Experiments

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1. Approach

1.1 variable

The variable for the a.csp and the b.csp is all the adjacent cells of the cell where it perceives the breeze or stench. We do not need to consider others cells because they will not influence the next cell (it is created by applying the action to the current position

1.2 constraints

My approach using two type of constraints, the first one is the risky variable constraints that is the adjacent cells of the cell where it perceives the breeze or stench must have at less one pit or one Wumpus in it.

The second one is the pits and Wumpus amount constraint which means there are at most n (provided by json file) pits and m (provided by json file) wumpuses in the variables (these are represented by cell).

1.3 output files

The …a.csp file I decide to let it be all the possible solution in the KB that there is pit or wumpus in the next cell where the agent will move, and let …b.csp be all the possible models in the KB that there is pit and wumpus in the next cell where the agent will move to. As a result, if there is a solution to a.csp then we know there is at less one deployment of the next cell is dangerous, if there is a solution to b.csp then we know there is at less one deployment of the next cell is safe.

So, we only need to restrict the domain of the next cell to be {“pit”, “wumpus”} for a.csp and restrict the domain of the next cell to be {“safe”} for b.csp. In my approach, this is done by adding a unary constraint to it.

2 Experiment

☹ not enough time…. sorry