Mastermind Game

Set-up Instructions:

1. Configure a webserver or download and install xampp (https://www.apachefriends.org/download.html)
   a. Start apache xampp control panel, ensure its working by checking http://localhost in web browser
   b. Download and extract code, a folder called Mastermind is seen
   c. Place this folder in xampp/htdocs/

2. Download and Install NodeJs (https://nodejs.org/en/download/)

3. Open command prompt, and navigate to Mastermind folder in xampp

4. Now navigate to js/local:
   For example: C:\xampp\htdocs\MasterMind> cd js/local

5. Run node server.js :
   For example: C:\xampp\htdocs\MasterMind\js\local> node server.js
   This ensures your web socket server is running

6. Now, open a browser, use Chrome, Safari, Firefox where Web sockets are supported and open the url:
http://localhost/MasterMind/index.html.
Game is established in such a way that the first connection is Codemaker and after the game ends, their roles are changed.

7. Open another browser, use Chrome, Safari, Firefox where Web sockets are supported and open the url:
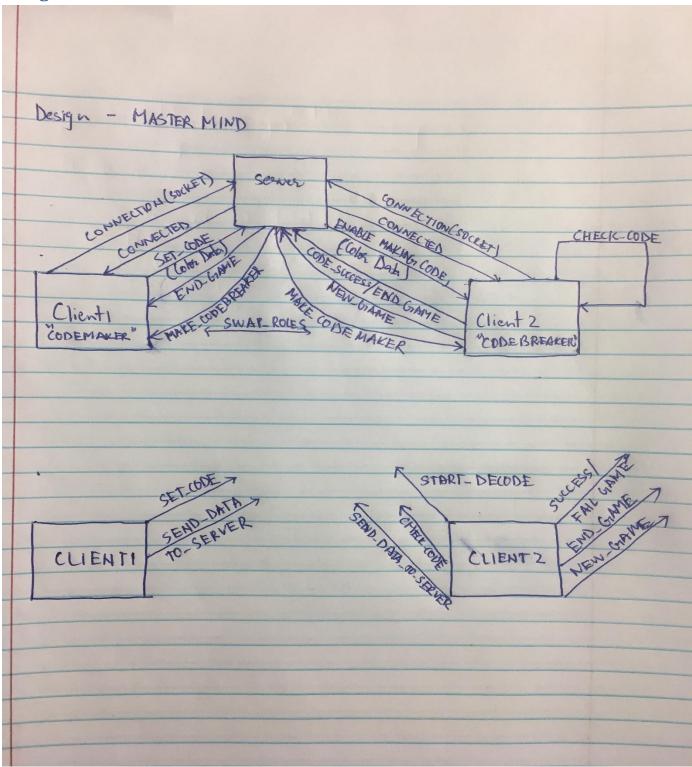http://localhost/MasterMind/index.html.
Game is established in such a way that the second connection is Codebreaker and after the game ends, their roles are changed.

8. Only play game after both the clients in the browsers are up. Do not open a page and then immediately "Set Code". More handling is required here from my side.

9. Codebreaker cannot start until Codemaker sets the code in his page. Only after he sets the code, the buttons on Codebreaker side gets enabled.

10. Each time after Codebreaker chooses the 4 pegs he has to check, otherwise next round doesn't start.

11. Do not refresh the page, use only buttons in the game to do everything. I did not handle the refresh connections.

Instructions for Game Play:

1. Ensure 2 clients are up and running and then only set Code in the Codemaker
2. Do not press refresh, didn't handle new client connections

Design:

Design - MASTER MIND

1. Server here indicates the web socket server. Webserver renders the HTML content
2. First client is assigned as Codemaker, and the second client is Codebreaker, after the game, roles interchange
3. The handling of different messages is done via web sockets and messages are handled accordingly in the clients

Limitations:

1. Do not press refresh to start a new game. If you do so, please restart the node server in Command prompt by first stopping it (Ctrl+C), and then executing the command: **node server.js**

2. I didn't work much on the color combinations to make it look very attractive. But I think I made it to look decent.

3. The first client who opens the url is made "Codemaker". I think I can do it in a more interactive way.

4. I have put a decent effort to host the app, but couldn't succeed. I should figure out a way sooner or later.

5. I think I can work more on the UI aspects for a better feel of the game.

6. More handling is required for repetitions of colors

7. **Technologies:** NodeJS, JavaScript, HTML, JQuery, Bootstrap

Improvements:

1. Handle refresh and other system level functionalities
2. Game establishment to be more interactive
3. UI to be more interesting

Efforts Spent:

1. Exploring the Mastermind game and playing it online: 1 hrs

2. Node JS understanding and implementation, testing of servers and clients: 3 hrs

3. Design the functionalities, understanding/imagining various use cases: 1.5 hrs

4. JavaScript implementation: 2 hrs

5. Debugging JavaScript and NodeJS connections and functionalities: 2 hrs

5. Testing: 2 hrs

6. Learning/Trying Heroku to deploy apps: 2 hrs (But couldn't succeed)