Countries Explorer

A React application that uses the REST Countries API to display information about countries around the world.

Features

- View a list of all countries with basic information

- Search for countries by name

- Filter countries by region or language

- View detailed information about a specific country

- Toggle between light and dark mode

- User authentication (login/register)

- Save favorite countries (for logged-in users)

- Responsive design for all device sizes

API Integration

This application integrates with the REST Countries API using the following endpoints:

1. `GET /all` - Fetches all countries

2. `GET /name/{name}` - Searches for countries by name

3. `GET /region/{region}` - Filters countries by region

4. `GET /alpha/{code}` - Gets detailed information about a specific country

Technology Stack

- **Frontend**: React

- **Language**: JavaScript

- **CSS Framework**: Tailwind CSS

- **State Management**: React Hooks (useState, useEffect, useContext)

- **Routing**: React Router

- **Authentication**: Client-side authentication with localStorage (for demo purposes)

- **Testing**: Jest and React Testing Library

Challenges and Solutions

Challenge 1: API Rate Limiting

Problem: The REST Countries API has rate limiting which could affect the application during high traffic.

Solution: Implemented caching of API responses using React state and localStorage to reduce the number of API calls.

Challenge 2: Performance with Large Data Sets

Problem: Rendering a large list of countries could impact performance.

Solution: Implemented efficient filtering on the client side to optimize performance.

Challenge 3: User Authentication

Problem: Implementing secure authentication without a backend.

Solution: For demonstration purposes, implemented client-side authentication using localStorage. In a production environment, this would be replaced with a proper backend authentication system.

URL of the Hosted Application

https://af-2-production-584a.up.railway.app/