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Description

We want to make Othello the board game that allows two players on different computers to play against each other. There will be a chat feature to let users send messages to each other while playing. There will also be a replay feature which saves game info in files that allows for exact reenactment of matches after they complete.

Interface

It will be played in the terminal, the players can use arrow keys to navigate the board and press enter when they've found a spot to place their piece.

Technical design

Topics covered in class

- We will allocate memory for arrays and buffers for reading & writing
- We will store the board in a text file and interact with the pieces by writing to it
    - We will store the players' chat in another text file
- We will find information from this text file when we save games and let the system reenact the match
- We will use stat on replay files to determine when games were played
- Forks and pipes to serve many games with 2 players per match
- Signal handlers to handle rage quitting
- Semaphores to control players writing to the chat file
- Networking to let server handle the 2 players on different computers, and to play multiple games at once

Breaking down tasks

Md - converting between the 2D array and the board, creating the network, making chat client

Yiduo - taking user input, developing algorithms, implementing the replay system

Data structures

We will use a 2D array for the board. This array, along with the pieces within it, will be converted to a more human-friendly form and written into the board text file.

Algorithms

We will make an algorithm to determine the color switches that happen when a user places a piece, what places are legal to place pieces, and when the game is won

Timeline

- Displaying the board - Dec 25
- Getting user input - Dec 26

- User interaction with the game - Dec 29
- Network - Jan 1st
- Replay system - Jan 4th
- Chat system - Jan 6th
- Completion by January 7th