Practice Exercise
CSP planning

1 Directed Questions

- What is meant by the *horizon* in a planning problem?

- What are *initial state constraints* in a CSP problem?

- What are *goal constraints*?

- What are *precondition constraints*?

- What are *effect constraints*?

2 CSP planning

There's a big football game tonight, and you can't miss it. You're trying to decide whether to watch it in person or on TV. Watching it in person requires having some money for a ticket. Watching it on TV is only possible if you have a TV and there isn't a local television blackout on the game. If you need money for a ticket, you can always sell your TV.

Figure 1 shows a CSP representation for this planning problem where the goal is to watch the game.

- What are the actions?

- What are the state variables?

- What is the horizon shown in Figure 1?

- Give the truth tables for the precondition constraint for action *watchAtPark* (labelled p1_s0 in the figure) and the effect constraint between *blackout* at step 0 and *blackout* at step 1 (labelled e3_s1).

- What is the minimum horizon needed to achieve the goal, if the start constraints specify that you have no money and that there is a TV blackout?

3 Learning Goals

You can:

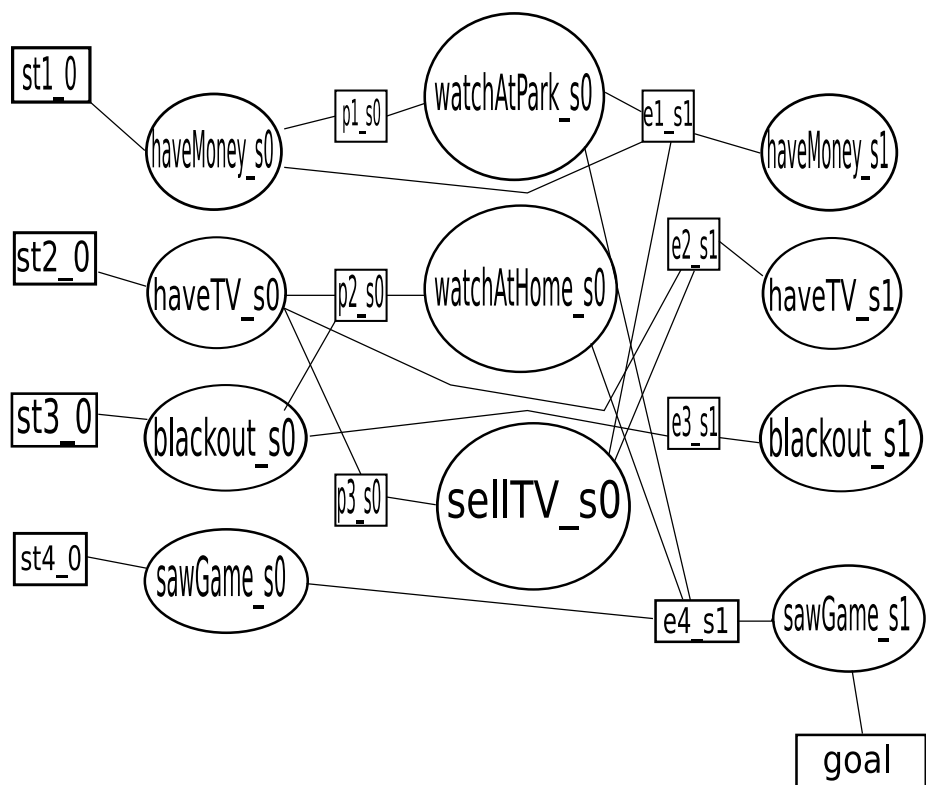- Translate a planning problem in STRIPS representation into a CSP planning problem (and vice-versa).

Figure 1: CSP representation for viewing the game