

NAAN MUDHALVAN PROJECT

UNIVERSITY OF MADRAS



COLLEGE NAME: AGURCHAND MANMULL JAIN COLLEGE

COLLEGE CODE : 1301

SUBJECT: FRONTEND DEVELOPMENT WITH REACT.JS

TOPIC: Crypto verse (Dashboard)

TEAM	ROLE	UNM ID	EMAIL ID
Ajai.S (222205173)	Team Member	unm130122G148	Sureshajai8352@gmail.com
Yeshwanth.R (222205330)	Team Member	unm130122G149	yyeshwanth380@gmail.com
Mohamed Fazil.A (22225253)	Team Leader	unm130122G150	mffazil04@gmail.com
Madeshwaran. D (222205249)	Team Member	unm130122G151	madeshwaran1752@gmail.com

Project Documentation

Introduction

Project Title: CryptoVerse

Team Members:

- Ajai.S
- Yeshwanth.R
- Mohamed Fazil.A
- Madeshwaran.D-

Project Overview

Purpose

CryptoVerse is a web application designed to provide users with real-time information on various cryptocurrencies, including their current prices, market trends, and detailed statistics. The platform aims to offer both novice and experienced investors a comprehensive tool to track and analyze digital currencies.

Features

- Real-time cryptocurrency price tracking
- Detailed statistics and market trends
- Search functionality for specific cryptocurrencies
- Responsive design for optimal viewing on various devices
- Interactive charts for price visualization

Architecture

Component Structure

```
CryptoVerse_NaanMudhalvan/  
| — public/           # Public assets  
  
| | — _redirects       # Redirect settings  
  
| | — cryptocurrency.png # Cryptocurrency image  
  
| | — index.html       # Main HTML file  
  
|  
  
| — src/              # Main source code
```

```
| └─ app/          # Global state management
|   | └─ store.js   # Redux or Context API store
|   |
|   └─ components/  # React components
|       | └─ CryptoDetails.jsx
|       | └─ Cryptocurrencies.jsx
|       | └─ Exchanges.jsx
|       | └─ Homepage.jsx
|       | └─ LineChart.jsx
|       | └─ Loader.jsx
|       | └─ Navbar.jsx
|       | └─ News.jsx
|       | └─ index.js
|       |
|       └─ images/   # Image assets
|           | └─ cryptocurrency.png
|           |
|           └─ services/ # API services
|               | └─ cryptoApi.js # API calls for cryptocurrency data
|               | └─ cryptoNewsApi.js # API calls for cryptocurrency news
|               |
|               └─ App.css      # Global styles
|               └─ App.js       # Main App component
|               └─ index.js     # Entry point
|
```

— .env.example	# Example environment variables
— .eslintrc.js	# ESLint configuration
— .gitignore	# Git ignored files
— README.md	# Documentation
— package-lock.json	# Dependency lock file
— package.json	# Project dependencies.

State Management

The application utilizes **Redux Toolkit** for efficient state management, allowing centralized and predictable state updates. It includes slices for:

- Cryptocurrencies
- News
- Price history

Routing

React Router is employed to handle navigation between different pages, ensuring a seamless user experience.

Setup Instructions

Prerequisites

- Node.js (version 14.x or higher)
- npm package manager

Installation

1. Clone the repository:
2. `git clone https://github.com/Unml302/fazil_2004`
3. Navigate project directory:
4. `cd CryptoVerse_NaanMudhalvan`
5. Install dependencies:
6. `npm install`

Folder Structure

Client

- **src/**: Contains the source code of the React application.
 - **components/**: Reusable UI components (e.g., Navbar, CryptoCard).
 - **pages/**: Page components corresponding to different routes (e.g., Homepage, Cryptocurrencies, CryptoDetails, News).
 - **app/**: Contains the main App component and routing logic.
 - **services/**: API service functions for fetching data from external sources.
 - **app/store.js**: Redux store configuration.

Running the Application

To start the application locally:

```
npm start
```

This will launch the application at `http://localhost:3000`.

Component Documentation

Key Components

- **Navbar**: Renders navigation links to different sections of the application.
- **Homepage**: Displays top cryptocurrencies and latest market news.
- **Cryptocurrencies**: Lists all cryptocurrencies with pagination support.
- **CryptoDetails**: Provides detailed information about a selected cryptocurrency, including charts and statistics.
- **News**: Shows the latest news articles related to cryptocurrencies.
- **LineChart**: Visualizes cryptocurrency price trends.
- **Loader**: Displays a loading indicator when fetching data.

Reusable Components

- **CryptoCard**: Displays brief information about a cryptocurrency, used in lists and search results.
- **Button**: Custom-styled button used across the application.
- **SearchBar**: Enables searching for cryptocurrencies.

State Management

Global State

Managed using **Redux Toolkit**, encompassing:

- **Cryptocurrencies**: State slice for storing cryptocurrency data.
- **News**: State slice for storing news articles.

Local State

Handled within components using the `useState` hook for UI-specific states, such as form inputs and modal visibility.

User Interface

Screenshots or GIFs showcasing different UI features, such as pages, forms, or interactions.

Styling

CSS Frameworks/Libraries

- The application uses **Ant Design** for consistent and responsive UI components.

Theming

- Custom theming is applied using Ant Design's theming capabilities to align with the application's branding.

Testing

Testing Strategy

- The project employs **Jest** and **React Testing Library** for unit and integration testing of components and Redux slices.

Code Coverage

- Code coverage is monitored using Jest's built-in coverage tools, aiming for comprehensive test coverage across all modules.

Screenshots or Demo

Live Demo

https://drive.google.com/file/d/1Z3tChRpGhalVRqfpbUjUmTP1koP-C_75/view?usp=drivesdk

Screenshots

https://drive.google.com/drive/folders/1bZIH61inNT0NepQbulek5WB1_Q8v3f4w

Known Issues

- The Exchange and News options are not working properly.
- API Rate Limits: Some cryptocurrency APIs impose rate limits, which might cause occasional delays or failures in fetching data.
- Incomplete Data Display: Certain cryptocurrencies may not have all the required details, leading to missing information in the CryptoDetails page.

- **Pagination Bug:** In the Cryptocurrencies list, sometimes pagination does not update properly when switching between filters.
- **Mobile Responsiveness:** Some UI elements may not be fully optimized for smaller screens, causing layout inconsistencies.
- **Loading Performance:** The app might take longer to fetch and display data when dealing with large datasets or slower networks.

Future Enhancements

- Dark mode toggle feature
- Real-time WebSocket price updates
- Improved UI animations
- Additional charting options
- User authentication for personalized watchlists