Stock Management System Project Report

Abstract

The goal of the "Stock Management System" project is to provide users with an efficient way to manage the inventory in a store. Our goal is to develop a stable online application that retailers and marts can use to effectively maintain and manage their inventory by utilizing the NextJs platform.

Responsive design, inventory reporting, stock management, real-time stock updates, and searching functionality are a few of the key features.

We as students can learn a comprehensive framework for creating web applications by putting this approach into practice. In actuality, restaurants, shops, and pretty much any other business that needs to employ software to handle stocked things can use this approach. The stores will be able to accomplish that thanks to the platform our web application offers.

Introduction

Effective stock management is crucial to the effective operation of firms in the fast-paced commercial world of today.

With the help of our stock management system, these companies can manage their stock more efficiently on a single platform that requires little more than an internet connection to run.

Using the NextJs framework, we are building a dependable web application that will manage the user company's stock information. Data about the stocks may be tracked in real-time with NextJs, and the user can add data to the web application as soon as the stocks come on site by just entering a few facts on the website. The database will then instantly reflect this modification.

As a result, it is a high-performance online application that meets the requirements of companies and retailers who require a computerized platform for inventory management.

Methodology

A disciplined process will be followed during the creation of the Next.js Stock Management System in order to guarantee a methodical approach and high-quality results. The requirements analysis, design, development, testing, deployment, and maintenance phases will make up the project's multiple stages.

Design

- *System Architecture*
  Created the overall system architecture, keeping security, performance, and scalability in mind. Choosing the proper server infrastructure and database is part of this.
- *UI/UX Design*
  Made sure the user interface is responsive and user-friendly by creating wireframes and prototypes.
- *Data Modeling*
  Created the database structure so that inventory data may be managed and stored effectively.

Development

- *Front-End Development*
  Used Next.js to implement the user interface to ensure a responsive and user-friendly design.
- *Back-End Development*
  Created the Node.js server-side code and include it with the database to manage user authentication and real-time data updates.
- *API Development*
  To facilitate communication between the front-end and back-end components, created RESTful APIs.
- *Security Implementation*
  To safeguard sensitive data, used role-based access control and secure user authentication.

Working Project Screenshots

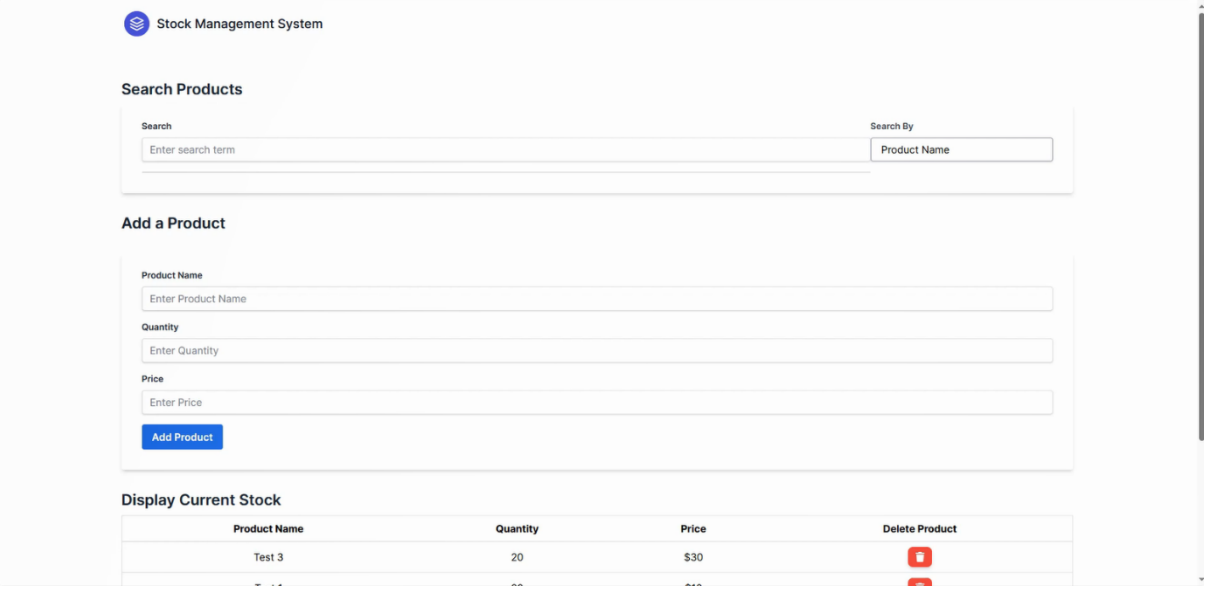

Figure 1: Main Page

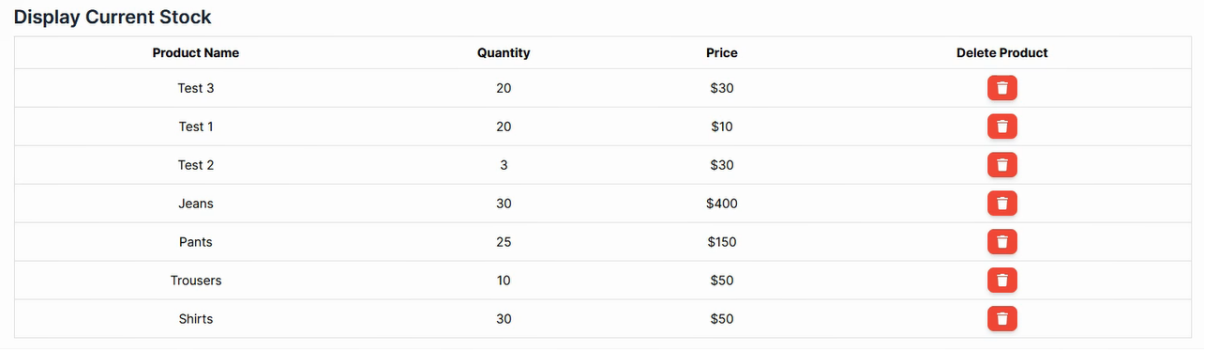

Figure 2: Current Stock Table (Data fetched from database)

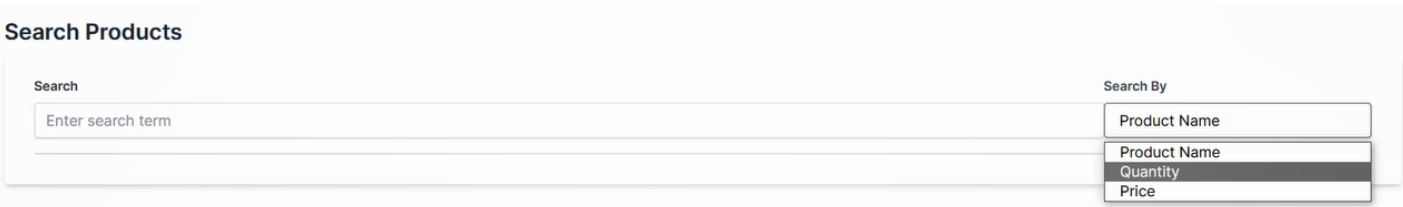

Figure 3: Search Functionality

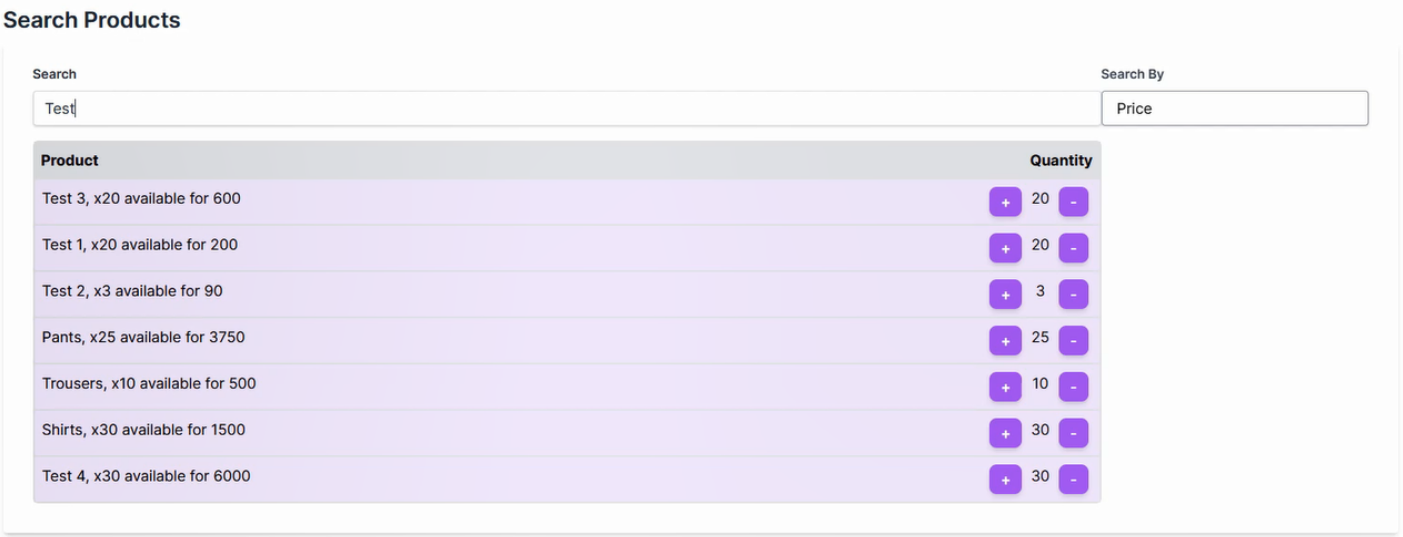

Figure 4: Searched Products

Figure 5: Product Being Updated

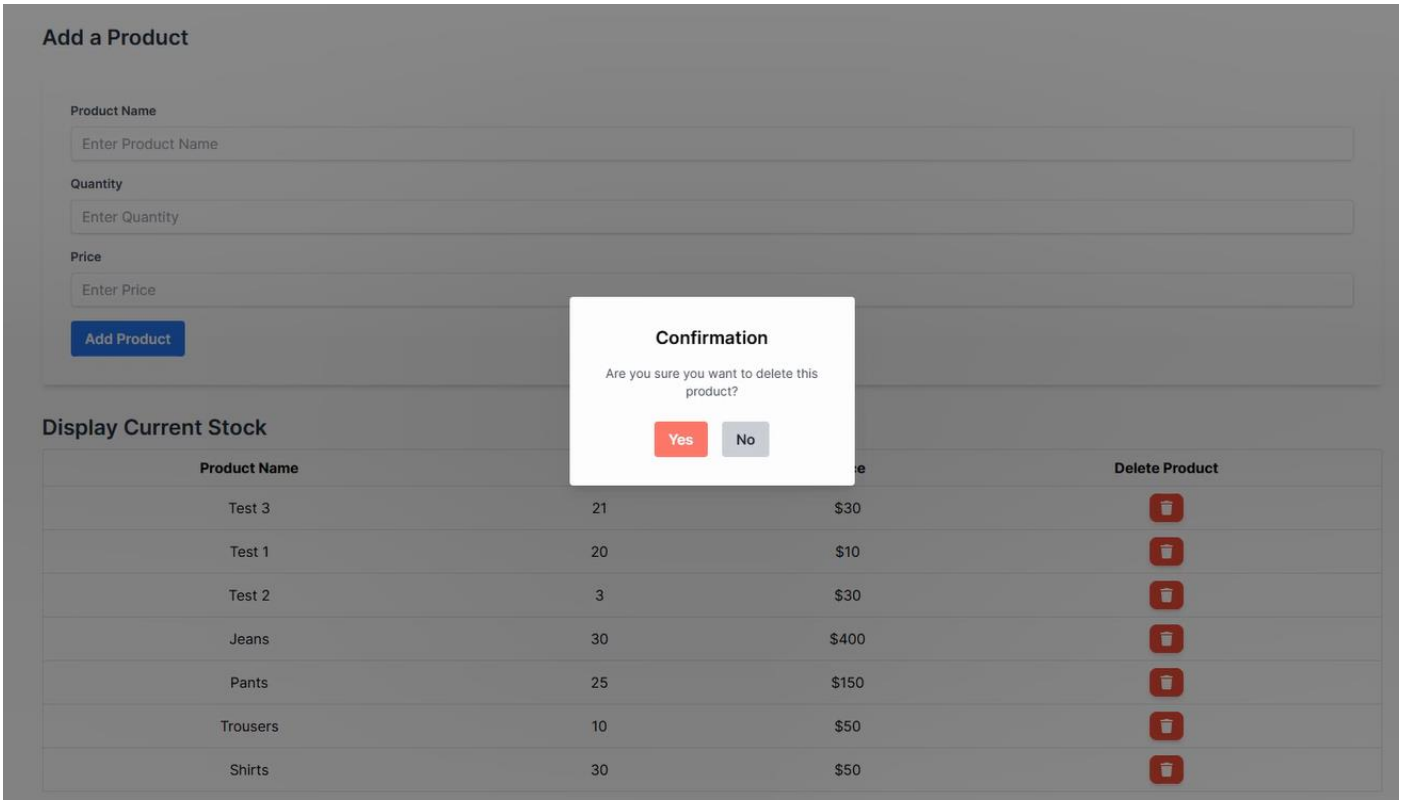

Figure 6: Delete Product Functionality

Discussion

We learned several important lessons while making the Next.js-based stock management system project. Utilizing Next.js, despite the fact that it needed some initial learning, showed how important contemporary technologies are for developing scalable, high-performance apps. We also discovered that learning from online resources is crucial in keeping up with the rapidly advancing technology of today's world. Accurate inventory management required the implementation of real-time data handling, underscoring the necessity of strong real-time capabilities in inventory systems. Overcoming these obstacles has improved our knowledge and equipped us for next tasks.

Conclusion

Next.js was used in the construction of the Stock Management System, which has highlighted the value of thorough requirement analysis, efficient use of contemporary web technologies, and user experience. We have effectively tackled the shortcomings of conventional inventory systems with this project by integrating order management that is more efficient, real-time tracking, and strong security features. The outcome of these endeavors is an application that is user-friendly, scalable, and high-performing, which improves accuracy and operational efficiency. Not only have the tactics and experiences learnt during this project guaranteed its success, but they have also yielded invaluable information for projects to come. This project serves as evidence of the advantages of integrating cutting-edge technology with careful design to address challenging business issues.