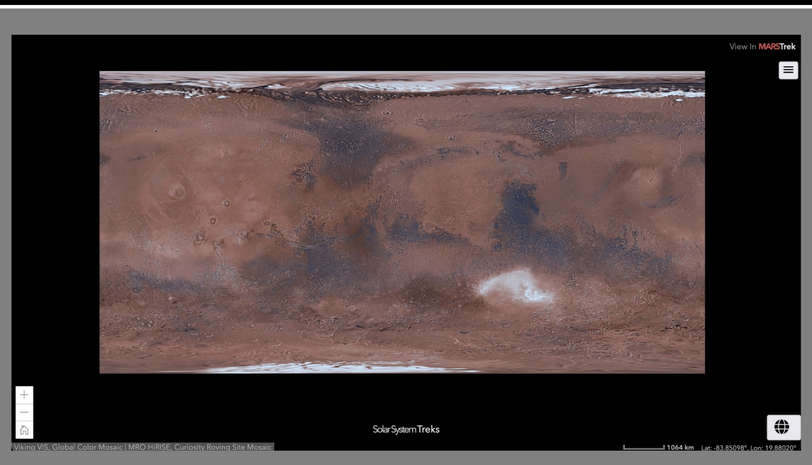
Moon-Trek

Team Members: Aldo Gil, Alex Sahakian, Allen Marquez, Andy Tsan, Anna Yesayan, Jian Wu, Sean Chung, Srivats Venkataraman, Tam Nguyen, and Tommy Lay
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Trek



Moon Trek is a software that works under a much bigger software called Solar System Trek. In essence, Moon Trek allows users to interact with a photo or 3D terrain of cosmic bodies: planets, moons, etc. This is possible since NASA georeferenced the actual surface of the planetary bodies and converted them into data that Trek users can use for interaction and modeling.

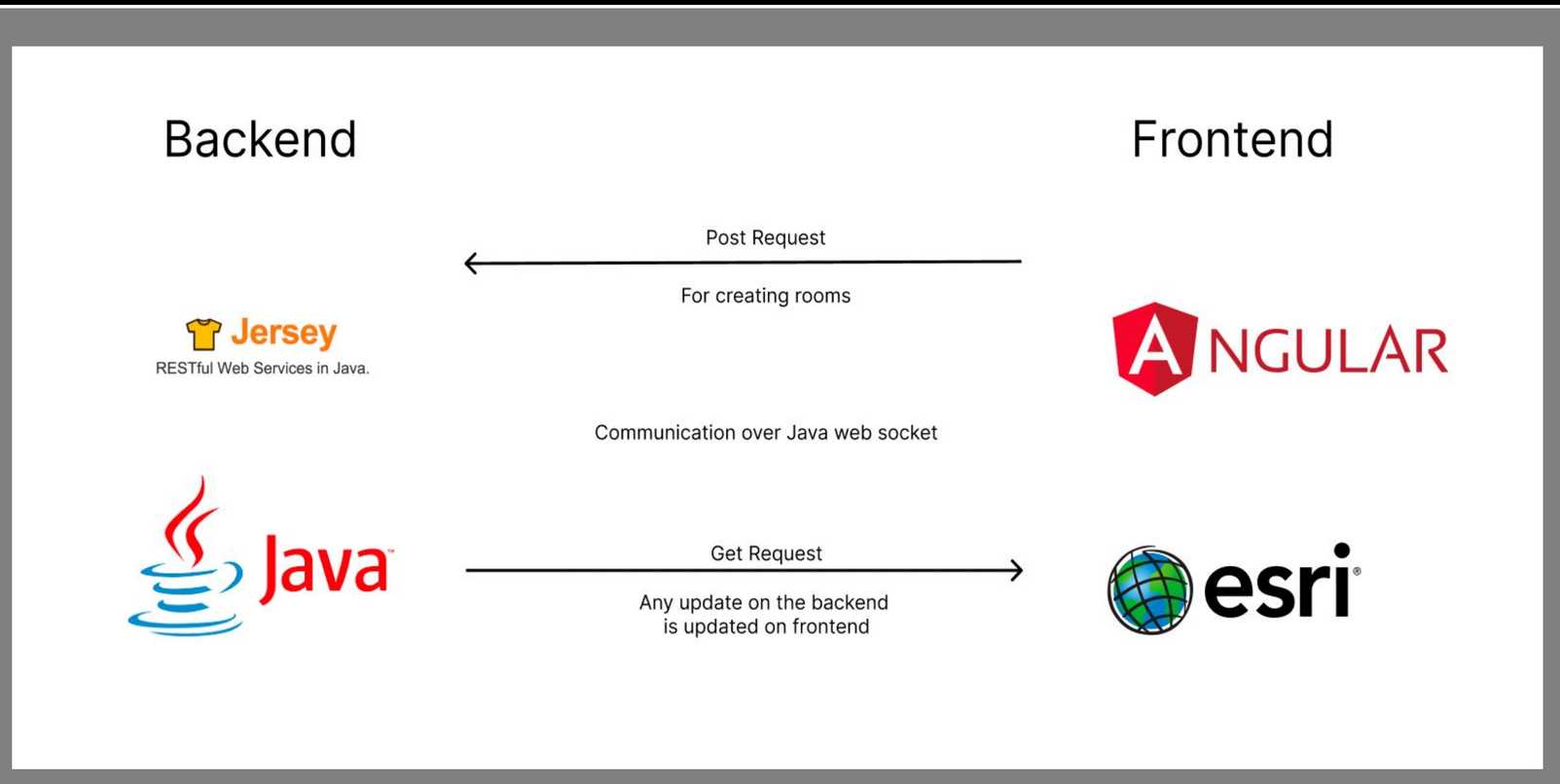
Jet Propulsion Laboratory (JPL) manages the Solar System Treks which are browser-based portals that allow one to visualize, explore, and analyze the surfaces of other worlds using real data returned from a growing fleet of spacecraft.

Video Demos

If you would like to get a better understanding of our results, scan the QR code below:

Or visit https://tommylay1902.github.io/SeniorDesignDemo/

Technology



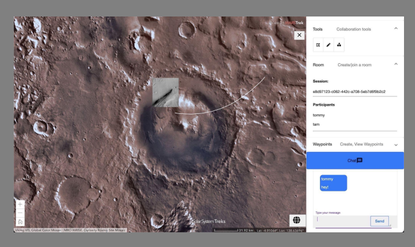
Objectives

The goal of our project is to implement collaborative features to the current Moon Trek web application allow multiple users to collaborate in a session. We will also be changing parts of the codebase to fit the requirements needed by JPL. The objectives are as follows:

- Implement collaborative features.
- Transition parts of the codebase from one technology to another.
  - Transition from Dojo Toolkit to using Angular for the frontend and UI
  - Transition from a NodeJS based backend to Java-based backend.
- Creating a WebSocket server for collaboration.

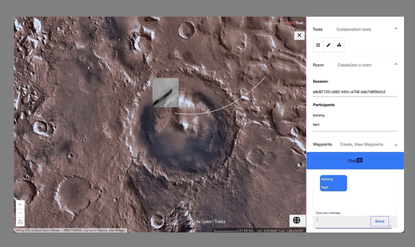
Data Flow

Created a backend web socket server along with multiple API endpoints to help keep data updated real-time amongst users that are connect



USER 1

User sends data whether it's in the form of a drawing, or a chat message



USER 2

Backend receives data, processes it and sends data back to all clients that are connected

Conclusion

- We learned a lot of new frameworks and technologies such as Angular, EsriJs, Jersey, also how to work between a production and development environment
- We have better knowledge on how to create architecture that supports real-time communication between users

Acknowledgement

We would like to give special thanks to the NASA JPL team for sponsoring us with this project work and also supporting us through our endeavors.

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