Chess

Distribution- and integration technologies

Karim Møller
karmo15@student.sdu.dk

Joachim Hejlesen
johej15@student.sdu.dk

Niels Frederik Norberg
ninor15@student.sdu.dk

Jebisan H. Nadarajah
jenad14@student.sdu.dk

Mads Berggreen
madbe15@student.sdu.dk

Lecturer
Jan Midtgaard
jmid@mmmi.sdu.dk

Introduction

This section describes the developed chess game and has a game manual of to how to play.

The game

The game is an alternative version of the classic chess game with the well-known chess pieces like the king, the queen, the rook, the knight, the bishop and the pawn.
In this version of Chess multiple clients vote for which should be the next move. The move with the highest amount of votes is chosen and made by the game. In case of a draw the game will randomly select one of the votes. The game is won by slaying the king.

How to play

To get the game running:

1. install Websockets: https://www.npmjs.com/package/websocket
2. Open the zip-file and extract to a chosen location.
3. Start the server.
4. Start multiple clients in your browser.
5. Play the game

Technologies

This section contains the different technologies that is used in this project. The technologies are explained and are clarified for where in the game they are used.

JSON

JSON is an open-standard file format that uses text to transmit data objects like attribute and value pairs or array data types. In this project we are using JSON to send strings all containing the votes from the clients to the server.

Websockets

A websocket is a communications protocol that gives the possibility for simultaneous 2-way communication. Websockets is in this project used with JSON for communications between client and server.

Node.js

Node.js is a open source, cross platform runtime environment for developing server-side web applications by letting you run scripts on the server-side. We use Node.js to have the game logic on the server-side instead of the client-side

JavaScript

JavaScript is a dynamic programming language mostly used for web developing, but can also be used for server-side programming with the aforementioned Node.js. We use JavaScript as the programming language to develop the chess game.

HTML5

HTML5 is the latest version of HTML or HyperText Markup Language and is used for structuring and presenting content on web pages. It consists of three kinds of code: HTML, which provides the structure; Cascading Style Sheets or CSS, which has the responsibility for the presentation; and JavaScript, which makes things happen. We use HTML5 and CSS to make the chessboard and the pieces visible on the web page, and then have JavaScript do the movement.

Jquery

Jquery is a library to be use with JavaScript and HTML. The purpose of the library is to simplify the interaction between JavaScript and HTML. Jquery is used in the project to draw the board.

Chessboard.js

Chessboard.js is a library for making a chess game with JavaScript and HTML, and is used in this project for the visual board and pieces.

Architecture & Design

This paragraph is about the program, how it is build, the architectural design and the graphical design.

The Server

The server chooses the move with the most votes, and moves the pieces. The server then returns the board to the clients. It was intended that the server would also handle a chat window for clients to chat with each other, but it was never implemented. The server is in charge for keeping each of the clients timer in sync to do this the server sends the timeleft each second. To update each client the system implements an observer pattern.

The Clients

The client is responsible for initialize the board and sending and receiving moves from the server. To challenge the players each client has a timer, which count downs to the deadline for the vote. Taking cheating into consideration, the client is build up with almost no logic, so there can't be manipulated with the game client-side.

The website

The site contains nothing but the chess board and the game starts once the client is connected to the game. The site also contains information about witch moves that has been voted on. Furthermore the site displays which team the current client is on and who's turn it is. There has not been implemented any login system yet, but has been taking into future consideration.

Multiple clients

The game can be played with multiple clients, but right now it is not practical because there is no way to communicate. This could be fix by implement a chat and furthermore the game needs a way to balance the team. One way would be to implement a voting system where each team can vote a team member off the team.

The graphical design

The web page consists of the chessboard. The timer is shown on the right alongside the moves voted on so far. When the timer runs out the move that got the most votes will be shown where the votes were earlier shown.

The picture shown to the right illustrates the chessboard and the chess pieces. The pieces are draggable and can be dropped on the desired square as long as the move is legal. However the piece will snap back to the original position, if the move is not legal.