Artificial Intelligence

Unification

We can get the inference immediately if we can find a substitution θ such that king(x) and Greedy(y) match king(John) and Greedy(John)

$\theta = \{x/\text{John}, y/\text{John}\}$ works

$\text{Unify}(\alpha, \beta) = \theta$ if $\alpha\theta = \beta\theta$

p	q	θ
knows(John, x)	knows(John, Jane)	{x/Jane}
knows(John, x)	knows(y, OJ)	{x/OJ, y/John}
knows(John, x)	knows(y, Mother(y))	{y/John, x/Mother(John)}
knows(John, x)	knows(x, OJ)	{Fail}

First order inference Rule

$\forall x \; King(x) \wedge Greedy(x) \Rightarrow Evil(x)$

$King(John)$

$Greedy(John)$

The inference Evil(John) from the sentence is obvious

If there is some substitution θ that makes each of the conjuncts of the premise of the implication identical to sentences already in the knowledge base, then we can assert the conclusion of the implication after applying θ