

# **CRYPTOVERSE**

## **(DASHBOARD OF CRYPTOCURRENCY)**

### **NAANMUDHALVAN PROJECT REPORT**

Submitted by

**TEAM CODE: SWTID1741232295156416**

#### **TEAM LEADER**

VIGNESH KUMAR.S (212204522) [m10firegaming@gmail.com](mailto:m10firegaming@gmail.com)

#### **TEAM MEMBERS**

SHRI SAI KUMAR.G(212204513) [g.shrisaikumar25@gmail.com](mailto:g.shrisaikumar25@gmail.com)

SURIYA.S(212204517) [suriyapriya301716@gmail.com](mailto:suriyapriya301716@gmail.com)

THAMEEM ANSARI.H(212204518) [tt3694682@gmail.com](mailto:tt3694682@gmail.com)

VINOOTH KUMAR.M (212204524) [vinothvinoth7870@gmail.com](mailto:vinothvinoth7870@gmail.com)

#### **DEPARTMENT OF COMPUTER APPLICATION**



#### **DEPARTMENT OF COMPUTER APPLICATION**

(Affiliated to the University of Madras)  
CLC WORK ROAD, CHROMPET, CHENNAI - 600 044  
**MARCH – 2025**

## Brainstorm & Idea Prioritization

### Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Reference: <https://www.mural.co/templates/brainstorm-and-idea-prioritization>

### Step-1: Team Gathering, Collaboration and Select the Problem Statement

The screenshot shows the 'Brainstorm & Idea Prioritization' template from Mural. It's divided into three main sections: 'Before you collaborate', 'Define your problem statement', and 'Brainstorm'.

- Before you collaborate:** A lightbulb icon with wavy lines. Includes steps:
  - A Team gathering:** Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.
  - B Set the goal:** Think about the problem you'll be focusing on solving in the brainstorming session.
  - C Learn how to use the facilitation tools:** Use the Facilitation Superpowers to run a happy and productive session.With a 'Open article' button.
- Define your problem statement:** Step 1. Includes a 'PROBLEM' box with placeholder text 'How might we [your problem statement]?'. A '5 minutes' timer icon is shown.
- Brainstorm:** Includes a 'Key rules of brainstorming' section with icons and text:
  - Stay in topic.
  - Encourage wild ideas.
  - Defer judgment.
  - Listen to others.
  - Go for volume.
  - If possible, be visual.

### Step-2: Brainstorm, Idea Listing and Grouping

2

## Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Person 1

Display real-time cryptocurrency prices, trends, and charts using third-party APIs.

Person 2

Allow users to add and track their crypto holdings with historical performance visualization.

Person 3

Enable users to convert between different cryptocurrencies and fiat currencies.

Person 4

Fetch and display crypto-related news updates to help users make informed decisions.

3

## Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

Real-Time  
Data &  
Analytics

User Portfolio  
Management

Market  
Insights &  
News

## Step-3: Idea Prioritization

4

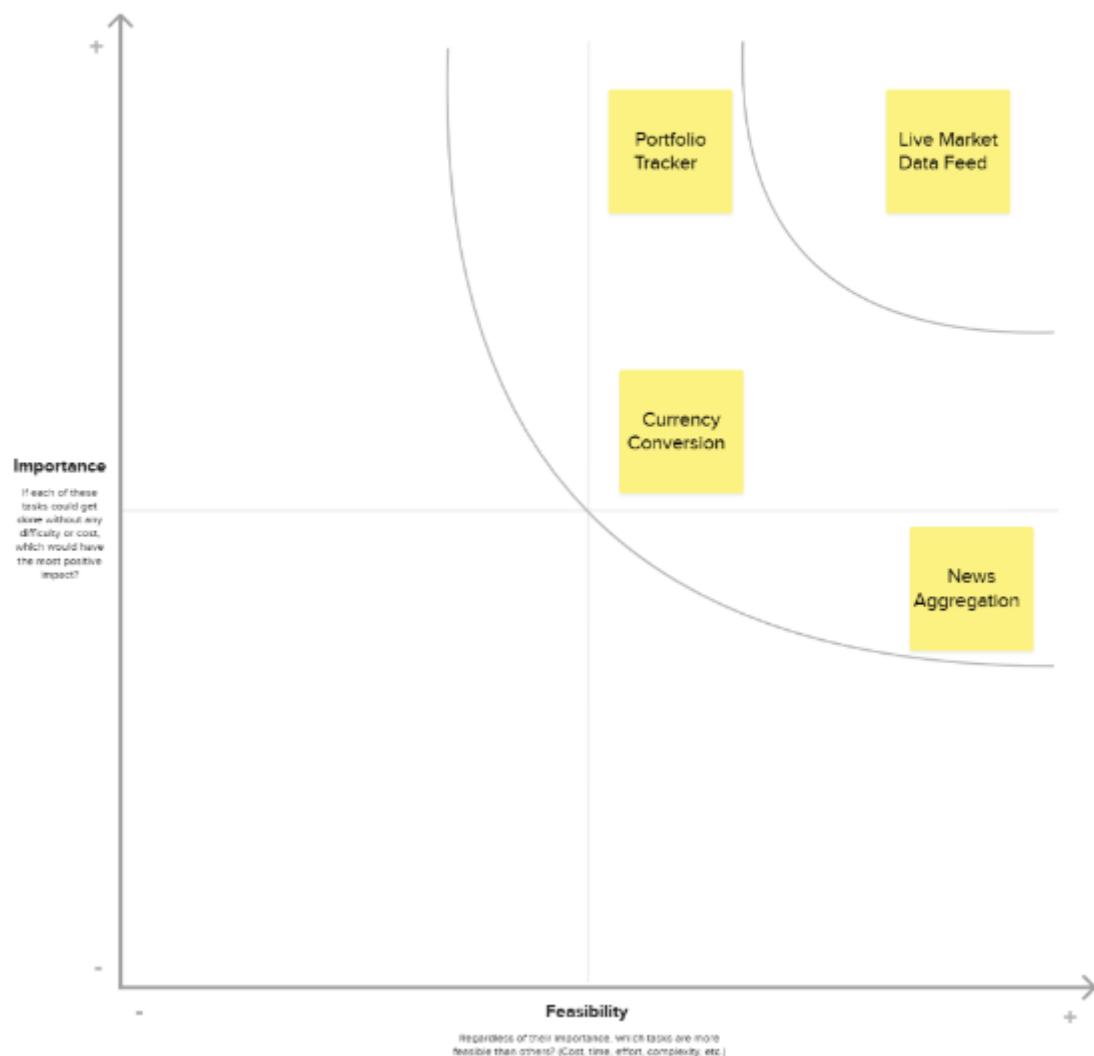
### Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the H key on the keyboard.



## Ideation Phase

### Define the Problem Statements

#### **Customer Problem Statement Template:**

Create a problem statement to understand your customer's point of view. The Customer Problem Statement template helps you focus on what matters to create experiences people will love.

A well-articulated customer problem statement allows you and your team to find the ideal solution for the challenges your customers face. Throughout the process, you'll also be able to empathize with your customers, which helps you better understand how they perceive your product or service.

I am	<small>Describe customer with 3-4 key characteristics - who are they?</small>	Describe the customer and their attributes here
I'm trying to	<small>List their outcome or "job" the care about - what are they trying to achieve?</small>	List the thing they are trying to achieve here
but	<small>Describe what problems or barriers stand in the way - what bothers them most?</small>	Describe the problems or barriers that get in the way here
because	<small>Enter the "root cause" of why the problem or barrier exists - what needs to be solved?</small>	Describe the reason the problems or barriers exist
which makes me feel	<small>Describe the emotions from the customer's point of view - how does it impact them emotionally?</small>	Describe the emotions the result from experiencing the problems or barriers

Reference: <https://miro.com/templates/customer-problem-statement/>

#### **Example:**

I am	I'm trying to	But	Because	Which makes me feel
I am	I'm trying to	But	Because	Which makes me feel
A crypto investor	Track real-time cryptocurrency prices	Most platforms are complex or require logins	I need quick access to price updates without extra steps	Frustrated and discouraged from using the platform

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
<b>PS-1</b>	A crypto investor	Track real-time cryptocurrency prices	Most platforms are complex or require logins	I need quick access to price updates without extra steps	Frustrated and discouraged from using the platform
<b>PS-2</b>	A beginner in crypto	Understand market trends easily	The available dashboards are too technical	I need a simple, visually appealing interface to analyze data	Overwhelmed and unsure about making decisions
<b>PS-3</b>	A day trader	Monitor price fluctuations and make quick decisions	The API data is slow or not updating in real-time	I need instant updates to react to market changes quickly	Anxious and unable to trade efficiently
<b>PS-4</b>	A user tracking multiple coins	Compare different cryptocurrencies in one place	Most platforms focus on a few major coins	I want a customizable dashboard that lets me track my preferred assets	Limited and forced to use multiple apps

## Empathize & Discover

### Empathy Map Canvas:

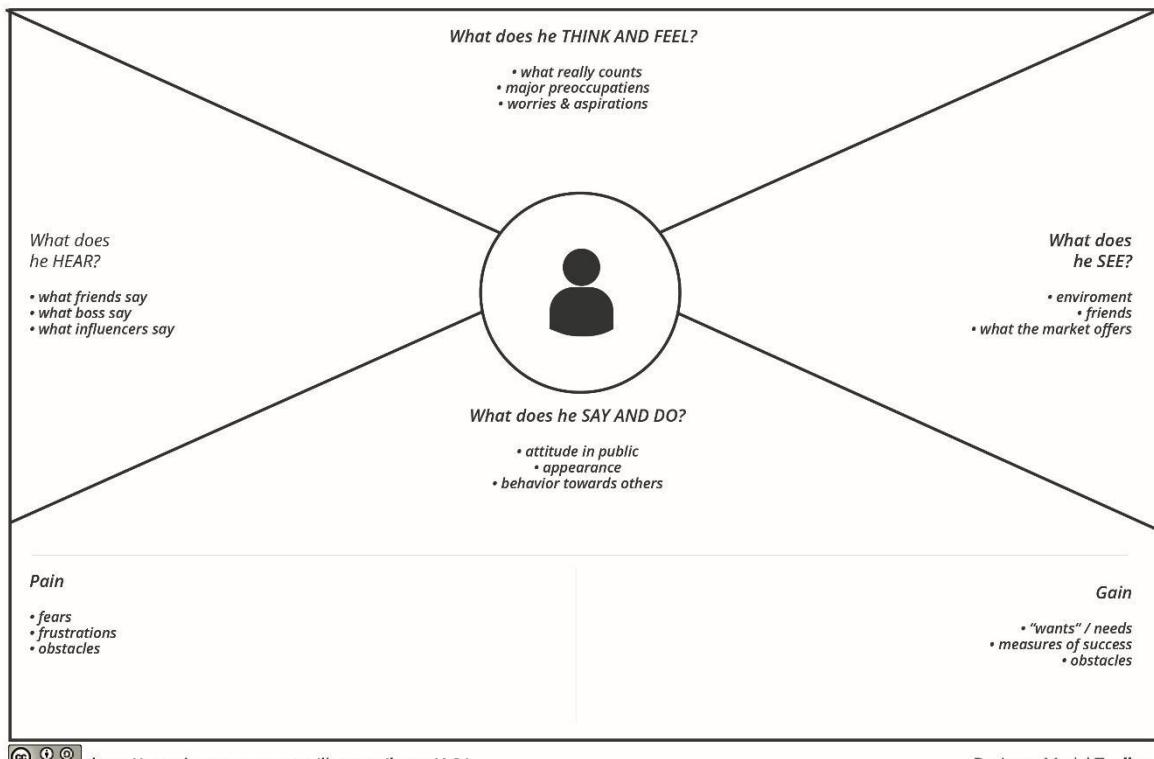
An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.

It is a useful tool to help teams better understand their users.

Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.

### Example:

Empathy Map



Business Model Toolbox

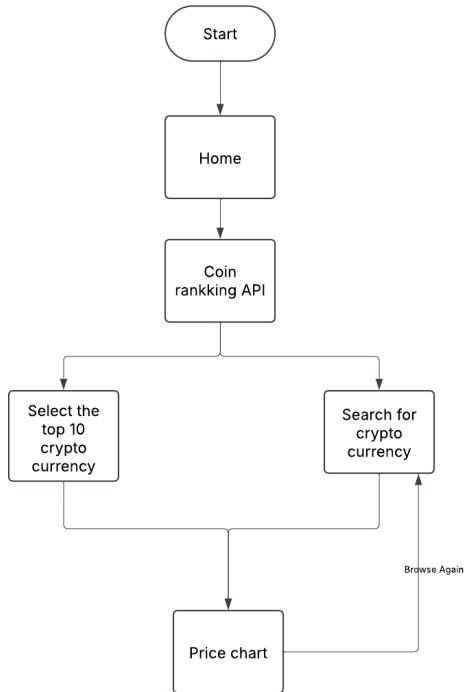
Reference: <https://www.mural.co/templates/empathy-map-canvas>

## Project Design Phase-II

### Data Flow Diagram & User Stories

#### **Data Flow Diagrams:**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes



the information, and where data is stored.

#### **User Stories**

Use the below template to list all the user stories for the product.

User Type	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web user)	USN-1	As a user, I can search for cryptocurrencies, Price chart or All cryptocurrencies	I can access my account / dashboard	High	Sprint-1
Customer (Web user)	USN-2	As a user, I can view trending and top 10 crypto coins on home page	I can receive confirmation email & click confirm	High	Sprint-1
Customer (Web user)	USN-3	As a user, I can buy, sell and View the Crypto currencies	I can register & access the dashboard with Facebook Login	Low	Sprint-2

## Solution Requirements (Functional & Non-functional)

### Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
<b>FR-1</b>	<b>Crypto Currencies and Discovery</b>	Search for crypto currencies
		Top 10 crypto currencies on home page
<b>FR-2</b>	<b>Price chart</b>	You can see the price chart of specific crypto currency in it
<b>FR-3</b>	<b>Admin Management</b>	Manage Users and Accounts
		Monitor System Analytics

### Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	The app should have an intuitive and user-friendly interface, ensuring smooth.
NFR-2	<b>Security</b>	API Requests must be secured. The app should prevent unauthorized .
NFR-3	<b>Reliability</b>	The app should ensure a consistent and uninterrupted experience, minimizing crashes and downtime.
NFR-4	<b>Performance</b>	Crypto currencies should load with minimal buffering. The app should respond to user interactions (search, price chart) within 2 seconds
NFR-5	<b>Availability</b>	The system should maintain an uptime of at least 99.9%, ensuring accessibility across different time zones.
NFR-6	<b>Scalability</b>	The app should handle increasing numbers of users and concurrent streams efficiently without performance degradation. The architecture should support future feature expansion.

## Technology Stack (Architecture & Stack)

### Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

**Table-1 : Components & Technologies:**

S.N o	Component	Description	Tec
1.	User Interface	Web-based interface for crypto currency	HT Re
2.	Application Logic-1	Top 10 crypto currency and data management	Jav
3.	Application Logic-2	All crypto currency and user search for selected currency	IBM
4.	External API-1	Fetching Coinranking API data	IBM

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Tech Stack
1.	Open-Source Frameworks	Frontend frameworks	React.js
2.	Scalable Architecture	Securing API calls and access controls	HTTP (Rails)

**Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)  
Product Backlog, Sprint Schedule, and Estimation (4 Marks)**

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	UI Setup	USN-1	Set up React.js project structure with necessary dependencies	7	High	Sidhartha
Sprint-1	Home Page & Navigation	USN-2	Create a homepage displaying top cryptocurrencies & trends	7	High	Sidhartha
Sprint-1	API Integration	USN-3	Fetch real-time cryptocurrency data from API & display on UI	6	High	Sidhartha
Sprint-2	Exercise Listing	USN-4	Dynamically list cryptocurrency data with price and volume	7	High	Sidhartha
Sprint-2	Exercise Details Page	USN-5	Create a detailed page showing price charts, market cap & trends	7	High	Sidhartha
Sprint-2	Filtering Feature	USN-6	Enable filtering of cryptocurrencies based on market cap, volume, and price changes	6	High	Sidhartha
Sprint-3	UI Enhancement	USN-7	Improve UI/UX with interactive charts and better styling	10	Medium	Sidhartha
Sprint-3	Error Handling	USN-8	Implement error handling for failed API request	10	Medium	Sidhartha
Sprint-4	Search Feature	USN-9	Allow users to search for cryptocurrencies by name.	10	High	Sidhartha
Sprint-4	Responsive Design	USN-10	Ensure responsiveness for mobile & tablet views	10	Medium	Sidhartha

**Project Tracker, Velocity & Burndown Chart: (4 Marks)**

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	1 Mar 2025	2 Mar 2025	20	2 Mar 2025
Sprint-2	20	6 Days	3 Mar 2025	4 Mar 2025	20	4 Mar 2025
Sprint-3	20	6 Days	5 Mar 2025	6 Mar 2025	20	6 Mar 2025
Sprint-4	20	6 Days	7 Mar 2025	8 Apr 2025	20	8 Apr 2025

## Problem – Solution Fit Template

### Problem – Solution Fit Overview:

The Problem-Solution Fit ensures that the identified problem aligns with the needs of users and that the proposed solution effectively addresses it. This concept helps developers, marketers, and business strategists validate the necessity and effectiveness of their solution before further development.

### Purpose:

- Address the lack of a structured and real-time cryptocurrency tracking platform for users who seek updated market data, trends, and insights.
- Provide an intuitive and engaging experience for users to monitor cryptocurrency prices, market capitalization, and historical data without manual research.
- Offer seamless navigation and real-time data retrieval from a trusted cryptocurrency API to enhance user experience.
- Improve accessibility and engagement through an interactive UI, responsive design, and well-structured data flow.

### Problem Statement:

Many cryptocurrency investors and enthusiasts struggle to find accurate, real-time, and well-organized market data. Existing platforms either require paid memberships, have cluttered interfaces, or provide outdated information, leading to poor decision-making in trading and investments.

### Solution:

- A React.js-based Cryptocurrency Tracking Web Application that provides users with an easy-to-navigate interface to explore market trends, price changes, and coin details.
- Integration with a cryptocurrency API ensures users get up-to-date and detailed information on various digital assets.
- Axios-powered API requests ensure smooth data retrieval with minimal delays.
- Categorization, filtering, and search functionalities improve accessibility and user engagement.
- A scalable and responsive UI design ensures seamless experience across different devices, catering to both beginner and experienced traders.

# Solution Architecture

## Solution Architecture:

The solution architecture for the Cryptocurrency Tracking Application ensures a scalable, efficient, and user-friendly platform for tracking real-time cryptocurrency market data, trends, and analytics.

## Goals of the Solution Architecture:

Identify the Best Tech Solution:

- Utilize modern front-end frameworks (React.js) and APIs (RapidAPI, CoinGecko) to provide a seamless and interactive crypto market tracking experience.

Define Structure & Characteristics:

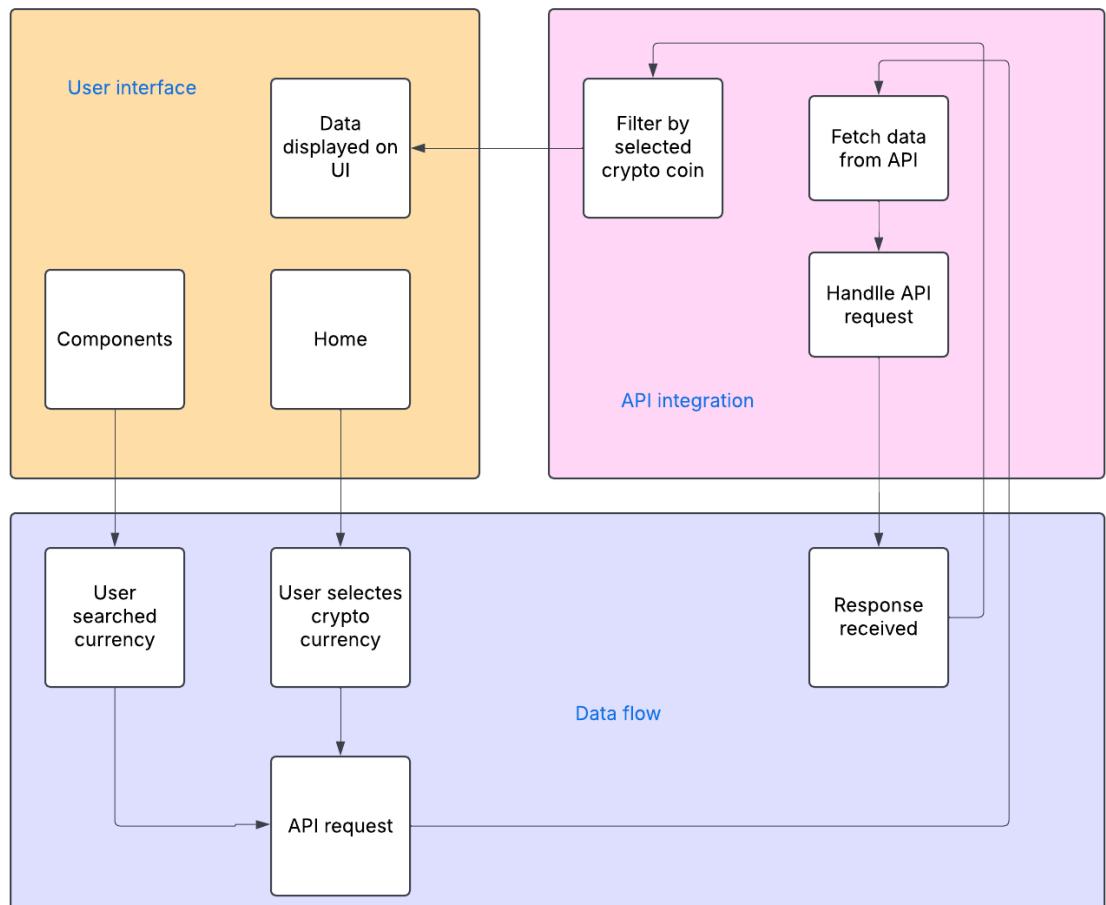
- Ensure a modular, scalable, and maintainable software architecture that supports future feature enhancements like AI-based price predictions and DeFi analytics.

Outline Features & Development Phases:

- Clearly define project milestones, including UI/UX design, API integration, database structuring, and deployment strategy.

Establish Specifications for Development & Delivery:

- Provide well-defined guidelines for system architecture, API integrations, data flow, and real-time data handling.
- Implement a high-performance backend to support large-scale user requests without delays.



# User Acceptance Testing (UAT) Template

## Project Overview

- ❖ **Project Name:** CryptoVerse
- ❖ **Project Description:** A React-based cryptocurrency tracking application that allows users to search, track, and analyse real-time cryptocurrency market data using a third-party API. Features include real-time price updates, coin details, filtering, and user-friendly UI/UX.
- ❖ **Project Version:** v1.0
- ❖ **Testing Period:** March 1, 2025 - March 8, 2025

## Testing Scope

### Features and Functionalities to be Tested

- ✓ Home Page & Navigation
- ✓ Cryptocurrency Search & Discovery
- ✓ API Integration for Real-Time Data
- ✓ Filtering Coins by Market Cap, Volume, and Price Changes
- ✓ Viewing Coin Details with Charts & Historical Data
- ✓ UI/UX Testing (Responsiveness, Icons, Styling)
- ✓ Error Handling & Performance Testing

### User Stories or Requirements to be Tested

- ❖ Searching & Viewing Cryptocurrency Details
- ❖ Filtering Cryptocurrencies by Market Cap, Volume, and Trends
- ❖ Displaying Coin Details with Price Charts & Market Insights
- ❖ Responsive UI across Mobile, Tablet, and Desktop
- ❖ Handling API Errors Gracefully

## Test Cases

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Load Homepage	1. Open the application 2. Homepage loads	Homepage should display market trends, top cryptocurrencies.	[Actual Result]	[Pass/Fail]
TC-002	Search for a Cryptocurrency	1. Enter a coin name in search 2. Click search	Matching cryptocurrencies should be displayed	[Actual Result]	[Pass/Fail]
TC-003	View Coin Details	1. Click on a coin 2. View details (price chart, volume, historical data)	Coin details should be displayed correctly	[Actual Result]	[Pass/Fail]
TC-004	Mobile	1. Open the app on a mobile	UI should be responsive and	[Actual]	[Pass/Fail]

	Responsiveness	device 2. Navigate through pages	properly displayed	Result]	
--	----------------	----------------------------------	--------------------	---------	--

---

## Bug Tracking

Bug ID	Bug Description	Steps to Reproduce	Severity	Status	Additional Feedback
<b>BG-001</b>	Search results take too long to load	1. Search for a cryptocurrency 2. Observe slow response time	High	Open	Need API response optimization
<b>BG-002</b>	Filtering feature not working correctly	1. Select a filter option 2. Observe incorrect results	Medium	In Progress	Filtering logic needs debugging
<b>BG-003</b>	UI overlaps on small screen devices	1. Open app on small devices (iPhone SE) 2. Observe UI distortion	Low	Open	Adjust CSS for better responsiveness

---

## Sign-off

**Tester Name:** [Enter Name]

**Date:** [Enter Date of Completion]

**Signature:** [Enter Signature]

---

## Notes

- Ensure testing covers both positive & negative cases
- Bug tracking should include severity levels & reproduction steps
- Final sign-off required before deployment