Team 10
EECS 448
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Team 6's Project 1 Design Paradigm

Generally, we think that the design paradigm Team 6 used for their Project 1 is functional programming. Their project consisted of two HTML files: index and game, in addition to a single JavaScript file that handled all the logic of the game. In the JavaScript file, they used no classes or objects to represent the different aspects of the game like ships or players. Instead, they had multiple functions that were responsible for all of the game's flow. However, in order to keep track of the state of the game, like registering where the ships were placed, where they were hit or if a player had won the game, the team used global variables.

We think that using global variables here defeats the purpose of functional programming, because those variables may act as objects that are continuously being altered throughout the game, much like in object-oriented programming. Also, one of the fundamentals of functional programming is that the functions are responsible for the whole program, and that each function has its own scope of variables that should not, or cannot be altered outside of that scope, so the use of global variables is contrary to this design paradigm as well.

As a result, despite thinking that the used design paradigm was functional programming, we could still pinpoint certain aspects of the codebase that counter the paradigm and make it more like object-oriented programming. We think that by having to use global variables to complete the project, Team 6 tacitly admitted that they needed some sort of objects to store the data, yet they decided to not write any classes, but multiple functions that modify those variables in the driver code instead.