**AI Tute 1 Week 2**

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Game spec for the assignment will be released later today

Project part A spec should start soon too

**Questions:**

**1.1)**

**1.2)**

* Depends on the definition of intelligence
* Does intelligence imply emergent behaviours
* “The ability to acquire and apply knowledge and skills.”
* Search engines show signs of intelligence

**1.3)**

* Humans are intelligent and are animals
* Animals are implicitly intelligent to some degree
* Questions are framed very similarly

**1.4)**

* Observability:
  + Observable:
    - If you are an agent acting in the environment, you have all the information accessible to you
    - Can you see everything that is relevant for to you do your job
  + Unobservable:
    - Do not have any information available
    - Rare to be able to solve a problem without seeing any of the environment
  + Partially Observable:
    - Can see part of the environment, part of the necessary information
* Deterministic:
  + About predictability of the outcomes of your actions
  + Will always produce the same output, with the underlying machine always passing through the same sequence of states.
* Stochastic
  + Having a random probability distribution or pattern that may be analsyed statistically predicted precisely
  + A stochastic process is a probabilistic (non-deterministic) system that evolves with time via random changes to a collection of variables
* Sequential
  + Each step is influenced by the previous step
  + Soccer is definitely sequential
* Episodic
  + Each step is independent of the previous step
  + Future states are not affected by current states
* Discrete
  + Information is received is in a particular position, you don't care about the precision, just need to know which area it is located in
  + Countable number of states for the input to be
* Continuous
  + Anything in the real world where you measure real times in order to measure your environment
    - Force, time, distance etc.
  + If any input is continuous, the whole environment is continuous
* Static
  + Fixed
* Semi-Static
* Dynamic
  + Capable of action and change
* Playing soccer
  + Partially observable
    - Cannot see behind you
    - Cannot track all the players simultaneously
    - Can’t observe what the opposition are thinking, tactics etc.
    - Have to go to extreme lengths to achieve full information
  + Stochastic
    - Don't know where the ball is going to go
    - Wind might be blowing around
  + Sequential
  + Static

**1.5)**