University of St.Gallen
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WAS Exercise 5

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Tasks 1 - 3

Command prompt for windows:

```
gradlew task1 | task2 | task3dryrun
```

Task 4

Question 1

The organizing plan should fail in this case as the agent does not 'perceive' any other agent's actions that might disrupt its blocks-world environment. The agent in question only perceives the environment before the first step, so while unstacking Block C from Block A, the agent does not recognize any changes regarding Block B. It tries to pick up Block B from the position that it 'remembers' B to be at and fails as it won't find Block B there anymore. A solution to this problem would be that the agent needs to 'perceive' the environment before every (unstacking / picking up) action step (I guess for the putting down action it is less important to perceive the rest of the environment, unless there's limited space on the table). Then, it will be informed on position changes of a specific Block and can adjust its plan to move to the new position.

Question 2

I can imagine that in this scenario there will be a kind of win-fail situation. What I think would happen is that if another agent unstacks Block B from Block C and moves it to the table for example, our first agent will still have the 'perceived state' that Block B is stacked on Block C at the specific position (as discussed in Question 1) and will try to stack Block A on Block B (to be exact to the position it believes Block B to be). It fails in that sense that the Block A will not end up being stacked on Block B, however there's a kind of win as it will be stacked on Block C instead (it will fall into B's position instead). So the plan itself doesn't fail in execution, but the goals will not be achieved. And now the question is if the agent can realize which further steps it needs to take to realize its goal nonetheless (unstacking A from C, stacking B back on C and then restacking A on B), which I believe in this program won't work.

Question 3

As we know from the lecture a proactive agent pursues goals while a reactive agent reacts to environmental changes. So taking the previous answers into consideration it becomes quite clear that we're dealing with a proactive agent here. If the agent would be enhanced with the suggested solution in Question 1, then it would become a reactive agent instead as it perceives and reacts to the environment changes before executing an action.