



GALACTIC GUARDIANS TOWER DEFENSE

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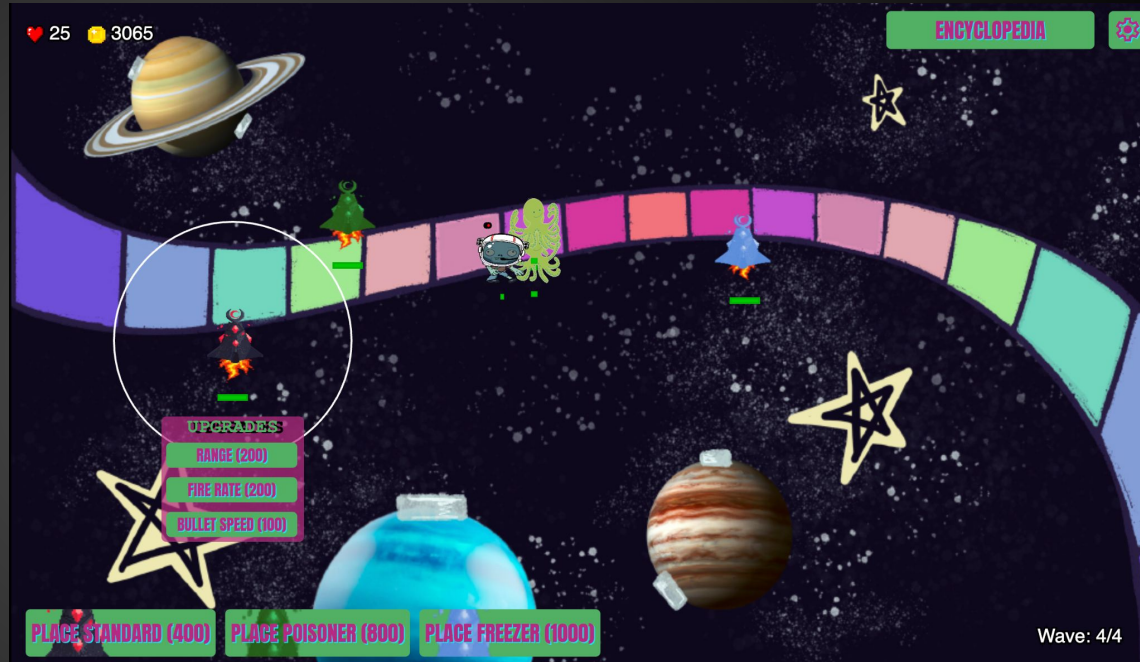
Project Beta

Team Members

- Lennice Bolton
- Dominic Ferrando
- Kenneth Guzy
- Gavin Hulvey
- Nathon Iadimarco
- Jacob Jericho
- Minh Nhat Nguyen
- Eva Powlison
- Dylan Sarell
- Priyank Shah
- Yaseen Shaikh
- Casey Shimko
- Melissa Underwood
- Jakub Wienczkowski

Description

- The player places towers in areas on a game map
- Enemies will come in waves
- Towers will shoot at the enemies
- Players will have to strategically upgrade their towers
- The player needs to monitor their health and currency
- The game is split into multiple waves and levels

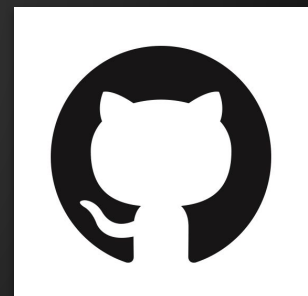


Tutorial

<https://dominicf2001.github.io/project-beta/>

Technology

- P5JS
- CSS Styling
- ES6 Modules
- GitHub Projects
- FI Studio 21 (Music)
- Krita (Static Images)
- Photoshop (Static Images)
- Canva (Graphic Design)
- Spine (Animations)



Art Direction: Audio



- Software - FL Studio 21
- Space themed, minor key but upbeat
- Boss theme - inspired by Wellerman
- Sytrus - main VST (Virtual Studio Technology)
- Additional VSTs - Harmor, Toxic Biohazard

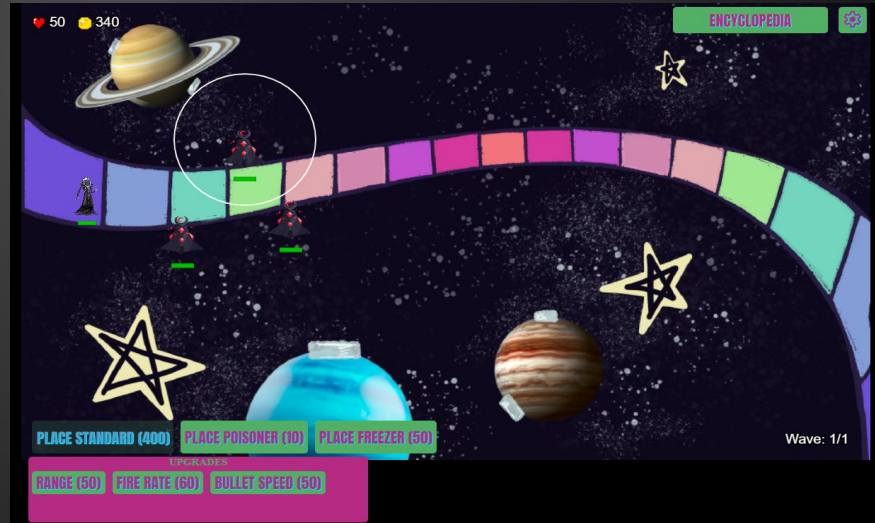


Art Direction: Visual

- Retro
- Whimsical
- Hand drawn maps using:
 - Procreate
 - Google slides
 - Microsoft Paint

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START



Teams

We decided it would be best to split our group into multiple sub teams concerned with:

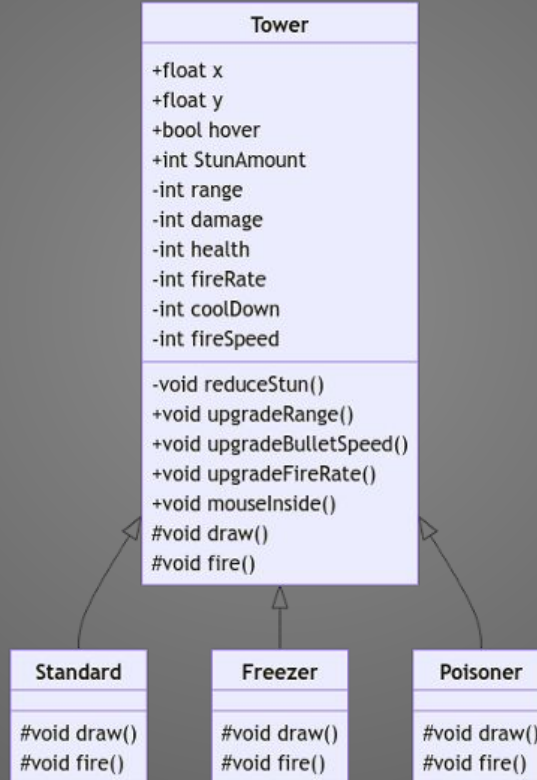
- Towers
- Enemies
- Maps
- User Interface (UI)

Towers

- There are three different types
 - Implemented using subclasses
- They can only be placed in certain areas on the map
 - Collider will restrict placement
- The player can apply different upgrades
 - Bullet speed
 - Range
 - Fire Rate
 - Function in parent class

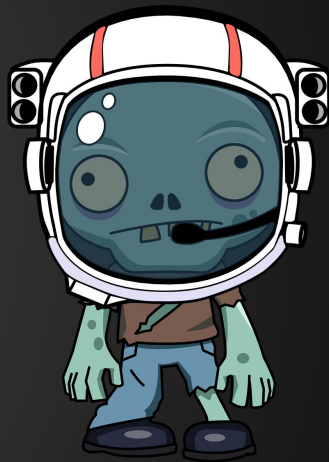


Tower Class UML



Enemies

- There are five different types:
 - Standard Zombie
 - Summoner
 - Summonee
 - Tank
 - Boss
- Implemented using subclasses
- Are spawned in waves
 - All enemies need to be defeated or reach the end to start the next wave
- Will only travel along a path
 - Have a verticality offset at spawn to avoid collision



Maps

The game has 3 playable maps:

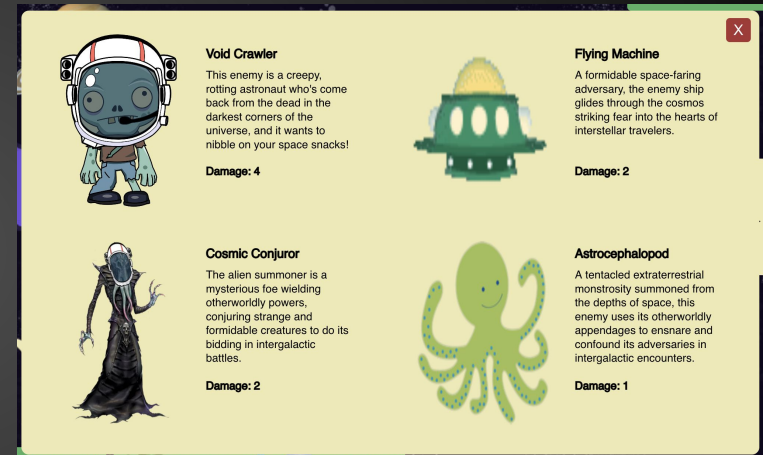
- Space Walk Map
- Spaceship Map
- Pirate Themed Alien World Map I Guess

Each Map has its own path that the enemies spawn on and follow. Different waves of enemies and placements for towers. There's also different music.

The Map information is tracked via a map-id. You can switch between the multiple maps. Map-id is used as an index to get the information.

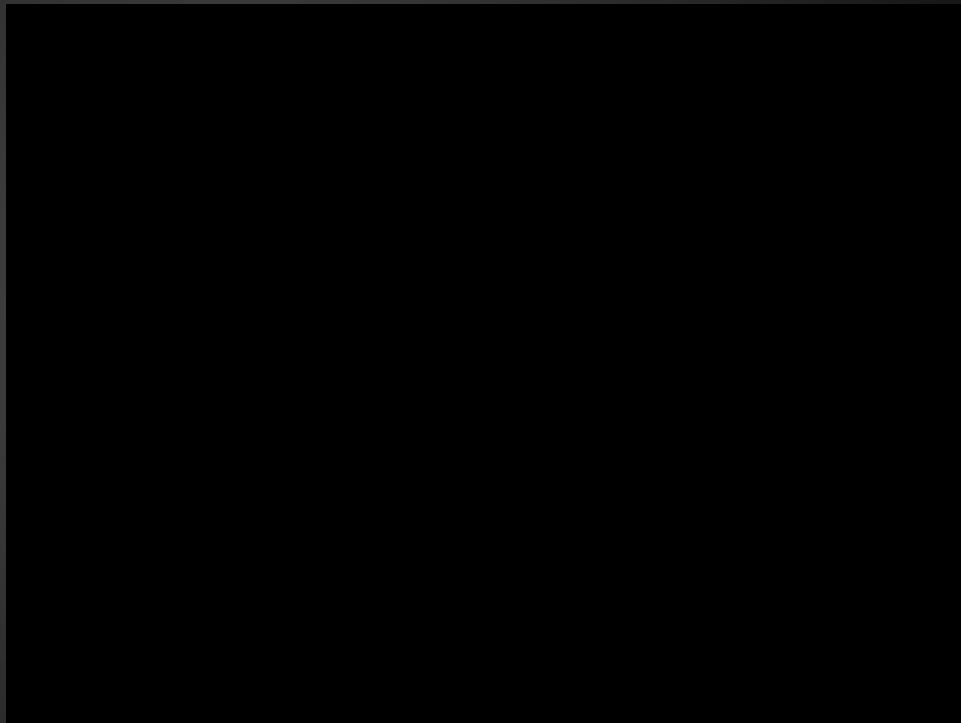
UI

- Title screen buttons - Start, load Save, select map, and tutorial.
- Tower Types/Selection Buttons
- Tower Upgrades menu
- Settings Menu
- Next Level Button
- Encyclopedia



Testing

- A couple unit tests with MochaJS
- Automated testing with Selenium and Python
- Uses a debug console to gather information
- Results reported using pytest



Feedback Video

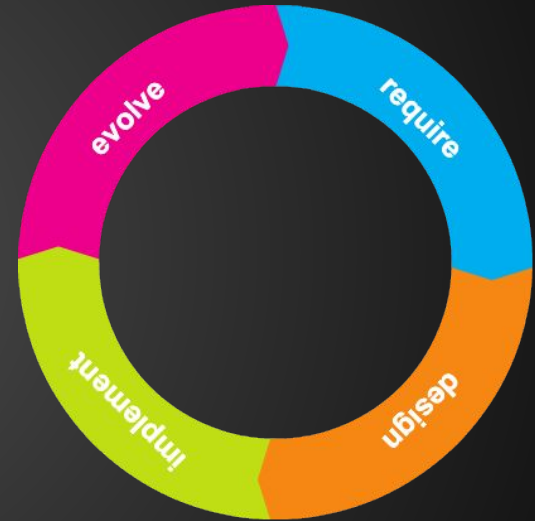
- We thought to record tests and make our results a little more personal and fun!





What We Learned

- Project management
- Technical collaboration
- Agile development
- Source code management with GitHub
- A lot of JavaScript



Demo

<https://dominicf2001.github.io/project-beta/>

Feedback

- Difficult to grasp at first but enjoyable with time
- Helpful tutorial
- Lots of creative art work
- Really good music

Future Plans

- Cash in existing towers
 - Add Stunner Enemy that stuns towers
 - Gemstone system
 - More levels
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- Ads
 - Microtransactions
 - Battle Pass
 -
 - PROFIT

Questions?