

PROJECT ABSTRACT

Cryptocurrency Market Dashboard with Price Alerts

A dark-theme crypto dashboard showing top-coin prices, sparklines, a Bitcoin trend chart, configurable price alerts, a portfolio tracker and market news. Delivered built-to-order with working demo, source code, report, PPT and viva kit.

01. Title

Cryptocurrency Market Dashboard with Price Alerts

02. Introduction / Background

Retail crypto investors check prices across half a dozen apps: one for charts, one for news, one for alerts, one for portfolio. This project consolidates the essentials into a single dashboard: a top-coins table with 24h/7d changes and SVG sparklines, a Bitcoin 7-day price chart, a market-overview strip (total cap, volume, BTC dominance, fear-and-greed index), a price-alert manager with active/paused toggles and trigger history, plus a portfolio view with holdings, P&L and market news. The design follows the conventions of real trading dashboards — dense tables, red/green change indicators, live-update affordances — implemented in vanilla HTML, CSS and JavaScript with realistic market data.

03. Problem Statement

Dashboard projects often look like generic admin templates with random numbers. This project addresses the gap by modelling a genuine market-data domain: coin metadata, price series, alerts with trigger conditions, portfolio positions with average-buy P&L, and news items — all rendered in coordinated views that behave like a real product, giving the student concrete domain logic to explain at the viva instead of decorative widgets.

04. Objectives

- Build a top-coins table with prices, changes, market caps and SVG sparklines.
- Implement a price-alert system with create, pause/resume and trigger history.
- Render a portfolio view with holdings, average buy price and P&L.
- Draw a 7-day BTC price chart with gradient fill on canvas.
- Present market news and top-movers panels from structured data.

05. Proposed Methodology

The app is developed as a single-file SPA with three tabs. First, a market dataset is modelled (8 coins with prices, changes, caps and generated 7-day series; portfolio positions; alert rules; news items). Second, the Market view renders the overview cards, BTC chart, top-movers and coins table with inline SVG sparklines generated from each coin's series. Third, the Alerts view implements alert state (active/paused/triggered) with toggle controls and a history log, and the Portfolio view computes position values and P&L from quantities and average buy prices.

06. System Architecture / Working

- Data layer: coin list, price series, alerts, portfolio positions, news feed objects.
- Market view: overview cards, canvas BTC chart, movers table, coins table with sparklines.
- Alerts view: rule list with toggle state, create-alert form, trigger history.
- Portfolio view: holdings table with computed P&L, news panel.
- State is held in JS objects; all rendering is template-string DOM generation.

07. Software Requirements

- Any modern web browser — no build step, no dependencies.
- Static hosting for deployment.
- Optional: a free crypto market API (e.g. CoinGecko) to replace demo data with live prices.
- Text editor for code walkthrough and extension.

08. Expected Outcomes

- A realistic trading-style dashboard with three functional views.
- Working alert rules with pause/resume and a trigger history log.
- Portfolio P&L computed live from holdings data.
- Documented single-file source the student can extend and explain.

09. Applications

- Front-end portfolio project demonstrating financial-dashboard UI skills.
- Teaching example for DOM rendering, canvas charts and SVG sparklines.
- Base for a live tracker wired to a market data API.
- Template for other asset-tracking dashboards (stocks, commodities).

10. Future Scope

- Live prices via WebSocket streaming from an exchange API.
- User accounts with server-side alert delivery (email/SMS).

- Candlestick charts and technical indicators.
- Mobile app wrapper with push notifications.