Minimum Viable Product

Overview

Create an online system where users can code tanks and watch them fight in an arena.

Tanks

Create tanks: a user should be able to...

- Create a new tank and give it a name
- Upload code for that tank
- Check the uploaded code to see if it will compile

Edit tanks: a user should be able to...

- Download the code for one of their tanks in it's original form as they uploaded it
- Replace a tank's code with a new upload
- Check the uploaded code to see if it will compile

Delete tanks: a user should be able to...

- Delete a tank

Manage tanks: a user should be able to...

- See a list of all their tanks
- Rename a tank
- Look at the source code for a tank (without downloading it)

Games

Create games: a user should be able to...

- Create a new game and give it a name

Join games: a user should be able to...

- See a list of games with open spots
- Join an open game with a selected tank

Watch games: a user should be able to...

- See a list of games they've joined
- Watch a game:
    - Watch the movements of each tank in the game over time (animated)
    - Watch the movements of bullets over time (animated)
    - Watch the health of each tank throughout the game
    - Change the playback speed of a game ("slow motion" vs. "fast forward")
    - Discern between their tank and enemy tanks (color coordination)

- o   See any exceptions/errors generated by their tanks during the game

Coding Interface

Rotate: a tank should be able to...

- Rotate a full 360 degrees
- Rotate in increments as small as 90 degrees
- Rotate to one of the 4 absolute directions (N, E, S, W)
- Rotate relative to current direction (Clockwise by 45, Counterclockwise by 90, etc.)

Move: a tank should be able to...

- Move forwards or backwards
- Move a certain number of grid spaces ("move forward 4")

Shoot: a tank should be able to...

- Shoot straight forward in the direction it's facing

Wait: a tank should be able to...

- Wait until their next turn

Manual

Tank interface: a user should be able to...

- See a list of possible tank moves
- See examples of tanks that work

Game mechanics: a user should be able to...

- Look up the rules for the game

Scoring

Personal record: a user should be able to...

- See the number of games they've won
- See the number of games they've lost
- Total tanks killed
- Total tanks lost

Tank record: a user should be able to...

- See the number of games a tank has won
- See the number of games a tank has lost
- See the number of other tanks a tank has killed

- See the number of times a tank has been killed

Security

Coding: a user should not be able to...

- Create any additional files on the server
- Delete anything on the filesystem on the server
- Get access to a shell on the server

Endpoints: a user should not be able to...

- See the code for other users' tanks
- Submit code for other users' tanks

Semester Milestones

Milestone	Milestone Goal
Review Requirements	Create a specifications and game rules documents that everyone in the group agrees with
Development Environment	Every developer has a working development environment and has committed code
Design Complete	Project architecture has been established and is accepted by the group of developers
Feedback Loop	People outside our group (preferably freshmen in the CS program) are using the product and giving feedback
Code is Complete and Tested	Code is in a working, usable state and has been tested for bugs and security holes
Product Deployed	Product is available on the web for open public use