Assignment 1

Deadline: 19th august 2012, 2359 hours

This assignment is based on socket programming.

1. **N-player multiple round game:** In every round half of the players are knocked out by holding a match between every two randomly chosen players. A match between two players is conducted as follows:

   - Each player sends a randomly generated number to the other.
   - The player receiving a value higher than its own value will knock out itself.
   - Same strategy is applied in subsequent rounds too.
   - At last the one who is still in the game is declared winner.
   - If the number of players is odd in a round then that player has to play with a dummy created by computer.

2. **Calculator:** Design a basic calculator model with a server and client. Client will send an arithmetic expression to server. Server will solve the expression and send the answer back to the client. Make your server program to handle multiple clients.

3. **Multiple chat client:** Create a multiple chat client using a server client model with following features.

   - Each client should register for the first time with a unique id.
   - At a time a client can chat with only one another client.
   - Each client can chat with any other client by sending a request to it. If client is busy or rejected by other client, client is allowed to send a new request. If request is accepted, clients are allowed to chat with each other.
   - Both the client can terminate chat with each other and again allowed to send a new request.
   - Each client can ask number of available clients, id of other free clients etc. from server.
   - You can add other features if you wish.