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Period 9
Full prototype

Project: Osmos / Agar.io

Summary:
A game like Osmos where the player controls the movement of a ball by shooting out pieces of itself to move. The goal is to consume other balls of smaller sizes in order to become larger. Contact with larger balls will result in losing as the larger ball consumes you.

Critical Features:
Main Player Movement:
Based on the player's size, the player will move at a certain velocity. Direction will be controlled by mouse clicks in Processing. As the player moves forward, food particles will be ejected behind it and it will lose mass while gaining speed.

Enemies/ food:
Other balls of varying sizes will move around in the field with the goal of becoming larger. They move away from balls of larger sizes and toward balls of smaller sizes. Speed depends on the size of the ball and movement is the same as the main player movement.

Board:
The player and other balls of various sizes are enclosed in a field of varying sizes. The balls and the player bounce off the walls.

Future add-ons:
Gravity:
Based on the mass of players, objects will be attracted or rotate around them. (Possibility of different levels.)
Visual:
Changing colors for balls of different sizes. Ex: Balls larger than the main player become red while smaller ones are blue.
Field:
The field is not confined to the area visible on the screen. The field of vision moves along with the main player.

PHASES OF DEVELOPMENT:

I. Code set-up. This will establish what a board will look like (dimensions, beginning players).

II. Code and come up with algorithms related to the movement of players. A player must be able to be controlled using clicks

III. Code the behaviors/movements of enemies/food. They should move in random directions, but coherently.

IV. Code the growth of the player/food/enemies. They should be able to absorb each other, gain mass after they absorb each other, and slow down as they gain mass.

V. Code the field and the interaction of the field and the players/food/enemies.

VI. Code the visual aspects such as colors and movements of the mass expelled from the player/enemies as they move.

VII. Code additional add-ons.

UML Diagram: