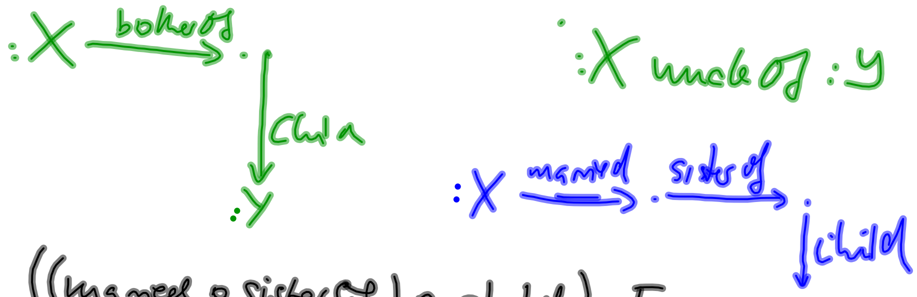
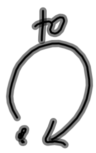
(brotherOf ∘ child) ⊑ uncleOf

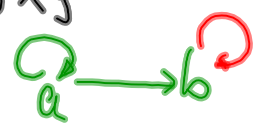


((married ∘ sisterOf) ∘ child) ⊑ uncleOf

UncleOfMore ≡ ≥2 uncleOf.⊤

Cyclic ≡ Node ⊓ {x | x to x}





Feb 1-14:10

Φ ⊨ uncle(john, barbara).

proven

Φ

¬uncle(john, barbara)

∀y: (¬brotherOf(john, y) ∨ ¬child(y, barbara))

[Forall y]

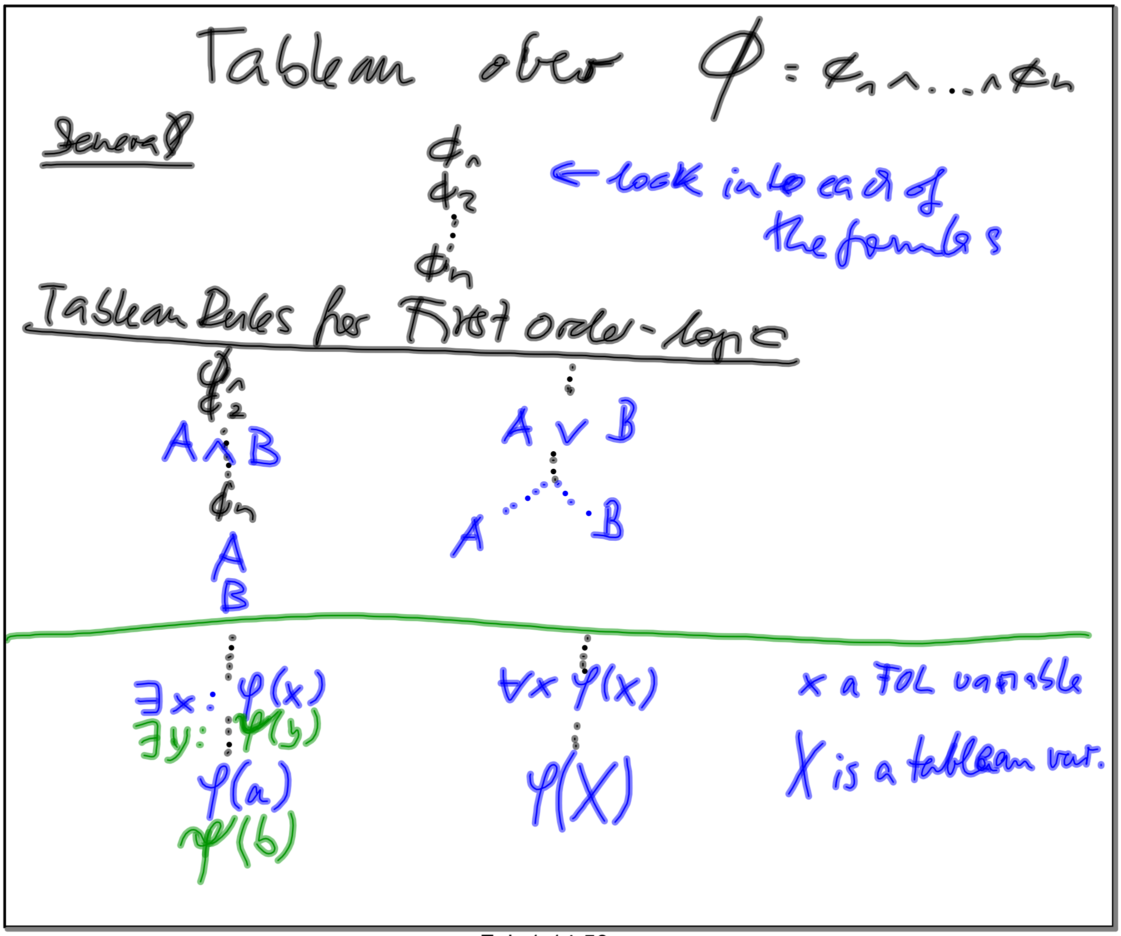
¬brother(john, y) ∨ ¬child(y, barbara)

¬brother(john, y) ¬child(y, barbara)

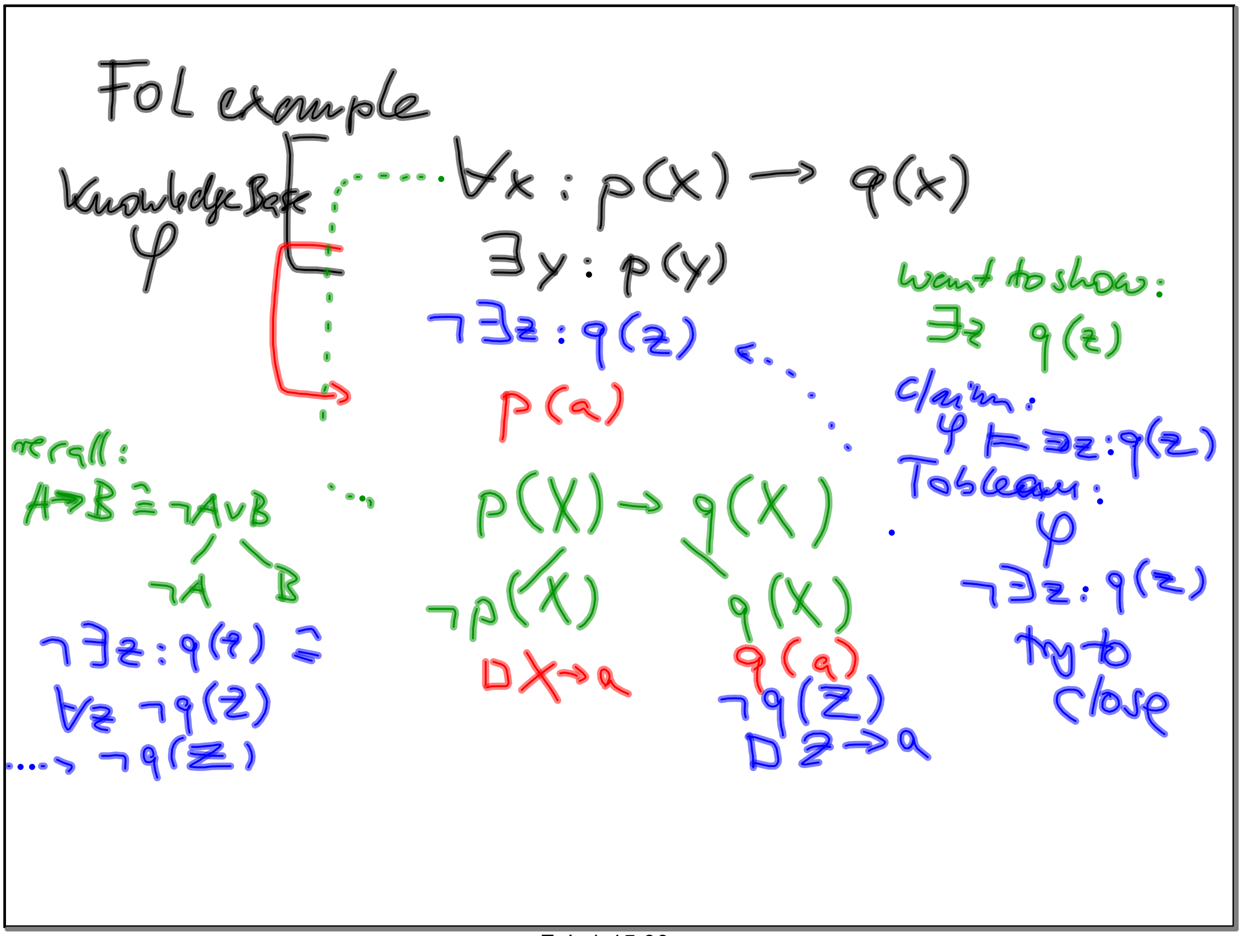
□ y -> sue ¬child(sue, barbara)

□

Feb 1-14:39



Feb 1-14:53



Feb 1-15:00

$\forall x \exists y : father(x,y)$

$\forall x \exists y : p(x,y)$

$\exists y : p(X,y)$

$p(X, f(X))$

y is a function of x

$X \to john$

$p(john, f(john))$

Feb 1-15:15

DL tableaux

kinds of formulas :

$C \equiv (\ldots)$

$C \sqsubseteq D$

$C \sqsubseteq \forall child.Person$

~~P~~ ...(john)

child (john, bob)

Two~~children~~sons Parent $\equiv \geq 2$ child.Male

Two sons parent(sue)

p(x)

($\geq$2 child.Male)(sue)

Male(a)

Male(b)

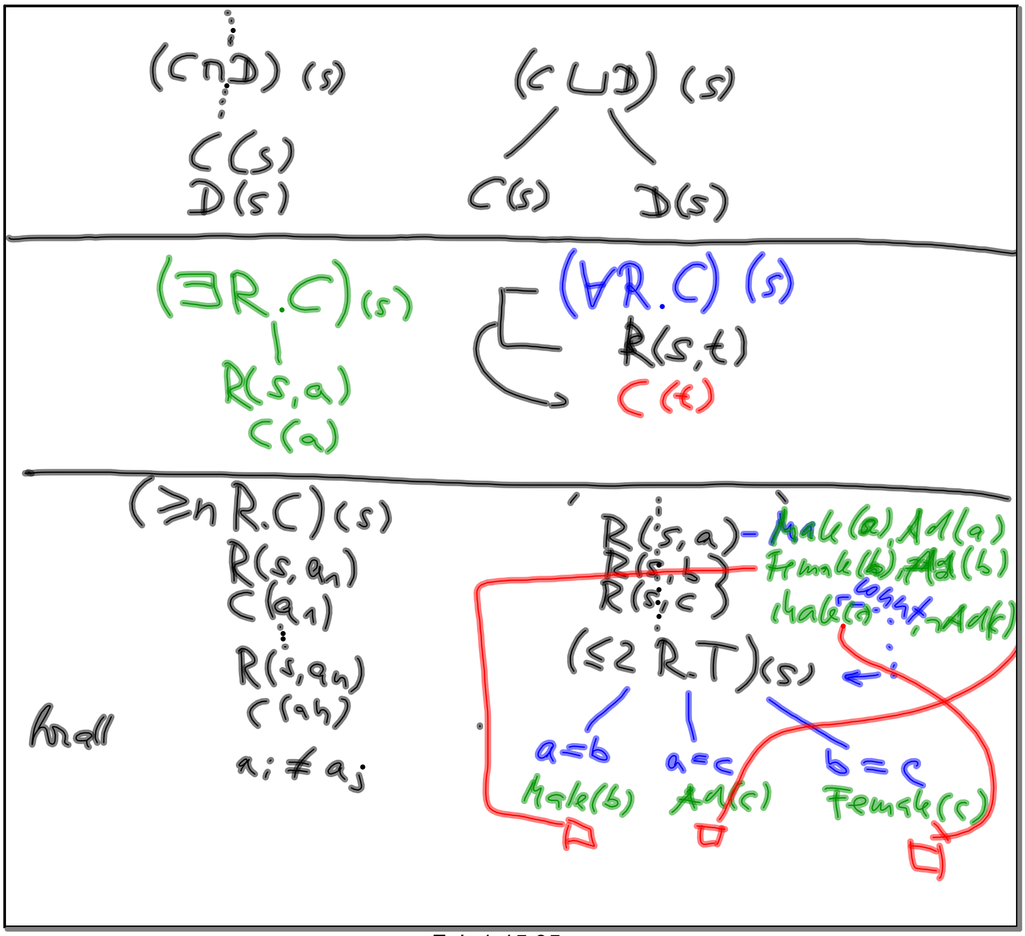
Child(sue,b)

Child(sue,a)

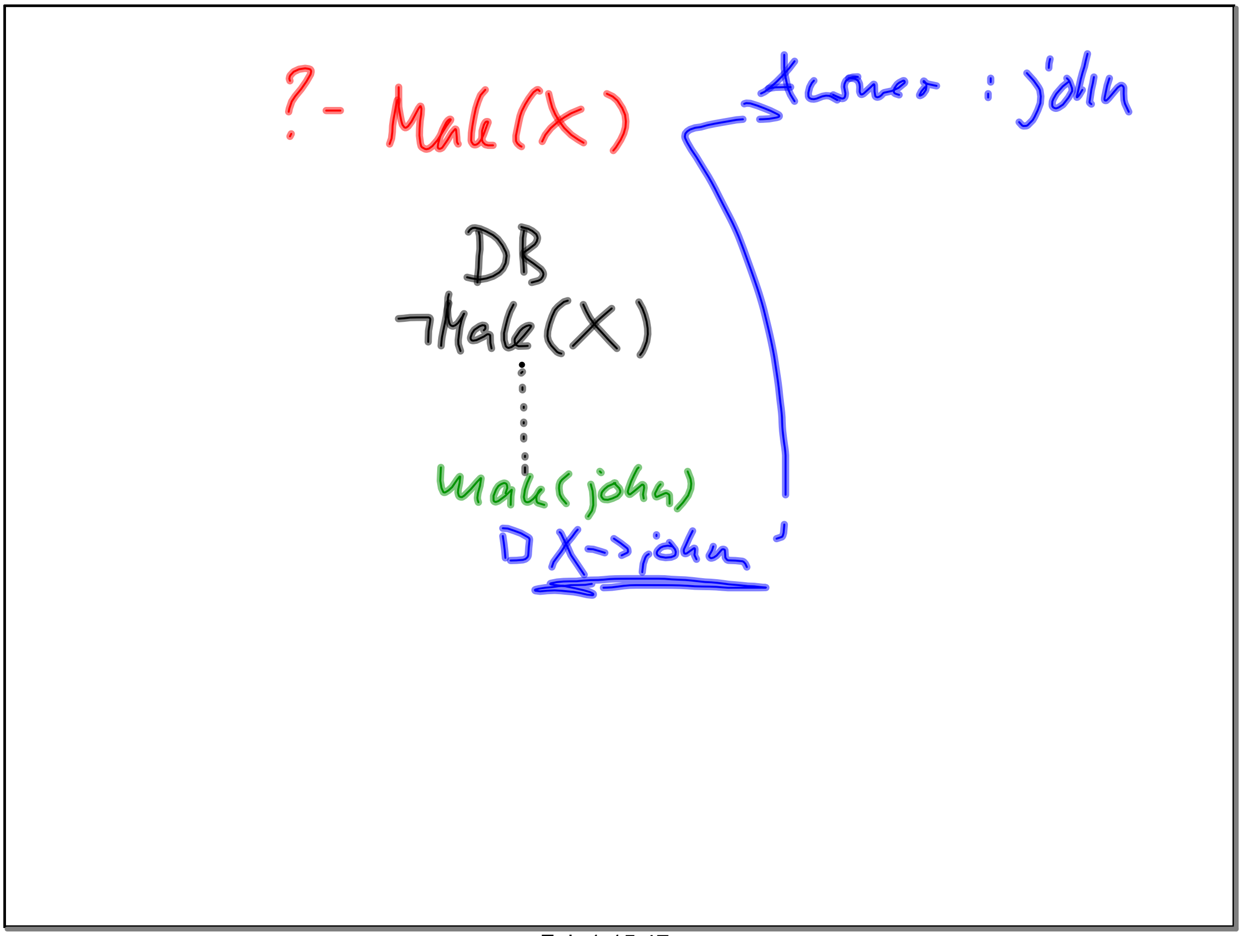
$a \neq b$

$\rightsquigarrow$ a, b.
both Male
both children of sue

Feb 1-15:28



Feb 1-15:35



Feb 1-15:47