Space Mission Visualizer

Space Apps Challenge

SPACE ADVENTURE: FROM THE EARTH TO THE LIMITS OF THE SOLAR SYSTEM

Idea

- Overview of Current Space Missions in Earth Orbit
- Zoomable 3D Environment
- Modern Web Application without the need for plugins

Space Mission Visualizer

127.0.0.1:5000/app/index.html

International Space Station

Envisat

Tiangong-1

Solar Dynamics Observatory

INTErnational Gamma-Ray Astrophysics Laboratory

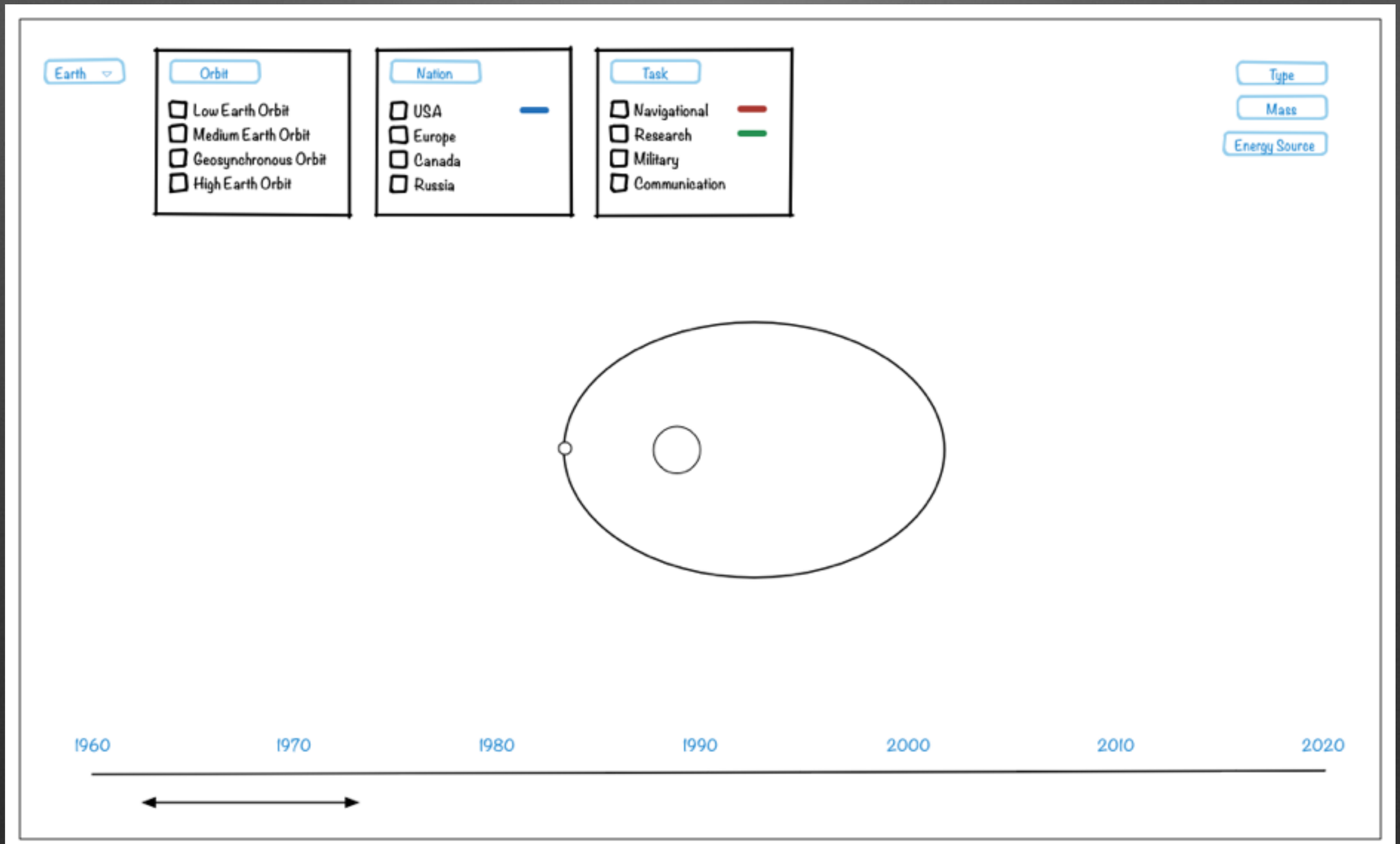
Technologies

- JavaScript, WebGL, THREE.JS 3D Engine
- Python as BackEnd for data access and position calculation
- JSON as data exchange and storage format

Extended Concept

- User configurable filter and color coding to highlight data of users interest
- Overlay of additional information
- Custom data format to store orbit information (TLEs) and additional properties for filtering
- Data Aggregators for updating Database with current Orbit Data and other information

Extended Concept



Approach for an Real World Application

- Client requests data within certain **timeframe** and for a region of interest from server
- Client filters the data further depending on made selections
- Orbit and Position Calculations can be done in JavaScript which would eliminate communication overhead

Thank you!