



Web Technology Mini Project Report submitted to Savitribai Phule Pune
University, Pune

CryptoCurrency Price Tracker



In partial Fulfillment for the awards of Degree of Engineering in
Computer Engineering

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Certificate

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Abstract

CryptoTracker is a modern and user-friendly cryptocurrency price tracking platform designed to provide users with real-time information on the latest prices of various cryptocurrencies. The platform allows users to seamlessly browse a wide range of cryptocurrencies, track their market performance, and access detailed information such as market capitalization, price fluctuations, available supply, and volume over the last 24 hours. Built using React, JavaScript, and styled with Tailwind CSS, the platform ensures a responsive and intuitive experience across all devices. Key features include a dynamic search bar for filtering cryptocurrencies, real-time updates of price data, and detailed cryptocurrency profiles with icons and other essential stats. The application integrates with an external API to fetch live market data securely. By focusing on speed, ease of use, and accuracy, CryptoTracker empowers users to make informed decisions in the ever-changing world of cryptocurrency.

Keywords: CryptoTracker, Cryptocurrency, Price Tracker, Real-time Data, Market Performance, API Integration, React, JavaScript, Tailwind CSS, Crypto Stats, User Interface, Cryptocurrency Platform, Responsive Design.

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List of Abbreviations

1. HTML – HyperText Markup Language
2. CSS – Cascading Style Sheets
3. JS – JavaScript
4. API – Application Programming Interface
5. UI – User Interface
6. UX – User Experience
7. DOM – Document Object Model
8. JSON – JavaScript Object Notation
9. HTTP – HyperText Transfer Protocol
10. HTTPS – HyperText Transfer Protocol Secure
11. URL – Uniform Resource Locator
12. React.js – A JavaScript library for building user interfaces
13. JWT – JSON Web Token
14. API Key – Application Programming Interface Key

Chapter 1

Introduction

1.1 Overview

The CryptoTrack website is a cutting-edge cryptocurrency price tracking platform designed to provide users with real-time data on various cryptocurrencies. The platform offers an intuitive and interactive interface for users to monitor the prices of cryptocurrencies like Bitcoin, Ethereum, and others, with support for multiple currencies including INR. Developed using HTML, CSS, JavaScript, React, Node.js, Express, MongoDB, and integration with a third-party API for real-time data, CryptoTrack delivers an easy-to-navigate and responsive design. It enables users to track the latest market prices, historical data, and trends, helping them make informed decisions. By offering a secure and streamlined digital experience, CryptoTrack empowers users to stay updated with the rapidly changing world of cryptocurrencies.

1.2 Aim/Motivation

The aim of this project is to design and develop a web-based cryptocurrency price tracking platform that caters to the increasing interest in digital currencies and the need for real-time market data. The motivation behind creating the CryptoTrack website stems from the desire to simplify how users access and monitor live prices of cryptocurrencies such as Bitcoin, Ethereum, and more. As digital assets become an integral part of the financial world, having a centralized and accessible platform allows users to stay informed about market fluctuations, price changes, and trends. The platform empowers individuals—whether beginners or experienced traders—to make informed decisions by providing reliable, up-to-date information in a user-friendly interface. It also encourages digital financial literacy and supports the growing adoption of blockchain technology globally.

1.3 Objective

- To allow users to monitor top cryptocurrencies, their market trends, and price variations over time.
- To provide key information such as market cap, rank, daily and weekly price change, and more in a clean, organized manner.
- To support search functionality that enables users to quickly find specific cryptocurrencies.
- To display historical data and charts for analyzing market behavior.
- To fetch and render live data using a third-party cryptocurrency API.
- To build the front-end using HTML, CSS, JavaScript, and React for a smooth and modern interface.
- To manage backend operations with Node.js and Express, ensuring scalable and secure performance.
- To store and handle user preferences (if any) using MongoDB for persistent data management.
- To promote awareness and accessibility of cryptocurrency information for both casual users and enthusiasts.

1.4 Organization of Report

The rest of this report is organized in following manner. In all chapters, related contents are described in detail.

- **Introduction** (Chapter 1):
- **Literature Survey** (Chapter 2):
- **Problem Statement** (Chapter 3):
- **Software Requirement Specification** (Chapter 4):
- **System Design** (Chapter 5):
- **Conclusion** (Chapter 6):

Chapter 2

Literature Survey

Related work done in the previous systems with their advantages and disadvantages.
Short description of existing system along with its advantages and disadvantages.

Sample of Literature Survey

	Features					
Name of System/Applications	Real-Time Price Updates	Market Cap & Rank	Price Change History	Search by Crypto Name/Symbol	User-Friendly Interface	API-Based Data Fetching
CoinMarket Cap	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
CoinGecko	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
CryptoCompare	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE
Manual Tracking (Spreadsheets)	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
CryptoTrack (Proposed)	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Binance App	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Chapter 3

Problem Statement

- In the modern food service industry, customers often face challenges accessing a reliable and efficient platform for ordering meals from local restaurants.
- Traditional food ordering methods involve phone calls, limited menu access, and lack of real-time updates, leading to delays and poor customer experience.
- Existing platforms may be expensive for small businesses or lack proper support for local restaurants and smooth user navigation.

Who – Food lovers, customers, local restaurants, and small food businesses who need a fast, user-friendly, and cost-effective digital food ordering system.

What – The issue is the lack of a unified platform that supports real-time tracking, secure payments, easy browsing, and direct customer-restaurant communication.

When – The problem occurs while placing food orders, especially during busy hours, or in areas where digital platforms are either unavailable or unreliable.

Where – This issue arises in traditional dine-in-only restaurants, areas with underdeveloped online systems, and platforms that don't cater well to local businesses.

Why – Solving this problem will make food ordering faster and easier, support local businesses, ensure customer satisfaction, and promote digital growth in the food service sector.

Chapter 4

Software Requirements Specification

4.1 Hardware Requirements :-

- RAM: Minimum 4GB (8GB recommended)
- Storage: At least 100MB of free disk space
- Display: 1024×768 resolution or higher
- Operating System: Windows, macOS, or Linux
- Internet Connection: Required for accessing live data from APIs and deploy

4.2 Software Requirements :-

Frontend Technologies:

- HTML – For structuring the user interface
- CSS – For styling and responsive design
- JavaScript – To implement dynamic features and UI interactivity
- React.js – For building a fast, component-based user interface

Backend and Data Technologies:

- **Node.js** – To build server-side logic and backend APIs
- **Express.js** – For routing and middleware handling
- **MongoDB** – To store user preferences, saved crypto lists, and basic analytics
- **Crypto API (e.g., CoinGecko/CoinMarketCap)** – To fetch real-time price data and market stats

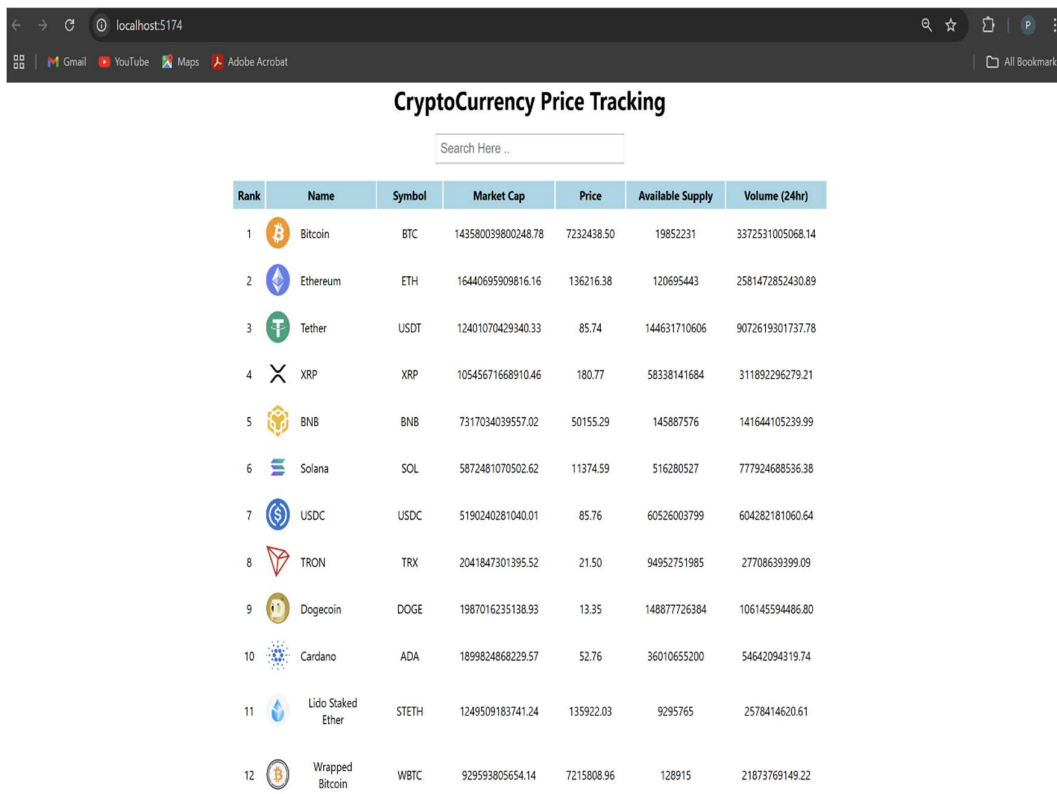
Development Environment:

- **Code Editor** – Visual Studio Code or any modern code editor
- **Web Browser** – Google Chrome, Mozilla Firefox, or any browser for testing
- **Postman** – For API testing
- **Git** – Version control and collaboration

Chapter 5













System Design and Result

5.1 GUI of Working System



CryptoCurrency Price Tracking

Search Here ..

Rank	Name	Symbol	Market Cap	Price	Available Supply	Volume (24hr)
1	 Bitcoin	BTC	143580039800248.78	7232438.50	19852231	3372531005068.14
2	 Ethereum	ETH	16440695909816.16	136216.38	120695443	2581472852430.89
3	 Tether	USDT	12401070429340.33	85.74	144631710606	9072619301737.78
4	 XRP	XRP	10545671668910.46	180.77	58338141684	311892296279.21
5	 BNB	BNB	7317034039557.02	50155.29	145887576	141644105239.99
6	 Solana	SOL	5872481070502.62	11374.59	516280527	777924688536.38
7	 USDC	USDC	5190240281040.01	85.76	60526003799	604282181060.64
8	 TRON	TRX	2041847301395.52	21.50	94952751985	27708639399.09
9	 Dogecoin	DOGE	1987016235138.93	13.35	148877726384	106145594486.80
10	 Cardano	ADA	1899824868229.57	52.76	36010655200	54642094319.74
11	 Lido Staked Ether	STETH	1249509183741.24	135922.03	9295765	2578414620.61
12	 Wrapped Bitcoin	WBTC	929593805654.14	7215808.96	128915	21873769149.22

Chapter 6: Conclusion and Future Scope

Conclusion

The CryptoTracker platform presents a robust and real-time solution for cryptocurrency enthusiasts, traders, and analysts by offering up-to-date price monitoring, historical trends, and intuitive visualizations. It bridges the gap between users and the complex crypto market through a clean, user-friendly interface, ensuring transparency and ease of use. By integrating data from various trusted APIs, the tracker enables users to make informed decisions, manage portfolios, and stay ahead in the volatile world of digital assets. With its secure architecture and scalable features, CryptoTracker has the potential to become an essential tool in the cryptocurrency ecosystem.

Future Scope

The CryptoTracker platform can be enhanced and expanded with several advanced features in the future, such as:

1. **Portfolio Management:** Allow users to track their investments across multiple wallets and exchanges in one dashboard.
2. **Price Alerts:** Enable custom notifications when a selected coin hits a target price or percentage change.
3. **AI-Powered Insights:** Use machine learning to analyze market trends and generate investment recommendations.
4. **Mobile App Integration:** Develop mobile apps for iOS and Android for real-time tracking on the go.
5. **News Aggregator:** Integrate news from multiple crypto sources to help users stay informed about market movements and events.
6. **Multi-language & Global Currency Support:** Expand usability by supporting multiple languages and displaying prices in various fiat currencies.
7. **Blockchain Explorer Integration:** Provide real-time transaction tracking and wallet analytics for supported coins.

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