

# Project 4-JavaScript and jQuery Report

## HTML and Bootstrap

To begin the project, I chose the Bare template from [startbootstrap.com](http://startbootstrap.com). The template contained a navigation bar, one main section with a header and paragraph in it, and jQuery and Bootstrap loaded. This template was very minimalistic, which allowed me to customize the project more fully, but it also contained very useful aspects such as the structure and libraries. Once I had the template loaded, I modified the HTML to display content regarding tic tac toe and I changed the CSS to match the style I wanted using Bootstrap. I used three sections along with a header and footer to organize the content because it made styling the page using Bootstrap simple and it made it very easy to see the structure of the page.

## jQuery

After the HTML and Bootstrap styling was completed, I added the id tag "tictactoe" to an empty div and created a new JavaScript file that contained the example from <https://jsfiddle.net/rtoal/ThPEH/>. Once the new JavaScript file was linked to the HTML file, the webpage worked as intended with a fully functional tic tac toe game. Although the base game worked, I needed to modify the jQuery code to improve upon the base example that I used. In order to do this, I needed to understand the code and learn how to use jQuery. The code took me a while to understand as I have never used jQuery before, and I needed to read the code and reference documentation. jQuery is only slightly different from plain JavaScript, so the jQuery by itself was not challenging to understand, but I have never written a tic-tac-toe game before, so understanding the logic behind the code was time consuming.

## Possible Improvements

The base webpage that I created needed some improvements to the features the game had. One possible improvement that I thought of was a score board. When two opponents play many games, it may be useful to keep track of which player won and how many games they won. Another possible improvement that came to mind while I was testing the base application was that the game board was quite small and difficult to see on a large monitor. Increasing the size of the board and symbols would improve the functionality and accessibility of the game. The symbols used to mark the spaces on the board were also composed of plain text. Replacing the icons with symbols that were different colors would improve the functionality of the game by helping differentiate between the two players, and it would also make the game more visually pleasant. The final improvement that I thought of while testing the base game was improving the end of game messages. These messages were implemented as alerts and they were not visually pleasant or very functional because they interrupted the gameplay.

## Implementation of Improvements

The first improvement that I implemented was the score counter for the game. I created a paragraph HTML element that contained three spans, which could be updated with the current score of the game. The JavaScript then updated the spans as the games ended. To increase the size of the board, I modified a portion of the base example that I used that specified the height and width attributes of the

gameboard that it creates. This made the board larger, but the icons still stayed the same size making the game look awkwardly disproportionate. To fix this issue, I changed the symbols to images of an X and an O that I created in Adobe Illustrator and modified their height attributes. This implemented another improvement while also fixing the problem that the board size increase caused. I modified the end of game messages by creating an empty div that I modified every time the game ended to indicate what the outcome of the game was. I attempted to use animations to fade the message in and out but decided against it after implementing it because it moved many of the elements around on the web page and reduced the functionality of the game.

## Final Thoughts

The project greatly improved my level of comfort using jQuery. While I did not write the tic tac toe game from scratch, by reading through it to understand it I gained experience with the language. Modifying the jQuery code also helped me gain experience writing in jQuery and understanding how it is used. Due to it being very similar to JavaScript, the jQuery learning curve was much easier than either the HTML, CSS, or JavaScript learning curves. While the latter were all new languages to me when I was introduced to them, jQuery is just a JavaScript library that makes the Java DOM manipulation and event handling syntactically simpler and easier to use. After completing this project, I prefer to use jQuery rather than plain JavaScript.