

Q1

Move - Preconditions

Agent need to be somewhere = $\boxed{\text{AgentAt}}$

Agent can't teleport, so it need a neighbouring cell = $\boxed{\text{Neighbour}}$

The cell the Agent moves to has to be free = $\boxed{\text{Free}}$

Steps

Remove agent from current cell $\boxed{\neg \text{AgentAt}}$

Move to new cell $\boxed{\text{AgentAt}}$. The cell the agent came from is now $\boxed{\text{Free}}$. And the cell the agent moved to is now $\boxed{\neg \text{Free}}$

Push - Preconditions

$\boxed{\text{AgentAt}}$ self explanatory

The box needs to be somewhere so $\boxed{\text{BoxAt}}$

I want the box to be next to the agent

$\boxed{\text{Neighbour}(\text{agtfrom}, \text{boxfrom})}$). Since the box

is moving from boxfrom to boxto , so they must

be adjacent so $\boxed{\text{Neighbour}(\text{boxfrom}, \text{boxto})}$

Q1-P2

The destination for the box must be
 $\boxed{\text{Free}}$

steps

Agent goes from current cell to where the
box is $\boxed{\neg \text{AgentAt}}$ \rightarrow $\boxed{\text{AgentAt}}$

Box leaves it's cell and goes to where
it's pushed to $\boxed{\neg \text{BoxAt}}$ \rightarrow $\boxed{\text{BoxAt}}$

The cell the Agent came from is now
 $\boxed{\text{Free}}$ And the cell the box went to is
 $\boxed{\neg \text{Free}}$

Pull

Very similar, but since its pull
it end up where the agent was

~~Q1-P2~~ ~~PushAt~~
~~It just worked that together~~

Q2

Init

Agent [L3], Box [L4], Free [L1, L2]

↓ Move

Agent [L2], Box [L4], Free [L1, L3]

↓ Pull

Agent [L3], Box [L2], Free [L1, L4]

↓ Push

Agent [L2], Box [L1], Free [L3, L4]

Q3

s₀

Agent [L3], Box [L4]

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Only legal move here is moving

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the agent to L2, so only one child

↓

s₁

Agent [L2], Box [L4]

Moving back is an option, but it will
just be going back to initial state
so it will be pruned by IW(1).

But we can move Agent to L1,
so we get a child state s₂

The agent can also pull box from
L4 to L2 resulting in the agent
going back to L3. This is also a child s₃

Q3P2

S₁

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S₂. Agent[L1], Box[L4]

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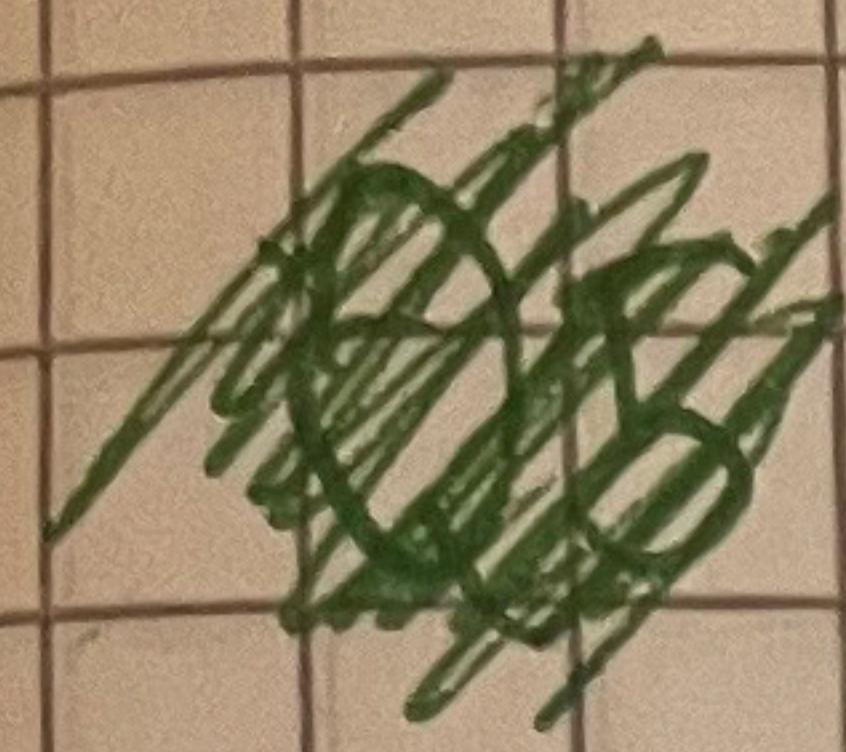
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Q4P2

and the box.



Q5

There are two types of conflict
cell & Box conflicts.

Cell Conflicts happen when two agents
try to place different objects
into the same cell at once

Box Conflicts happen when both agents
try to move the same box in one
step. Neither of the involve

p vs. $\neg p$

Instead the domain rules say you
cannot have two objects in the
same cell or push the same box
from two directions at the same time

Because of that none of these conflicts
are revealed by STRIPS