



TK1: Distributed Systems - Programming & Algorithms

1st Programming Exercise Submission Date: 18.11.2014

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By handing in a solution you confirm that you are the exclusive author(s) of all the materials. Additional information can be found here: <https://www.informatik.tu-darmstadt.de/de/sonstiges/plagiarismus/>

Shared Fly Hunting Game via Java RMI (20 P.)

Implement a game as a Client/Server application based on **Java RMI**. The game is about hunting a fly with a fly flap. On the GUI a fly randomly appears. By pressing the mouse on top of the fly, the fly was "hunted". The player who caught the fly first gets a point. Once the fly was hunted it re-appears at a different position. All players see the same fly at the same position. Also, all players see the current points of all other players.

Requirements:

- The GUI for the client should be Swing based.
 - o The GUI shows the fly
 - o The GUI shows a list of all players with their current points scored
 - o The GUI notifies the player when a fly was hunted
 - o Use the Model-View-Controller pattern e.g. changes to window size should not delete the model etc.

Server:

- The server sends the current position of the fly to all clients
- The server distributes all changes to all players (points, fly hunted, participants)

Client:

- The client sends all changes (one point gained, fly hunted, etc.) to the server.
- The client should load the stubs from the server codebase (file-url should suffice)

Please keep the following in mind:

- Please generate a working Ant script starting two clients and a server.

The interface for client and server could (but not has to) look like this:

IGameServer:

```
void login(String playerName, IGameClient client)
void logout(String playerName)
void huntFly(String playerName)
```

IGameClient:

```
void receiveFlyHunted(String playerName, int newPoints)
void receiveFlyPosition(int x, int y)
```

Important:

Project of a different group submitted (Plagiarism) -> 0P for both groups