Assignment 1: Artificial Intelligence
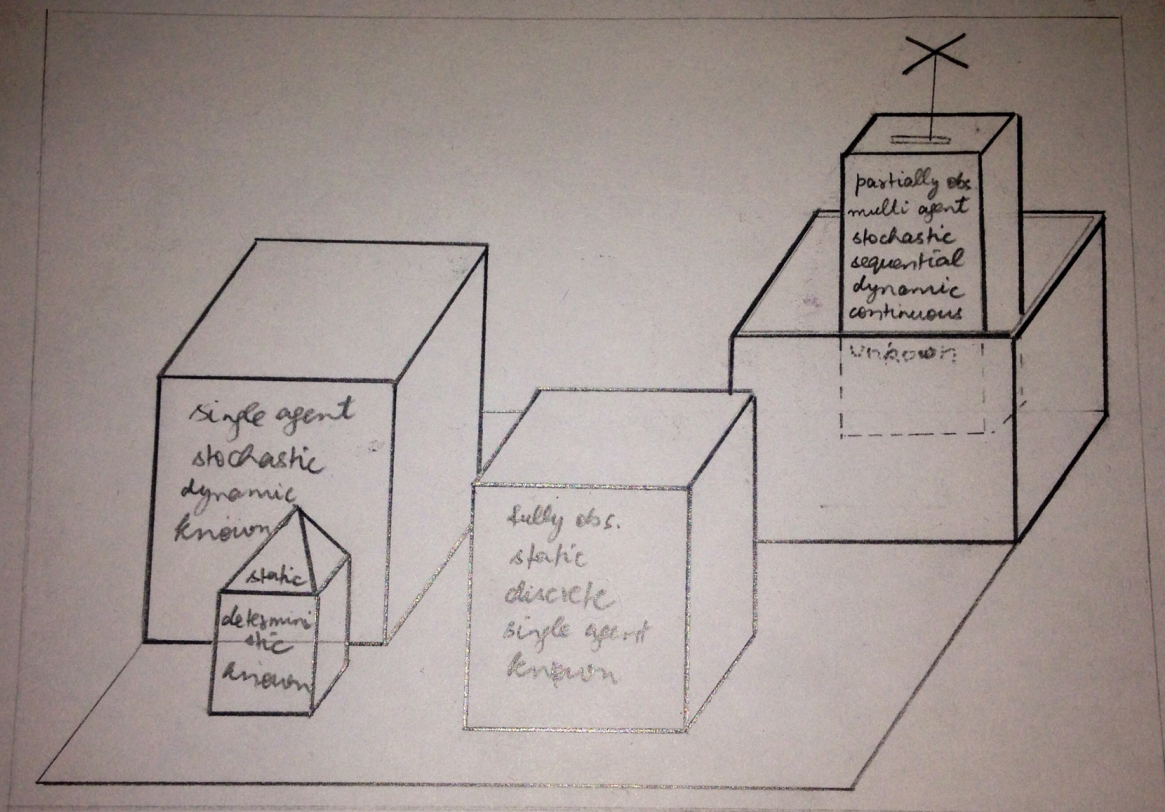
Shouvik Sachdeva
11693

January 18, 2014

Table 1: Labeling tasks on the basis of their nature

Task Environment	Observable	Agent	Deterministic/ Stochastic	Episodic/ Sequential	Static/ Dynamic	Discrete/ Continuous
Playing soccer	Fully	Multi	Stochastic	Sequential	Dynamic	Continuous
Brushing your teeth	Fully	Multi	Deterministic	Sequential	Static	Continuous
Playing a tennis match	Fully	Multi	Stochastic	Sequential	Dynamic	Continuous
Practicing tennis against wall	Fully	Single	Deterministic	Sequential	Static	Continuous
Deciding item for lunch	Fully	Single	Deterministic	Episodic	Static	Discrete

The following paragraph explains the reasons for labeling practicing against a tennis wall as fully observable, single agent, deterministic, episodic, static, and continuous. The sensors of the agent can give it access to the complete state of the environment, hence it is fully observable. Since there is only one agent(player) involved, it is single agent. The next state of the environment is completely determined by the choice that the agent takes and the current state of the environment, hence the environment is deterministic. The task is sequential because each action(hitting the ball) affects the next decision. The environment is static as the only change in the environment is caused by the agent and does not change on its own. The task is continuous as the agent(player) has infinite number of possibilities for hitting the ball.

Figure 1: Cartoon related to AI