Crypto Tracker Project

Objective - The objective of this project is to develop a web application that allows users to track and view detailed information about various cryptocurrencies. Users should be able to search for specific coins, paginate through the list of coins, sort the list by price and volume, add their favorite coins to a list for easy access, and view detailed information and historical price charts for each coin.

Pages in the Website

1. **Home Page (index.html)**
   - Displays a list of cryptocurrencies with basic information.
   - Allows users to search for specific cryptocurrencies with a debounced search input.
   - Includes pagination to navigate through multiple pages of coin data.
   - Allows sorting of the coin list by price and volume.
   - Allows users to navigate to the detailed view of each coin.
   - Includes a loading shimmer effect while fetching data.
2. **Favorites Page (favorites.html)**
   - Displays a list of the user's favorite cryptocurrencies.
   - Allows users to navigate to the detailed view of each coin.
   - Includes a loading shimmer effect while fetching data.
3. **Coin Detail Page (coins.html)**
   - Displays detailed information about a selected cryptocurrency.
   - Shows historical price charts with selectable time ranges (24h, 30d, 3m).
   - Includes a loading shimmer effect while fetching data.

Tasks for Students to Implement

1. **Home Page (index.html)**

- Fetch and display a list of cryptocurrencies using the CoinGecko API.
- Implement a debounced search input to filter the list of displayed cryptocurrencies.
- Implement pagination to navigate through multiple pages of coin data.
- Implement sorting functionality for the coin list by price and 24h volume.
- Implement a loading shimmer effect to show while data is being fetched.
- Allow users to add coins to their favourites list (stored in local storage).

2. **Favorites Page (favorites.html)**
   - Retrieve the list of favorite coins from local storage
   - Fetch data for favorite coins from the CoinGecko API.
   - Display basic information for each favorite coin.
   - Implement and display a shimmer effect while data is loading.
   - Allow users to navigate to the detailed view of each coin from the favorites list.

3. **Coin Detail Page (coins.html)**
   - Fetch detailed information about the coin from the CoinGecko API.
   - Display the coin's image, name, description, rank, current price, and market cap.
   - Fetch and display historical price data in a chart (Chart.js) for different time ranges (24h, 30d, 3m).
   - Implement and display a shimmer effect while data is loading.
   - Allow users to switch between different time ranges for the historical price chart.

APIs Used

- **CoinGecko API**: Used to fetch cryptocurrency data.
  - **Get Coin List**: Used on the Home Page to fetch a list of cryptocurrencies.

- Endpoint:
  `https://api.coingecko.com/api/v3/coins/markets`
- Parameters: `vs_currency=usd`, `order=market_cap_desc`, `per_page=100`, `page={page}`

○ **Get Coin Details**: Used on the Coin Detail Page to fetch detailed information about a selected cryptocurrency.

- Endpoint:
  `https://api.coingecko.com/api/v3/coins/{id}`

○ **Get Coin Market Chart**: Used on the Coin Detail Page to fetch historical price data for a selected cryptocurrency.

- Endpoint:
  `https://api.coingecko.com/api/v3/coins/{id}/market_chart`
- Parameters: `vs_currency=usd`, `days={days}` (where `{days}` can be 1, 30, 90 for 24h, 30d, and 3m respectively)