Department of Electrical and Computer Engineering
Concordia University

Communication Networks and Protocols - COEN 445
Fall 2013

Project: Auction System

1. Introduction

The project consists of designing and implementing in, Java, C++, C# or C, an Auction System (AS). The description of the protocol to implement is given in Section 2 while the requirements are stated in Section 3.

2. Auction System Protocol Description

The Auction System (AS) consists of several clients/users and a server communicating through the Internet, using UDP (see Fig. 1.). The AS allows for the clients to register with the Auction server. Only registered clients are allowed to offer items for auction and bid. A registered client can advertise many items for sale at a time. Auctions for an item are open during 5 minutes after its advertising and the broadcasting of the information to all registered clients. An item is sold to the highest bid at the end of the period of 5 minutes. For every item, the AS keeps informing the clients about the current highest bid. A client can bid as many times as he wishes for an item on auction.

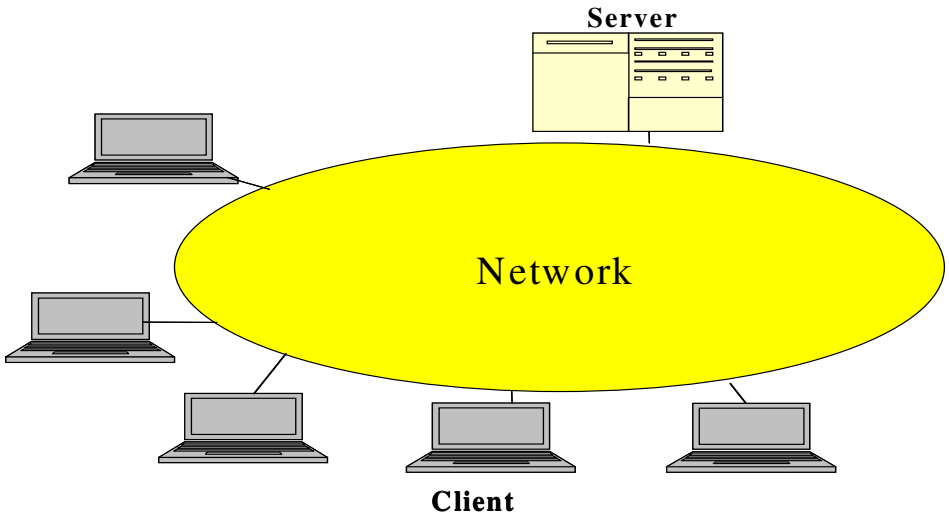

Fig. 1. Overall System

2.1. Registering with the AS

A client has a unique Name. In order to receive information, offer items for auction, or bid, it has to register with the server. The server has to keep this information. A client can always try to leave the Auction System. However, it can be denied deregistration if i is currently offering an item for auction or active in bidding for at least one item (currently leading with the highest bid for at least one item)

2.2. Offering items for auction

Every registered user can offer items for sale.

2.3 Bidding for items

A client can bid on any item being currently offered and can submit as many items as it wishes. To keep the clients informed on every item, any change in the current highest bid is sent to all the registered clients. When the bidding period of 5 minutes is over, the server informs the winning client. If there is more than one client with the highest bid, the first bid to reach the server wins. The server also informs the client who is selling the item about the winner. When an item has not attracted a single valid bid, the server restarts the bidding process for another period of 5 minutes. This can be repeated until one client makes a winning bid.

3. Requirements

- Project should be done in groups of 2 students. You should send, by September 26th, 2013, your group list including student names, ID numbers and **ECE** email addresses to glitho@ece.concordia.ca.
- Each team should select and motivate the technologies it uses in the project (e.g. socket programming, web server, chat server). Open source and freeware are allowed. The set of messages to use (if socket programming is selected) is provided in an annex.
- The expected output consists of:
    - A technical report (max: 10 pages). The contribution of each member of the group should be explicitly stated in the report.
    - A powerpoint presentation (5 minutes) to introduce your demo
    - A live demo
- Every student should submit a signed Expectation of Originality Form, which you can download from:

http://www.encs.concordia.ca/scs/Forms/expectations.pdf.