Stellaris

Yuting Shao & Zihan Xu

Project Objective:
A web app for nature science researchers to simulate the growth of a planet. This app allows users to manipulate different features of an original planet (like earth 4.5 billion years ago) to see how nature environment and civilization on a planet grow, iterate, maintain and decay.

Technique Applied:
Node.js, Express.js, MongoDB, HTML5, React (Hooks)

User Persona:
People of all ages, especially science researchers and young kids can access this web app to see how different variables (Carbon Dioxide, Amino Acid, Mitosis, etc) combinations lead to different results of a planet's growth.

User Stories:
In 2077, humans explored all the planets in the Oort cloud. They owned the technology to manage a global ecosystem of a just explored planet. The United Nations wonder if we can simulate the operation result of exploiting a given planet. Therefore, they hired 79 years old computer science masters Zihan and Yuting from Northeastern University to design a simulator web with react, express, mongoDB and all required functions from Professor John.

Features:
Nav bar: links to all the pages
Main Page: basic introduction and tutorial of this app
Build Page: adjust variables to generate the result of one planet.
Users can also change (update) the variables or delete simulation results given their input name and planet's name.
Multiverse (universe list) Page: users can check and search the planet they created and other user's universes in this page.
About Page: users can check personal websites of Dr. Shao and Zihan.

Database:
Two MongoDB collections:

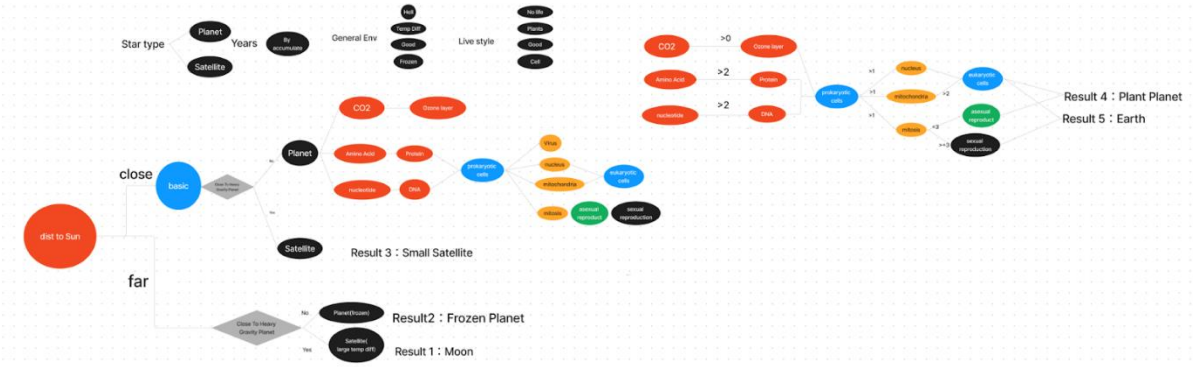
1. Builder, which records the universes name that built by each builder;
2. Universe, which records all the existed universes and updates the judgements based on the input parameters.

Functions:

- Every user can join this website main page (Zihan) without login, but each time their setting and adjusting (Create) parameters will result in a unique result (Read). (Zihan & Yuting)
- This result will be stored to MongoDB and showed (Update) on another page if user agree to do so, these results will be interpreted as multi universe. (Yuting & Zihan)
- If user is not satisfied with this result, they can delete (Delete) this result by specifying the universe name and builder name after they submit it to multiverse. (Yuting)

Logic Flow:

Following is the logic flow of different types of universes that used in the backend to determine the type of the built universe.



Design mockups:

Home page

logo	Nav Bar

A Background picture

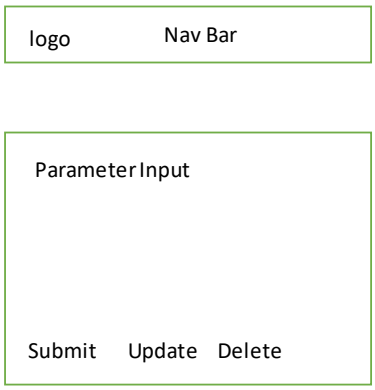
Welcome

Music button

Description

footer

Build page



List page