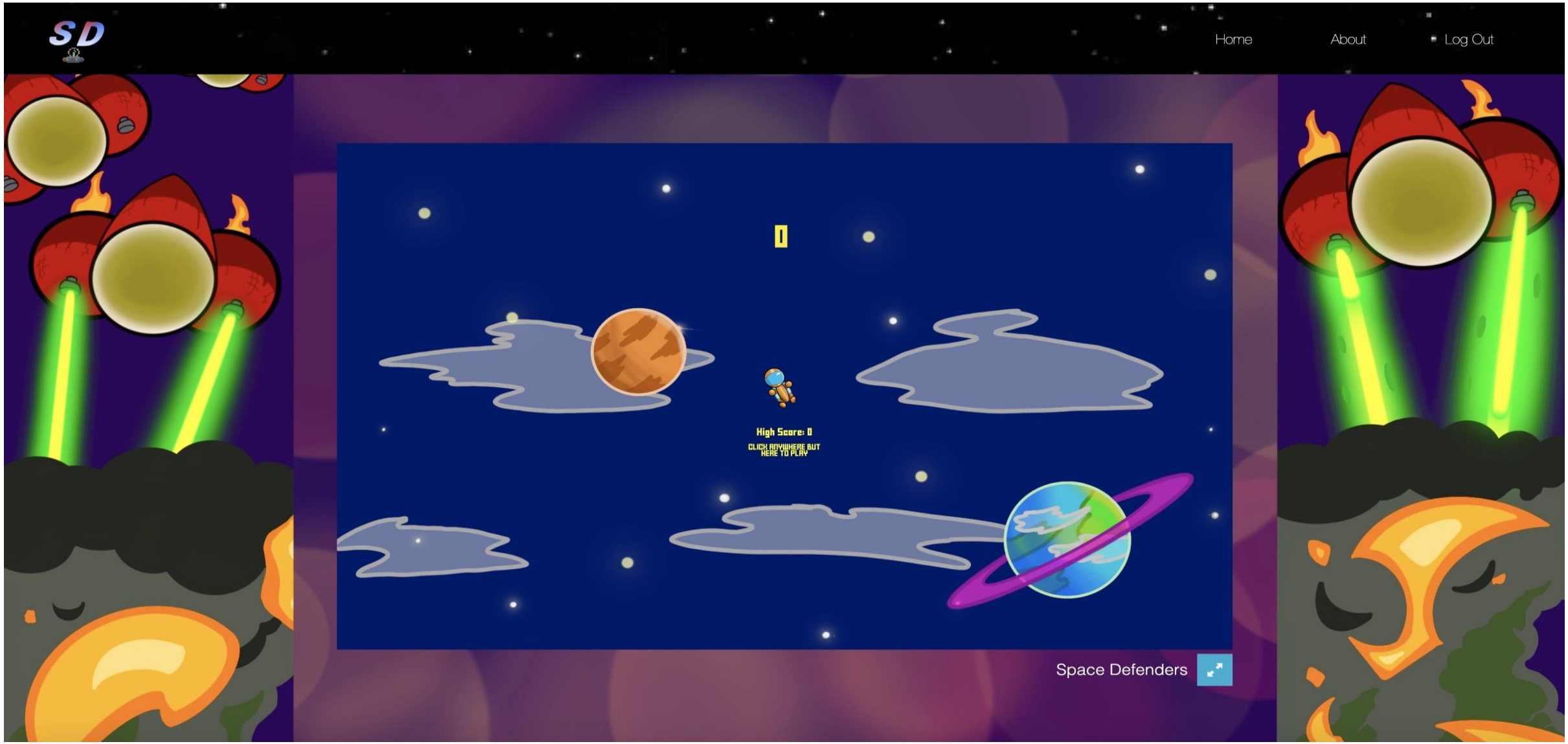

SPACE
DEFENDERS
HOW SPACE GOT DEFENDED

About the Team

- There are 5 of us
- Luke Soderquist
- Adam Poppenhagen
- Josh O’Leary
- Alice Gurkova
- Michael Jordan

THE GAME IN BROWSER

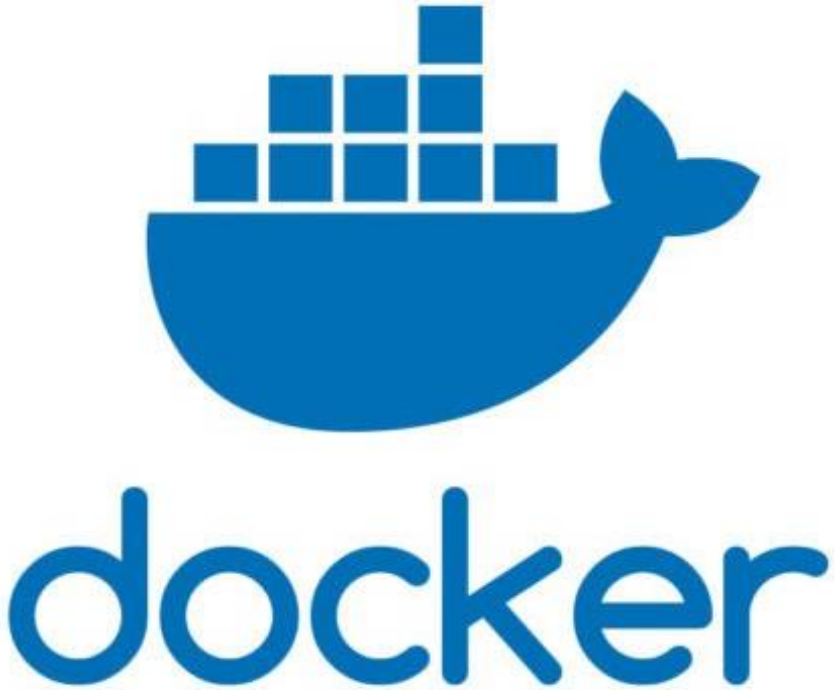


Tools Used

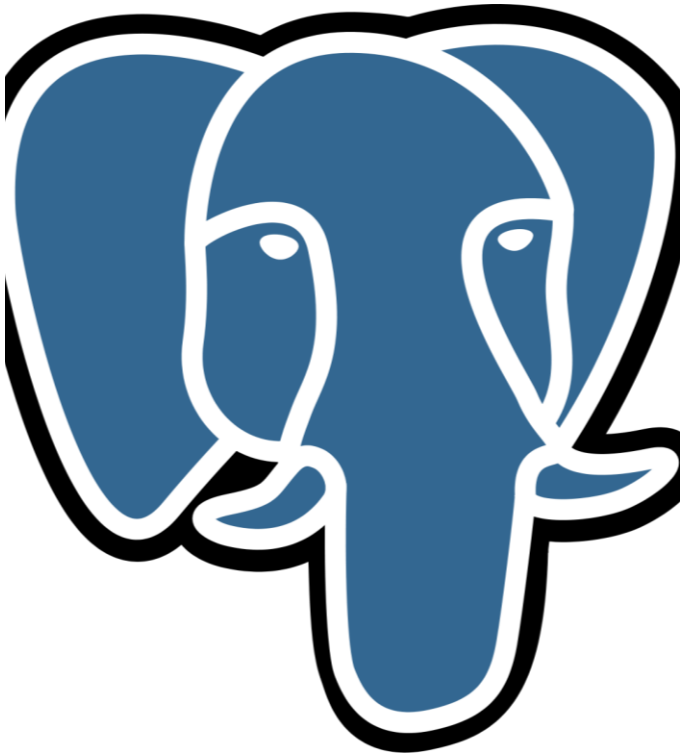
- Unity
- Docker
- PostgreSQL
- Node.js
- JIRA
- JFXR
- Procreate
- Garage Band
- Github
- VSCode
- Sublime

Docker

- Allows for containerization of our node.js server and PostgreSQL database
- Still a little fuzzy on how it actually works, but it works really well
- Allows for the use of test cases to ensure website works properly and database returns proper values
- 5/5 would containerize again



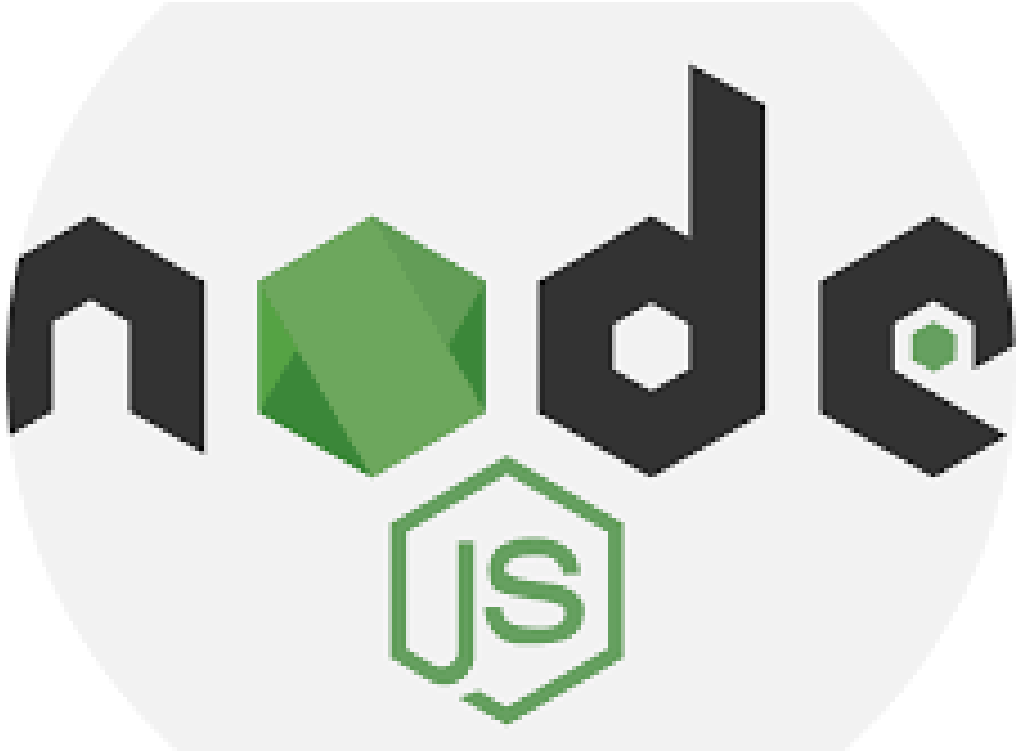
PostgreSQL



- Database manager storing all usernames, passwords, and scores (if we're lucky)
- When used in conjunction with Docker, is incredibly effective in both data management and retrieval
- Language is intuitive and easy to remember
- Incredibly versatile, even though our uses were limited, it is obvious that PostgreSQL is useful for many situations
- Easily integrates with node.js
- 5/5 would store again

Node.js

- Used as server-side language for communication between webpage and database server
- Syntax can be a bit confusing and seem convoluted at times
- Rules for calls are not fully understood
- Still effective for API calls to the database
- 4/5 but we’re never getting away from it so we’ll just learn it better



JIRA

- Kanban board organization website
- Used to detail prospective sprints, user stories, and epics
- This was a little difficult for us to stick to as it wasn’t checked very often and we had to change game portion of project half way through
- Did help with weekly meetings
- Ensured no one was “Boss”
- 4/5 would story again, with a bit more dilligence

Unity

- Unity is the engine that handles and compiles all the C# code used for the game
- The learning curve is extremely steep
- C# is pretty close to C++, but Unity uses its own libraries and keywords
- Once there is some familiarity, the program is extremely robust and handles things fluidly
- 4/5 stars for difficulty for beginners

Procreate

- Extremely robust art creation software
- Used to hand draw all visual assets
- Really intuitive to begin, but very deep feature set allows for use from beginner to professional
- 5/5 Will use for every project

Garage Band and JFXR

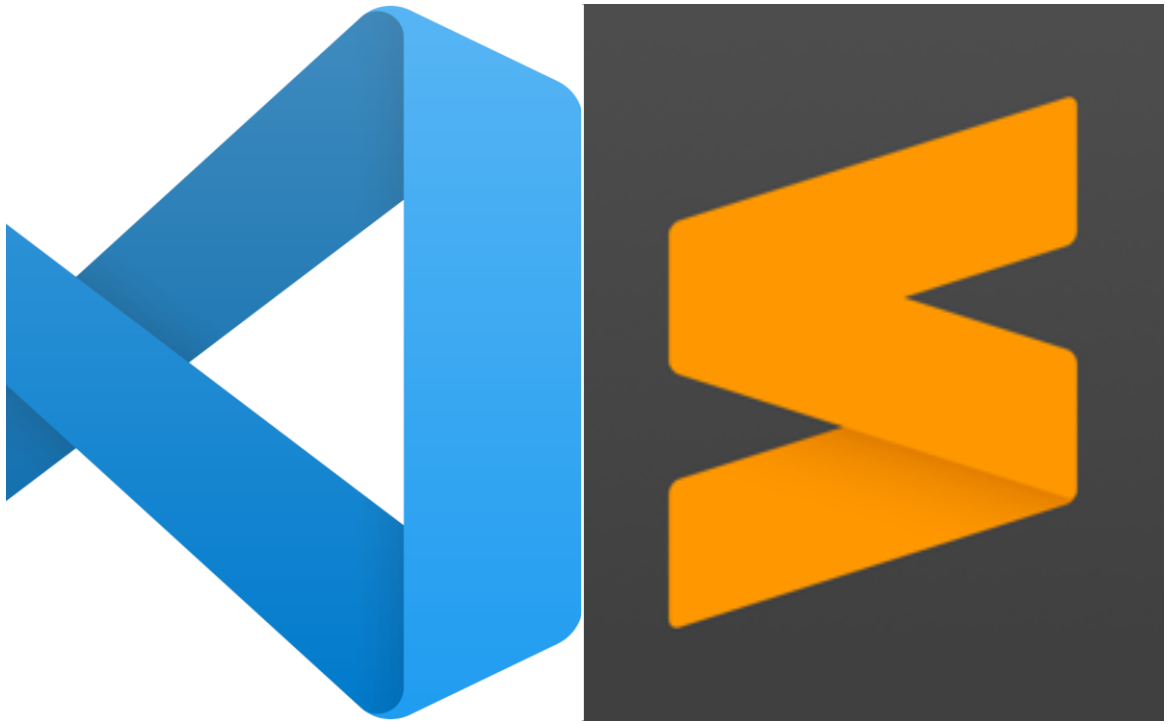
- Tons of prebuilt sounds and rhythms
- Chord mode makes for effortless composition of high quality orchestrastrations
- Steep gap between beginner and pro modes, but that also requires musical knowledge
- 5/5 For all my rocking out needs

- Sound Effects editor
- Export in any format
- Random feature makes for easy creation
- 5/5 haven’t stopped playing with it since

Github

- Online code repository based on graph theory
- Used as a place to turn in code and projects for credit
- Used as a place to store code and assets so they are available to each team member
- 5/5 doesn’t matter what we think, it ain’t going away

VSCode, Sublime



- Both are rich text editors
- VSCode is more robust and more customizable, but more prone to bugs and harder to fix by beginners
- Sublime is also excellent, though the “free” version has pop-ups asking for money

Methodologies

Unity Collaborate

Unity Collaborate works through GitHub

First we are able to build a team using our githubs through Unity

We then made our project and enabled the collaborate feature

Once all the members have the project downloaded we can push and pull changes just like normal github, bit it’s all contained in Unity.

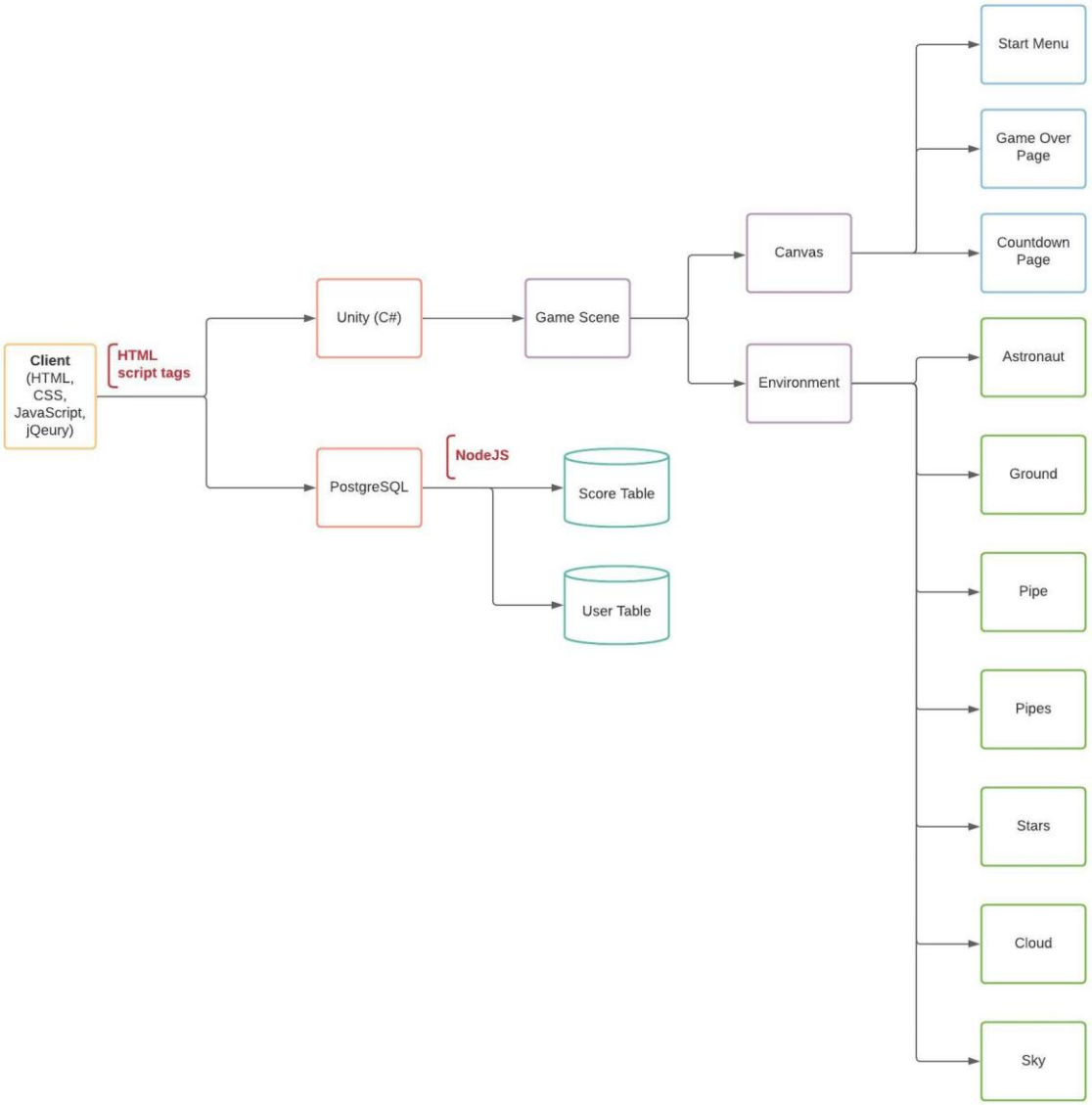
AGILE

Multiple weekly meetings with the team acted as scrums where we would plan out work for the week.

Separated our workload into four sprints, and although we shifted out plan throughout the course of our development process, this schedule helped us determine how behind/ahead of schedule we were.

DEMO!

Our Architectural Diagram



Challenges

- Learning Unity
  - With all of us being new to unity, there was a large learning curve we all experienced throughout the development of the game, overall we all gained a lot of skills and knowledge on how to use the program.
- Working with Databases
  - Creating the registration and login pages and making those work with the database we created was tricky.
- Creating a Tower Defense game
  - Our initial game idea was to create a tower defense game, however we eventually began to realize that we would not have enough time to develop a game so complex.
  - Instead, we pivoted and created a Flappy Bird style game

Thank you!

Time for questions