# Intellij4Life - P4 Presentation

Ryan Williams,
Colton Larson,
Sandeep Chundru,
Scott Swensen Sr.
Christopher Haynes,

Chad (recap)

- Each player owns a 3x3 castle surrounded by 12 squares of walls.
- Rooks and queens move unimpeded by castles and walls.
- If a rook ends in an enemy castle, it is promoted to a Queen.
- The king can move and capture in the same way as a chess king or knight
- Kings cannot leave their castle and can capture any enemy piece in the castle.
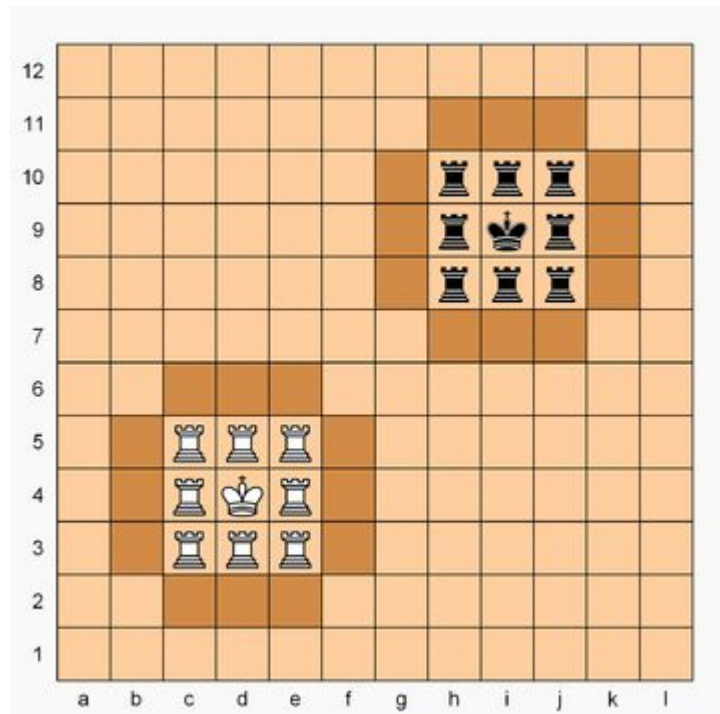
Chad (recap)

- A rook or queen may capture an opponent's rook or queen only when one of these pieces is on the enemy's wall, and the other piece is in its own castle. This is the only scenario in which rooks and queens can capture.
- In other situations rooks and queens cannot capture, and simply block one another's movement.
- Castle walls do not block check
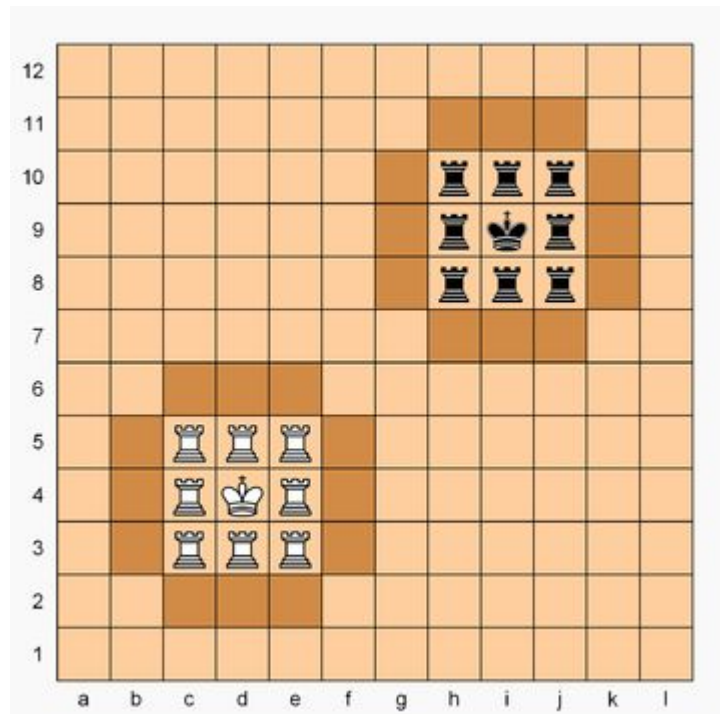
Tools and Methods

- Git / GitHub

- Java 1.8

- JUnit 5

- Maven

- React js

- Node js

- IntelliJ

- Pair Programming

- Branch naming conventions: <first initial><last initial>-<branch name>

Refactorings

- Inline Profile class into User class.
- Inline Request classes from frontend into APIs.
- Extracted API classes for specific tasks like register, login, makeMove, etc.
- Extracted methods to remove duplicate code.
- Extracted methods to shorten long methods.
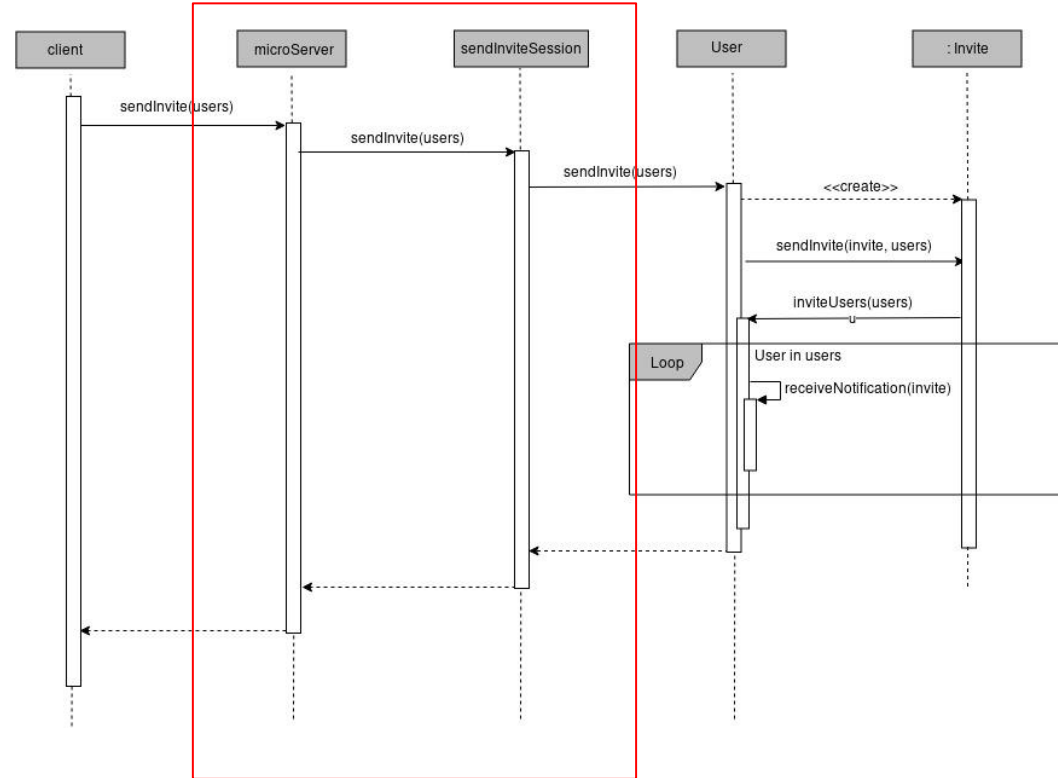
Design Patterns

- MVC
- Bridge
- Facade

Updated Documents - Sequence Diagram Make move

Sequence Diagram: Make Move
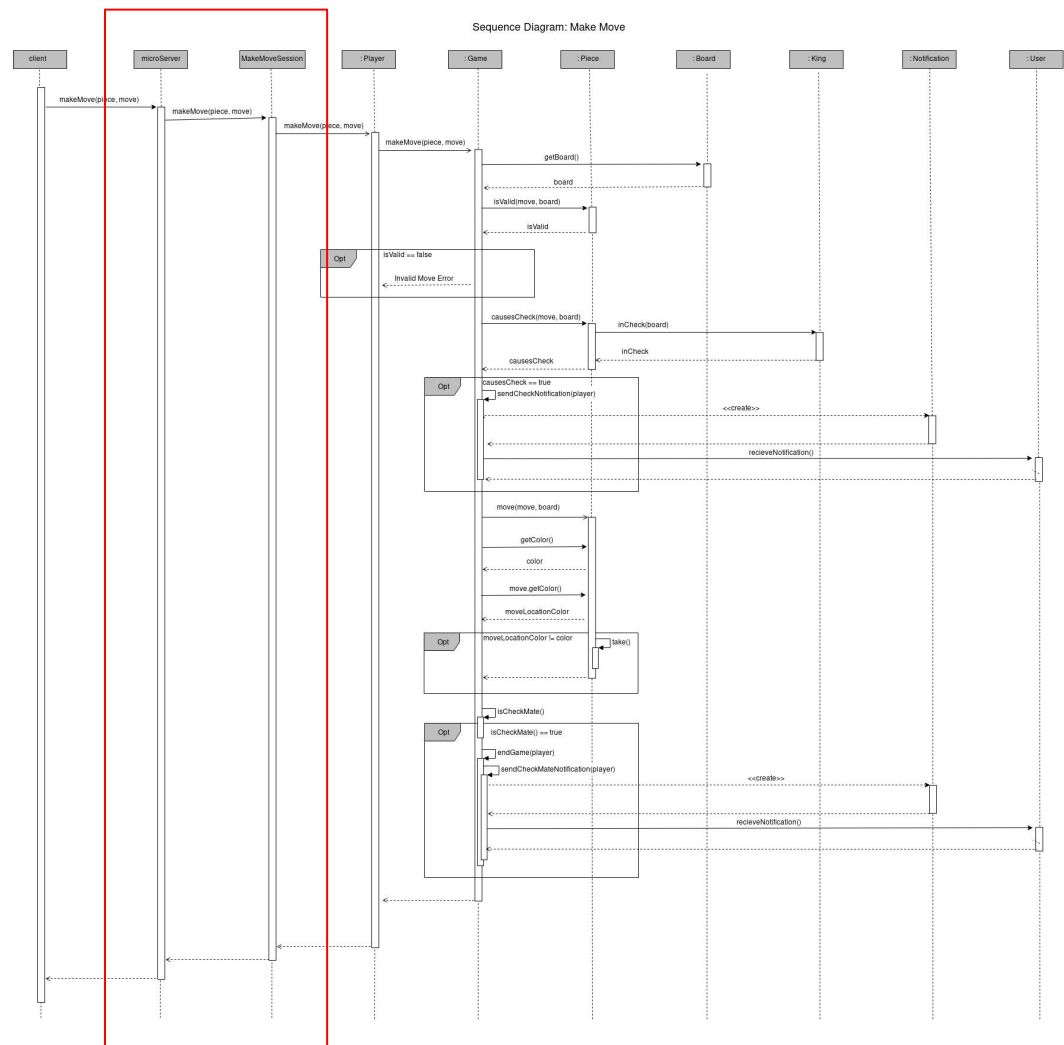
Updated Documents - Sequence Diagram Send Invites

Sequence Diagram: Send Invitation

Updated Documents - Traceability link matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Server	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MicroServer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
User	X		X	X	X		X			X			X	X	X	X
Profile							X	X	X							
Notification				X	X				X							
Invite				X	X					X			X	X		X
Player	X				X	X		X	X	X	X					
Game	X				X	X		X	X	X	X					
Board					X	X										
Piece					X	X										
Database	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
GetBoardSession	X					X				X	X					
GetGamesSession	X					X				X	X					
GetUsersSession			X													X
GetvalidMovesSession						X										
MakeMoveSession						X										
LoginSession												X				
RegisterSession		X														
RemoveUsersSession			X													
InvitesSession																X
ActiveGames												X				

Legend For Columns

1	Switch Game
2	Register User
3	Unregister User
4	Reject Invitation
5	Create Game
6	Make Move
7	View Profile
8	End Game
9	Quit Game
10	Join Game
11	Play Game
12	Log In
13	Cancel Invitation
14	Accept Invitation
15	Interact with Invitation
16	Invite Players

Challenges

- It was hard to keep documents up to date.
- Interaction between host and client was difficult to handle initially.
- Asynchronous games were hard to handle due to keeping the game state consistent in the database and between players.
- Deciding how to handle invitations.
- Passing the board between the frontend and backend.
- Dealing with ambiguity.
- Learning as we went for many of the necessary components like database, system testing, frontend, servers, etc.

Demo