Intro

This document will detail the major bosses, for now just sticking with an elementary boss.

Each boss will get progressively more difficult after they take more damage, just like Mario games, but instead of 3 hits, it will be 4 waves with the health bar.

**First Boss**

First Wave (Full Health)

* Boss will move like horizontal enemy
* Has speed of 2
* Can shoot 5 missiles, all vertically
* Boss’s vertical limit is y = 200, will not go beyond this line, in this wave

Second Wave (75% Health)

* Increase boss speed to 5
* Missiles can come in multiple directions, missiles move in multiple directions
* Missiles move in 4,5,6,7,8 o’clock directions

Third Wave (50% Health)

* Boss chooses a random direction, every 20 frames
* Boss can now move up to the y = 400 line, no further

Last Wave (25% Health)

* Boss can spawn horizontal enemies

Technical Grooming:

Necessary fields:

* X location
* Y location
* Width
* Height
* Image
* X velocity
* Y velocity
* X direction
* Y direction
* Value
* Shoot flag (not sure how to implement this exactly)
* Right, Left, Up, and down boundaries
* Number of bullets that can be fired
* Health
* Wave
* Hitbox

All these fields are exact same as Enemy class, so inheriting from enemy class

Boss class

Needs to be able to change attack, speed, and type of movement, based on amount of health,

Which can be a function on its own, set wave,with 4 mini functions, wave\_1, wave\_2, etc.

Separate function to execute wave, calling all the mini wave functions

In play function:

* Call set wave whenever the health dips from 1 quartile to another
* Always call execute wave

Set Wave:

* Decrease Wave field by 1
* Call set wave properties function

Set Wave Properties:

For wave 1:

* Set x speed to 2
* Set number of missiles to 5
* Set missile direction to vertical
* Set boss vertical limit to 200

For wave 2:

* Set missile directions to 4,5,6,7 or 8 o’clock positions (happens in shoot function, depending on wave)
* Set boss speed to 5

For wave 3:

* Set missiles to be circle bullet, shots which now causes 10 damage to player

Execute Wave

* Call the respective wave execution function, depending on wave field, wave\_1, wave\_2 execution functions

Wave\_1: