GAM 1543

FINAL PROJECT

Objective:

Create a multi-player game

Data:

* A board will consist of 4x4 buttons.
* TCP/IP will be used in this project

**The client**

* The client application will consist of a simple .NET windows form with a thread listening for messages from the server.
* Upon connection to the server, the client will start receiving server messages.
* The Client UI will consist of :
  + **4 Buttons horizontally and 4 button vertically placed.**
  + **A List Box displaying the connected users.**

**The Server**

* The server will serve as a lobby for playing games.
* The server will consist of multiple threads for handling connections and handling data transmissions.
* The server will not have any user interaction except for displaying server activities.
* The server will host the games rules and logic.

**Rules:**

* Client Connects to Server
  + Server relays the client to a thread for communication
  + Client launches a thread for communication with server
* Client Join Game
  + Client send play information
    - PLAY command
    - IP address of the second player as data packet
  + Server joins the 2 players to the game thread
* Client quits application
  + Client send exit information
    - EXIT command
    - Empty data packet
  + Server ends the threads belonging to the client and kills the game if in process
* Client Selects a button on the Game UI coord (ex:3,2)
  + Client send button information
    - SELECT command
    - 3,2
  + Gamethread on the server broadcast the coord to the second player
    - REFRESH command
    - 3,2
  + Client receives Refresh command
    - Client reset background color on all buttons
    - Client paint button 3,2 with blue background

**Requirements**

* Client will listen on both channels using same logic as server

**Grading**

* Exception handling
* Thread synchronization
* Multi player
* All the above Rules.