

A DISTRIBUTED MULTI-AGENT AUCTIONING SYSTEM

Internet based auctions are one of the most important parts of electronic commerce systems and they have a wide range of users. A customer who wants to buy a service or product can connect to a Internet based auction house, participate in the auctions and buy the auctioned services and products. There are many online auction houses and a product can be sold from more than one auction house with more than one auction. This situation complicates the buying and selling process and may cause the user buy a product or service with a high price which he could buy it with a lower price. Therefore, a need has born for a system which connects to auction houses, participates in the auctions that are arranged in them and follows these auctions in real time.

In this work, a multi agent auctioning system structure is proposed and its implementation details are described. Agent are software programs which are able to behave autonomously and make logical decisions. If these properties are taken into account, an agent system is a suitable solution for participating in an auction and bidding in the name of a user. Agents can behave towards their goals taking into account the changes in their environments and they can change their behaviours according to these changes. They can work together or negotiate by communicating in a multi agent environment.

the system, a an agent type is defined for every role. A seller agent is defined for the role of customers who are selling a product and a buyer agent is defined for he role of customers who are buying a product. Auction house agent is defined for auction house role and auction agent is defined for auction manager role. Flexibility of the agents' behaviours is achieved by defining strategies and settings which are selected by the user.

JADE environment and library is used for creating, managing and supporting the communication of the agents in the implementation of the system. JADE environment and library supports these operations by providing various tools and libraries. JADE is a multi agent system development environment and library which supports the standards defined by FIPA, which is the organization that defines the standards for multi agent systems. It provides a flexible and extensible structure for agent communication and controlling behaviours of agents.