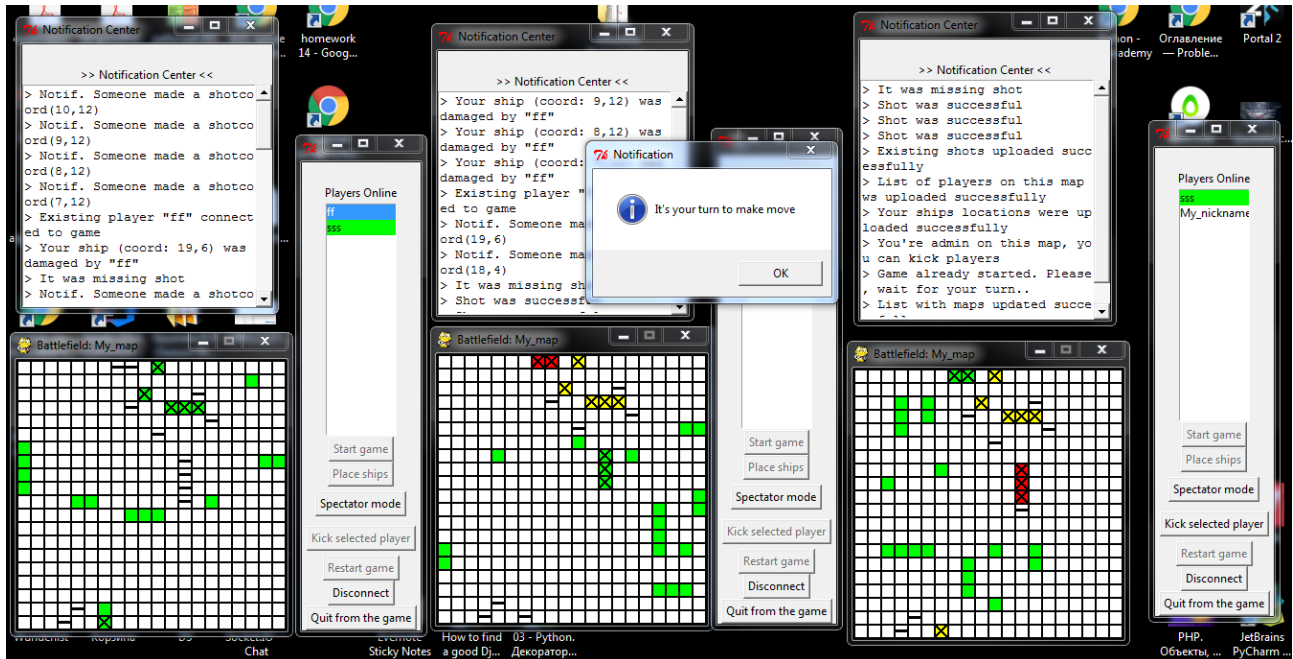# Battleship Game Manual

General view of the game:

Structure of the project:

On the *client side* should be following files:

- client.py
- common.py
- gui.py
- config.ini (will be created automatically, when user registered his nickname on server)

On the *server side* should be following files:

- server.py
- models.py
- common.py
- gui.py
- ship_placement.py

Installation process.

For running the game, you should install following:

- **MySQL server** (www.dev.mysql.com/downloads/mysql/)
- **Erlang** (www.erlang.org/download.html)
- **RabbitMQ** (www.rabbitmq.com/download.html)
- **Redis**:
  - For *nix systems: https://redis.io/download
  - For windows (need to have MS Visual Studio to make *.exe files) download the files from this repository www.github.com/MSOpenTech/redis and follow the instructions here www.github.com/MSOpenTech/redis#how-to-build-redis-using-visual-studio

    or as alternative follow this answer: www.stackoverflow.com/questions/6476945/how-do-i-run-redis-on-windows/20200022#20200022

Before start the application, you need to:

- **run MySQL Server** (username "root" and password "" (empty password)
  You also need to create database "**battleship**".
  Then upload database from file "***battleship.sql***" to your database "**battleship**"
- **run RabbitMQ** on localhost on standart port (15672)
  To run RabbitMQ, you need to run the command in terminal "rabbitmq-server"
- **run Redis**
  by typing in terminal command "redis-server.exe"
  (after making *.exe files, this file should be in the following folder "redis-3.0\msvs\x64\Debug\")

Additional information.

You can access RabbitMQ on:

www.localhost:15672 (default credentials: guest / guest)

Alternatively, you can use **'rabbitmqadmin'** tool to work with RabbitMQ. To work with it you need to:

• Download rabbitmqadmin from here http://localhost:15672/cli/, rename to "*.py" extenstion and run in terminal: "***Py -2 rabbitmqadmin.py***"

To print all queues type in terminal "rabbitmqctl list_queues"

To show messages in particular queue type in terminal:

"*Py -2 rabbitmqadmin get queue=queue_name*"

Game process.

Battleship game includes several windows with different functionalities:

- Choosing your nickname window
- List of available servers
- List of available maps (games) with possibility to create your own
- Window to create your own map
- Main game window with the field
- Notification center
- List of players that play on particular map (game)

Normal game session will include following steps:

- Input your nickname (if the player's running the program first time)
- Choose the server
- Join the map (game) or create new map (game). (depending on server the list of maps will be shown because list of maps shows available maps for particular server)
- If player has decided to create the game, then player can choose 3 different sizes of the field: *small, medium,* and *large* (S, M, L accordingly)
- Place your ships (server will place them randomly)
- Wait for your turn to make a shot
- If you have found enemy ship it will be marked with cross, if you missed the cell will be marked with dash
- During the game, player can go into spectator mode, in this case he/she will see all the ships located on the field, but will not be able to make shots. This action is irreversible, even later when player will reconnect to this map again, he/she will be in spectator mode.
- The player who created the game can kick players out of the game session using kick button. Also creator can "start game" and "restart game" (when game is finished)
- Player can disconnect from the game using disconnect button, in this case ships will stay on the field, so if he/she will decide to re-connect to the session, he/she

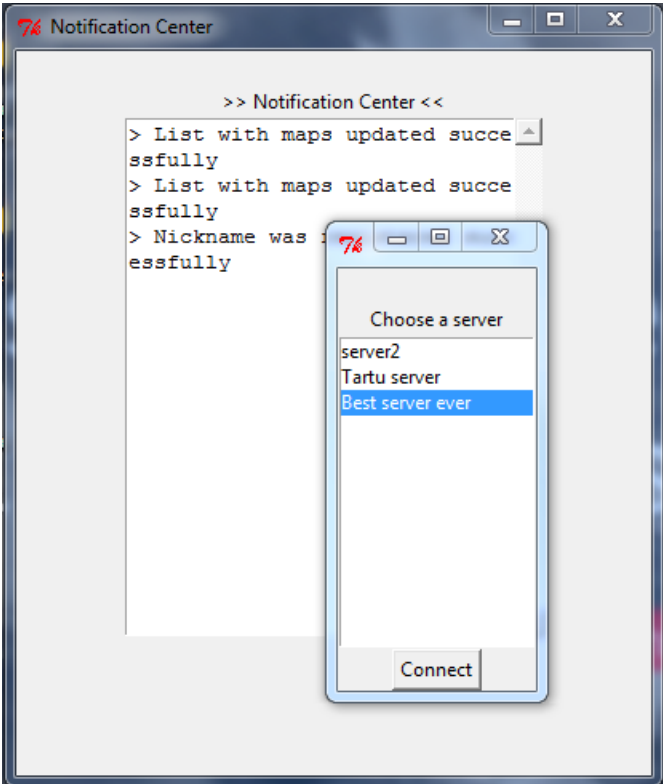will be able to continue the game. Press on cross on the top of the window will also disconnect player.

- Player can quit the game using quit button, in this case he/she will lose all the ships and will not be able to return to this map.
- When player was kicked, the window with battlefield will be closed automatically and player will be redirected to list of maps (games). He/she will not be able to join this map again.
- In case of creator of map clicked on "restart map", map will be recreated and all previous players will be joined to this map (except kicked players)
- If admin decided to quit, and there's only one player (admin him(her)self on the map), the player will be redirected to maps(games) list and current map will be deleted. If the total numbers of players is more than 2 (including admin), and admin decided to quit, new admin will be chosen automatically, and previous admin will be redirected to maps (games) list.
- Player can't create nickname, map name that already exists.
- If the map is full, player is not able to connect to this map.
- On the map (in the game) player can see who should make a shot now, this player will have a green color in players list. Disconnected players and players in the spectator mode will have gray color. When disconnected player connects, the color will change to default automatically. Kicked players are highlighted in red color.
- If someone made successful shot, only player who made a shot and player of damaged ship will receive notification about successful/damaged shot, other players will just receive notification that someone made a shot (but in the message it's not specified whether shot was successful or not).
- Players who are in spectator mode, can see everything on the map ((un)successful shots, ships locations)
- When player made shot and it was successful, shot will be marked with particular color that reflects particular player. (each player on the map has its unique color)
- Own ships on the map will always be highlighted in green color.
- In players list current player can observe who has turn now (this player highlighted in green color).
- When the player makes shot, he/she will wait for response from server and if the shot was successful current player has possibility to make shot again, otherwise next player should make a shot (current player should wait for its turn)
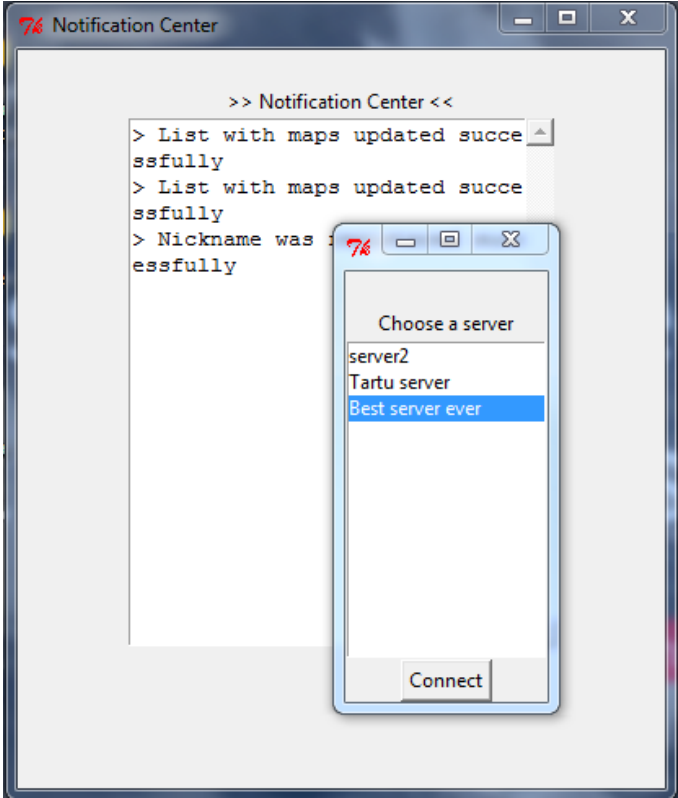
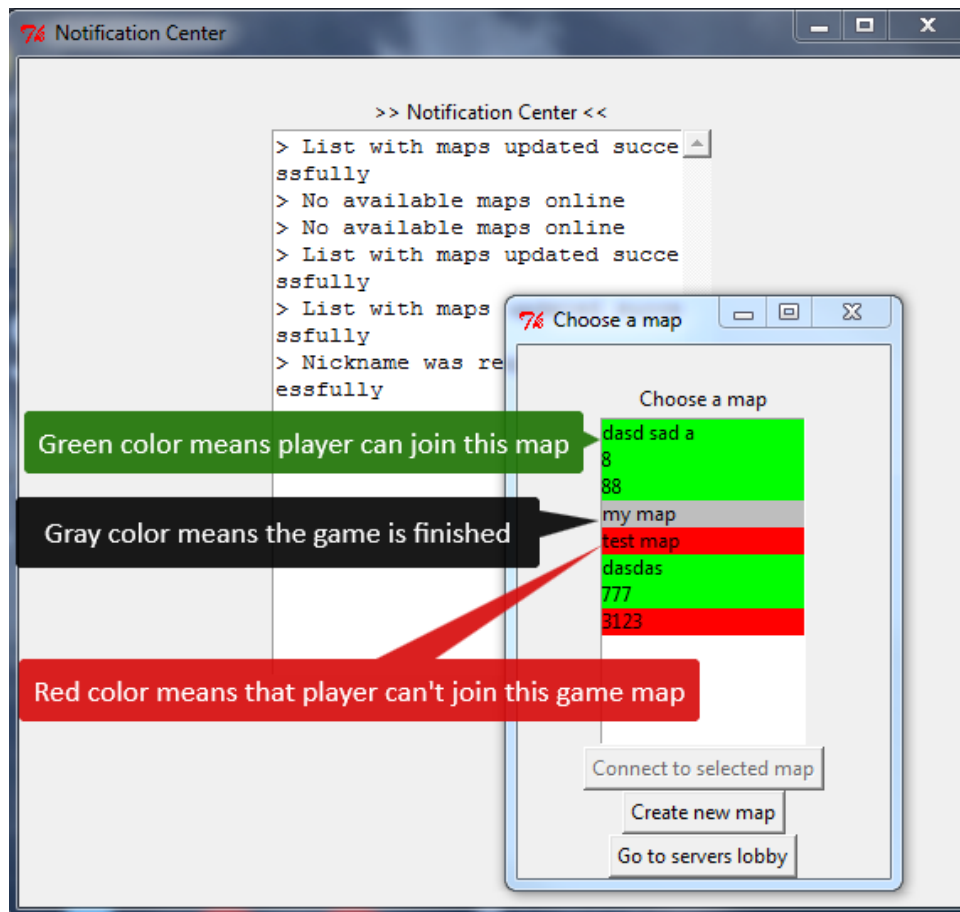# Additional screenshots of the game:

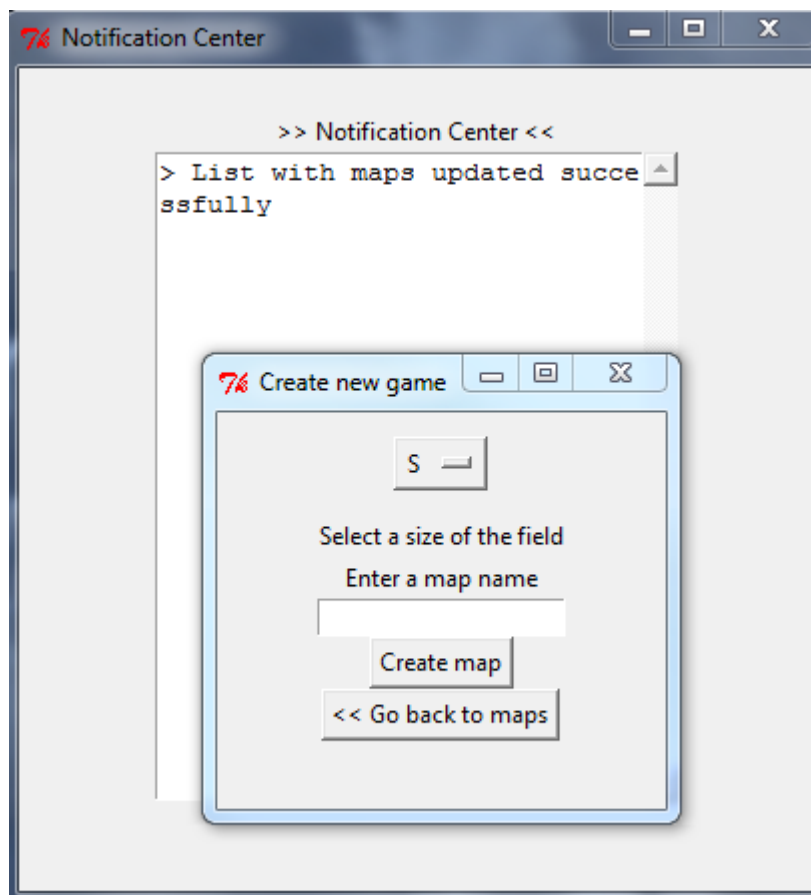## Register nickname window
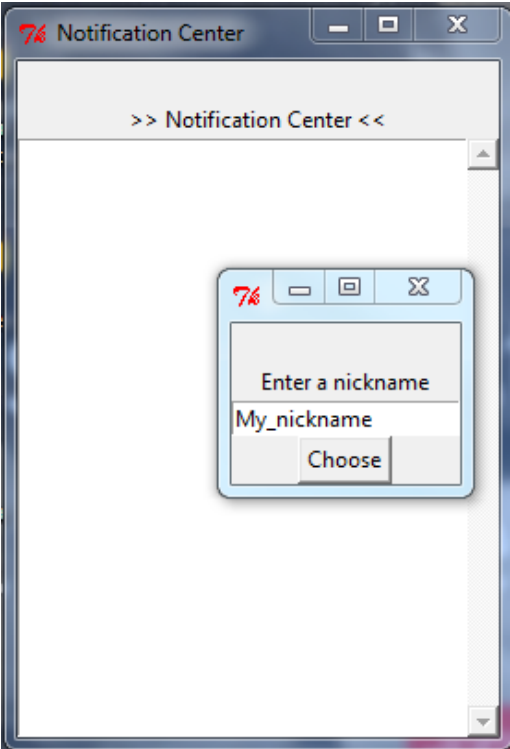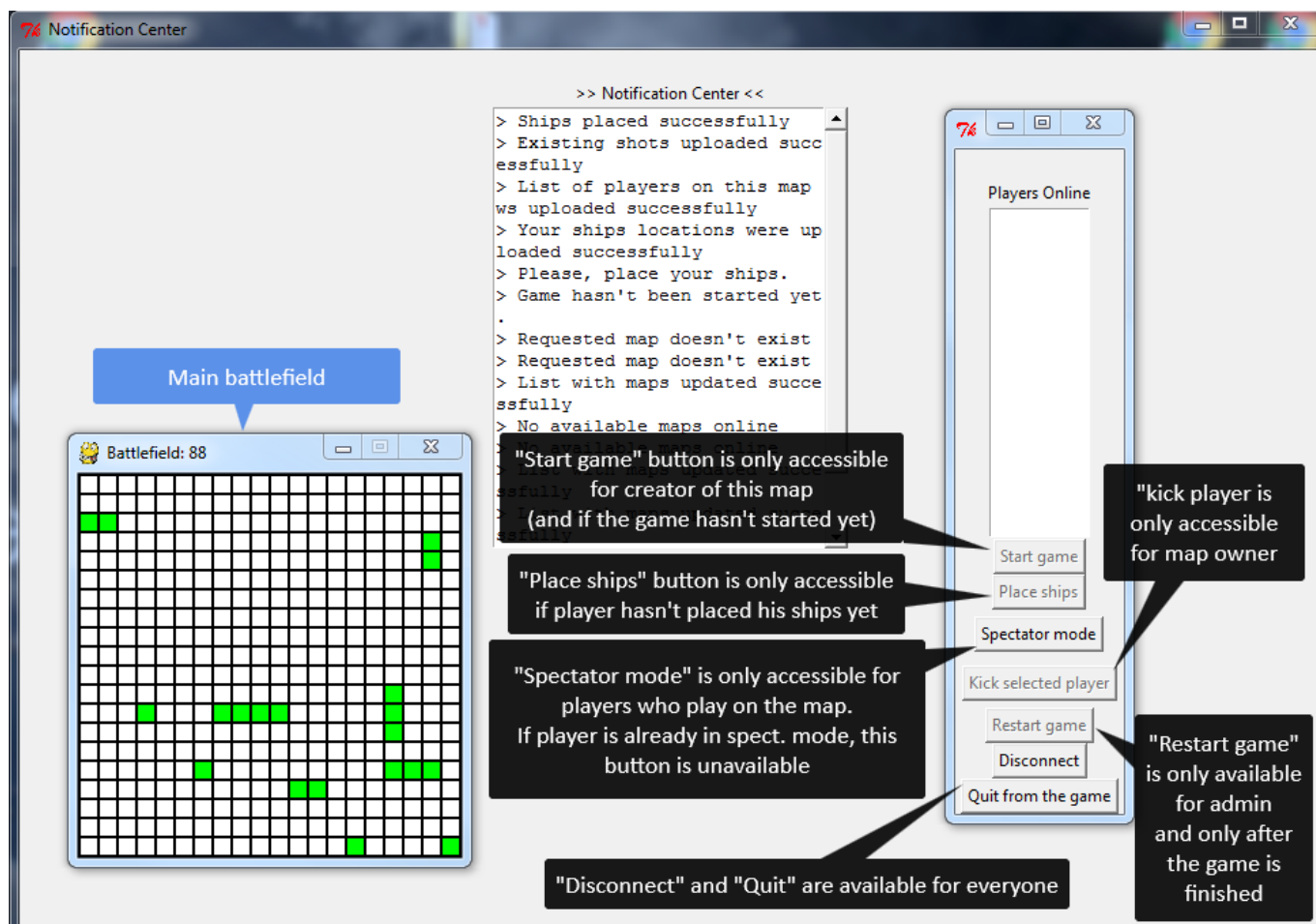

Choose server window

Choose map (game) window

Choose map window

Create new map window

Main battlefield window

"Start game" button is only accessible for creator of this map (and if the game hasn't started yet)

"Place ships" button is only accessible if player hasn't placed his ships yet

"Spectator mode" is only accessible for players who play on the map.
If player is already in spect. mode, this button is unavailable

"kick player is only accessible for map owner

"Restart game" is only available for admin and only after the game is finished

"Disconnect" and "Quit" are available for everyone

Main battlefield window with several players

When players placed their ships, admin can "Start Game".
Minimum number of players which placed ships >= 2.
After game started, all players will see the nofitication