Department of Electrical and Computer Engineering
Concordia University

Communication Networks and Protocols - COEN 445
Fall 2011

Project: Auction System

Annex: Set of messages (socket programming)

2.1. Registering with the AS

REGISTER	RQ#	Name	IP Address	Port#

REGISTER Message

To acknowledge this registration request and the actual registration in the file, the server responds to the client with the following message.

REGISTERED	RQ#	Name	IP Address	Port#

REGISTERED Message (positive acknowledgement to the REGISTER message)

UNREGISTERED	RQ#	Reason

UNREGISTERED (negative acknowledgement to the REGISTER message)

DEREGISTER	RQ#	Name	IP Address

DEREGISTER Message

DEREG-CONF	RQ#

DEREG-CONF Message

DEREG-DENIED	RQ#	Reason

DEREG-DENIED Message

2.2. Offering items for auction

OFFER	RQ#	Name	IP Address	Description	Minimum

OFFER Message

OFFER-CONF	RQ#	Item#	Description	Minimum

OFFER-CONF Message

NEW-ITEM	Item#	Description	Minimum

NEW-ITEM Message

2.3 Bidding for items

BID	RQ#	Item#	Amount

BID Message

HIGHEST	Item#	Amount

HIGHEST Message

WIN	Item#	Name	IP Address	Port#	Amount

WIN Message

SOLDTO	Item#	Name	IP Address	Port#	Amount

SOLDTO Message

BID-OVER	Item#	Amount

BID-OVER Message

3. Requirements

Project should be done in groups of 2 students. You should send, by September 27th, 2011, your group list including student names, ID numbers and **ECE** email addresses to khendek@ece.concordia.ca.

Design and Implement the client(s) and the server that follow the protocol aforementioned. The coding of the protocol messages is part of your design, i.e. you have to come out with the appropriate coding of the messages. You can decide to use simple text message, etc.

Clients and Server should be multi-threaded as it is generally the case for communication protocol entities.

Reporting: The server and the clients should be reporting their communications (i.e. the exchanged PDUs) using a log file or printing directly into the screen. In other words, during the demonstration, I would like to see the messages sent and received by these entities, progress and failures.

Assumptions/Error/Exception Handling
You should be aware that the description as it is does not state everything. For instance what happens if a client receives a response with a RQ# that does not correspond to any of its (pending) requests?

State and document clearly any assumption you make beyond the assumptions made by the instructors.

You should hand in a report, by Week 13, where you document clearly your assumptions, design decisions, code and experiments. You should also state clearly the contributions of every member of the group. Every student has to contribute **technically** (designing and implementing the protocol) to the project. - You also have to submit a signed Expectation of Originality Form, which you can download from:
http://www.encs.concordia.ca/scs/Forms/expectations.pdf.

A demo will be held during Week 13 of this fall term. During the demo all the members of the group should be ready to answer questions of the instructor. We will be running at least 8 clients and 1 server on different machines and tests all the messages in this protocol.

During the demo we may also go through the code and the report.

The project will be discussed further in class.

Bonuses

Bonus marks will be given to students for going beyond the requirements stated in this document. For instance designing and implementing a GUI for using this system, or using a client on a hand held device like a Smartphone… **Before you start working on such features please consult with the instructor**.