



## Instruction Manual - Team 5

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## Introduction

Welcome to Battletracks. Put your traditional battleship skills to the test, with a boiler spin on it. Choosing either single player or multiplayer, face our easy and difficult AI or other live opponents. Play the tracks and climb the ranks. This is Battletracks.

## Getting Started

Battletracks can be played on any internet enabled device which can access a web browser. You will need a google email in order to be able to create a log in.

U - Up

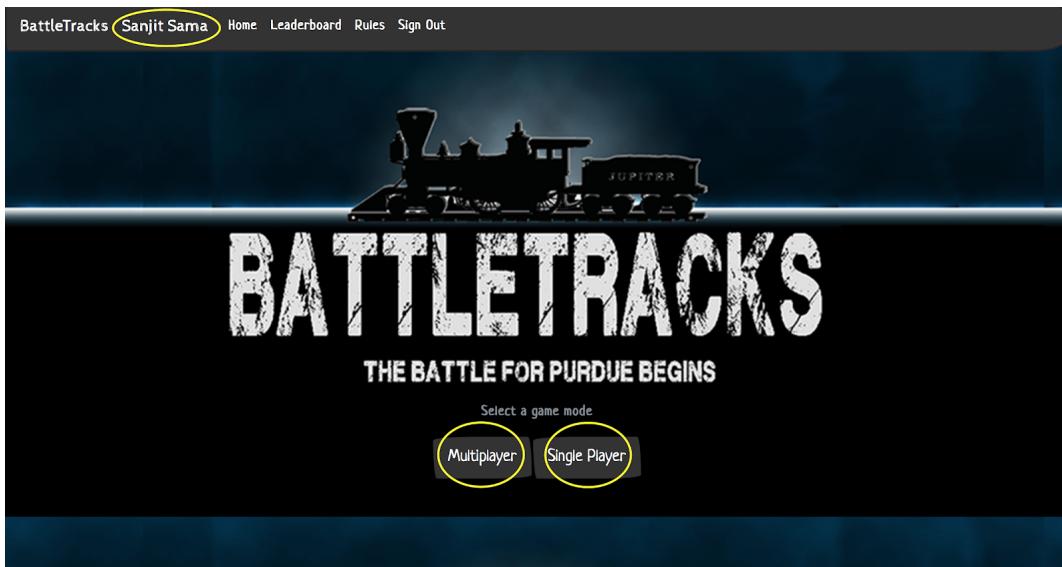
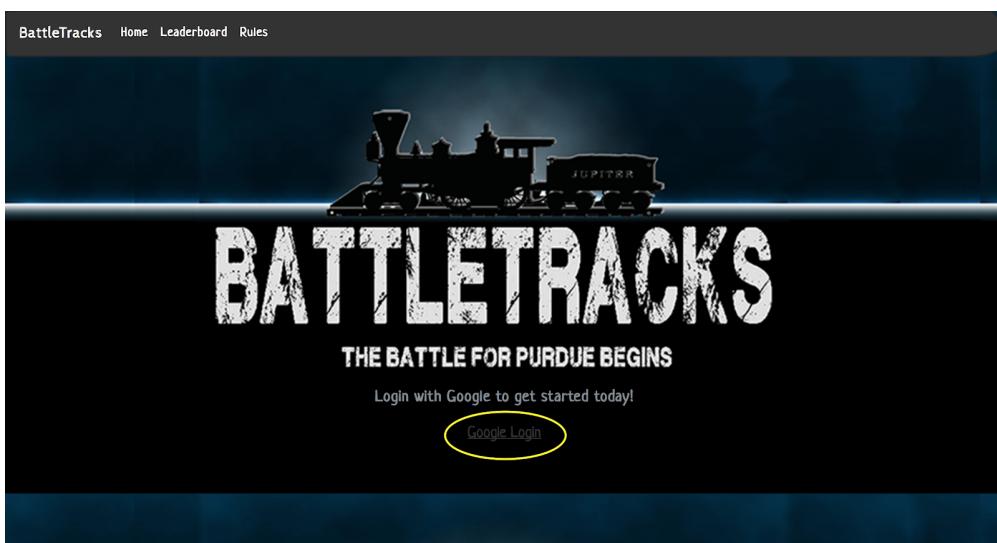
D - Down

L - Left

R - Right

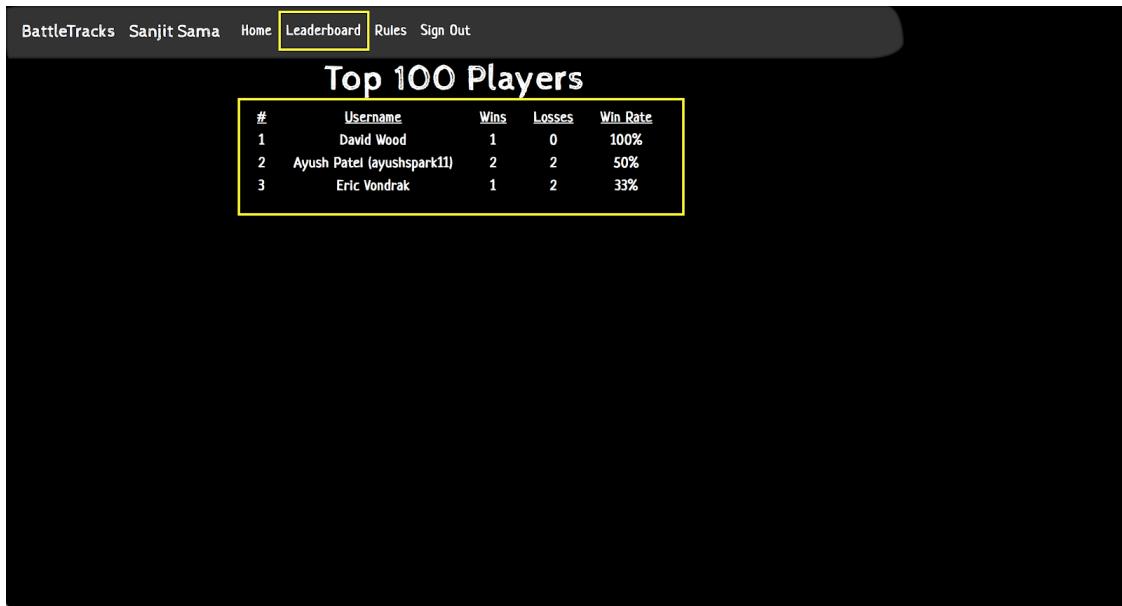
## Instructions - Basics

1. Please go to the following url: boilergames.com:9006
2. You will then be greeted with the following Home Page. Please click the "Sign In" button to get started. Notice that the google login button alongside the buttons which appear later on will always be below the logo.
3. After you have successfully logged in, notice that your name will appear on the top left hand corner. Also, notice how that two options have appeared for game mode: "Multiplayer" and "Single Player".



*Before we choose a game board we will familiarize you with the rest of the website.*

**4. Leaderboards:** The live leaderboard will update based on your **Total Wins - Total Losses**. It will be populated with the Top 100 Players. There will be fewer players on the board if fewer than 100 players have played any multiplayer matches.



The screenshot shows a dark-themed web application. At the top, there is a navigation bar with links: 'BattleTracks', 'Sanjit Sama', 'Home', 'Leaderboard' (which is highlighted with a yellow border), 'Rules', and 'Sign Out'. Below the navigation bar, the title 'Top 100 Players' is displayed in a large, bold, white font. Underneath the title is a table with a yellow border, listing the top three players. The table has columns for rank (#), username, wins, losses, and win rate. The data is as follows:

#	Username	Wins	Losses	Win Rate
1	David Wood	1	0	100%
2	Ayush Patel (ayushspark11)	2	2	50%
3	Eric Vondrak	1	2	33%

**5. Rules:** The Rules page will greet you with the formals rules to play the game. Please take a few minutes to brief yourself with the instructions.

## GAME RULES

### Game Objective

The object of Battlettracks is to try and destroy all of the other player's trains before they destroy all of your trains. All of the other player's trains are somewhere on his/her board. You try and hit them by entering the coordinates of one of the squares on the board or clicking it. The other player also tries to hit your trains by selecting coordinates. Neither you nor the other player can see the other's board so you must try to guess where they are. The board on the left side is your board, and the board on the right is the opponent's board.

### Starting a New Game

Each player places the 5 trains somewhere on their board. The trains can only be placed vertically or horizontally. Diagonal placement is not allowed. No part of a train may hang off the edge of the board. Trains may not overlap each other. No trains may be placed on another train.

Once a train is placed, the players may not move the trains.

The 5 trains are: Electric-Train (occupies 5 spaces), Diesel-Engine (4), Coal-Hauler (3), Caboose (3), and Steam-Locomotive (2).

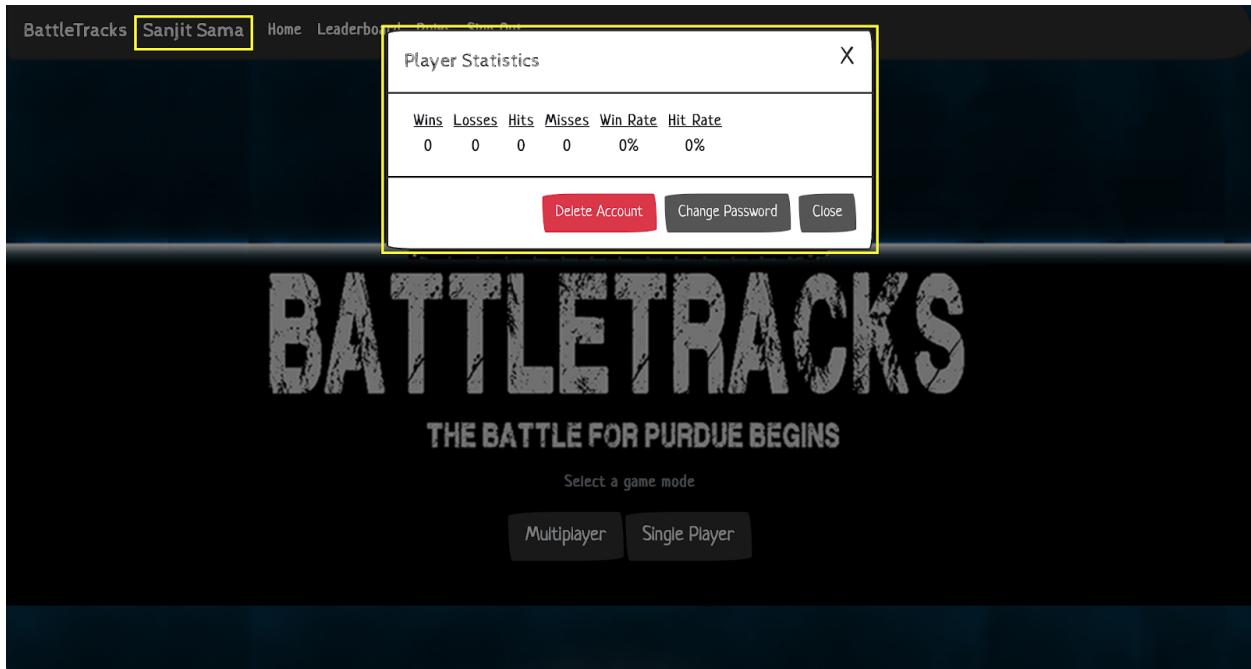
### Playing the Game

Player's take turns guessing by selecting coordinates. The opponent or the UI responds with "hit" or "miss" as appropriate. The board will be marked accordingly for both players: explosion for hit, broken tracks for miss.

When all of the squares that one your trains occupies have been hit, the train will be destroyed. The player who destroyed it will be notified that a train has been destroyed.

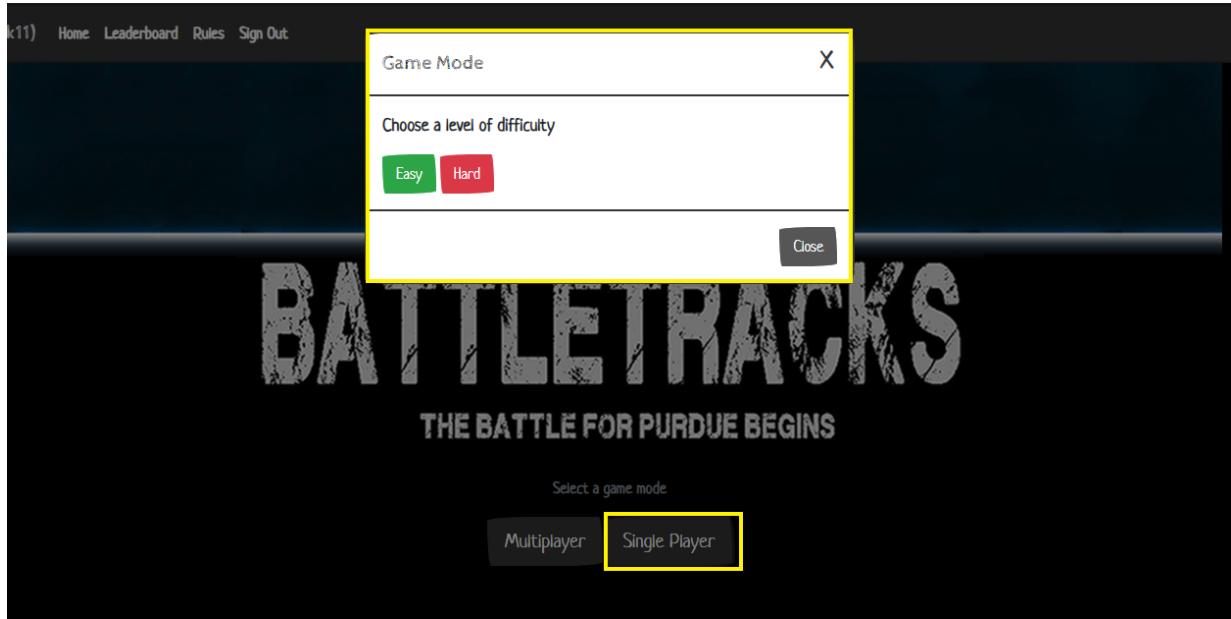
As soon as all of one player's trains have been destroyed, the game ends.

**6. Player Statistics:** Once you click on your profile name you will notice that a new modal pops up. Here you can [see](#) that your personal statistics will appear. Here you can also delete your account and change your password. Deleting your account will only remove your data from our server and database, not Google's. Since we are using Google accounts, attempting to change your password will take you to your google profile to change your password there instead. Beside the player name in the navigation bar are the home and “Battletracks” buttons. These buttons should both take you back to the homepage.

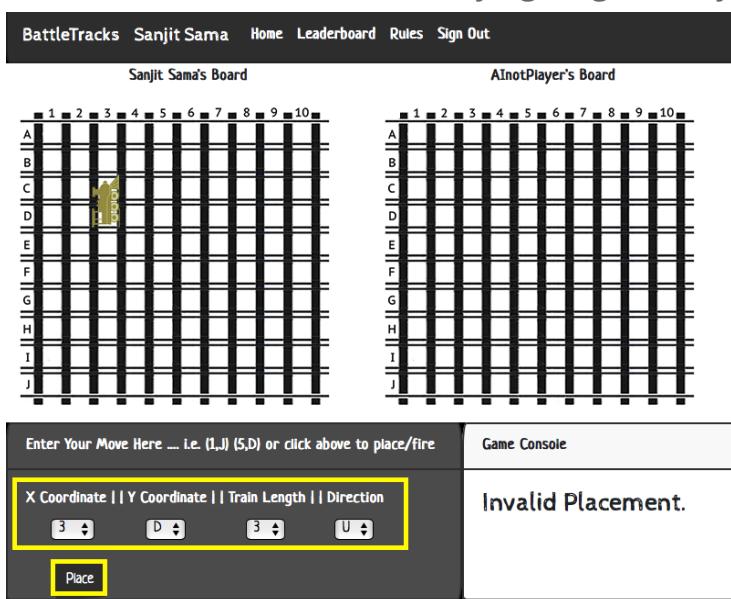


## Instructions - Single Player

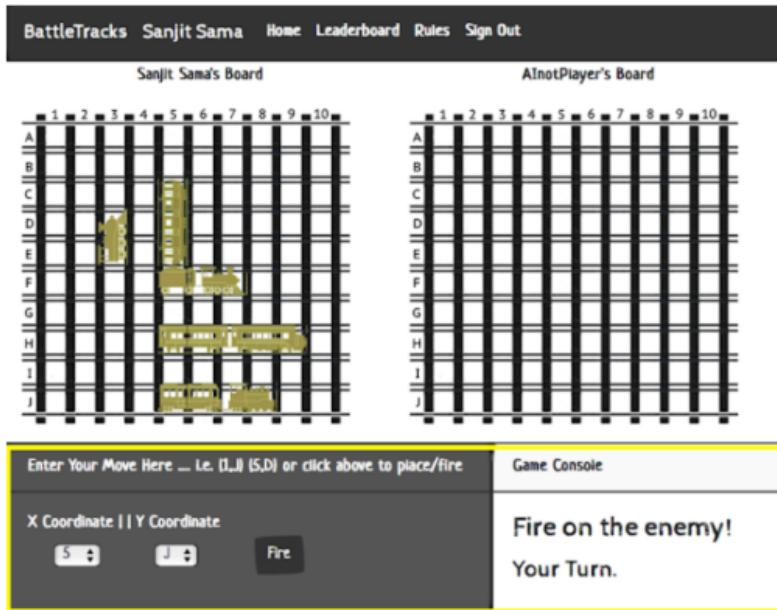
1. **Single Player:** Once you click on single player you will be greeted with either "Easy" or "Hard" option for difficulty.



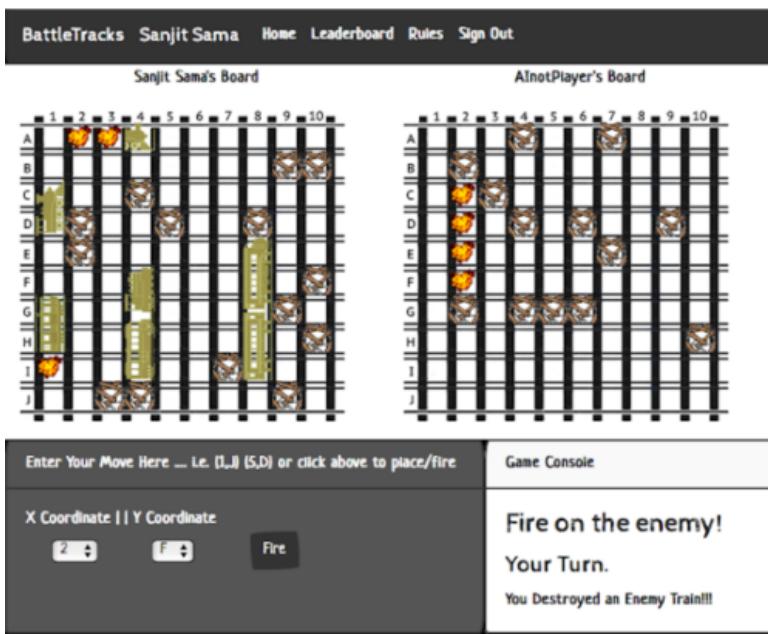
2. You will then be taken to the game page. You must first begin by populating your board with trains. To do so, please choose the appropriate x,y coordinates, the length of your train, and finally the direction. Once you have chosen the desired inputs please click place for the train to be placed on your board. There are five trains of varying length that you must place: 2,3,3,4,5.



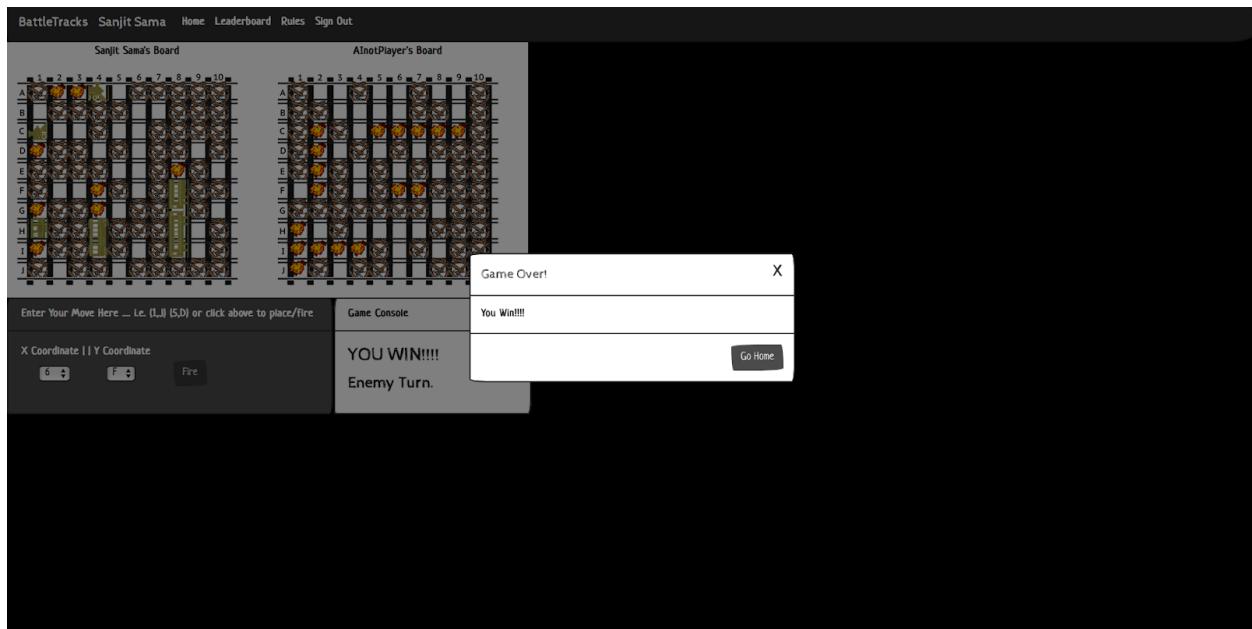
3. Once all the trains have been placed you will notice the Game Console change. The Game Console will indicate when it is your turn, as well as whether you've made an invalid attack. In the event of an invalid attack, you will be allowed to pick another location. To fire, you may click on the opponent's board on the square that you would like to target. Alternatively you may input an X and Y coordinate then click "Fire".



4. Notice that when an enemy train is hit you will see a small image of a blast which indicates that your move was a successful hit. Otherwise, the other symbol, resembling a broken set of train tracks, represents a "miss" on the game board.



5. Finally, if you successfully win or lose the game, you will be greeted with a “you win” or “you lose” modal. This will also update your personal statistics. This modal should also appear in the event that your opponent disconnected in the middle of your game if you were playing multiplayer. If both players have already joined the match, then the player who leaves will be awarded a loss, and the remaining player will be declared the winner. This will also affect the stats of the players involved. You can view the changed statistics by clicking on your name once you leave the game page. Clicking the Go Home button should return you to the home screen.

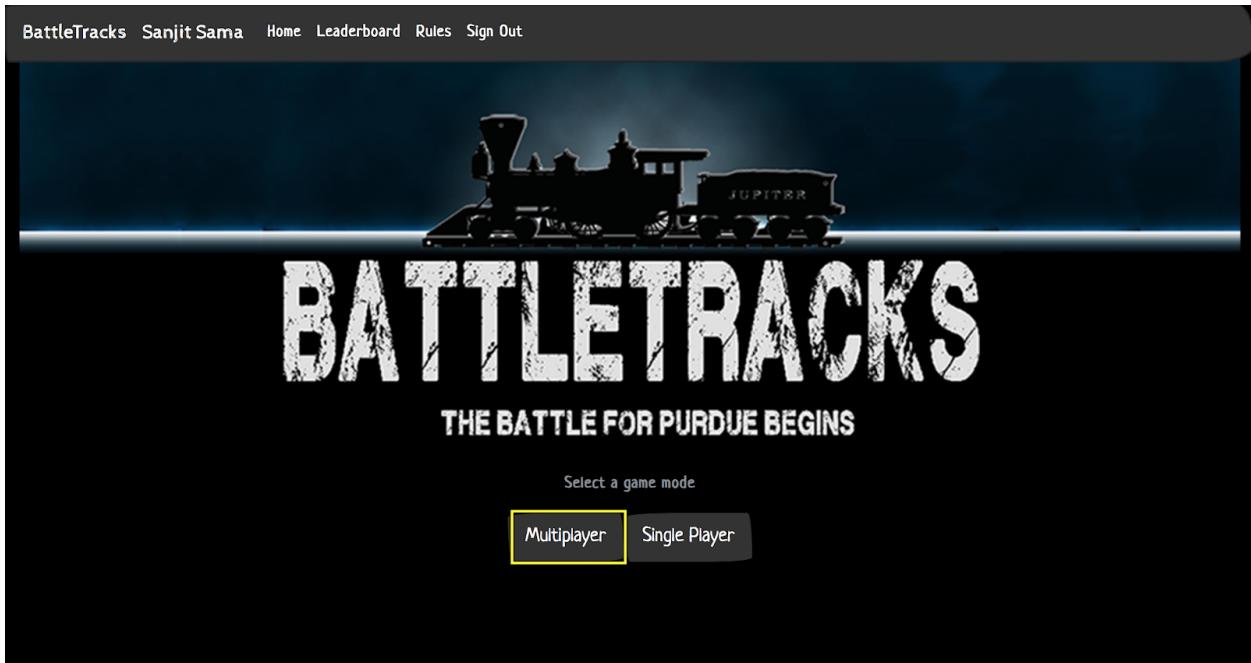


## Easy Vs. Hard

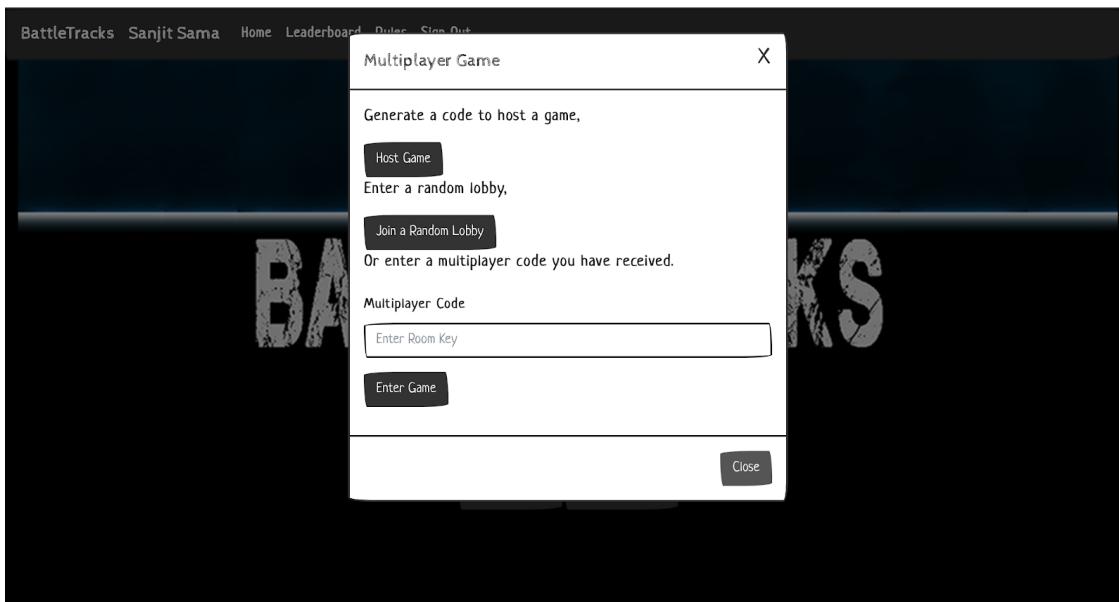
For placing, both the Easy and Hard AI randomly place their trains in an empty map so that every train fits without issue. When it is ready to fire, the Easy AI's algorithm selects an X and Y at random and attempts to fire there. If the shot is invalid, it fires again until a valid shot is fired. This is the sum of the Easy AI's decisions. The Hard AI differs from the Easy AI in that after it hits a train, it will shoot around the train in an attempt to destroy the entire train. Once every square around the hit train squares have been fired upon, the Hard AI will resume firing randomly.

## Instructions - Multiplayer

1. If you would like to play Multiplayer, please select the multiplayer button on the homepage when you first arrive at the website.

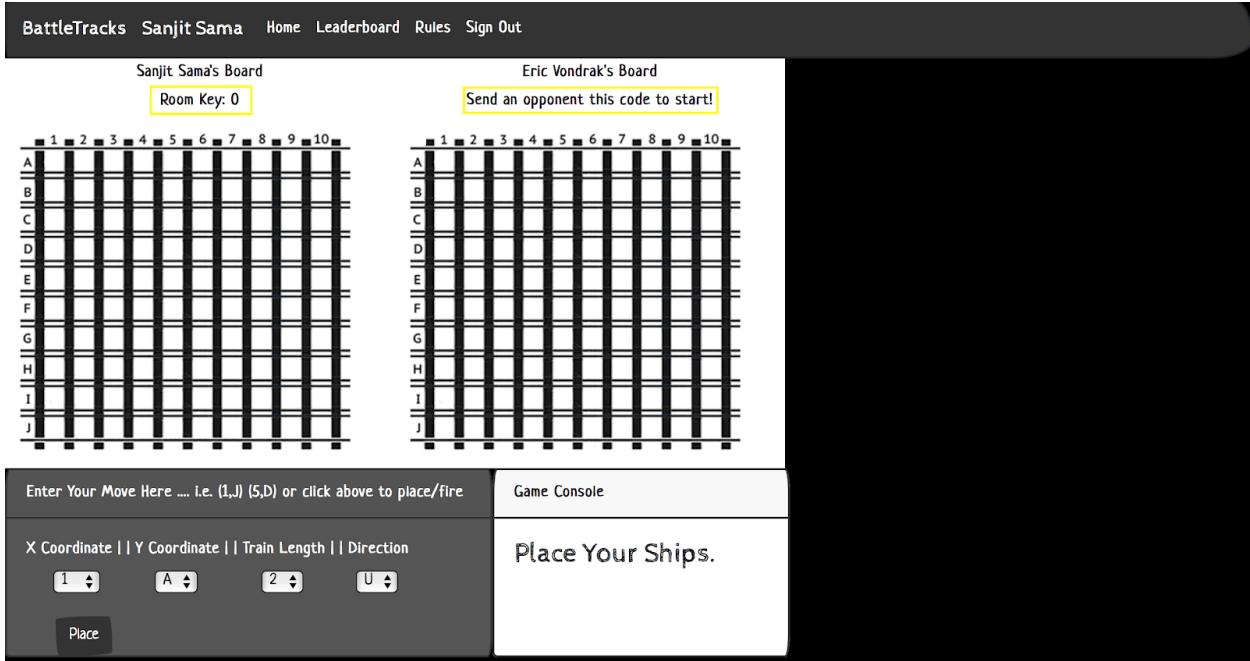


2. You will be greeted with a modal which allows you to either join or host a game. You can choose to host a game, which will be further explained below. You may also join a random lobby which will allow you to play other players who have chosen this option. Finally you can choose to join a game by putting in a Room Key given to you by a person hosting a game.



These links go to /host, /random, and /join?key=ROOMKEY respectively.

3. Below is the multiplayer game mode. If you are hosting a game, the room key will be shown in the highlighted space below. Give this key to a friend and have them input the key in the multiplayer modal, and you two can now face each other in combat! Note that you may leave a multiplayer game without penalty if no opponent has joined your game. Once a game has two players, there will be a penalty for leaving.



4. Multiplayer and singleplayer are played in the exact same way, so see above if you need directions. However, disconnects are additionally handled in multiplayer, detecting when a player leaves a game and giving them a loss if they do so before the end. If your opponent leaves the game, you should be granted a win via forfeit and be notified as such by a modal. Also note that in multiplayer you will not be able to begin firing until both players have placed all of their trains down.