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Crypto Price Tracker – Documentation

# Project setup guide

1.Clone the repository
https://github.com/ThushariSenevirathne/price_tracker
2.Install dependencies
3.Start the development server
4.Open http://localhost:3000 in your browser to view the app.

# API integration details

Fetching Data

- The application uses the fetch API to retrieve data.

Updating Data

- Automatic Updates: The application refreshes the cryptocurrency prices every 60 seconds using React Query's refetchInterval feature.
- Manual Refresh: A "Refresh" button allows users to manually fetch the latest prices by calling the refetch() function.
- Error Handling: If the API fails to respond, an error message is displayed to the user.
- Loading Indicator: A spinner or message is shown while fetching data to enhance user experience.

# State management explanation

Why React Query?

- Automatic caching to reduce redundant API calls.
- Background data fetching for real-time updates.
- Built-in error handling.
- Improved performance with efficient data management.

# Challenges & solutions

1. Handling API Rate Limits

- Implemented caching with React Query to reduce unnecessary requests.
- Added a refresh interval to avoid excessive manual requests.

2. Optimizing Performance

- Used React Query's caching mechanism instead of repeatedly calling the API.
- Displayed a loading indicator while fetching data to improve user experience.

3. Ensuring Mobile Responsiveness

- Used CSS flexbox and grid layouts for adaptive UI.
- Tested on various screen sizes to ensure usability on mobile.