The background of the entire image is a painting of a three-masted sailing ship, likely a pirate ship, with its sails partially unfurled, moving through dark blue, choppy ocean waves under a sky filled with dramatic, light-colored clouds.

# SWEET PIRATE OH'MINE

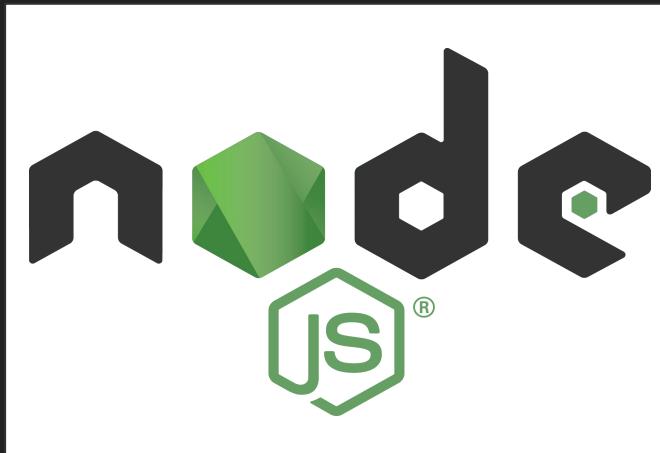
**Matthew Crosby, Sharon Dasari,  
Ean Dodge, Evan Kidd, Keegan  
Knapp, Moamen Mahmoud,  
Maxim Mamotlivi, Seth Opatz,  
Brody Peelman, Brent Warring,  
Jacob Welch, & Nick Widmer**

# Project Goals

We aimed to create a game combining the wonder of sailing the high seas with the intrigue of solving puzzles for treasure to create a new and different experience embodying what it's like to be a pirate. But, more than anything, we wanted to put our best collaborative effort into a finished product that we could be proud of.



## Tools Used:



# Vision Statement

To create an exciting pirate adventure that challenges players to unleash their inner puzzle loving pirate, outwit challenging puzzles, defeat monstrous enemies, and unlock the doubloons of hidden treasures—all while delivering fun gameplay, realistic sailing, and unfathomable riches. This product was made to give anybody that loves puzzles, pirates, and sailing a fun and immersive experience.

# Game Function Summary

You are a pirate looking for islands to plunder for treasure. You set sail from your home island, and shoot your cannons at anyone and anything in your path as you make your way toward a treasure island. But, it's not that easy, as a boss monster stands in your way to guard the treasure! You must defeat the boss to dock on the island and earn your riches. But the treasure is locked, and you must solve a puzzle to open it up and reap the rewards.



# Our Process

Meetings, votes, SCRUM etc (how we operated week to week)

- Team would meet after class every monday
  - Get an idea of the work needing done for the upcoming week
  - Brainstorm features / ideas to potentially add
- Through the week via discord work would be divided amongst people
  - Ideas were always welcome during this time as well
  - A lot of changes would come about in this stage
- Testing / Demo
  - To wrap up the week we could commit what was finished to our main branch
  - Before fully merging those who wanted to participate could test / dummy run the new changes to make sure they were ready for presentation on Monday

# How we implemented Agile

Our weekly iteration included:

- A weekly “standup” mondays after class / on discord discussing features that need done this week
- Post issues to our projects Kanban board after standup and throughout the week if necessary
- Iterate over last weeks features by writing any necessary tests first, then implementing the newest feature
- Show deliverables to stakeholder and receive feedback (if available)
- Code reviews before each branch merge
- Present on monday
- Repeat!

# Documentation

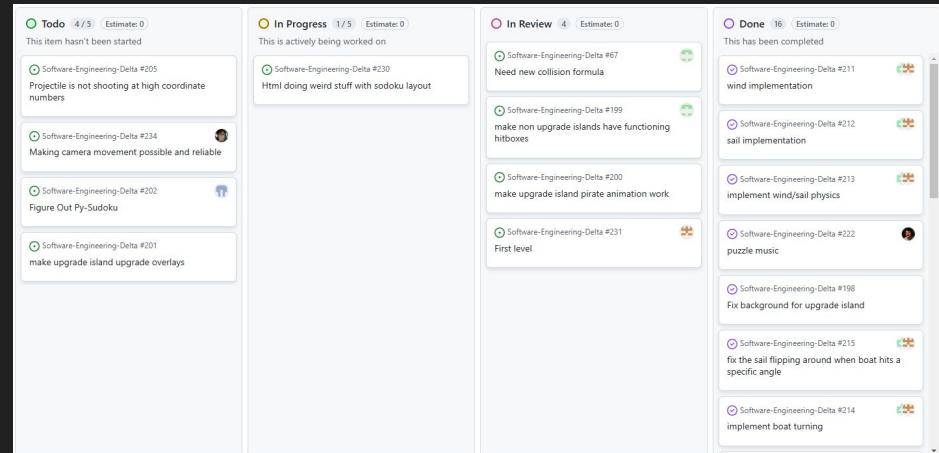
All our Weekly Burndown Charts:

<https://docs.google.com/spreadsheets/d/1-IPcrMJJinuD9i9ndgOdbwhh6ptXR-CxArg-uReU4EM0/edit?usp=sharing>

Example of our Shared Weekly Documentation Template:

[https://docs.google.com/document/d/1J1tEz0jIXWhzLGPuNkjWMvB9ThAU2kDgZhmiT5G\\_pl/edit?usp=sharing](https://docs.google.com/document/d/1J1tEz0jIXWhzLGPuNkjWMvB9ThAU2kDgZhmiT5G_pl/edit?usp=sharing)

Kanban: (Example from Sprint 9)

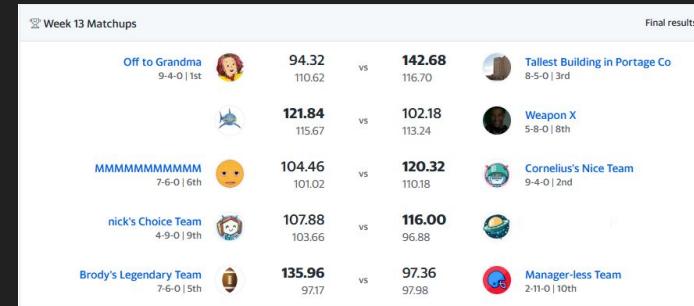


# Collaboration

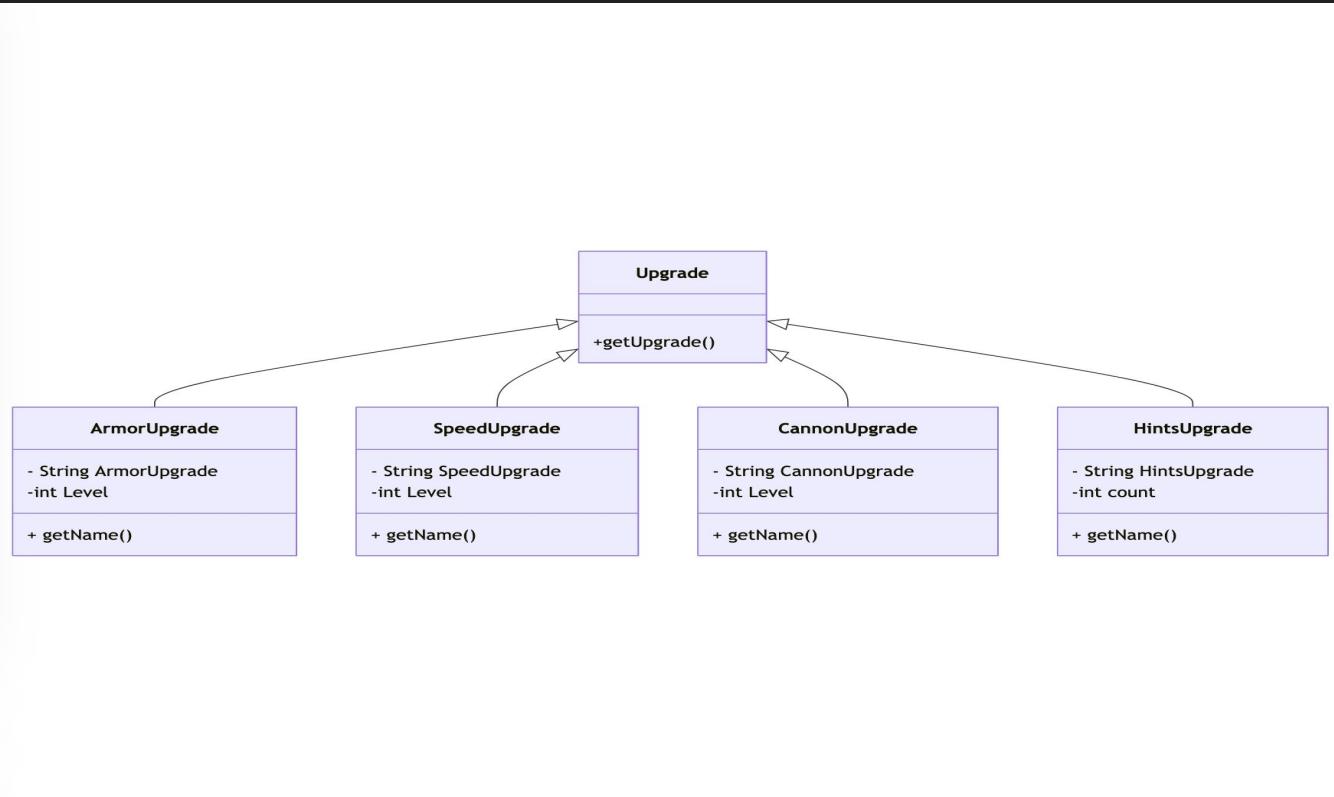
In the early stages of project development, we met in an empty classroom after class to discuss what we needed to do. This allowed us to create clear goals for ourselves and grow closer as a team. It was during this time where we split ourselves up into three groups: A programming group, a testing group, and a research & development group.

As a team, we have participated in a little friendly rivalry through a fantasy football league, called the League of SCRUM:

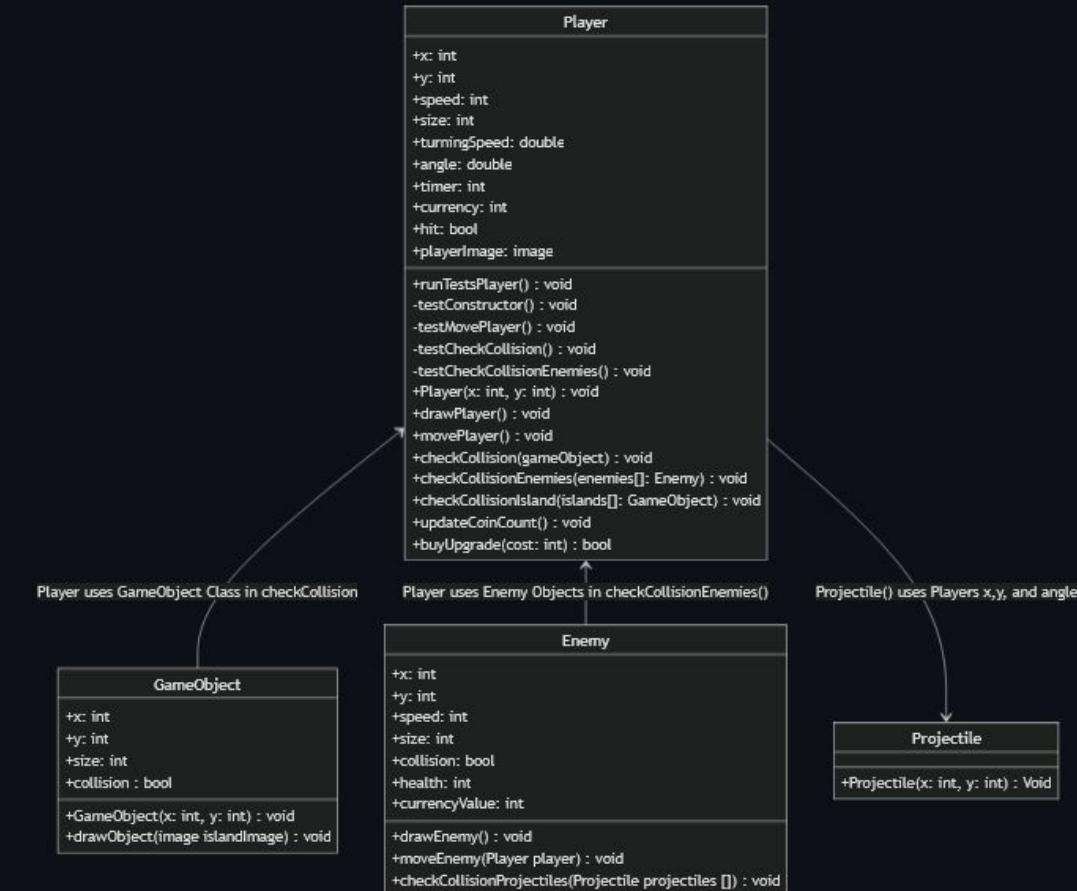
This has helped boost team comradery



# Upgrades UML



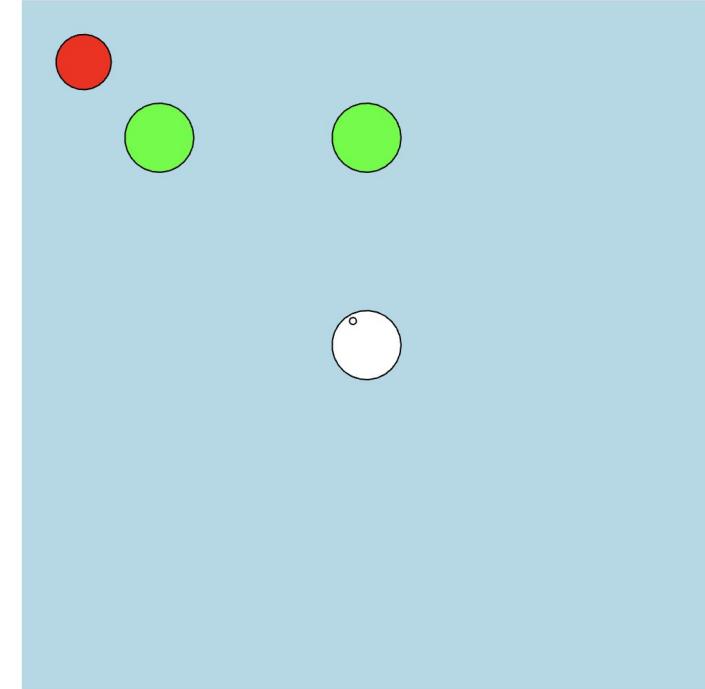
# Player UML



# Early Development

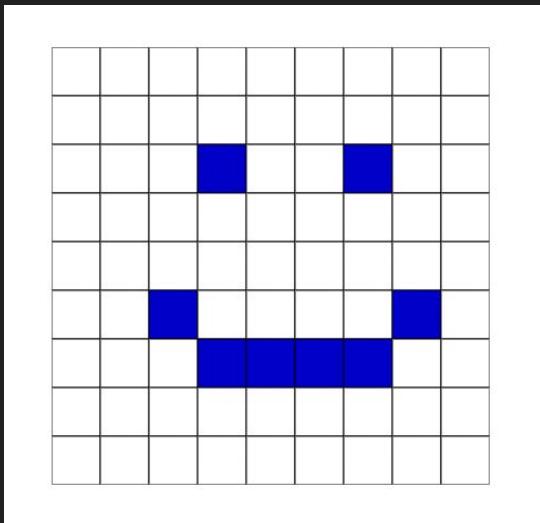
At the start of development, the group split up to perform their own tasks. A few members worked on a boat that sails around and shoots enemies, another few worked on puzzles, and others worked on upgrades. This created modular code, and allowed us to divy up the workload quite easily.

We started out simple, with a circle in a square area of water able to shoot little circles for the sailing portion for the game:



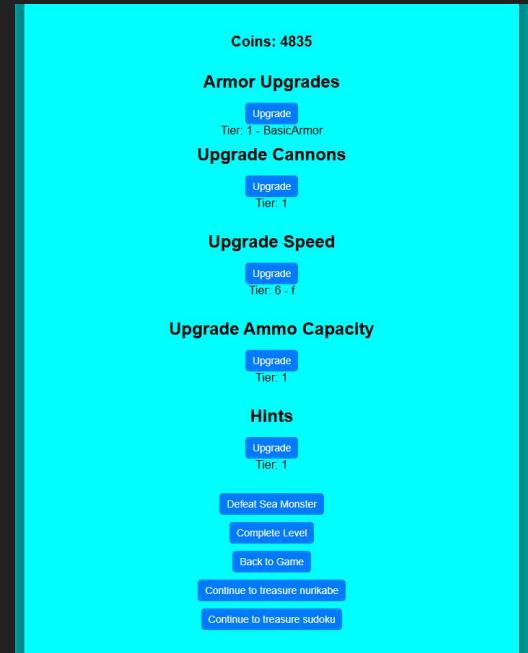
# Early Development cont.

For the puzzles, we started out with a resizable grid of squares you could click to change their color:



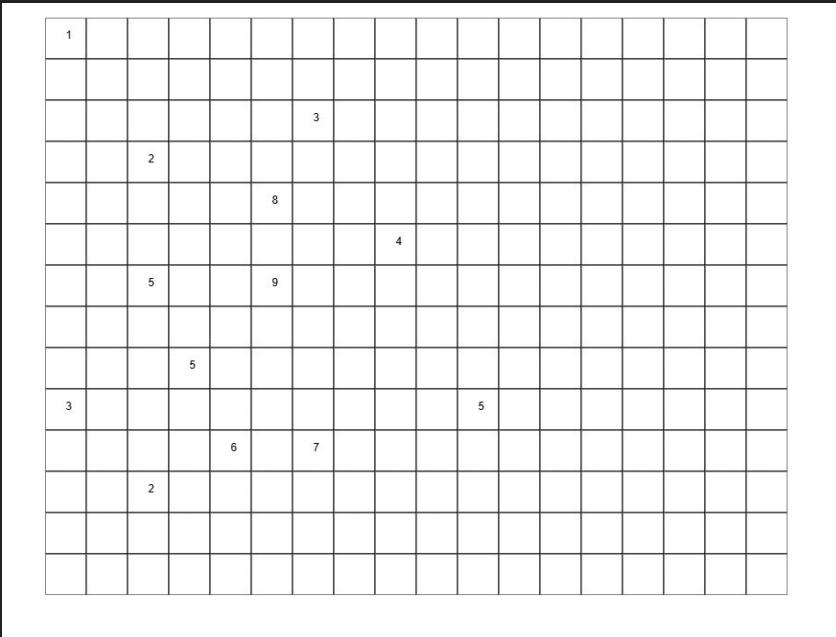
All of these prototypes were improved upon iteratively each sprint in a test-driven manner

The upgrade functionality started out as a simple upgrade screen with buttons you could use to exchange coins for a few upgrades:

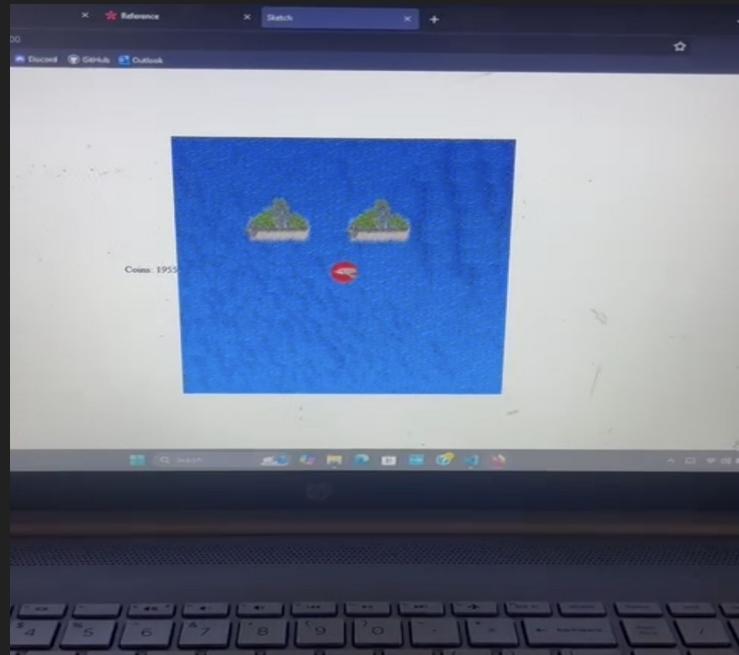


# Early Dev Screenshots

- Brody showcasing early ability to type into sudoku squares:

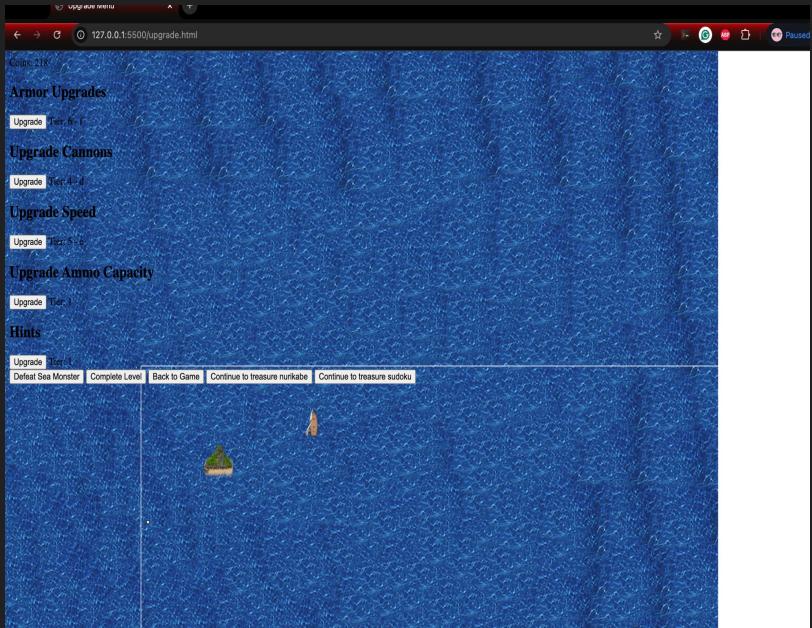


- Ean testing our game in its early stage:



# Early-ish Stages

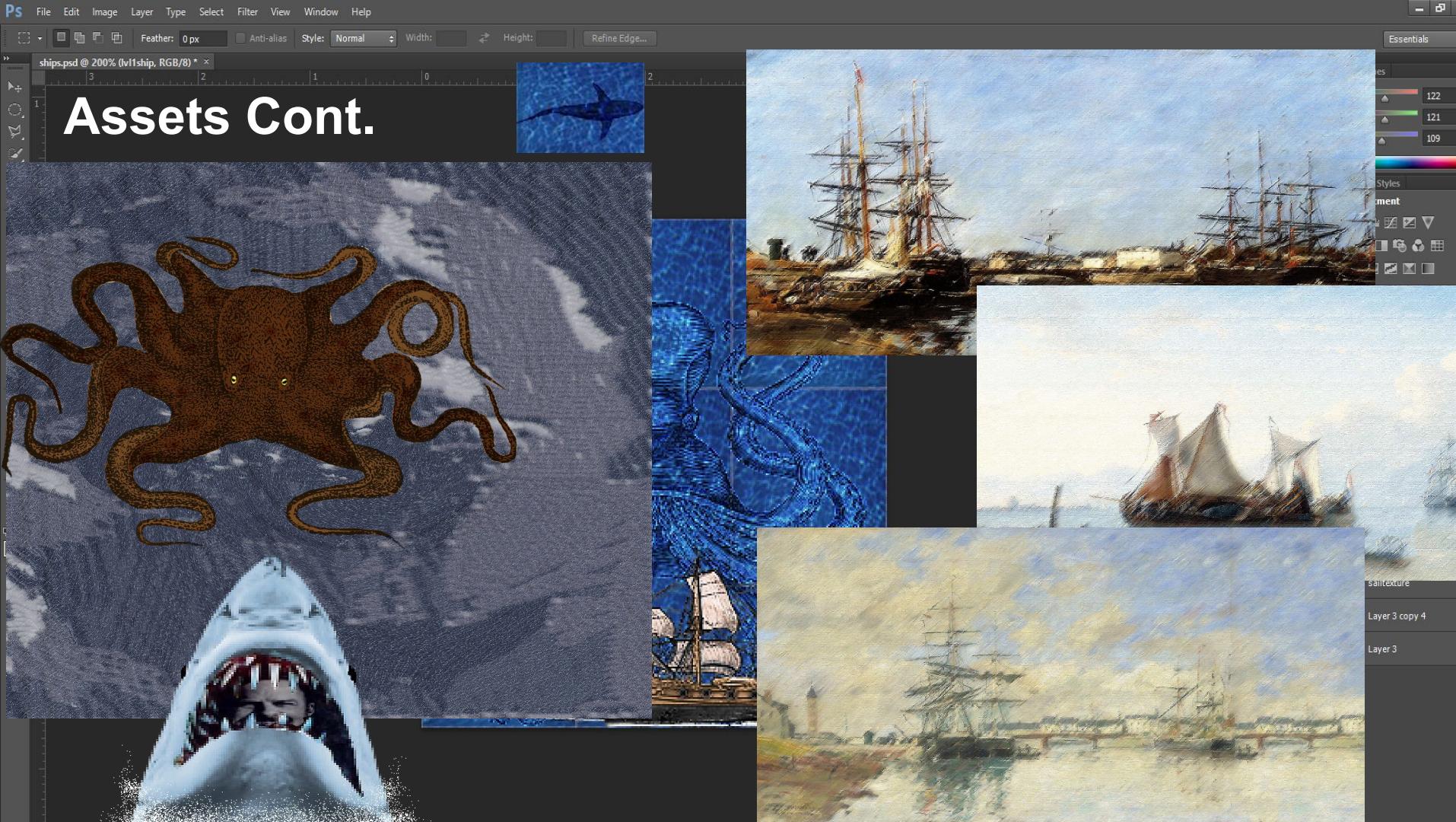
- Nick trying to make the upgrade screen just an overlay w/ buttons:
- First “placeholder” for upgrade island. Gave Max ideas



# Asset Development

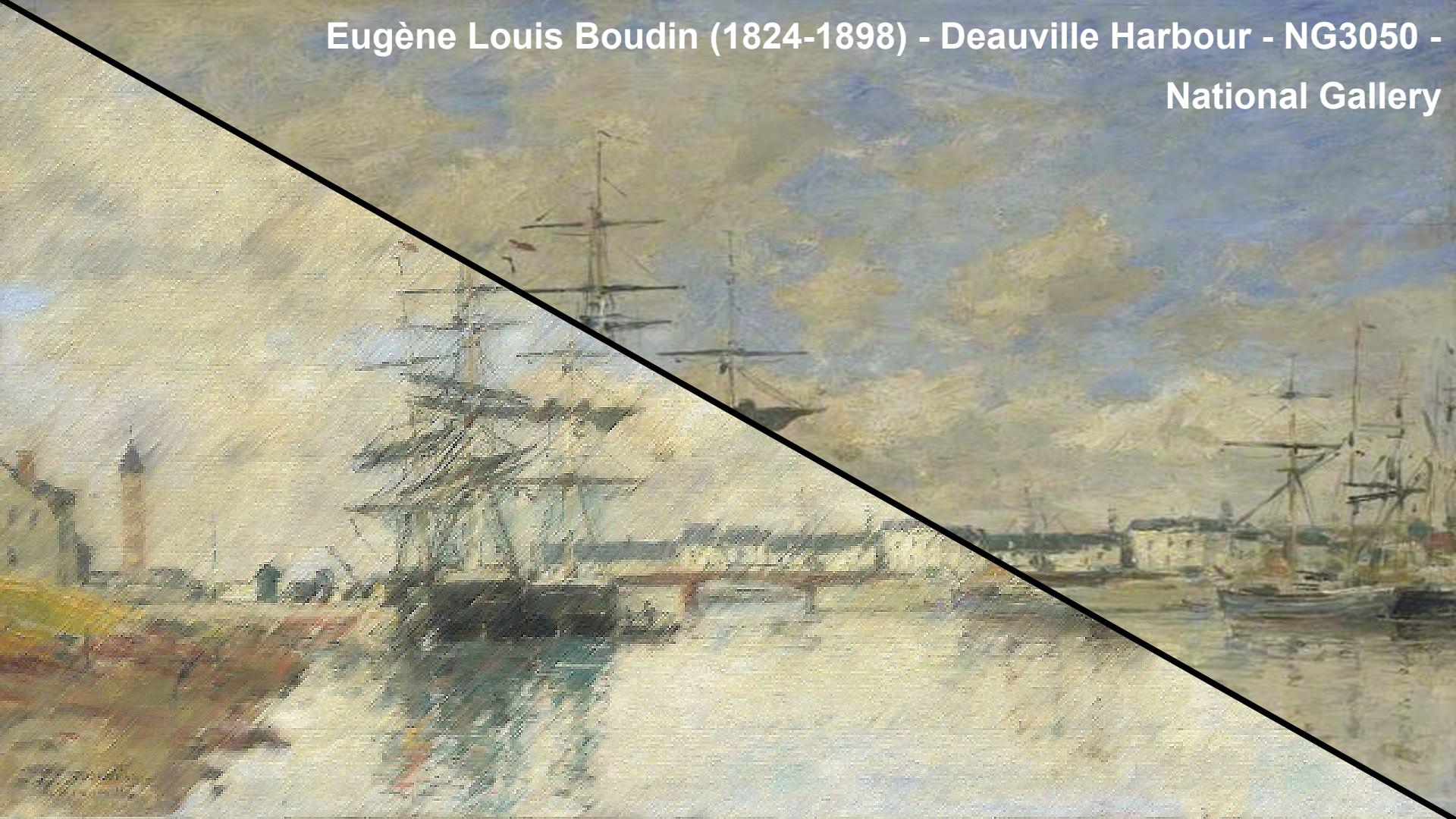
- Back and forth dialogue/feedback with the team led to many prototype assets & gradual refinement.
- A wide selection allowed for a streamlining in scope

Ps



Eugène Louis Boudin (1824-1898) - Deauville Harbour - NG3050 -

National Gallery



# The State of Development by Culmination

How our process changed from the beginning, how we improved as a team and the changes we made:

- At first it started off as creating a list of features we want into our base game and making sure from day one we had a product that met those requirements
- Once we had our base game we would chat weekly amongst each other in the discord about the state of the current game and suggest features and or bug fixes for the upcoming sprints
- The product soon became a culmination of an entire semester of hard work, trial and error, and the motivation to design and construct a product in its entirety!

# Making Progress...

Upgrade Island:

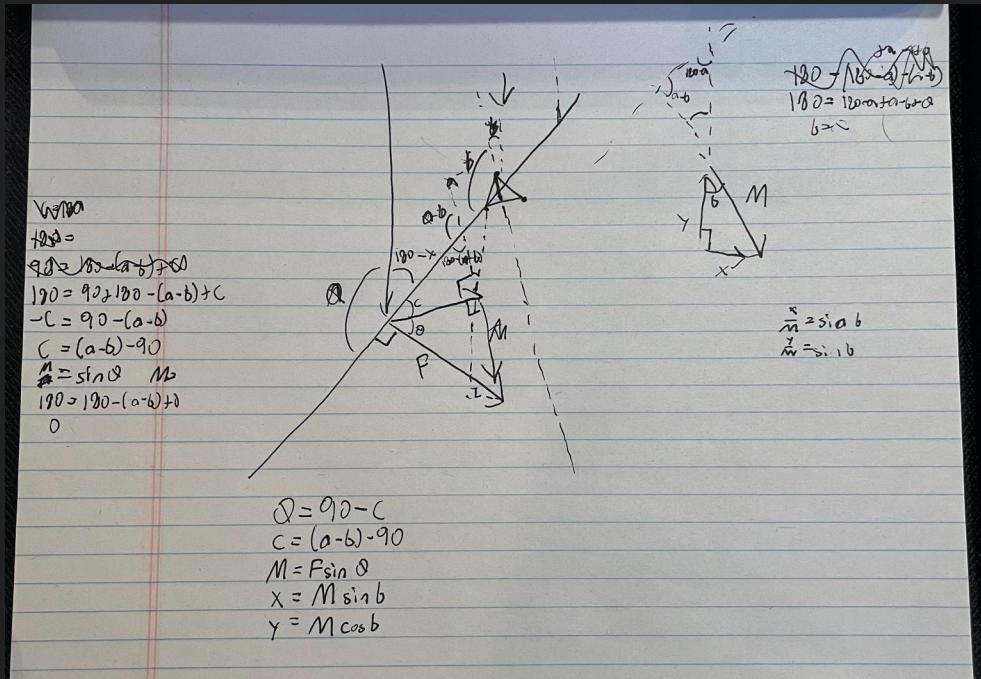


The “Graken” is born!

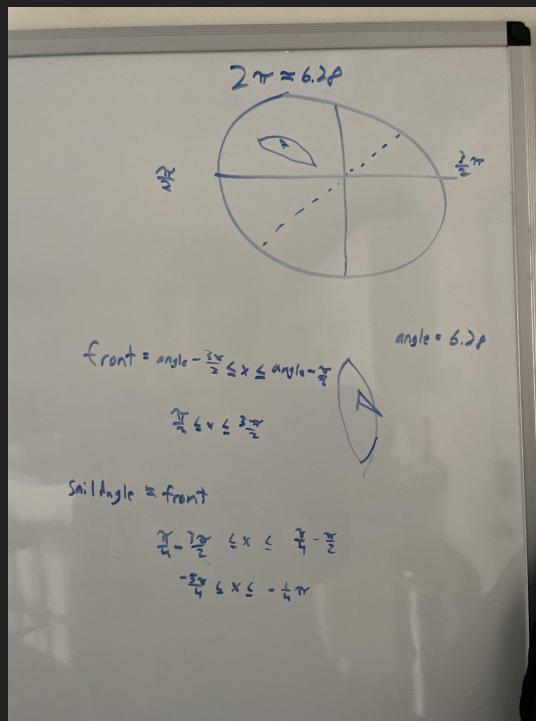


# Finally Getting to Realistic Sailing...

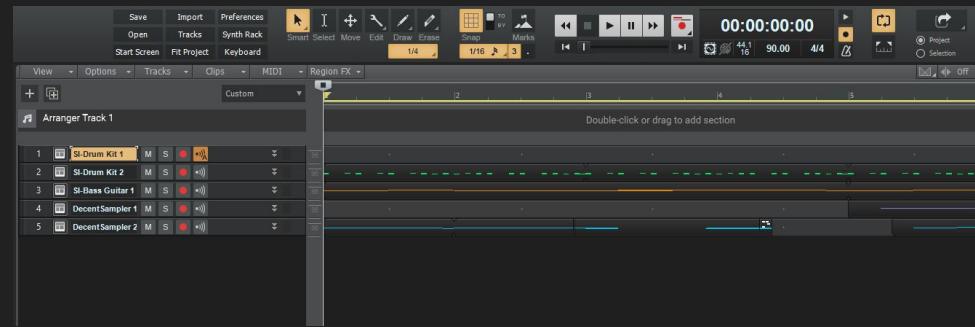
Mathematics related to  
figuring out the sailing:



I Want Real  
Sailing!



## Music creation:



# Nearly There...

New levels!



Upgrade overlays:



**Let's Demo!**

Sweet Pirate of Mine

<http://cassini.cs.kent.edu/pirate/>

(if you want to try on own pc)

# Let's Hear from Our Stakeholder!

- MK2 Geoffrey Kansa USCG
- 15+ Year member of the United States Coast Guard
- Previously station on the USCGC Eagle one of only two active commissioned sailing vessels in the United States military today
- Huge pirate and video game enthusiast!



Notes from stakeholder:

- Seeing the
1. Loves ~~#~~ progression throughout the semester
  2. Sailing ~~realistic~~ for physics is really cool
  3. Comradery
  4. Efficiency with communicating and planning
  5. Graphics are amazing
  6. Creativity with bosses
  7. Puzzles are fun and work really well

# Testing

With our main goal every sprint being a working product, we needed to both believe and prove that what we had was sufficient. This is why we took a Test Driven Development path for our testing.

- For core aspects of the game, unit tests were written before the implementation itself
- Once the implementation passed its tests, then it could be pushed to production
- Tests implemented via Jest, as JavaScript testing framework
- Why Jest?
  - Jest requires minimal configuration
  - Extensive documentation
  - Supports multiple JavaScript Frameworks like p5js
- Automated testing done by GitHub Actions after every push to the main branch, as well as continuous deployment to the Cassini server

# Accreditation

Seth Opatz: Nurikabe Puzzle, Music, Weekly Burndown Chart, Weekly Documentation, Hint Upgrade, Credits Page

Nick Widmer: Upgrade / Main Island lead

Moamen Mahmoud: Controller/Gamepad Support

Brody Peelman: Sudoku Puzzle, Server Hosting

Brent Warring: Level Design/Implementation, Wind Implementation Help

Matthew Crosby: Movement, Collision, Test Framework, Upgrade Island Team

# Accreditation (Cont)

Sharon Dasari: Tetris Puzzle

Evan Kidd: Architectural Documentation, UML Diagram

Keegan Knapp: Wind Dynamics, Other Cosmetics

Maxim Mamotlivi: Art Assets, Asset File/Access Architecture, Sudoku Puzzle, CSS Puzzle Styling, Testing Performance.

Jacob Welch: Sailing Physics, Boss Design/Implementation, Unit Testing, Health & Currency Implementation

Ean Dodge: Worked GitHub, Main Screen/Tutorial, Bug Fixing

MK2 Geoffrey Kansa USCG: StakeHolder/Test Subject

Any Questions?