game that has no total stable model.

Exercise 3 (Well-Founded Model) Consider again the win-move game from the lecture:



Consider to start the Alternating Fixpoint Computation for the rules `win(X) :- move(X,Y), not win(Y).`
`lose(X) :- pos(X), not win(X).`

with $\mathcal{H}_0$ as

- some atoms that are correct: lose(k), win(b), win(d)
- some atoms that actually are in contrast to the well-founded model of the above game: win(f), lose(c), win(m).

(it is often called "seed" when starting an iterative algorithm with some initial values)