DOCUMENTATION

For proper usage:

In order to make sure that the project can be viewed properly, all files (i.e., index.htm, index.js, board.js, move.js, location.js, blank.png, x.png, o.png, xwin.png, owin.png, and style.css) should remain in the same directory – on a local computer, for instance. Then, open index.htm in a browser using the full directory where all the files are stored (i.e., typing the full directory into the browser's address bar). This project appears to function properly on Chrome, Internet Explorer (after enabling "scripts or ActiveX controls"), and Opera.

WYSIWYG, for the most part:

On index.htm, the user should see a page with the header, "Tic Tac Toe (AI YAI YAI!)" and an empty Tic Tac Toe board, along with a comment beneath about the game's difficulty level (by default, the "Hard" level is enabled) and three buttons in a row, each of which – when clicked – will start a new game of Tic Tac Toe with the corresponding difficulty level (easy, medium, or hard) of artificial intelligence.

How to play:

This game of Tic Tac Toe is based on the rather standard definition that many become familiar with in childhood, except that instead of against playing another child, you will play against an AI engine designed specifically for Tic Tac Toe. The human player is always given the "advantage" of moving first as X. To select a square to play, simply click on the desired square. The program will alert you if you pick a square that has already been played, but it will be kind enough to let you select another (legal) square as your move. Then, the computer will use the negamax algorithm – which is very similar (almost logically identical, syntactically more compact) to the minimax algorithm that relies upon a player's strategy to maximize the utility of his game while minimizing the utility of his opponent's – in order to determine what it *thinks* is its best move. The "intelligence" of the AI is determined by the number of moves deep it is allowed to search down the game tree (the more number of moves it can see ahead, the more difficult it will be to beat). On the easy level, it will be pretty mindless to thwart the AI's strategy and win. While winning is possible on the medium level, it certainly requires some thought and playing around. Winning on the hard level is, to the best of my knowledge, impossible. *Cackles gleefully*

The end is a new beginning:

At the end of the game, the winning sequence (i.e., row/column/diagonal) is highlighted, if any, and the status on difficulty is updated to reflect the status of the game's conclusion (i.e., either the winning side or a draw). At this point, you will not be allowed to make any more moves, lest you incur the wrath of the Javascript alert… unless you decide to click one of the three "New Game" buttons at the bottom (which you are allowed to do at any point, even during a game) – then the fun can begin all over again!