Project Reflections and Challenges

This document reflects on the challenges encountered while developing a REST API for managing U.S. state data, using Node.js, Express, and MongoDB Atlas, deployed on Glitch.

The project aimed to provide endpoints for various data manipulations, including CRUD operations and specific data retrievals like fun facts and demographic details.

One significant challenge related to setting up the development environment on Glitch. The platform's default Node.js version did not support some of the modern JavaScript syntax used in other components of the project, such as optional chaining and the nullish coalescing operator. This led to syntax errors that halted the application's execution. Resolving these issues required updating the Node.js version specified in the package.json file and ensuring all dependencies were compatible with this newer version.

Integrating MongoDB Atlas presented its own set of challenges. Initially, the application failed to connect to the database due to an incorrect configuration of the connection string and network access settings. The connection errors were particularly tricky to debug because they did not provide clear guidance on the root cause. Adjusting the MongoDB Atlas network access to allow requests from all IP addresses and correcting the connection string in the environment variables eventually resolved these issues.

Developing and testing the API endpoints involved numerous challenges, especially with the DELETE operation, which needed precise handling to ensure the correct fun fact was removed without affecting other data. Debugging these endpoints required a thorough understanding of asynchronous JavaScript, as improper error handling initially led to unhandled promise rejections that crashed the application.

Deployment on Glitch also posed significant challenges. The application frequently hung on the "Starting..." screen, a problem that was eventually traced back to caching issues and resolved by clearing the cache and restarting the project. This experience underscored the importance of understanding the deployment environment as well as the application code.

In conclusion, this project not only enhanced my technical skills in using Node.js, Express, and MongoDB but also improved my problem-solving abilities and my understanding of application deployment on cloud platforms like Glitch. Each challenge, whether related to coding, database management, or deployment, provided valuable lessons that will undoubtedly benefit my future projects in software development.

-John Fritter