CS 3600 - Introduction to Intelligent Systems

Homework 4 - Sample Solution

English sentences	CNF
Joe is a cat.	Cat(Joe)
No cat has a dog friend	~Cat(x) v ~Dog(y) v ~Friend(x,y)
Sam is Joe's friend	Friend (Joe, Sam)

Resolution works by adding the negated query to the knowledge base and resolving to false. Since we want to prove ~Dog(Sam), we add Dog(Sam) to the knowledge base and then:

Cat(Joe)   ~Cat(x) v ~Dog(y) v ~Friend(x,y)

x/Joe

~Dog(y) v ~Friend(Joe,y)   Friend (Joe, Sam)

y/Sam

~Dog(Sam)   Dog(Sam)

CONTRADICTION