(Mini) Programming Assignment

Due Date: April 6, 2016

The goal of this assignment is to use an existing Prolog compiler to perform first order logic resolution.

You will use the package from `http://www.openbookproject.net/py4fun/prolog/prolog1.html`. We have provided two questions in English. Your goal is to create the background knowledge (i.e., translate the English statements to FOL statements). You should also create the facts as grounded predicates that would serve as evidence based on which you answer the queries using resolution.

What should you turn in? (1) The input and output from the program as a pdf file submitted online (2) A handwritten part (to be handed over in the class) where you prove/answer the question by resolution.

1. Professor Adams, who lives in Bloomington, USA, advises multiple students. ~~If a professor advises a student, they should publish papers together~~. Students publish papers with their advisor. ~~A professor could be in the advising committee of the student but need not advise the student~~. Micheal has published 6 papers with Professor Adams. Professor Adams is in the advising committee of Micheal and Brian. **If a professor is in the committee of a student, he/she is the advisor**

   Prove: Micheal is advised by Professor Adams.

   Is it possible to prove that Brian is advised by Professor Adams?

2. V (the victim) has been murdered by a single individual. There are only three suspects, A, B, and C, and it is certain that one of them committed the crime. Here is what else is known: A says that B was V's friend but that C hated V. B says he was out of town the day of the murder, and he didn't even know V. C says that he saw A and B with V just before the murder.

   You can assume that everyone except the murderer is telling the truth.

   Who is the Murderer? Hint: You do not need FOL for doing this. Write the statements as propositions and perform propositional resolution.

   (This puzzle is from Ira Kalet, adapted from Brachman and Levesque, in Knowledge Representation and Reasoning) - Thanks Devendra.