

# 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)

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# Project Documentation

## Introduction

**Project Title:** CryptoVerse

**Team Members:**

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## 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 to the 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/1Z3tChRpGhaIVRqfpbUjUmTP1koP-C\\_75/view?usp=drivesdk](https://drive.google.com/file/d/1Z3tChRpGhaIVRqfpbUjUmTP1koP-C_75/view?usp=drivesdk)

### Screenshots

[https://drive.google.com/drive/folders/1bZIH61inNT0NepQbulek5WB1\\_Q8v3f4w](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