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Hand in solutions via email to
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until 29.01.2013 (only Java sources and
PDFs accepted).

Paper submissions possible after the lecture.

Tutorials for “Formal methods for Java” Exercise sheet 11

Exercise 1: Soundness of all-left

Prove soundness of the rule `all-left`. Assume $\Gamma, \forall X. \phi(X), \phi(t) \implies \Delta$ is a tautology and show that $\Gamma, \forall X. \phi(X) \implies \Delta$ holds in an arbitrary structure \mathcal{M} .

Exercise 2: Hintikka Set

Show that H as depicted on Slide 8 from Lecture 22 is a Hintikka set. Restrict yourself to the rules for $\phi \wedge \psi$, $\neg(\phi \wedge \psi)$, $\forall X. \phi(X)$ and $\neg(\forall X. \phi(X))$.

Hint: First show that if $\neg\phi \in H$, then $\phi \in \Delta$.

Exercise 3: Models for Hintikka Sets

Prove the induction step from Slide 11 of Lecture 22 for the formulas $\phi \rightarrow \psi$, and $\forall X. \phi(X)$.