

SL 480

some constraints in FOL:

- names  $\langle 1, 1 \rangle$ :
- $\forall x : \text{TopManager}(x) \rightarrow \exists y \text{mg}(x, y)$
- $\forall x, y_1 : (\text{mg}(x, y_1) \rightarrow \forall y_2 (y_1 \neq y_2 \rightarrow \neg \text{mg}(x, y_2)))$

• works for  $\langle 1, 3 \rangle$

$$\forall x, y_1, y_2, y_3, y_4 ((\text{Emp}(x) \wedge \text{mg}(x, y_1) \wedge \text{mg}(x, y_2) \wedge \text{mg}(y_3) \wedge y_1 \neq y_2 \wedge y_2 \neq y_3 \wedge y_1 \neq y_3 \wedge y_4 \neq y_1 \wedge y_4 \neq y_2 \wedge y_4 \neq y_3) \rightarrow \neg \text{wf}(x, y_4))$$

negative atomic conclusions  
"denial"  $\rightarrow$  stable models  
 $\rightarrow$  end of the lecture

Mai 6-10:08

Tableau

prove  $F \models G$

$$\begin{array}{c} F \\ \neg G \\ \diagdown \quad \diagup \quad \diagdown \quad \diagup \\ \square \quad \square \quad \square \quad \square \end{array}$$

Systematically construct fragments of ~~the~~ model(s)

$\rightarrow$  "close" tableau

$\rightarrow$  rule out certain (or all) potential solutions countermodels

Mai 6-11:04

## Aside Higher-Order Logics

- google for "HOL prover"
- one of the most prominent ones is "Isabelle"
- interactive provers

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## DATA LOG

head  $\leftarrow$  body.

head :- body.

body will be a conjunction of atoms

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