

DS Homework 1 - Report

Dependencies: Tkinter library (part of python but sometimes not installed)

User manual explaining the User Interface and how to play the game

Arbitrarily many people can play on one machine simultaneously or on several machines.

Running the application:

- Navigate to the root of the repository
- Run `python main_server.py -f name_of_sudoku`
 - If no name is given, there will be a default sudoku
- Run `python main_client.py -g`

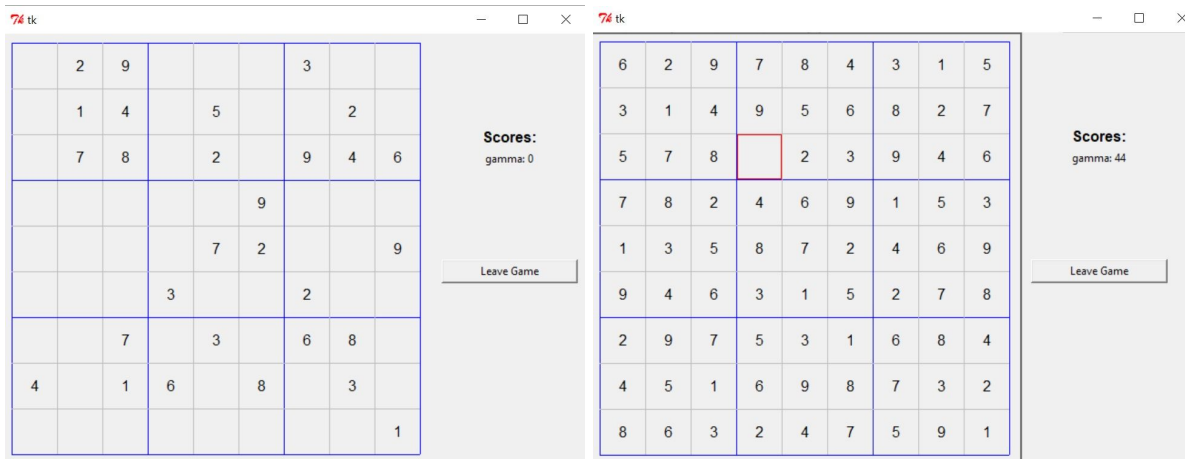
If you want to add more sudoku puzzles, do the following

- Create a sudoku puzzle as a csv file (empty fields filled with 0)
- Create another csv file with the solution to the sudoku puzzle
- Put both files in the `sudoku/puzzles` folder
- It is important that the solution has the same name, with `_solution` added to it
 - For example if the sudoku puzzle is stored in the file `sudoku1.csv` then the solution should be in the file `sudoku1_solution.csv`

To implement UI, we used standard **Tkinter GUI** library. Main things you need to know to play the game:

- Right after a **server** and **clientgui** are running, the user will see the window with a request to enter the nickname. Under this, there is a **list box** with available nicknames that player can use by **double-clicking**. If the user provides a new nickname longer than 8 alphanumeric characters or/and it has spaces, the player will receive the pop-up screen **with a warning** to meet requirements for the username, otherwise, the user will proceed to next dialogue window.
- Next Dialog window requires entering the server address. If the connection fails, a pop-up screen will show "Server not found" (in approximately 20 seconds).
- Based on server address, the player will be shown a window with empty boxes, where he/she can specify the name of a new session and a maximum number of the players. In case if the user wants to join an already existing session, in the same window there is an option to choose one from the list by **double-clicking**. In both cases, the user will wait until all required players have joined. Then the Gameplay GUI is shown.

- Now user can start to solve a Sudoku puzzle. The player can insert a number by **highlighting any cell with a cursor**. If the number is right, the cell will be filled with this number and the score will be increased by 1, otherwise, the cell will remain empty and the score will be reduced by 1.
- All players can select any cell to guess a number, that is why during a game the player`s game board will be updated if other players choose the right number.
- We used only one puzzle of medium level for our Sudoku game. To test it, use a solution provided in the image below.



- Scores of all players in the session are shown on the right side of the game board.
- The player can leave the game by clicking “Leave game” button.
- The server will inform all players with the message who is the winner of the current session. The winner is a player with the highest score once the puzzle is solved or the player who stayed alone in the session.