

A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is light green. They are positioned diagonally, with the blue one partially covering the green one.

# WEC 2021 - Programming

Team Meadow Lake

# Challenge

- Design a game to entertain ourselves during the pandemic
- Support remote play in the age of lockdowns



- Create an interactive chess-style game that supports multiple players
- Implement piece movement, capturing, and winning
- Design interactive GUI to play the game





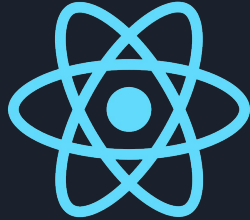
# Assumptions

- No need to support simultaneous games
- A pawn that reaches the opposite end of the board becomes a queen
- A queen cannot put an opponent in check while it is inactive for 5 moves

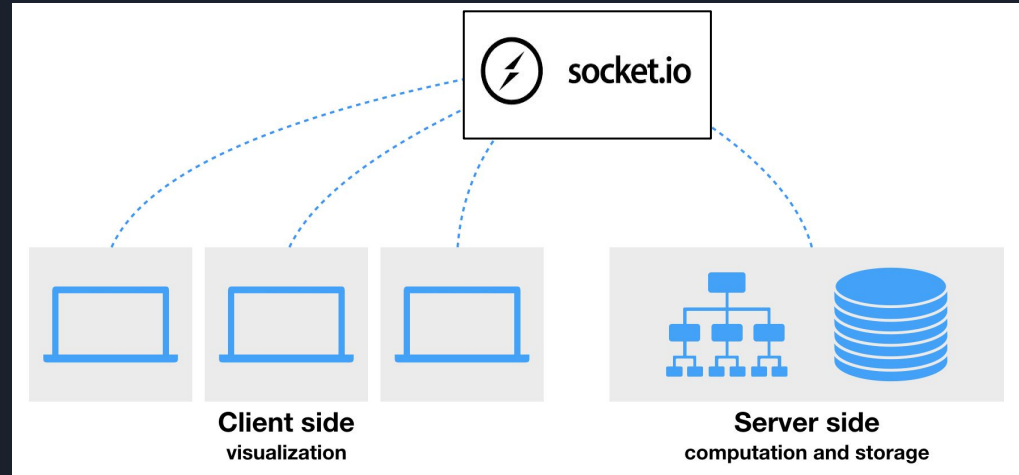


# Language & Architecture

TypeScript, React, Node.js



Client-Server with Websockets





# Development Methods

- Work split between frontend and backend
- Github
- VSCode Live share



# GUI

## Black

Vanguards placed: 2

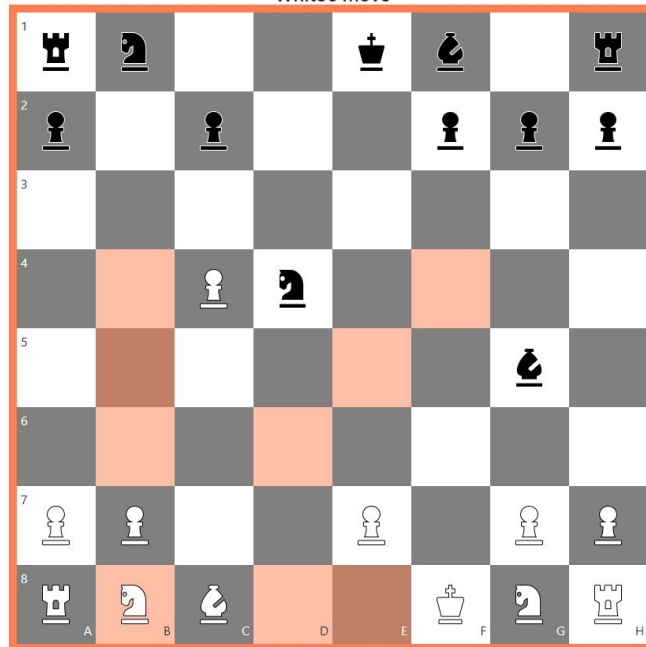
Taken



### Moves

1. d4
2. Qd3
3. Vd4
4. Vd3
5. Vf8
6. Kd4
7. Bg5

## White's move



Reset Board

Reset Team

Change board

Total allowed vanguards: 2

## White (You)

Vanguards placed: 2

Taken



### Moves

1. Va4
2. Vg5
3. Vd4
4. Vd3+
5. c4
6. Qd4
7. Kf8



# GUI

 **Black**

Vanguards placed: 2

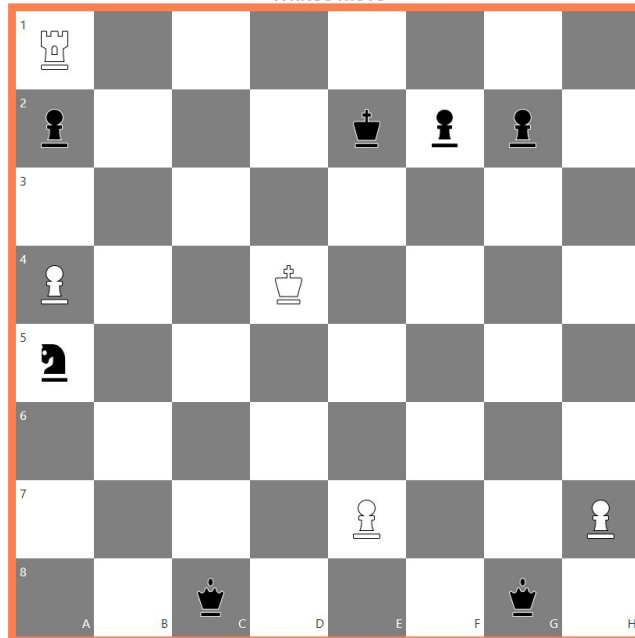
Taken



Moves

1. d4
2. Qd3
3. Vd4
4. Vd3
5. Vf8
6. Kd4
7. Bg5
8. Kb4+
9. Kb4+
10. Rd1
11. Rd7
12. Bc4+
13. Bd5+
14. Be6+
15. Kb7
16. Ke4+
17. Ke2+
18. c4
19. Ke4
20. Kg4+
21. h5

White's move



Reset Board

Reset Team

Change board

Total allowed vanguards: 2

**White (You)**

Vanguards placed: 2

Taken

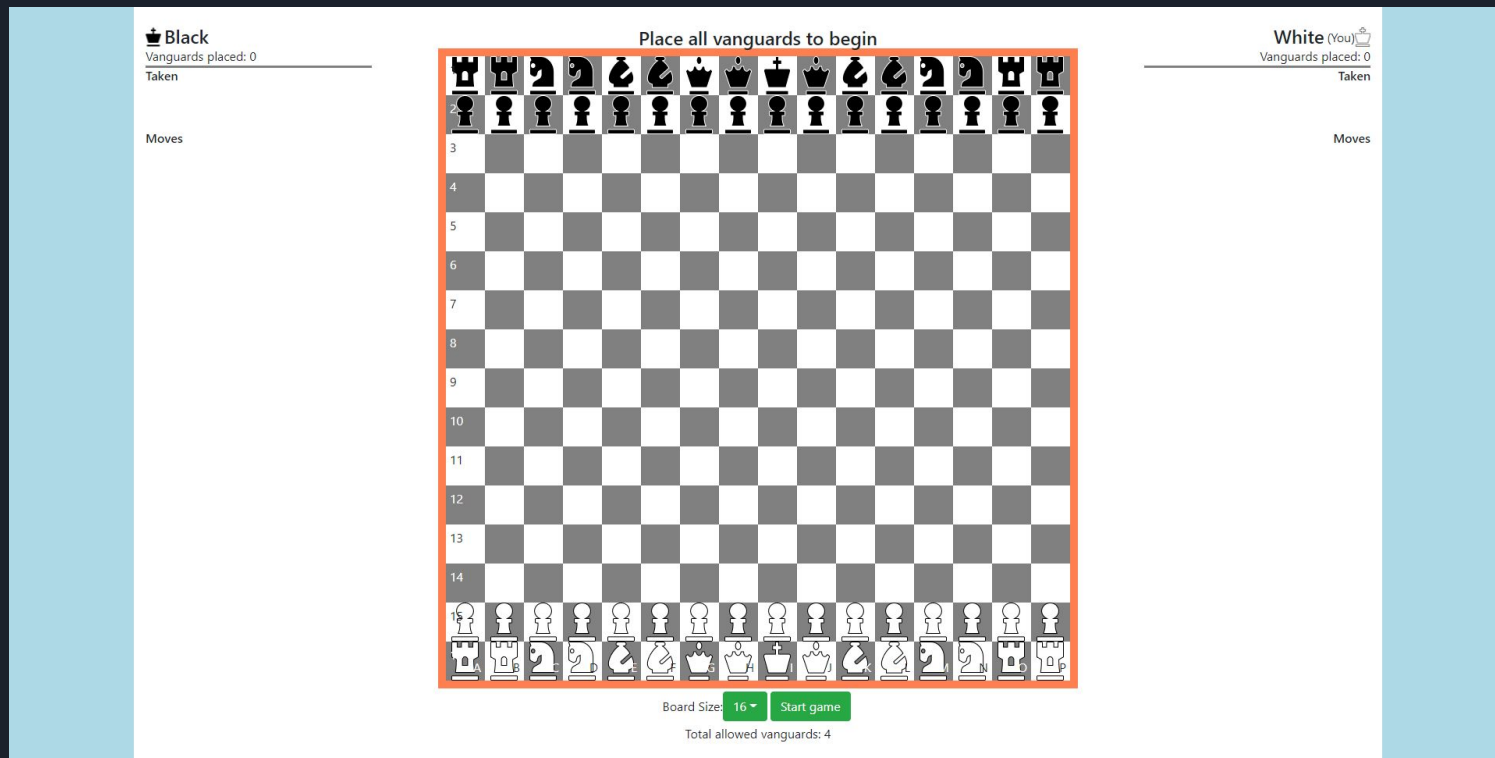


Moves

1. Va4
2. Vg5
3. Vd4
4. Vd3+
5. c4
6. Qd4
7. Kf8
8. Kd6
9. Kb4+
10. Kf7
11. Kg5
12. Bd7
13. Kd5
14. Be6
15. Ke6
16. Rb8
17. Ke5
18. Kd6
19. Kc5
20. Kd4
21. Kc3



# GUI







# Algorithm

- Server decides where each piece is allowed to move
- The server will use the set of where pieces can move to determine available tiles for the user to click on.
- It also uses the available moveset of each piece to detect check, checkmate and stalemate.





# Extra Features

- Log of moves played
- List of pieces taken
- Highlight available moves
- Pawn promotion
- Check safety - can't put self in check





# Guiding the New Normal

- Online games help bring us together
- Multiplayer-games that support remote play allow us to connect despite the pandemic and lockdowns
- Breaks from the norm, such as playing fun games, help improve mental health
- Creative development of new forms of entertainment allow us to keep our minds sharp



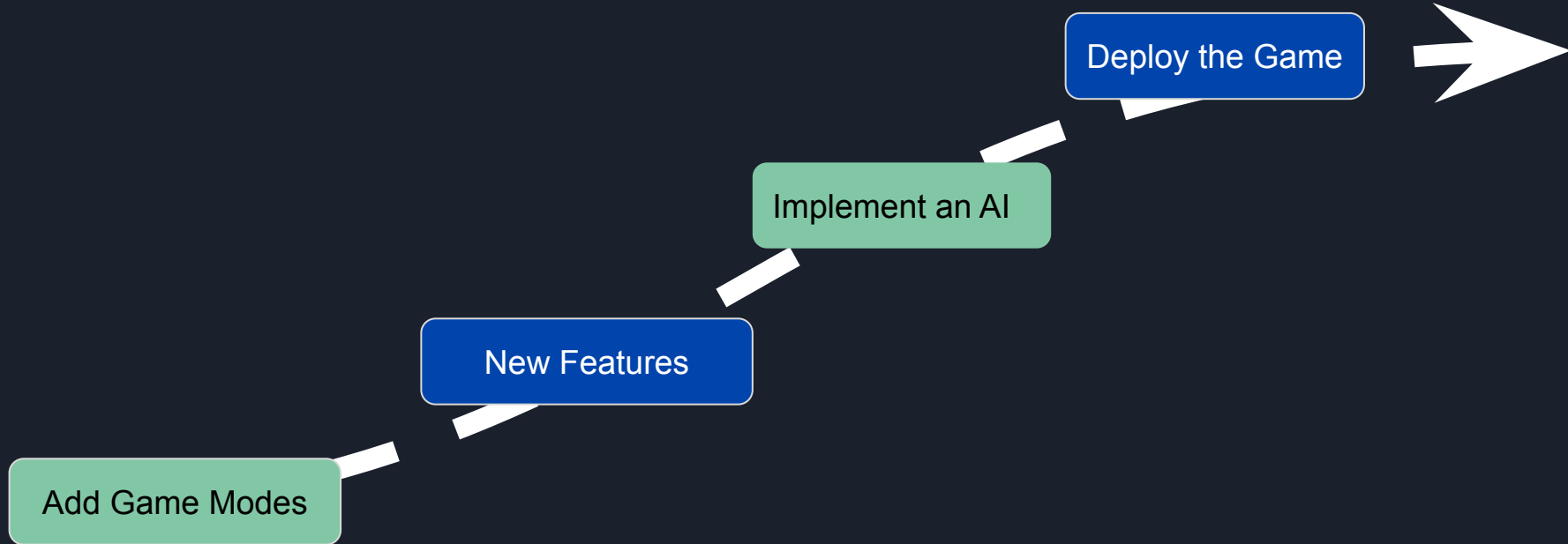


# Bugs

- No known bugs



# Future Developments





Thank you

