

CS378
Autonomous Multiagent Systems
Spring 2004

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Week 2b: Thursday, January 29th

Good Afternoon, Colleagues

Are there any questions?

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- Will there be a definition? Does it matter?

Programming Assignment 2

- How did it go?
- Do we need a C tutorial?
- (1 more in C, then C++)

Logistics

- Next programming assignment: communication

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- Discussion list: Thomas, Ben

Logistics

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- Discussion list: Thomas, Ben
- Littman talk

Class Discussion

Aashish Parekh on the future of Agent Intelligence

Environments

Environment \implies sensations, actions

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- fully observable vs. partially observable (accessible)
- deterministic vs. non-deterministic
- episodic vs. non-episodic
- static vs. dynamic
- discrete vs. continuous
- single-agent vs. multiagent

Your Agent Examples



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Other: National government (foreign relations)

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- $\mathcal{P} = S, \text{see}(s) = s$
- $T : S \times A \mapsto S$ (T unknown to you)
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Discrete? Accessible? Deterministic? Static? Episodic?

The Decision



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- multiagent reasoning?
- learning?

Standard vs. State-based Agents

It is worth observing that state-based agents as defined here are in fact no more powerful than the standard agents we introduced earlier. In fact, they are *identical* in their expressive power.

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- Standard agent: $action : \mathcal{S}^* \mapsto \mathcal{A}$

Reactive Agents

- $action : \mathcal{P} \mapsto \mathcal{A}$
- Decision based entirely on the present

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Reactive agents for today's assignment task?

Agents and Objects

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- Autonomy
- Flexibility
- Own thread of control