Sl 412:

DB: no function symbols

$\varphi \models_{\mathcal{B}}$ encompassed$(X, \text{"Europe"}, Y)$.

φ

if e.g. $\mathcal{B}_1 = \{X/\text{'D'}, Y/100\}$ $\Rightarrow$ $\varphi \models_{\mathcal{B}_1}$ encompassed$(X, \text{"Europe"}, Y)$.

more interesting: queries: for which $\mathcal{B}$ does φ hold

$\Rightarrow$ answers:

$\mathcal{B}_1$ as above is an answer

$\mathcal{B}_2 = \{X/\text{"R"}, Y/25\}$

⋮

Sl 417:

Consider some complex formula $\varphi \rightarrow \psi$ ($\hat{=}\ \varphi \models \psi$)

e.g. Software Verification: φ Specification, ψ some nice guarantee

$\Leftrightarrow$ verification that $\varphi \rightarrow \psi$ always holds ... in ALL possible, legal cases

$\Leftrightarrow$ $\neg(\varphi \rightarrow \psi)$ is unsatisfiable

Brute-force tableau proof:

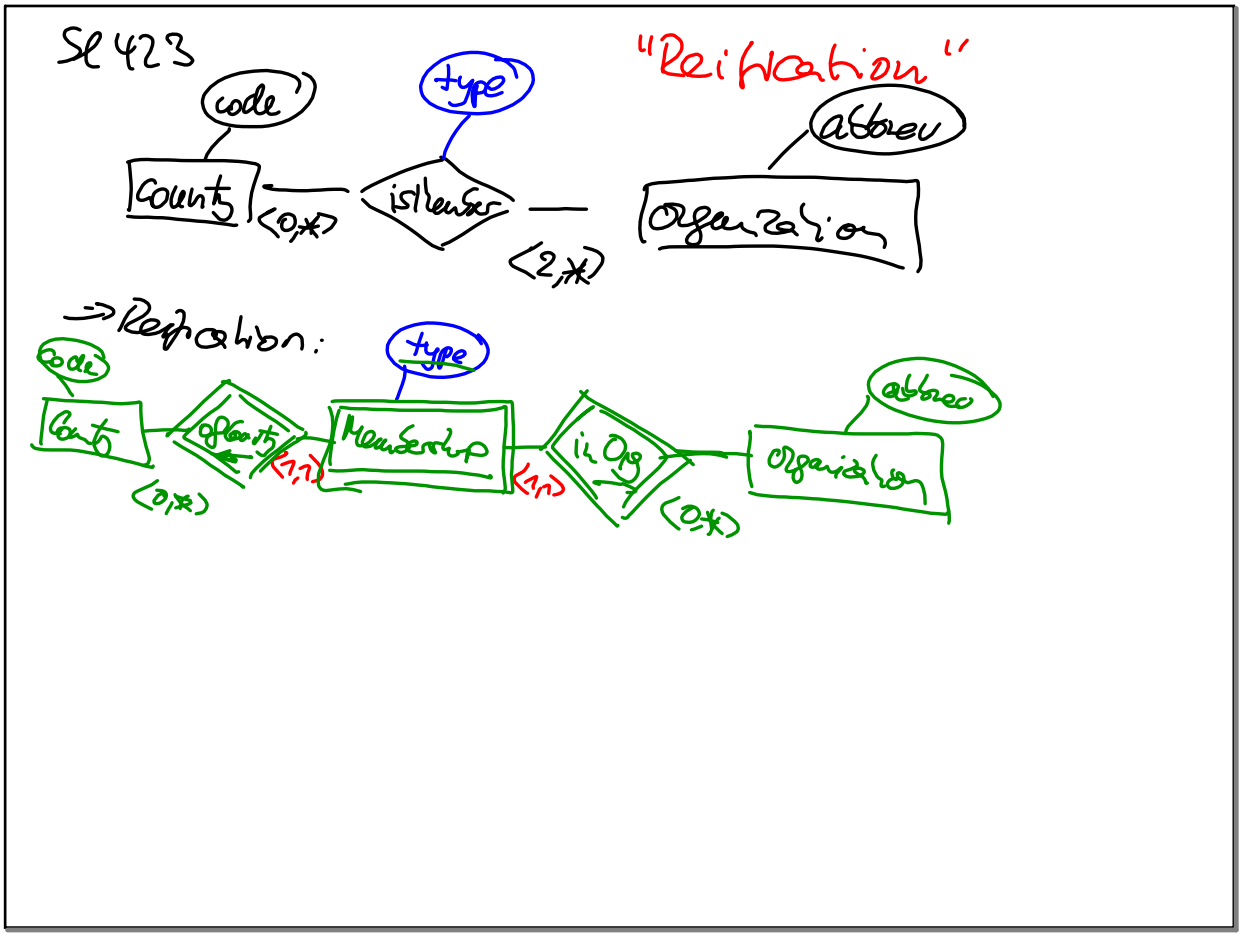
φ

$\neg\psi$

⋮

try to expand to find models of $\varphi \wedge \neg\psi$

"countermodels"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