

2000 Paper 9 Question 9

Artificial Intelligence

Consider the following story of the play Macbeth, by William Shakespeare:

The characters are Macbeth, Lady-Macbeth, Duncan and Macduff. Macbeth is an evil noble. Lady-Macbeth is a greedy ambitious woman. Duncan is a king. Macduff is a loyal noble. Macbeth is weak because Macbeth married Lady-Macbeth and because Lady-Macbeth is greedy. Lady-Macbeth persuades Macbeth to want to be king. Macbeth murders Duncan using a knife because Macbeth wants to be king and because Macbeth is evil. Lady-Macbeth kills Lady-Macbeth. Macduff is angry because Macbeth murdered Duncan and because Macduff is loyal to Duncan. Macduff kills Macbeth.

Construct a semantic network representing the above story. [8 marks]

Show the chain of reasoning leading to Macduff killing Macbeth. [5 marks]

It is possible to change the story so that Lady-Macbeth is unable to persuade Macbeth to want to be king. Augment the story to provide a reason for Lady-Macbeth's inability to persuade Macbeth to want to be king. Update the semantic network to reflect the new situation. [7 marks]