Project Description

Currency Converter App Development

# Introduction

I am developing a **Currency Converter Application** that uses real-time and historical exchange rates from an external API. The project is primarily focused on allowing users to convert between different currencies, track historical exchange rate data over various time periods, and display trends in the form of a chart. This project will be built using React.js for the frontend and Tailwind CSS for styling.

## Why I Chose This Project

This project aligns with my goal to build a useful application that leverages modern web development tools while solving a common problem, currency conversion. I am particularly drawn to the challenge of working with a real-time currency conversion tool because I use forex bureau’s a lot in my daily life. Having a tool that can aid in immediately knowing the day's rate would be beneficial.

## Project Objective

The goal of this project is to create a functional and visually appealing currency conversion app that will allow users to:

1. Convert currencies.

2. View historical exchange rates for different date ranges.

3. Display trends using charts that adapt based on the selected currency and time range.

4. Provide responsive design to accommodate both desktop and mobile devices.

## Project Planning and Specifications

**1.** **Frontend Stack**

* React.js
* Tailwind CSS

**2.** **API Integration**

**Open Exchange Rates API**

- This API is central to the project, providing real-time and historical exchange rate data.

- The application will use this API to fetch currency conversion rates for multiple currencies, with the free tier of the API supporting conversions with USD as the base currency.

- Historical data for exchange rates will be retrieved to allow users to view past trends for any given currency pair over a range of time periods, such as the last 1 day, 1 week, 1 month, and 1 year.

**3. Project Structure**

* **Component Design**
  + The project is broken down into several components such as CurrencySelectionDropdown, AmountField, and ConversionRate to manage individual pieces of the UI. Ensuring the code is maintainable.
* **HistoricalChart Component**
  + will handle data visualization using Recharts to present the fetched historical data in a clean and readable format.
* **DateRangeButton**
  + will allow users to change the date range for historical data, giving flexibility to the users to view trends over different time periods.

Conclusion

The Currency Converter App is a project designed to provide real-time currency conversion and historical trends in a modern, responsive web application. With a clean UI, modular codebase, and real-time API integration, this project presents a unique opportunity to build a tool that is both useful and technically challenging. The focus on data accuracy, responsive design, and user interaction ensures that the app delivers a seamless and valuable experience for end-users.