

Due 11th Feb, 2011

The goal of this assignment is to learn client server programming with TCP and UDP sockets. You are required to implement a server and a client for a ticket reservation system for a movie. Assume that the movie theatre has c total seats. There is a single server, but multiple clients may access the server concurrently.

The server accepts three kinds of calls from a client:

1. **reserve name count** – inputs the name of a person and assigns the number of seats equal to **count**. If the theater does not have enough seats, no seat is assigned and the command returns -1 . If a reservation has already been made under that name, then it is considered error and the command returns -2 . When the seats are assigned the command returns the list of seats assigned.
2. **search name** – returns the seat numbers assigned to him or her (returns -1 if the name is not found).
3. **delete name** – frees up the seats allocated to that person. The command returns the seat numbers that have been released (and -1 if the name is not found).
4. **getinfo** – The command returns a text description of the movie such as actors, rating, plot etc.

Note that you also have to write the client program that takes input from the user and then communicates with a server using sockets. Your program should behave correctly in presence of multiple concurrent clients.

Implement two versions of the program: one with TCP sockets and the other with the UDP sockets. Measure and compare the average response time for **reserve** and **getinfo** queries for both the programs. Assume that the text description of the movie is 5K Bytes.

The programming assignment should be done in teams of two students each. Both the team members will get identical score on the assignment. However, if you prefer to do the assignment individually, you can talk to the instructor. The assignment needs to be in Java and submitted via blackboard.