

**CmpE 473 Internet Programming**  
**Spring 2015**  
**Project 1—Due: 19/03/2015**

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(Group project) You will implement a client/server system for selling stuff through negotiation.

Consider a person who is interested in selling an item, such as a desk or a dress. She wants to log in to the system, enter information about the item she is selling and assign a desired price for the item. Any user can enter the system, search for items in the system, and then attempt to purchase the system. If a user attempts to purchase an item, she will say how much she would be willing to give for the item and start negotiating with the seller. The system will facilitate the negotiation by providing offers and counter-offers to the users. For example, Alice enters the system to sell a black dress of size 38 with the desired price of 100TL. Another user Barbara enters the system and searches for black dresses and views Alice's dress. Barbara likes the dress and wants to buy it but she is not willing to pay 100TL, so instead she offers to pay 50TL. Alice doesn't accept 50TL but brings down her own price to 90TL. Barbara, then offers 75TL for the dress. Alice doesn't accept that either but offers it for 80TL. Finally, Barbara agrees to pay 80TL and the dress is sold.

Your job is to write the necessary client and server software to realize this system. The users have access to a browser and will enter information to the system over their browser. The information will be communicated to a server that will record things in a database. The server will decide which items to show to a user based on the search query. The negotiation will be done by the human users but as the negotiation progresses information will need to be shown to users as necessary.

In the demo, you should be able to show cases where

1. A user enters information about an item and successfully adds it to the system.
2. A user searches for an item and finds the item in the system.
3. Two users carry out a negotiation and eventually agree on a price.
4. Two users carry out a negotiation but cannot agree on a price and as a result, the user chooses another item from the system.

You will give a demo of your system and hand in a detailed report as hard copy.

**All** members of the group need to be present in the demo. Be prepared to show all aspects of your program, including the different scenarios listed above. You are responsible for facilitating the demo so make sure you have the necessary software.