

CS 6364
Homework 5
Professor Moldovan
Due April 12, 2017 before class

Problem Logic Proof

Consider the following precedents:

Macbeth

This is a story about Macbeth, Lady Macbeth, Duncan, and Macduff. Macbeth is an evil noble, and Lady Macbeth is a greedy, ambitious woman. Duncan is a king, and Macduff is a noble. Lady Macbeth persuades Macbeth to want to be king because she is greedy. She is able to influence him because he is married to her and because he is weak. Macbeth murders Duncan with a knife. Macbeth murders Duncan because Macbeth wants to be king, because Macbeth is evil, and because Duncan is king. Then, Lady Macbeth kills herself. Finally, Macduff gets angry and kills Macbeth because Macbeth murdered Duncan and because Macduff is loyal to Duncan.

Linda and Dick

This is a story about Linda and Dick. Linda is a woman, and Dick is a man. Dick is married to Linda. Dick is weak because he is tired. He is tired because Linda is domineering.

Adam and Eve

This is a story of Adam and Eve and an apple. Adam is greedy because Eve is foolish. Adam wants to eat a forbidden apple because he is greedy. God punishes Adam and Eve because Adam eats the forbidden apple.

An Exercise

This is a problem concerning a foolish noble and a domineering lady. The noble is married to the lady.

Goal: Show that the lady may persuade the noble to want to be king.

Provide a logic proof for this goal using information from the *Macbeth*, *Linda and Dick*, and *Adam and Eve* precedents as necessary.

Show:

1. Transform relevant text sentences into FOL formulas.
2. Implement a logic proof using resolution (No need to use Prover9), and show the steps of your proof.