GraphiqReality
A web solution for 3D data visualizations

The Problem
There’s a lot of data visualization tools out there but the problem is most of them do not offer 3D visuals. 2D data visualizations are generally fine but what if there's too much to display for just two dimensions? Certain data sets can sometimes require more than a 2D drawing to help the viewer understand the data.

Our Solution
Our solution is a web app that offers exactly that: 3D visualizations. It allows for users to upload their own data and build an interactable visualization from that.

Implementation
Our project uses mainly web technologies. Most of the backend is handled with node.js. User uploaded data is formatted as a CSV file and is parsed and sent to a PostgreSQL database which is then queried whenever someone requests the data. The visualizations are rendered using WebGL through the Three.js library.

Virtual Reality
Virtual reality is a relatively new technology that we’ve integrated into our app. With something like a Google Cardboard and a phone, you can see and explore 3D visualizations from a new perspective.

The User
The user is able to easily upload their own data and build visualizations. They are able to filter their data, showing only a subset, and generate links to share their visualizations. We tried to give the user many options when creating and customizing their visualizations so that they can show their data how they want to.

Technologies

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Users can upload data to our servers or send requests to the server for a data set

The server parses user uploaded data or request and sends a query to database

The server then sends the data to the client in a format that can be processed by our visualizations

When the database is queried for data, it is sent back to the server

Geographical

Shot Charts

Bar Graph

Scatter Plot