# Loan Calculator App with Currency Conversion

## Overview

This project is a modern, single-page web application built using React JS and Material UI. The app allows users to calculate loan EMIs (Equated Monthly Installments), view an amortization schedule, and convert EMI amounts to various currencies using real-time exchange rates from the ExchangeRate-API.

## Key Features

* • Loan EMI calculation using standard financial formulas.
* • Currency selection dropdown with live exchange rate conversion using ExchangeRate-API.
* • Responsive design supporting desktop and mobile view.
* • Dark and light mode toggling using Material UI theming.
* • Error handling for failed API calls or missing data.
* • 404 Not Found page for unmatched routes.
* • Reusable components and custom hooks for API and EMI logic.
* • Global state management using React Context API.

## Currency Conversion API Integration

The app integrates with the free tier of the ExchangeRate-API to fetch live exchange rates.  
API Endpoint Example:  
https://v6.exchangerate-api.com/v6/YOUR\_API\_KEY/latest/USD  
  
You must register and obtain a free API key to use this endpoint. Then, replace YOUR\_API\_KEY in the app code with your actual key.

## Technical Implementation

The application is built using React functional components and leverages React Context for managing global states like theme and currency. Material UI is used for styling, layout, and theming. Exchange rates are fetched using custom React hooks, and the UI updates dynamically when the user selects a different currency.

## Evaluation Goals

This project is designed to evaluate a candidate’s skills in:

* • React fundamentals (state, props, hooks)
* • Component structure and code reusability
* • Third-party API integration and data rendering
* • Handling tables, lists, and pagination
* • Theme customization (dark/light mode)
* • Error handling and UI fallback mechanisms
* • Responsive design and mobile-friendly interfaces

## 📁 Project File Structure

The following structure outlines the organization of the Loan Calculator App project:  
  
loan-calculator-app/  
│  
├── public/ # Static files and public index.html  
│ └── index.html  
│  
├── src/ # Main application source code  
│ ├── assets/ # Static assets (images, icons)  
│ ├── components/ # Reusable React components  
│ ├── context/ # Context API providers (ThemeContext, CurrencyContext)  
│ ├── hooks/ # Custom React hooks (useExchangeRates, useEMICalculator)  
│ ├── pages/ # Application pages (Home, About, NotFound)  
│ ├── App.js # Root component  
│ ├── index.js # Entry point  
│ └─utils.js # MUI theming configuration  
│  
├── .env # Environment variables (API key)  
├── .gitignore # Git ignore rules  
├── package.json # Project metadata and dependencies  
└── README.md # Project overview and instructions

## 💻 Installation & Setup

npm I react-router-dom, axios, materialui

Follow these steps to run the project locally:  
  
1. Clone the Repository:  
 git clone https://github.com/your-username/loan-calculator-app.git  
  
2. Navigate into the project directory:  
 cd loan-calculator-app  
  
3. Install dependencies:  
 npm install  
  
4. Add your ExchangeRate API key:  
 - Create a `.env` file in the root directory.  
 - Add your API key in this format:  
 REACT\_APP\_EXCHANGE\_RATE\_API\_KEY=your\_api\_key\_here  
  
5. Start the development server:  
 npm start  
  
The app should now be running on http://localhost:3000