Experience Report: Navigating Full-Stack Development and Deployment Challenges

Introduction

Embarking on a comprehensive full-stack project, my goal was to develop a dynamic web application capable of managing an inventory system. This endeavor required me to create and style three key components—InventoryList, ItemForm, and MovieList—each with its dedicated CSS for a cohesive look and feel. Additionally, integrating a Navbar facilitated seamless navigation across these components, enhancing user interaction and accessibility.

Frontend Development: React and CSS Integration

The frontend architecture of my application was built on React, allowing for modular and efficient component management. The creation of InventoryList, ItemForm, and MovieList components was the cornerstone of my project, requiring thoughtful design and integration to ensure a user-friendly interface. Employing CSS for each component, I achieved a visually appealing and consistent styling across the application. The inclusion of hyperlinks within the Navbar, such as linking to a third-party API for movie listings and creating inventory items, underscored the importance of intuitive navigation in web applications.

Backend Development: Express.js and MongoDB

On the server side, my journey continued with the development of a robust backend using Express.js. This involved setting up a server.js file to handle various functionalities, including file uploads, MongoDB connections, and CRUD operations for managing inventory items. Ensuring the server was operational on port 3001 was a critical step towards a fully functional backend system.

Deployment Challenges and Solutions

The deployment phase presented its own set of challenges, starting with the creation and configuration of an EC2 instance. This process involved system updates, package installations, and setting up Node.js, followed by Nginx installation and configuration to serve the application. Despite encountering hurdles, such as integrating the application with an S3 bucket for image uploads and addressing broken image links, these obstacles offered valuable learning opportunities in troubleshooting and problem-solving.

Reflection and Conclusion

This project was an enlightening journey through the landscape of full-stack development, from the dynamics of React and Bootstrap on the frontend to the complexities of Express.js and MongoDB on the backend, and the meticulous process of deployment on AWS. This experience not only bolstered my technical skills but also reinforced the importance of persistence, resourcefulness, and continuous learning in the ever-evolving field of web development.