

Cactus

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Period 4

Atari Breakout and *Space Invaders*

Overview

We plan on creating an arcade-like setting, with several different games. We will be remaking older games, *Atari Breakout* and *Space Invaders*. We will have a menu with different buttons that will then start the chosen button's respective game. In *Atari Breakout*, we will use Queue for the balls, have a superclass for different kinds of blocks at different levels, and state variables for the states of the blocks.

Similarly, *Space Invaders* will also have a Queue for the spaceships, and a superclass for the different aliens. Overall, both games will have a way to keep track of lives, highscores, and usernames.

Java Concepts to be Implemented

❖ Structure

- Queue: balls in *Atari*, shooters in *Invaders*
 - Also to keep track of lives left
- Superclasses for blocks and aliens
 - Which gives all blocks or all aliens the same basic structure but allows for further implementation of specific properties, such as size, color, etc.
- Object creation and instance variables
 - Creates the player and attach to it its properties that need to be kept track of, such as lives, highscore, username, state (which changes after hitting different blocks) etc.
 - Same thing for blocks and aliens.
- Sort for highscore (username tags)

❖ Additional Designs

- Import images for backgrounds
- Design player, blocks, and aliens using shapes (they could be cats, food, and anything that's cute :))
- Import sound files to provide sound effects for shooting targets and/or losing lives (if allowed).
- Text description of each game on the main menu page and brief explanation of points gaining and losing rules. (i.e. Shooting a small alien → 1 point; Shooting a big alien → 3 points, etc.)

