Laboratório de Aplicações com Interface Gráfica

LAIG – 3MIEIC07 – Grupo 9

3º Trabalho – User Manual

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Necessary actions to have the complete program running

○ Place the "Prolog" folder in the "reader" folder that is inside the "Source" folder.

○ Open SICStus Prolog and load the server.pl file, located in the Prolog folder.

○ Using Mongoose (or another embedded web server, such as Visual Studio Code's Live Server extension), open the "reader" folder inside the "Source" folder.

The complete program should now be running on your preferred web browser.

Short summary of the game's main rules

Cannon is an abstract war game where each player first places a city on the back row, then pieces move trying to capture the opposing city or shoot it with a cannon, which is a special arrangement of three pieces in a row. It is played on a 10x10 checkered board with black and white pieces.
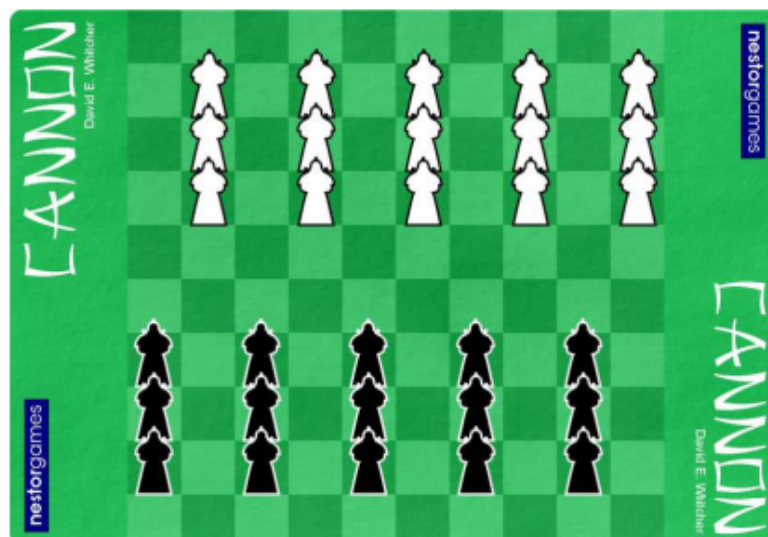

Figure 1: A cannon board before the cities are placed

Objective

The main objective of the game is to destroy the opponent's city, which can be achieved by capturing it with a piece or via a cannon shot (which is also considered a capture). Opposing pieces can all also be captured.

Movement

A normal piece may move to an adjacent (orthogonal or diagonal) forward empty spot. Normal pieces can capture enemy pieces in adjacent forward (orthogonal and diagonal) and lateral points, moving to take their place afterwards. Normal pieces can also retreat backwards (orthogonally or diagonally) two spots if adjacent to an enemy piece.

Cannons are three normal pieces of the same player in a straight line. Cannons can move along their length one spot in either direction, as long as that spot is empty. To capture, cannons can shoot along their length as long as the spot directly in front of the cannon isn't occupied by an enemy piece. The cannon shot can hit either two or three spots away.
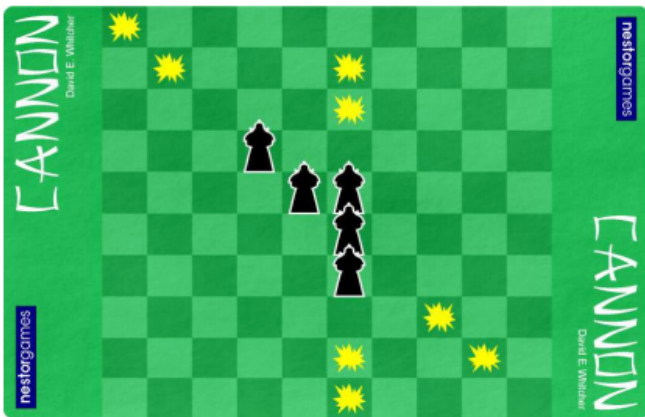

Figure 2: Cannon shots example

Each turn a player may use a normal piece or a cannon. Passing is not allowed. The game ends when a city gets captured or a player runs out of pieces.

User instructions

Use the GUI to set if either player is a human or an AI (players can also be the player 2 if they want to use the black pieces and go second). Press the "StartGame" button on the GUI to start the game, at which point the board will be populated with the basic pieces (minus the cities unless it's an AI vs AI game).

From then on the game on the human player's side can be controlled by pressing the pieces with the mouse to place cities, choose what pieces to move and where to move them to, where to shoot, etc. Pieces of different colors will show up on the board when the human player presses a valid piece to move on their turn, showing what moves are possible. The different colors represent the selected piece (gold), the spots where it can move (green), spots to place a city (blue) and pieces that can be captured (red). Of note that shoot a cannon, you must select the piece that is further back.

To have the AI move, either press A or the GUI "PlayTurn" button. To take back a move, press the "PreviousPlay" GUI button. Press Q to change sides and E or W to increase player score for Player 1 or 2, respectively. The player can also use the GUI to change the difficulty of the AI, set the time for each turn or change the scenario surrounding the board.