Motivation/Background

* Problem
  + Students have a difficult time understanding molecular structure and bondings with just the materials available within their classes.
  + Instructors have a difficult time teaching these students
* Solution
  + Create a game that visualizes molecules in a 3D space so that students have a companion to their classes
  + Provide fun actions and goals for players to enjoy playing the game
  + Allow instructors to track their students’ progress in the game and steer their learning to fit the curriculum

Technologies

NodeJS, MongoDB, Unity, SQLite, GitLab, Bootstrap, Trello, Slack

**Process**

Scrum was chosen as the process methodology for this project. Due to the open and flexible nature of this project, it was imperative to not only discuss potential ideas with the project sponsor but also show implementations of these ideas in a timely manner. Therefore, Scrum encouraged customer collaboration with the project sponsor while giving the development time the necessary agility to implement new features in a timely manner.

For this project Scrum sprints were two weeks long and user stories to be implemented next sprint were decided upon during a sprint planning meeting with the project sponsor. This sprint planning meeting coincided with the end of sprint meeting for the previous sprint so that the team could communicate which user stories were implemented in the previous sprint and use that as part of the discussion when the next sprint was being planned.

High Level Design

Metrics

## Completed Work

* Moleculog
  + Similar to a Pokedex or the logbook from Metroid Prime
  + Able to scan molecules and then view information about them
* Task System
  + Jobs the player can accept to complete in the game world.
  + Accept jobs from level hub.
  + Turn in through Logbook when completed
  + Ex. Collecting a certain number of water molecules
* Logbook
  + Central access point for Moleculog and Task Log
* Server Side
  + Created API for tracking stats from the game
  + Instructor sign up system
  + Viewing student stats
  + Logging in through the game

## Future Work

* Add more molecules
* Finish tasks system - getting paid for completed tasks
* Upgrade system for the ship
* More levels

Screenshots