Übungen zur Vorlesung: Wissensbasierte Systeme

Blatt 8

Exercise 8.1

Consider the belief network below that extends the electrical domain to include an overhead projector. Answer the following questions about how knowledge of the values of some variables would affect the probability of another variable:

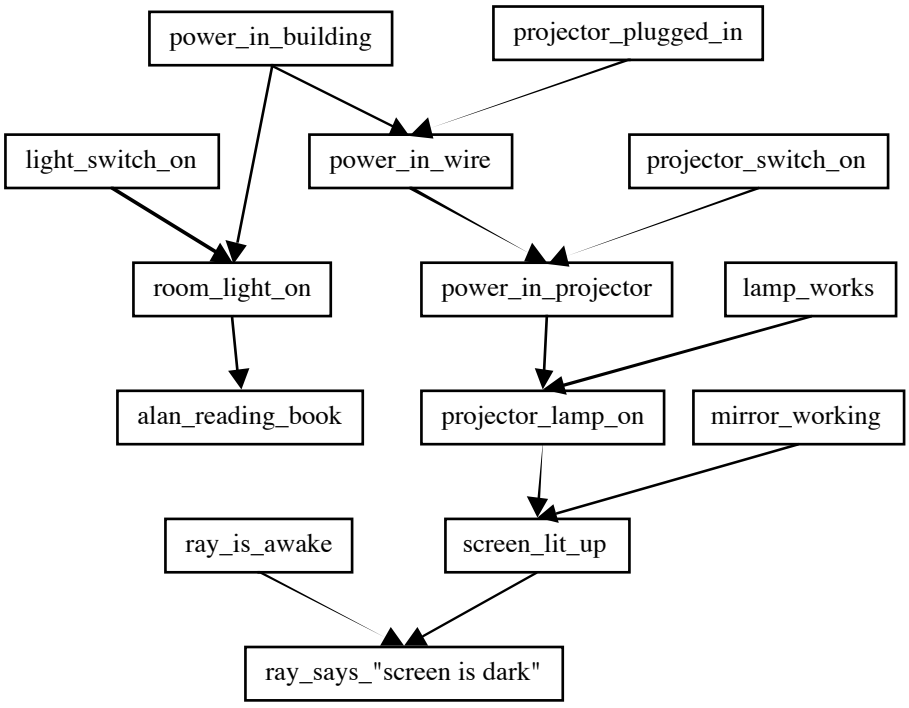
(a) Can knowledge of the value of *projector_plugged_in* affect your belief in the value of *alan_reading_book*?

(b) Can knowledge of *screen_lit_up* affect your belief in the value of *alan_reading_book*?

(c) Can knowledge of *projector_plugged_in* affect your belief in the value of *alan_reading_book* given that you have observed a value of *screen_lit_up?*

(d) Which variables could have their probabilities changed if *lamp_works* were observed?

(e) Which variables could have their probabilities changed if *power_in_projector* were observed?



Exercise 8.2

It is well known that taking drugs may cause people to talk nonsense and totter. Also illness may cause people to totter. Most people do not help when a person seems to be on drugs, but they tend to help in the case of illness.

a) Design dependency diagram for people to help.

b) Specify plausible probability tables for each node.

c) What is the probability for helping when tottering is observed?

d) How does the probability of helping change when nonsense talk is experienced (in addition to tottering)?

e) You see that somebody is being helped. What is the probability that he is on drugs?