TETRIS

DESIGN PATTERN

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SUMMARY

PROGRAM

Our program is a multi-players Tetris game. When the program is running two consoles open: one for a client and one for the server. The game will only launch when two players are connected to the server.

When the game is launched a Tetris game will be displayed in each of the client's consoles within five seconds.

CLIENT – SERVER RELATION

To have a good communication between the client and the server we implemented two classes and multiples threads.

Server

First, we established the local endpoint for the socket, then we created a TCP/IP socket, finally we bound the socket to the local endpoint and listened for incoming connections and we created a list for all client connection. The game only starts when the size of list of clients is bigger than one.

For the Server we used two threads:

- "listenerThread" that execute the method "DataIn": this thread allows us to listen all data that came from the client, those data are processed and according to the received message it performs different actions.
  The message can be a client who has lost in this case we close the socket, it can also be a client who removed a line, here we sent a penalty to the other clients.

- "ConnectionThread" that execute the method "DataOut": this thread monitors the connexion with the clients and send message to them, "StartGame" is sent when there is 2 clients and a number between 1 and 2 should be sent to set the type of block created by the game.

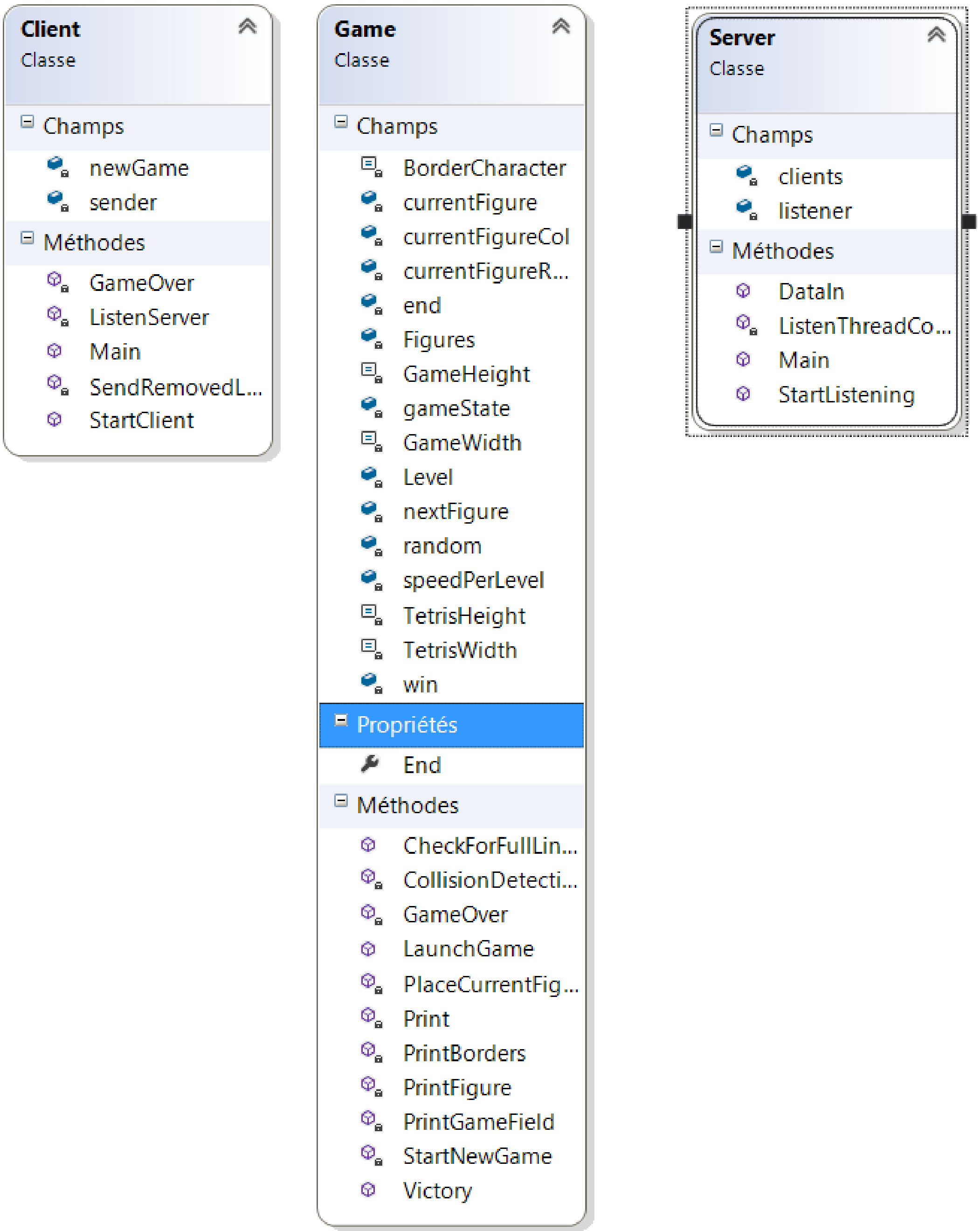
Client

For the client side we first established the remote endpoint for the socket, then created a TCP/IP socket and finally connected the socket to the remote endpoint.

We used two threads as well:

- "listenerThread" that execute the "`ListenServer`" method: this thread listens all data that came from the server an according the message different methods are executed,
  "You Win" = Stop the game and display a message
  "1" = A block of one square should be displayed in the game
  "2" = A block of four square should be displayed in the game
  "Penalty" = A penalty should be displayed in the game
- "sendThread" that execute the "SendToServer" method: this thread sends messages to the server when he removes a line in the game and when he loses the game.

OBJET DESIGN



The Server class is our server. It is used to receive and send information to the different clients.
The Client class is a player. It is used to launch the game and to send information to the server.
The Game class is our Tetris game, there is all the function to make game. It is launched from a client when server ask to.

CONCLUSION

Succeed

In conclusion for this project we succeed in making a working game in the client-side launch by the server-side, we also get a client server connection using different thread

Fail

But we couldn't make the server act as the producer of block and add a penalty line to the other players when a client removed a line. Because except the StartGame message our client did not receive the message sent by the server and conversely