Planning.
Programming project in Introduction to AI

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Figure with plan

Results are presented in figure **??**.

Figure 1: Plan for the gardening agent. Blue boxes are start states and red boxes are goal states. Pink edges indicate a valid plan. For actions, a red, blue and green line indicate a mutex in respectively inconsistent effect, interference and competing needs. For the propositions, red is negation mutex and blue is inconsistent support mutex.

Expand; do or do not

Obviously we need to expand at S_0 since none of the goal states are represented. In S_1 we also need to expand one more, since we have a mutex in (wetLawn, shrtLawn) and we need to be mutexfree in the set of all the goal states. This is fulfilled in S_2, so we finish the expanding.

The Plan

The plan we choose based on the planning algorithm goes so:

- Mow the lawn.

- Water the lawn with a sprinkler and water the flowers with the watering can (in either order).

Figuring out the plan

To figure out the plan, all we need to do is do a backtracking search from the (fulfilled) goal states and make sure that for each step we choose all the actions to not be mutex. This is fulfilled for the pink plan in figure **??**.