

A Multi-Agent Architecture for Peer Help in a University Course

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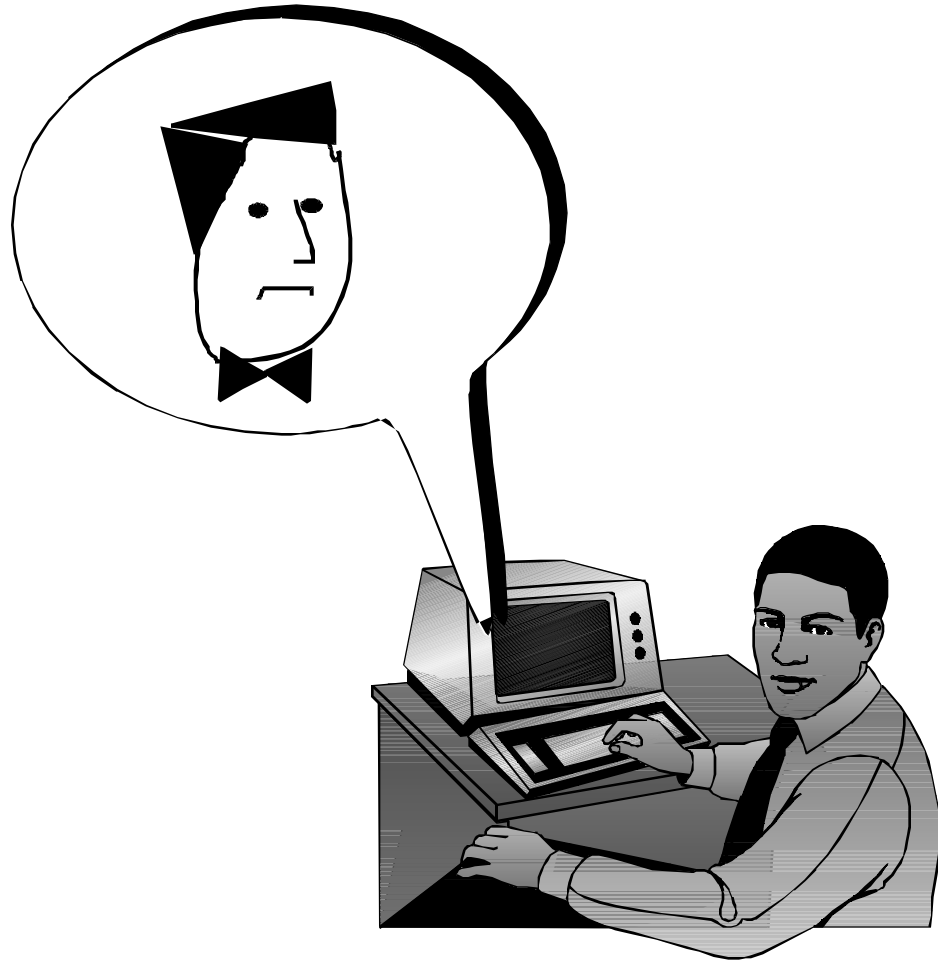
The I-Help Project

- Supporting peer help in University teaching
- Selection of a peer helper based on modeling the students and analysis of the help request
- Large scale experiment --> database bottleneck

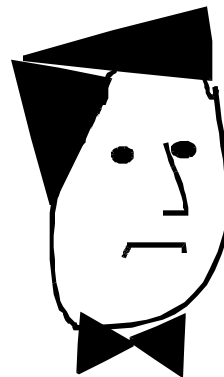
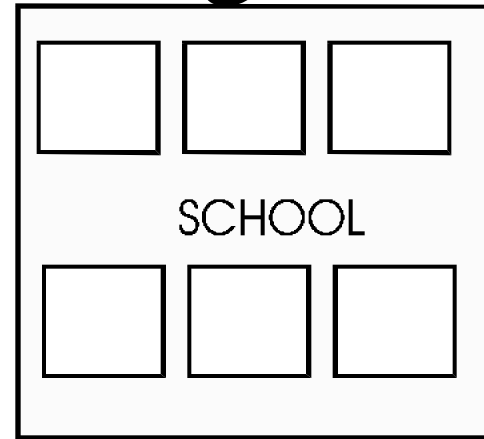
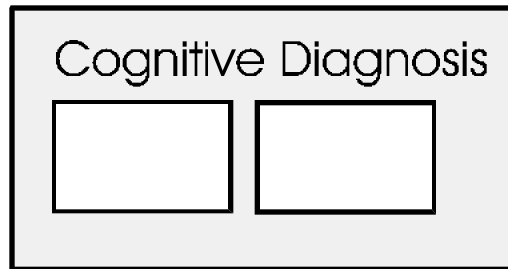
Multi-Agent Architecture

- Reflects the distributed environment
- Ease of implementation
- Allows treating human help and electronic help in a similar way --> “help resources”
- Provides robustness
- JAVA (platform independence) and JDBC
- Provides a new and useful metaphor
- Opens new research avenues

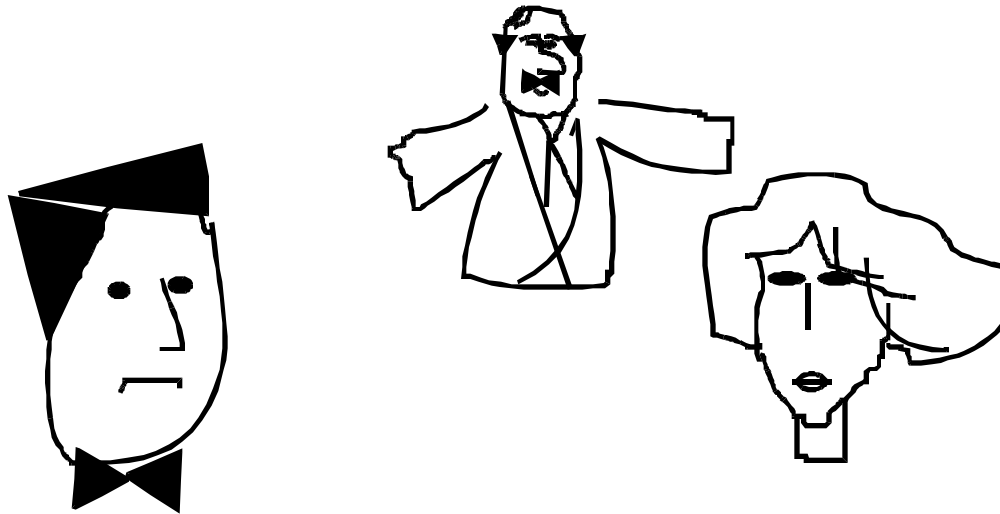
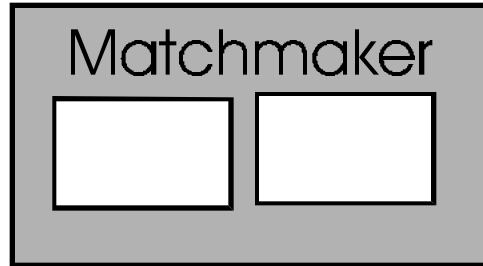
The personal agent



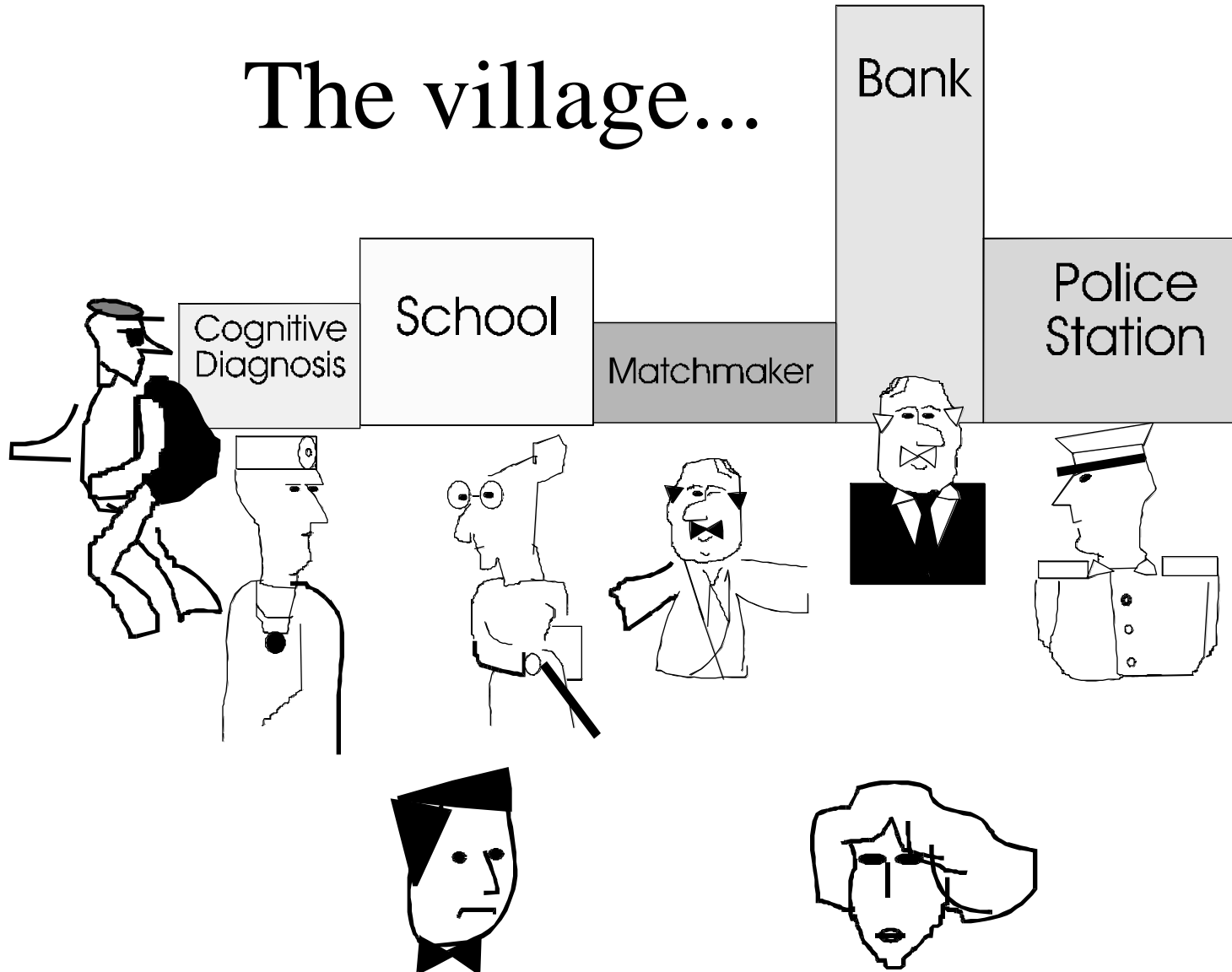
The application agents



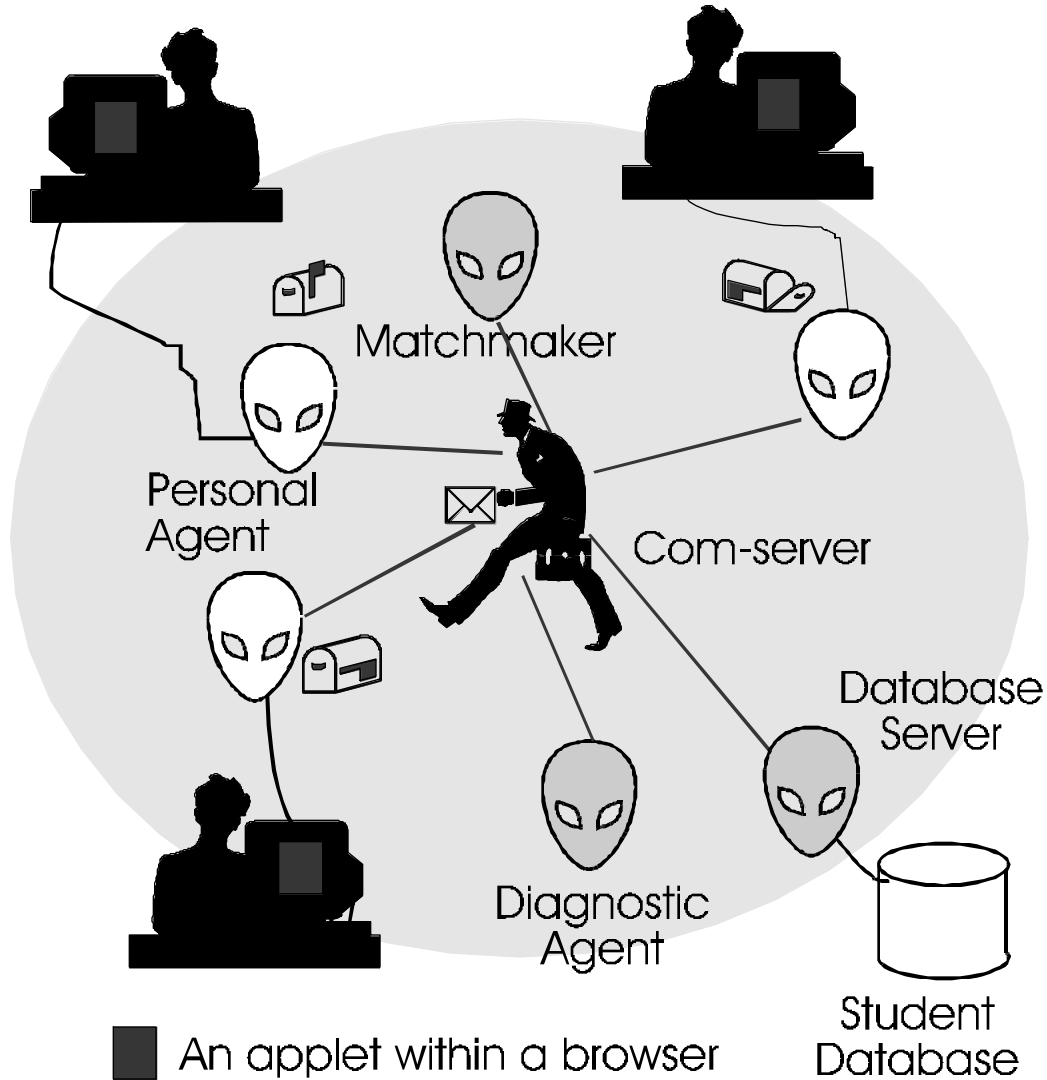
More application agents...



The village...



Implementation



Agent Anatomy

Java threads

- message processing thread -- communication
- kernel thread -- state of the agent, reasoning
- work threads -- pursuing goals

Inter-agent Communication

sending messages / objects

- peer -- negotiation between two agents
- bus -- searching for a partner
- hub -- requesting a service from a list of agents

Issues

- **Resource Management:** Monitoring, Agent Migration, Decision-making in case of resource conflict,
- **Communication:** Address book
- **Protection:** Eliminating malicious agents
- **Standardization:** CORBA, Ontologies
- Modelling user goals, resources and relationships
- Reasoning about goals and resources
- Reasoning about relationships, persuasion, negotiation