Exercise: Build a Simple Web Application

Objective:
Create a small full stack web application to manage a simple inventory of products. The application should have a basic user interface where users can add, delete, and update products.

Backend Requirements:
- Language: Python
- Framework: Flask or Django
- Create RESTful APIs to handle CRUD operations (create, read, update, delete) for product **items.**
- Each product item should have a unique ID, name, description, and price.
- Persist the product data in a simple JSON file or SQLite database.

Frontend Requirements:
- Framework: Vue.js or React
- Implement pages to display the list of products, add new products, edit existing products, and delete products.
- Ensure the front end communicates with the backend APIs to perform all operations.

DevOps Requirements:
- Containerise your application using Docker.
- Write a basic Kubernetes deployment yaml file that defines how your application should be deployed in a Kubernetes environment.

Bonus:
- Implement authentication to secure your APIs.
- Add a simple search feature to filter through the products.
- Use environment variables for managing configuration.

Submission:
- Provide the source code in a GitHub repository.
- Include a README file with instructions on how to set up and run the application, including how to deploy it to a Kubernetes cluster.