Take a Virtual Hike

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Project Overview

- Problem: The COVID-19 pandemic is mentally and emotionally stressful, and has limited opportunities for activities such as vacationing and connecting with nature
- Solution: to create an explorable, full-scale 3D virtual nature environment
  - Purpose of relaxation and stress relief in the stressful time of COVID-19
  - To indulge the user in a realistic nature environment
- Our application will require a web browser to run on any OS
- Our app is made for anyone whose life could use a bit of stress relief and relaxation
  - Whether those stresses are from COVID-19 or not
  - These people's lives will be improved just by playing our game
  - Will improve the life of anyone that plays, no matter what

Requirements

Functional

- The User shall be able to load into a virtual Environment upon startup
- The User shall be able to move around and explore the world freely
- The environment must include collision detection
- The User will have the ability to choose between a fly-through and walk-through mode
- The environment must be 1:1 scale with reality
- The Game must implement a soundscape for the environment (secondary requirement)

Requirements (cont.)

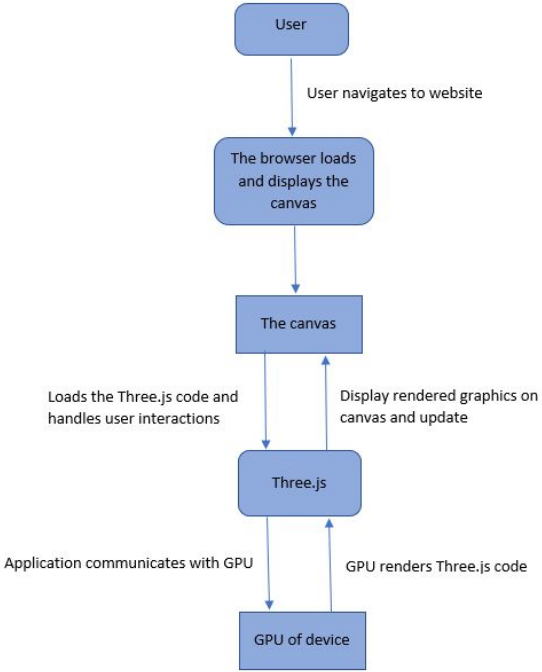
Non-functional

- The rendering of the environment must be aesthetically pleasing
- The movement/usability while exploring environment must be simple and effective
- The application must run on a reasonably priced and attainable computer.
- The application must contain elements of procedural generation

Technical and/or other constraints

- The application must be compatible with all web browsers

Conceptual Design Diagram



Semester Goals

- Have a working demo of the project alonf
- Have a structured work flow of adding new features to the project
- Have a structured way of testing and improving the project code on GitLab
- Set up continuous integration for the project on GitLab
- Use an agile like framework for structuring our workflow

Schedule


Sep 14
Sep 21
Sep 28
Oct 5
Oct 12
Oct 19
Oct 26
Nov 2
Nov 9
Nov 16
Nov 23
Jan 25 (Semester 2)
End of Semester 2
Learning the Three.js API (Research and Tutorials)
Start our software application
Create the base environment of our application
Create the procedural generation algorithm
Work on having the algorithm generate objects at a 1:1 scale
Implement a first person view
Implement a walkthrough mode
Implement a flythrough mode
Implement collison detection
Implement a soundscape (if we have extra time)
Test all of our features and code, look for bugs/glitches

Technical Challenges

- Bringing together all the different sections of the project together successfully and continuously improving on it.
- Ensuring consistent rendering performance
- Minimizing visual glitches
- Scaling certain elements in the environment
- Resolving bugs in the code

Thank you for listening!

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