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Übungsblatt Nr. 1

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Aufgabe 1

1.

False. With the rigth performance measures (general: win chess and win go), the RA should be able to master go and chess at the same time.

2.

True. The RA could have gathered more information about the enviroment in previous timesteps which caused a different behaviour although same enviromental conditions.

3.

False. To be certainly deterministic, the agent function would have to be deterministic, which is not the case. The same percept sequence could be mapped to a different output because of e.g. the learning element of an RA.

4.

False. Rationality has nothing to do with the sucess rate of the agent. Rationality is about how the agent behaves.

5.

False. If the agent's goal is to loose with performance measures accordingly, the agent would still be rational.

Aufgabe 2

1.

fully observable, the agent can precieve the whole assignment
deterministic, if the agent takes the action to solve a task, he knows how many tasks are left
static, the assignment won't change while solving
discrete, limited numbers of tasks in one assignment
number of agents: 2

2.

fully observable, the agent can precieve the whole chess board
strategic, environment depends on the oponent
dynamic, the chess board changes while playing
discrete, limited numbers of actions (chess rules)
number of agents: 2

3.

partly observable, the agent can precieve the field depending where he is locaed
stochastic, because of the ball
dynamic, the ball and other players are moving
continuous, state of the field and percepts/actions are unlimited
number of agents: 22

4.

fully observable, the agent can perceive the whole pot with eggs
deterministic, if the RA will switch the stove, the stove will get hot/cold
dynamic, water will start to boil, eggs will changes consistency
continuous, turn stove on/off is deterministic, but the egg's consistency moves continuously from fluid to hard
number of agents: 1

Aufgabe 3

1.

No, the agent function itself will not change, because is independent from the speed of the machine. The behavior of the agent however might change because they perceive and act twice as often when running on double speed.

2.

Goal-Based. It needs the goal of reaching B and it needs to keep track of the environment and act accordingly. Not Model-Based Reflex because it needs to act and not only react to the environment. Not utility based because the goal of reaching B can either be accomplished or not. There can not be a meaningful utility function.

3.

Akinator - Guessing a famous person based on yes/no questions. Based on a internal state the agent is asking questions about the famous person and, at the end, showing the result based on the history of question/answers.