React Checker Game
IT 612

Martin O'Sullivan, Luis Morel, Megan Sorette
Department of Computer Science, University of New Hampshire

University of New Hampshire

Introduction

Our goal was to design a 2-player single-page application (SPA) game of checkers. The application contains a menu screen to enter a name and the color piece you want to use. When done at the menu, the game starts and you can start playing checkers. Cool little features with the application is a little ad display on the bottom of the screen cycling through prompts and a rule book that will be accessible when playing.

Methods

JavaScript was used to build up the backend of our application, in conjunction with the React library to implement a seamless, complex UI design. HTML and CSS worked in tandem to structure the website and its aesthetic.

The application utilizes two components in the React library: the useState Hook to track the game and each piece, and the useEffect Hook to render fetch() method requests. FetchAPI was used to make HTTP requests to pull advertisements (Fig. 2).

Diagrams

Fig. 1

Fig. 3

```
3  ∨  const AdAPI = () => {
4       const [adData, setAdData] = useState([]);
5       const [currentAdIndex, setCurrentAdIndex] = useState(0);
6
7       useEffect(() => {
8         fetch("https://samuelg900.github.io/adCheckers/ad.json")
9           .then((response) => response.json())
10          .then((data) => {
11            console.log("SUCCESS");
12            setAdData(data);
```
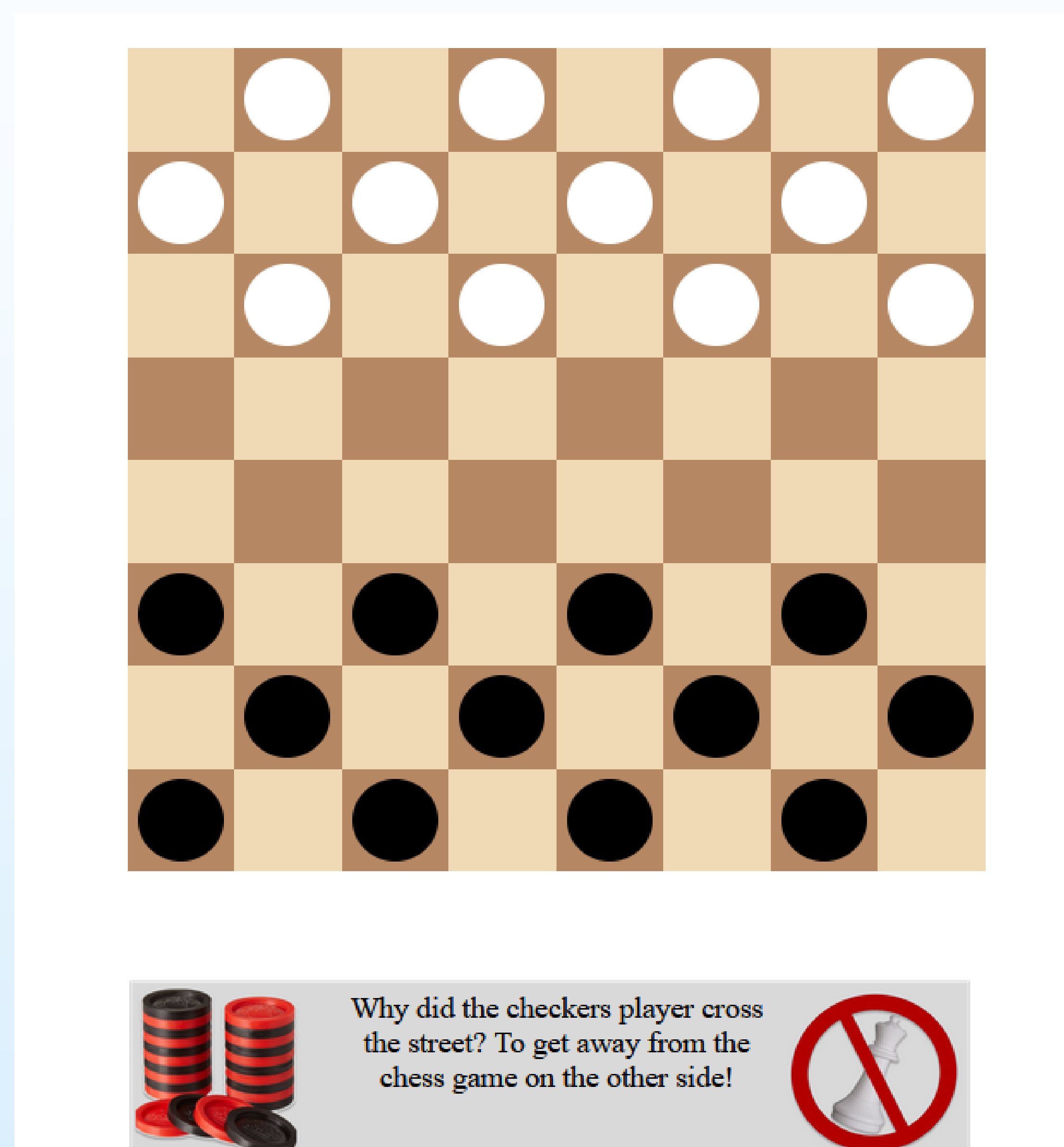
Fig. 2

```
[
  {
    "adnumber": 1,
    "text": "Why did the checkers player refuse to play chess? Because they couldn't handle all the 'knight'-mares on that board!"
  },
  {
    "adnumber": 2,
    "text": "Why did the checkers player laugh at the chessboard?\nBecause they thought the knight was trying to spell 'LOL' with all the L moves!"
  },
  {
    "adnumber": 3,
    "text": "Why did the checkers player cross the street? To get away from the chess game on the other side!"
  },
  {
    "adnumber": 4,
    "text": "Why did the checkers player avoid the chess tournament? Because they didn't want to be surrounded by a bunch of squares!"
  },
  {
    "adnumber": 5,
    "text": "I can't believe they made a board game out of a movie."
  },
  {
    "adnumber": 6,
    "text": "Have you cringed yet?"
  }
]
```

Fig. 4

Discussion

Fig. 1 showcases the fully deployed and rendered checkers game. The application is rendered through the root file, App.jsx.

Fig. 2 is a code snippet of the AdAPI.jsx file that uses the fetch() method, useState Hook, and useEffect Hook to pull advertisements into the application.

Fig. 3 is the introductory form that displays when the application is first accessed. It consists of a simple HTML form that, when submitted, takes the player(s) to the board shown in Fig. 1.

Fig. 4 is the JSON file that the script in Fig. 2 sifts through to display prompts every 10 seconds.

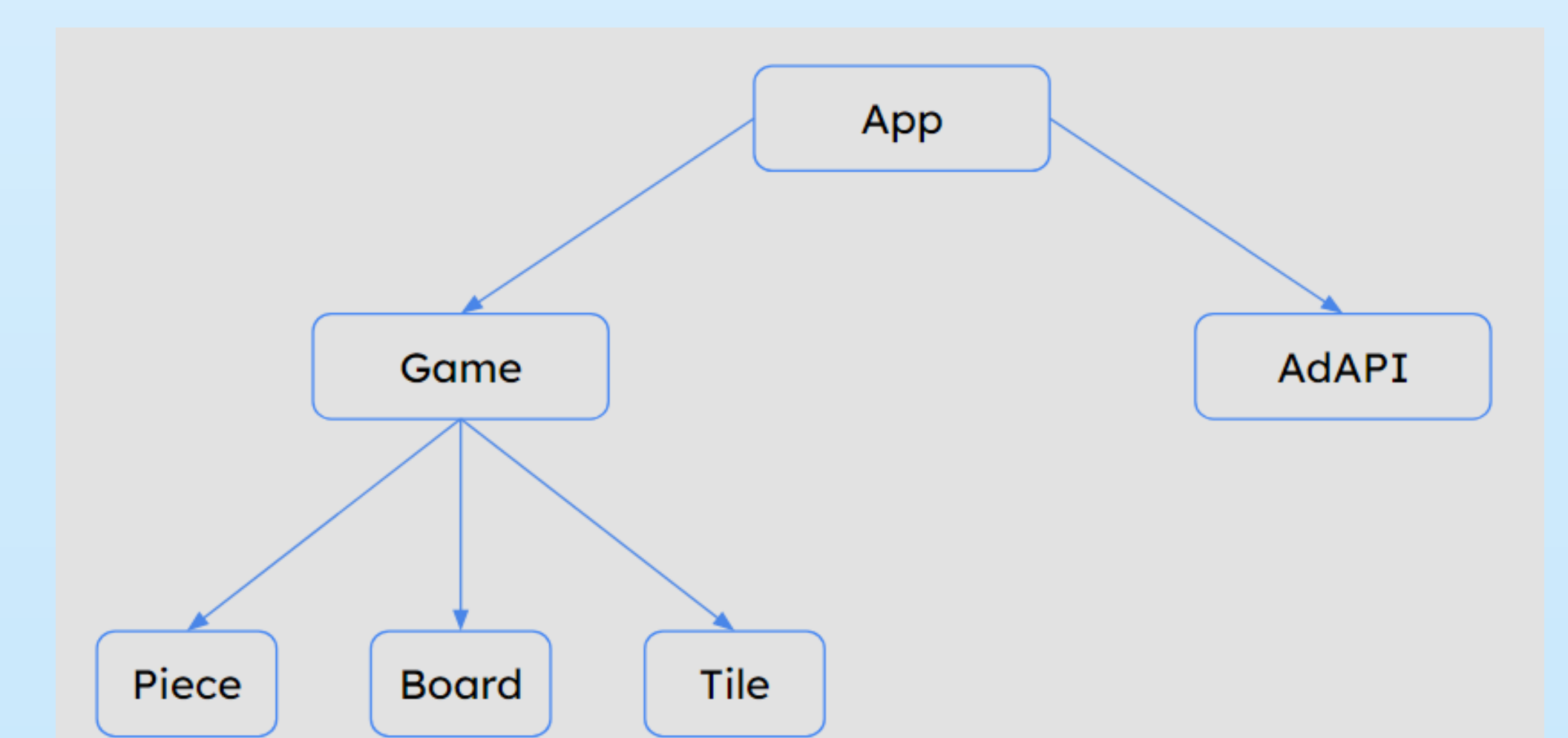Fig. 5 is a visual tree that lists the components in which the application is built on.

Fig. 5

References

https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API
https://martinvosullivan.github.io/checker-react-app/
https://react.dev/