Cooperative Strategies in Multi-Agent Systems

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Outline

The Problem

The Mechanism

The Aims and Objectives

The Implementation

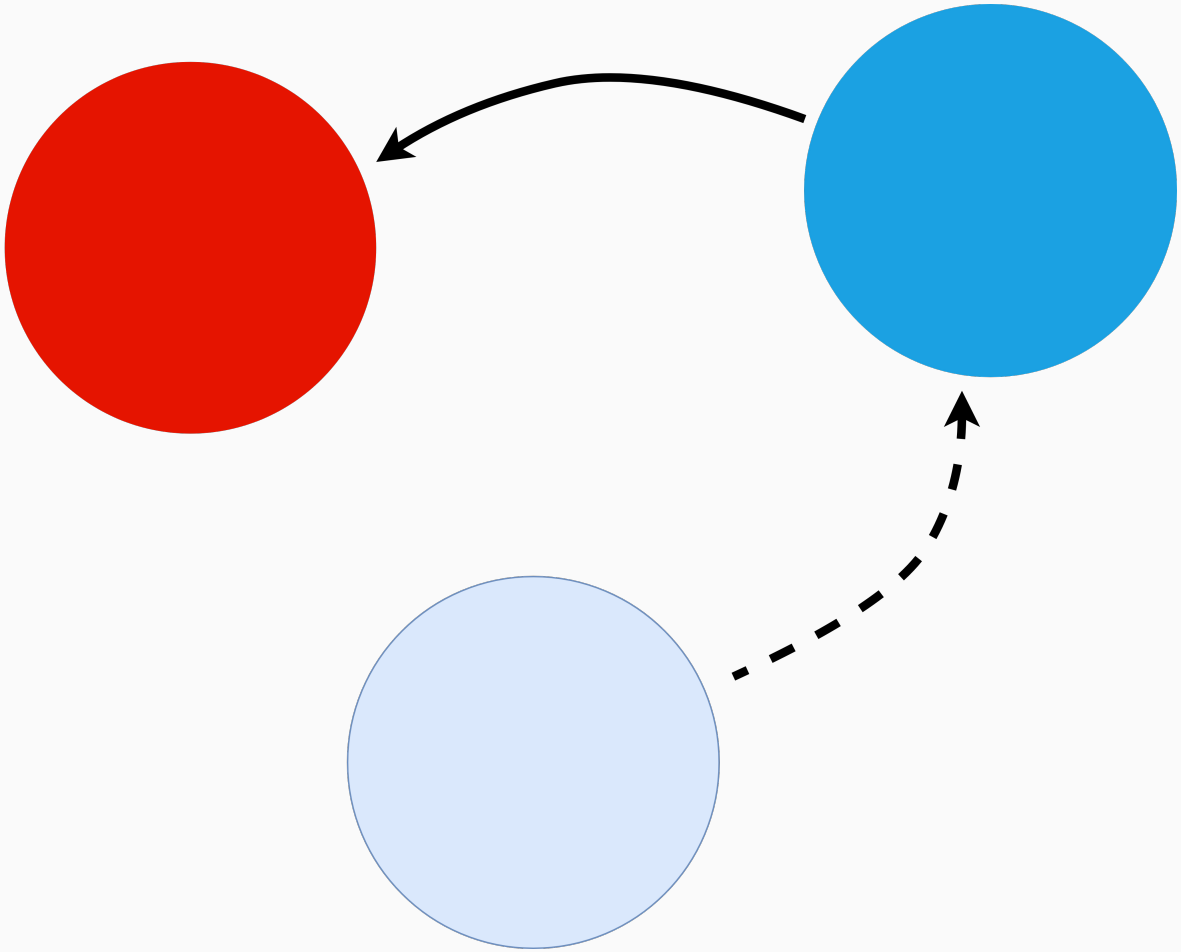
The Future

The Problem

"Survival of the fittest."

- Herbert Spencer in The principles of biology

The Mechanism

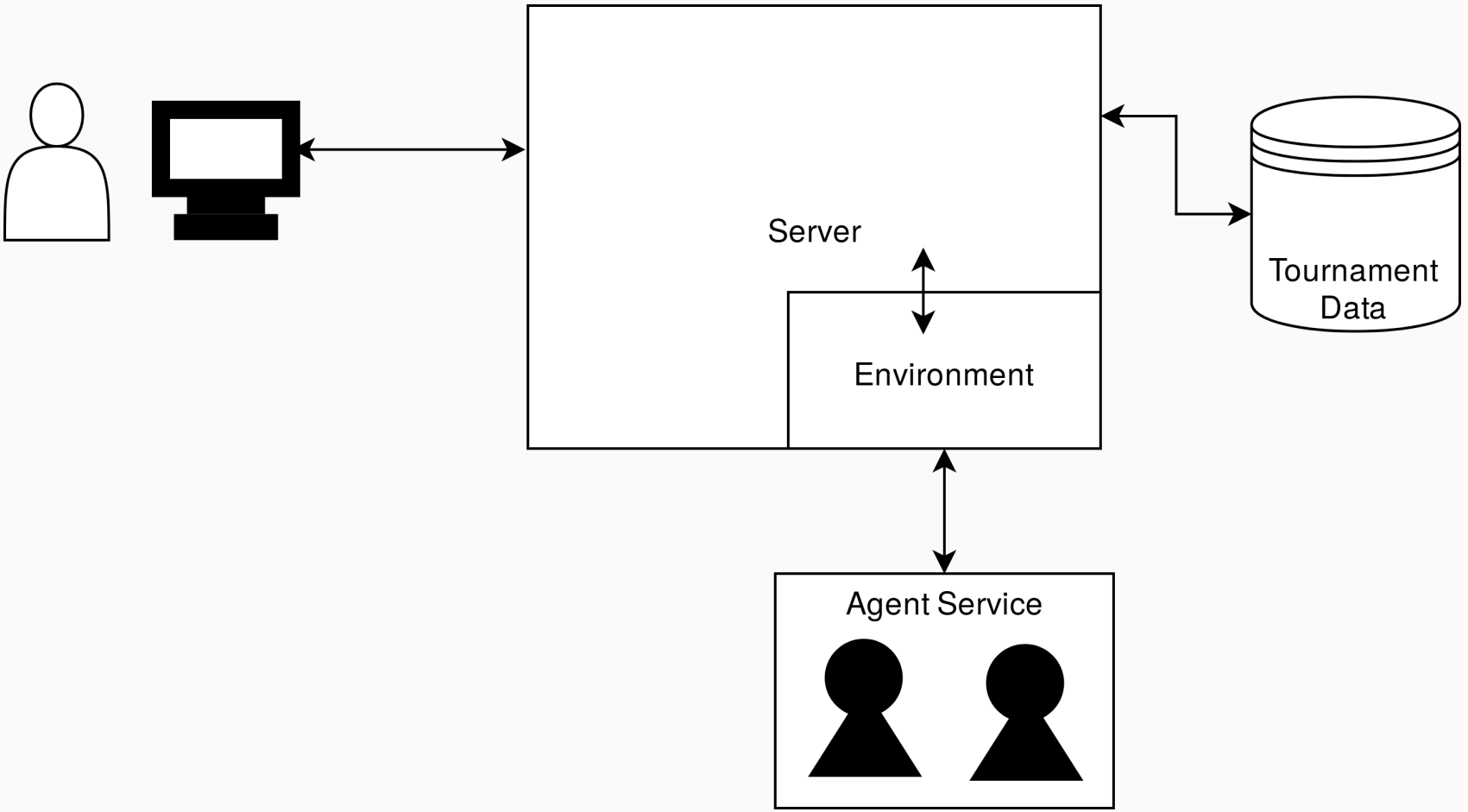


[0]Taken from Nowak and Sigmund 1998 [1]

The Aims and Objectives

- Implement a multi-agent system to run a model of indirect reciprocity
- Explore my model and the mechanism of indirect reciprocity's relevance to multi-agent systems
- Examine the success of different strategies and trust models for agents in the system
- Explore how social ability can affect the evolution of cooperation in a system

The Implementation



The Future

- Improving the environment class structure and testing
- Post-tournament analysis
- Front-end for an indirect reciprocity game
- Expanding the API
- Developing more agent strategies
- Improving agent proactivity
- Making the web application design fit for education (enhanced GUI + content)
- Development of a learning agent

Bibliography

Martin A. Nowak and Karl Sigmund.
Evolution of indirect reciprocity by image scoring.
Nature, 393:573–577, 1998.