# Fancy Game 2

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About This Project

- As the name would suggest, this project is a game.
- In this game, you control a ship that fires at enemies. Your goal is to survive through as many waves of these enemies as you can before losing all of your HP to enemy projectiles or collisions with obstacles.
- Throughout the levels, you earn points, a score usable as a comparison method, and currency, which can be used to buy helpful upgrades and power ups.

Features
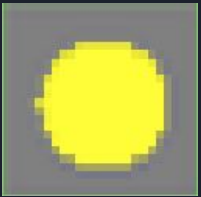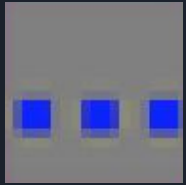
- Power Ups - random enemy drops that aid the player
- Currency - spendable points earned through gameplay
  - Upgrade player stats (HP, attack, defense)
  - Buy power ups to activate later
- Waves - enemies come in "waves"
  - At the end of each wave is a boss
  - Currency Shop accessible at the end of each wave
- Multiple enemy types
  - Three types that appear in the body of the wave
  - Two boss exclusive types
- Critical Hits
  - When a projectile hits an enemy directly in the center, it gets killed instantly
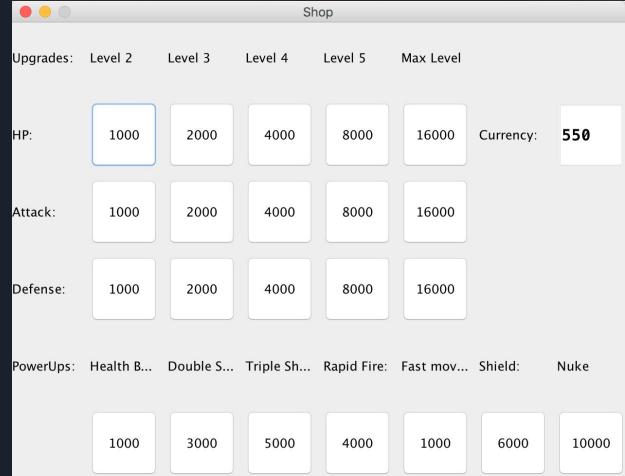
Classes

- Package Main
  - Boost-represents a "boost", a yellow square that adds HP when hit, regardless of max HP
  - Enemy-represents an enemy, subclass of Shooter
  - Explosion-handles explosion gifs
  - GameWindow-contains main methods
  - Hotbar-a hotbar that allows you to store and use purchased powerups
  - KeyboardInput-(deprecated) handles inputs from keys
  - Obstacle-represents an obstacle that does large amounts of damage when hitting the player
  - Player-represents the player
  - PowerUp-an item that temporarily gives some form of aid to the player
  - ProgressBar-represents a progress bar, used to show player health
  - Projectile-represents a projectile, shot by the player or enemy

Classes Cont.

- Package Main cont.
  - Shooter - a "shooter" ship that can move and fire projectiles
  - ShooterGame - master class for handling all game rules and interactions
  - ShooterGraphics - master class for handling all graphical matters
  - Shop - a window that allows you to spend in game currency for upgrades
  - SidePanel- a panel on the right side that shows score, points, and currency
  - Wave - represents a "wave" of enemies with a boss at the end
- Package Enemies - subclasses of Enemy
  - Boss0, Boss1 - subclasses for two boss variants
  - Special - different movement, shoots lasers
  - Ninja - very fast, erratic movement, but low HP
- Package Projectiles
  - Laser - a special subclass of projectile with different damage properties

Shop

Upgrades:	Level 2	Level 3	Level 4	Level 5	Max Level		
HP:	1000	2000	4000	8000	16000	Currency:	550
Attack:	1000	2000	4000	8000	16000		
Defense:	1000	2000	4000	8000	16000		

PowerUps:	Health B...	Double S...	Triple Sh...	Rapid Fire:	Fast mov...	Shield:	Nuke
	1000	3000	5000	4000	1000	6000	10000

Real World Impacts

Solving Boredom

-The program is primarily a game, and thus may be used to temporarily remove boredom, especially among younger demographics.

Game Design

-As a game, this program acts as both an inspiration for others and an aid to understanding certain concepts crucial to game design.

Promoting Analytical Thinking

-Multiple aspects of the game, most notably the upgrades to player stats and power ups available for purchase, result in player strategy being a major factor in success.

Military Applications?

-It is possible that the game could be adapted for use in a flight simulator to train pilots.

Thanks for Listening