



Internship at NASA

Tyler Schiewe

What I Learned

Learned how to use Git for version control, how to write unit tests, and how to use Docker for containerization.

Why I'm Doing

Interested in space exploration and wanted to gain hands-on experience in a professional environment.

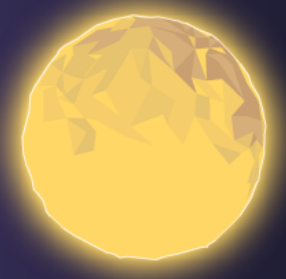
Goals

- Develop the system's database.
- Create user interfaces to perform complex calculations and calculate orbit paths.
- Develop an API to serve user requests.
- Implement an API to send data to a mobile application.

Source: Tyler Schiewe, 2022

SEA⁵

SEA⁵ is designed to provide public, private, and scientific space exploration information for orbital mission, or more precisely, trajectories throughout the heliosphere, planets, and on the ground.





Internship at NASA

Tyler Schiewe

What I Learned

Learned how to use the system's database to find information about the system's components and calculate their values.

Why I'm Doing

Learned how to use the system's database to find information about the system's components and calculate their values.

Goals

Design the system's database.

Create user interfaces to perform database operations and calculate their values.

Design an API to use their interface.

Recreate an API to use their interface.

SOURCE: DATA ANALYSIS REPORT

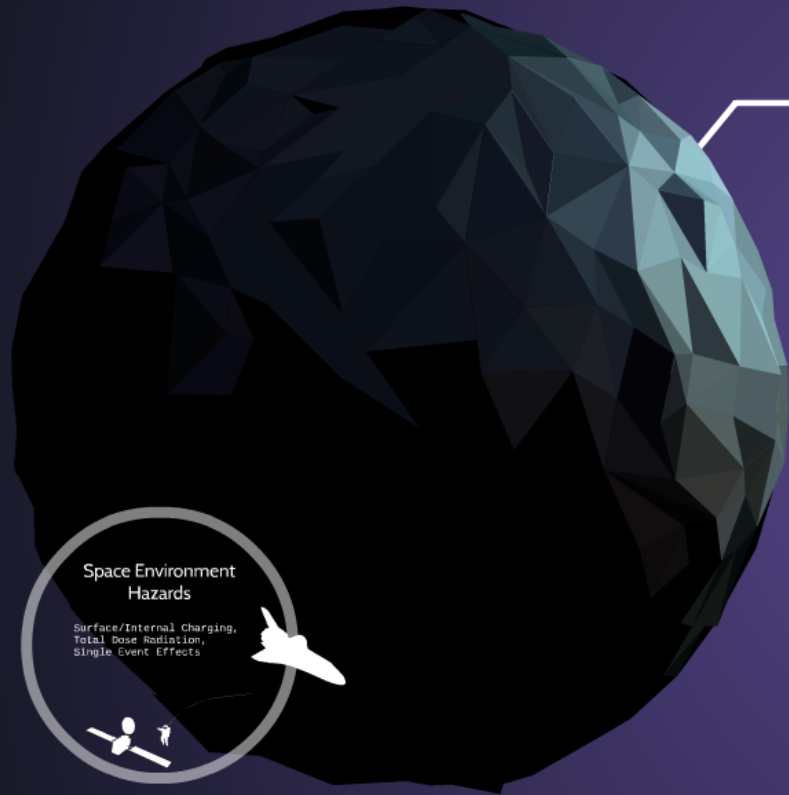
SEA⁵

SEA is designed to provide public, private, and scientific space exploration information for orbital missions, including the selection of landing sites, the selection of landing sites, and the ground.



SEA⁵

SEA5 is designed to provide past, present, and predicted space environment information for specific missions, orbits, and user-specified locations throughout the heliosphere, geospace, and on the ground.



Space Environment Hazards

Surface/Internal Charging,
Total Dose Radiation,
Single Event Effects



Goals

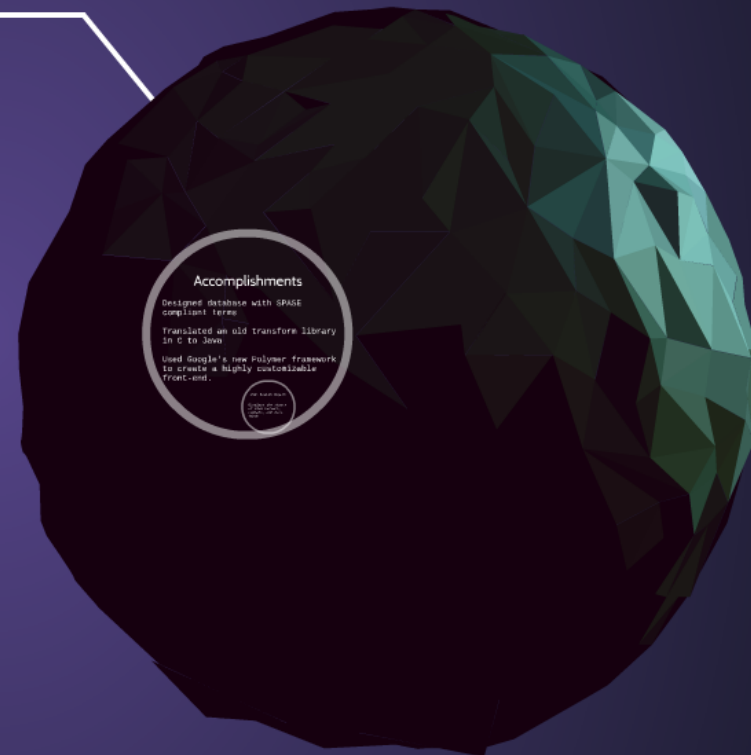
Design the system's database

Create some utilities to perform coordinate conversions and calculate hazard values

Design an easy-to-use user interface

Implement an end-to-end demo for 3 Geosynchronous satellites

BONUS: ISWA Health Report



Accomplishments

Designed database with SPASE compliant terms

Translated an old transform library in C to Java

Used Google's new Polymer framework to create a highly customizable front-end.

ISWA Health Report

Displays the status of ISWA servers, cygnets, and data feeds

ISWA Health Report

Displays the status
of ISWA servers,
cygnets, and data
feeds



What I learned

- Java web app development
- Creating and using servlets
 - Polymer Web Components
- Basic search engine design
- Importance of space weather

Where I'm Going

Google
Grad School
...?



MISSION ACCOMPLISHED

Thanks to NASA GSFC, Marlo
Maddox, Richard Mullinix
and everybody at CCMC



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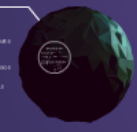
What I Learned

Why We Do It

Goals

- Enlarge the system's database
- Create new utilities to perform complex calculations and calculate more features
- Enlarge the data to six star systems
- Reformat all data to the same text & numerical format

SOURCE: DARK MATTER PROJECT



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SEA⁵ is designed to provide public, scientific, and professional space exploration information for orbital missions, spacecraft, and other related activities throughout the Heliocentric, geocentric, and on the ground.

