Exercise Sheet 4
CS 2210 Logic for Computer Scientists (Hitzler)
Solutions due: Tuesday February 10, 2015, 11am

Exercise 24 (no hand-in – do if coding helps you with the material) Write a computer program (you may choose your favorite language), which accepts as input graphs specified in the form of Example 1.1.5, and computes all $T_P \uparrow n$, where P consists of all the non-fact Datalog rules from Example 1.1.5, plus the input graph encoded as facts.

Exercise 25 (no hand-in – give it a try we'll discuss it in class) Given a Datalog program P, an interpretation $I \subseteq B_P$ is said to be *supported* if for every $A \in I$ there exists a rule $B_1 \wedge \cdots \wedge B_n \rightarrow A$ in ground(P) with $\{B_1, \ldots, B_n\} \subseteq I$.
Show the following.

(a) An interpretation $I \in I_P$ is supported if and only if $I \subseteq T_P(I)$.

(b) The least Herbrand model of any program is supported.

Exercise 26 Show that the Datalog program from Example 1.1.1 Herbrand-entails

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