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CS305 Software Models

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User’s Guide for **Slide & Connect**

**Game description**

**Purpose and essence**  
Both players want to make 4 in a row of their marker type on the board. The way to play is to choose which way the pieces fall (like the game 2048), but the objective is to get 4 in a row (like the game Connect 4). The board is now displayed using a GUI.

**Game Loop**

1. GameController places marker randomly (A/B, which alternate every iteration) on the grid (8x8).
2. GameController displays current board.
3. Player (1/2 alternate) picks gravity direction (UP, DOWN, LEFT, RIGHT) or Game Settings (SAVE, LOAD, RESET, QUIT).
4. GameController shifts all markers in gravity direction.
5. Check:

if (4 in a row): **Player (1/2) wins**

else if (board is full): **Tie**

else: **Loop to step 1**

**Input**

UP – DOWN – LEFT – RIGHT – RESET – SAVE – LOAD – QUIT

\*\*Input has now become buttons in the GUI.

Up Button – Move all markers upward

Down Button – Move all markers downward

Left Button – Move all markers to the left

Right Button – Move all markers to the right

Reset Button – Resets the GameController, which stores the state of the game, from

the configuration file.

Save Button – Stores the state of the game and uses XML formatting to store

GameController Model in XML.

Load Button – Retrieves the state of the saved game in XML

Quit Button (Exit button of window) – Closes the program

Format: GUI Button - has to be one of the 8 buttons above.

**Output**

The board and the message

The message is displayed on the console window and could be one of the following:

1. "Player <1/2>, pick another direction"
2. "Player <1/2> wins" or "tie".
3. “Resetting Game…”
4. “Saving Game…”
5. “Loading Game…”
6. “Quitting Game…”

The board is a grid represented by characters in the console as a character array that shows where the markers are. The board is now displayed as a GUI.

The configuration file (.txt) includes:

1. Board Size //grid set as 7
2. Player 1 Char //Player 1 marker set as X
3. Player 2 Char //Player 2 marker set as O
4. How Many to Win //consecutive markers to win set as 4

\*Everything in configuration file can be changed at compile type to make the game dynamic.