DGMD E-28  
Developing Single Page Web Applications  
Assignment: Battleship

## Objective: Practice with Javascript objects.

## Tasks

Your task is to create an interactive game based on the game of battleship.

* Use a 6 x 6 grid to make testing easier (the classic game is 10 x 10)
* You should have 3 ships sized: 2, 3, 4 squares
* Ships can be oriented horizontally or vertically.
* Placement of the ships is determined by an external JSON object that you will read.

*Name* is the reference name of the ship

*Orientation* is horizontal or vertical

*Size* is the number of grid squares that will be occupied

*Coords* is the starting point in the grid as [col, row] (the first col,row is [1,1] )

(see battleship.json in canvas). Feel free to edit the file to create your own configuration.

Within the game code, you may assume that the JSON is correct – ie, that no ships will overlap and no ships will go beyond the board.

Create a 6 x 6 grid of squares to represent the game board. A user will click on a square to try to locate a ship. You need to respond with “hit”, “miss” or “sunk”. “miss” means there is no ship. “hit” means they found a ship but not all of the squares for that ship, “sunk” means they found a ship and completed all of the squares for a ship. Note that you should not tell the user which ship was sunk. You should indicate that the square was selected and if it was hit. For, example – blank means unselected, colored red means it was hit and colored grey means a miss.

A user will have up to 20 guesses to find all ships. The game is over when all ships are located or 20 guesses are used. On game over, indicate the locations of the individual ships.

The focus of this assignment is using objects You will want to make use of methods in addition to properties. In addition to the JSON to place the ships, each square could be an object and the “game” can be an object. Some suggested methods for the game object are buildBoard and placeShips.

Note that this version of the game provides only one placement of the ships. That is intentional as an academic exercise even though it would not create the best game!

## Deliverables:

## PDF or doc with: URL, all code

Answer to the questions:

1. Of the object variations we have learned, which feels the most useful to you?
2. What was the easiest part of this assignment?

## Rubric

40% creativity/effort/code quality

60% runs to spec