# Frontend Task Documentation

## Project Overview

This project is a React.js application created using Vite, a fast development build tool, and TypeScript for static typing. Tailwind CSS is utilised for styling, and the application includes a responsive login page that communicates with an external API for authentication. The Context API is employed to manage state across components, and lazy loading is implemented for optimised code splitting.

## Login Page

The login page is implemented in the Login component and associated sub-components such as LoginForm. The page is styled using Tailwind CSS for a responsive design. Authentication is handled through the api.ts service, making requests to an external API.

## Dashboard

The dashboard is composed of the Dashboard component and the DashboardHeader component. Lazy loading is applied to optimise performance by splitting code into smaller chunks that are loaded only when necessary.

## Context API

The AuthContext is used to manage authentication state across the application. It provides a context provider and consumer to allow components to access and update authentication information.

## Best Practices

### Responsive Design

Tailwind CSS is used for responsive styling, ensuring a seamless experience on various devices.

### Lazy Loading

Code splitting is implemented using lazy loading to improve loading times by only loading the required code when navigating to specific pages.

### Context API

The Context API is leveraged for state management, promoting a clean and efficient way to share data across components.

### API Service

The api.ts service handles communication with the authentication API, encapsulating logic and promoting maintainability.

### TypeScript

TypeScript is employed for static typing, enhancing code robustness and developer productivity.

## Conclusion

This React.js application follows best practices for development, ensuring a responsive and efficient user experience. The use of Vite, TypeScript, Tailwind CSS, and the Context API contributes to a well-structured and maintainable codebase.