

Field Materials - Frontend Coding Assignment

confidential, please do not share

Please do not use a public repository for storing your code

Assignment:

Design and implement a (partial) Battleship game as a web app.

In Battleship, the computer has positioned five ships of various sizes on a 10x10 board. Each ship must be placed horizontally or vertically, completely on the board, without overlapping another ship. The player cannot see the ship's locations. Each round, the player "fires" at a board position of his choosing. The computer indicates if this was a "hit" or a "miss". When all tiles of a particular ship have been hit, the computer indicates that the entire ship has been sunk. When the player has sunk all of the ships, the game is over.

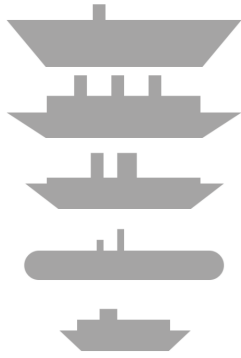
Obviously this game would be more fun if the player had his own ships and the computer were firing back, but we'll leave that out for simplicity. In other words, we are only implementing the turns for Player 1, not for Player 2.

You may use the provided JSON data (see below) indicating the position of the ships. You should produce a web app for this game as described, according to the provided mocks. The game should be responsive and mobile-friendly, so that it may be played on an iPhone 5-sized screen (320x568) up to a desktop browser (approx. 1440x1024).

Please use React for the implementation. You may feel free to use Redux, Typescript, LESS, or modern ES6 javascript features if you'd like. Please provide the source code for the game and ideally a hosted version where it can be played (or instructions for running it locally with minimal setup). It's not necessary to save game state or anything like that.

Ship layout data:

```
{
  "shipTypes": {
    "carrier": { "size": 5, "count": 1 },
    "battleship": { "size": 4, "count": 1 },
    "cruiser": { "size": 3, "count": 1 },
    "submarine": { "size": 3, "count": 1 },
    "destroyer": { "size": 2, "count": 1 }
  },
  "layout": [
    { "ship": "carrier", "positions": [[2,9], [3,9], [4,9], [5,9], [6,9]] },
    { "ship": "battleship", "positions": [[5,2], [5,3], [5,4], [5,5]] },
    { "ship": "cruiser", "positions": [[8,1], [8,2], [8,3]] },
    { "ship": "submarine", "positions": [[3,0], [3,1], [3,2]] },
    { "ship": "destroyer", "positions": [[0,0], [1,0]] }
  ]
}
```



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x x x x x

x x x

x x x

x x

X	X	O	X		O		O		
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	O	O	O	O	X	O	O	X	O
O		O			X			O	
	O		O		X		O	O	O
O	O		O		O		O		
O	O		O		O	O	O	O	O
		O		O		O	O	O	O
O		X	X	X	X	X	O	O	O