

## Final Project Proposal **Connect 4**

We envision the project to take on the form of a simple game within the terminal. This game entails the use of a variety of arrays to simulate the grid-like board for the commonly-known game Connect 4. As the game progresses and the players place their pieces, the arrays will slowly be populated by letters indicating the players' colors. The objective of the game is to place four pieces in the shape of a line (diagonal, horizontal, or vertical) on the board.

We plan to implement two modes of the game: singleplayer and multiplayer.

- If the player chooses singleplayer, the program will automatically use a bot that will place its pieces randomly across the board to go against the player. The player will have the first turn and be prompted to select a column to place their piece in. The program will, then, print the new state of the board (after the bot's turn), and prompt the player to select another place to put their piece.
- The multiplayer version of the game will assume that both players are present and will take turns controlling the machine while the program is running. Player 1 gets to pick their "color", while player 2 is automatically assigned the other. After every turn, the program will return the board and prompt a player to make a move. Both of these game modes will require a line of 4 pieces of the same color going in any direction to terminate.

### Additional Details:

When the command `java Woo` is initially run, the program will display a welcome message, along with directions for the game. Under the directions, the user will be prompted to select a game mode. After selecting a game mode, the user will have to confirm their selection. Regardless of what the selection is, the user(s) will get to choose their "color", which is essentially just a letter, and will be asked if they are ready to begin. If the player selects yes, the board will appear on the screen and they will get to start the game. If the player selects no, they will return to the color assignment prompt. We plan to have a "Back" option for the user throughout each step of the game setup, as well as an "End Game" option while the game is in process, which will require a confirmation if clicked.