Users manual

To run:

With SICStus Prolog consult the file server.pl on TP3/game/plog/ and run the command "**server.**". Open your localhost server in the root directory of this project, enter TP3 and the game should be running.

Game Rules:

The board is hexagonal with 36 hexagonal cells. The border cells of the board are different than the rest. These are called void zones and player cannot place a piece directly on those zones (but they can get there due to the mechanics of the game, more on that later).

Each player has 2 zones for collecting pieces and 15 pieces (10 of his color and 5 of the opponent's color). In their turn players will place any piece that they hold on the any non-void zone. After placement, **only the nearest piece** in each of the 6 directions starting where the new piece was put will be repulsed or attracted depending on their color, like magnets. If the nearest piece is the same color as recently placed one it will be repulsed until it meets another piece or hits the edge of the board. Otherwise, it will be attracted to the cell next to the most recently place piece on the board.

If, after all changes to board have been done, there are 4 or more pieces of the same color adjacent, they will be moved to a collecting zone of the player of their color (a player can collect pieces even if its not his turn). If the piece is in a void zone it will be collected to the risk zone, if not, it will go to the bonus zone.

The game ends when there are no more pieces left to play (30 moves, 15 from each player).

The scores are calculated like this:

- Each piece in the bonus zone is worth 1 point.

- If a player has more pieces of his color on void zones, he must subtract to his score the number of pieces in the risk zone.

- In case of draw the winner is the player with less pieces on void zones.

- If there is still no winner, it is considered the winner the player that has less pieces on the risk zone.

- If the draw persists the game ends in a tie.

Game official page: https://nestorgames.com/#gauss_detail

Rulebook: https://nestorgames.com/rulebooks/GAUSS_EN.pdf

User Instructions:

To select a piece just click on it, if successful, an animation will start to confirm the selection. Only playable pieces at that point in the game will be selectable, so, for instance, if the game is on AI vs AI mode, no piece will be selectable.

After selecting the piece choose one of the non-void unoccupied cells on the board to put it in. Every change on the board will be done automatically.

Several functionalities are present both in the interface on the top right corner of the application and on the scene itself:

- The player can change game mode and AI difficulty mid-game i.e., a game of Human vs Human can be changed into Human vs Easy AI simply by pressing the button on the scene option menu or on the interface.

- Continuously undo moves until any desired point. Only works if there is at least one human controlling a player. If you are on AI vs AI just change one of the controllers, undo the move and change it back to resume. Works mid-game and after it ends.

- Pause the game while on standby.

- Play the movie of all past plays. Works mid-game and after it ends. Like the undo functionality, mid-game only works if there is at least one human playing, but it works alright either way if the game has already ended.

- Start a new game.

The following functionalities are only available on the interface:

- Change scene and the theme of game related objects on the "Theme" folder.

- Reset camera position on the "Game" folder and all other functionalities that are available on the scene option menu.

- Change active camera.

- Toggle lights