DESIGN AND IMPLEMENTATION OF E-STOCK MARKET USING SECURE AGENT SYSTEM

SUMMARY

The Internet is growing exponentially; and number of users and number of applications are growing respectively. Like other applications, electronic trading applications are affected from this trend, quality of available applications are improving and new applications are created. Virtual stock markets are one of these e-trading applications which are getting more popular in recent years. These applications provide a risk-free environment for investors, so they buy and sell securites without taking risk and they gain experience about the trading strategies. Like other e-trading applications running over Internet, virtual stock market needs data security, performance and scalability. Agent technology that gets attention from IT world, suggests solutions for e-trading application's needs.

Mobile agent systems consist of entities called agents. These agents are able to communicate with each other, and work together to complete a common goal. Mobility provided to agents allow them to run on remote hosts, so that the network load is lessened and performance is improved. Mobile agent systems have a wide application area. Artificial stock markets, electronic marketplaces and online bidding systems are examples of e-trade applications which are implemented by agent systems.

In this work, virtual stock market is implemented by a secure and mobile agent system. SECMAP (Secure Mobile Agent Platform) is used as the secure mobile agent platform. SECMAP is worth being used not only for the security features it presents for agents and hosts, but also for its very flexible and powerful agent programming interface. It will be realistic to model a stock market as a distributed system.

Consequently, electronic stock market system is implemented as a distributed system. Agents represent the actors and elements that constitute the stock market, which have the related responsibilities. Security, privacy and atomicity properties, which are identified as either required or desirable in e-commerce systems are implemeted in our system. As a result, a different approach that takes advantage of agent systems is used for electronic stock market.