Project Overview

Financial Data Portal

A comprehensive platform to capture, analyze, and visualize financial data from multiple sources.

Key Capabilities:

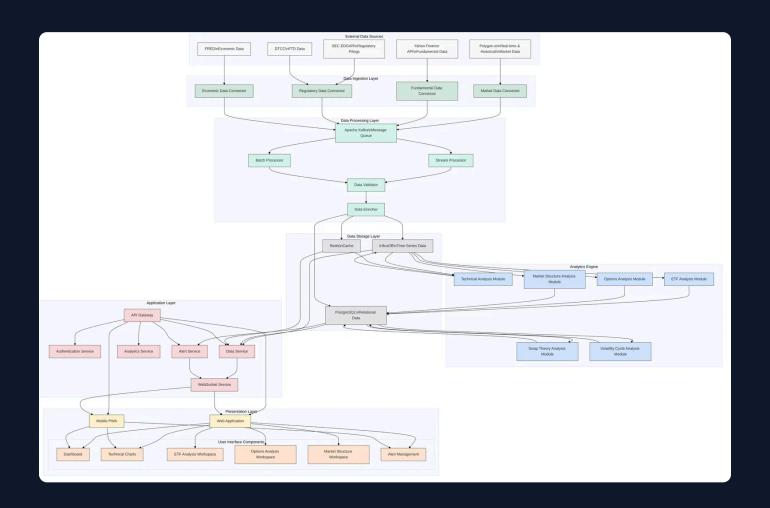
- Real-time market data integration
- Automated data collection from multiple sources
- Advanced financial analytics
- Interactive data visualization
- ₹ Specialized market structure analysis
- Responsive design for all devices



System Architecture

Multi-Tier Architecture

A scalable, modular system designed for efficient financial data processing and analysis.



Data Layer

Time-series database for market data, PostgreSQL for relational data, Redis for caching

Application Layer

API services, data processing pipeline, analytics engine, authentication services

Presentation Layer

React frontend, responsive design, interactive visualizations, real-time updates

Data Sources & Integration

Multi-Source Integration

Comprehensive data collection from multiple financial sources with intelligent synchronization.

Primary Data Sources:

Polygon.io

Real-time and historical market data, options chains, reference data

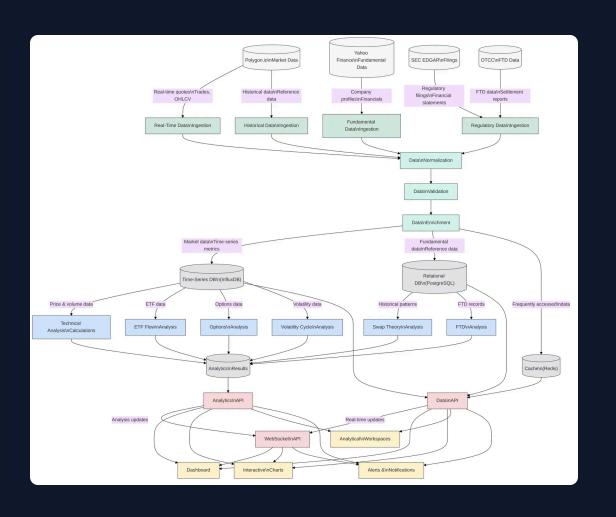
Regulatory filings, FTD data, official financial statements

Yahoo Finance

Fundamental data, analyst estimates, ETF holdings

fred

Economic indicators, interest rates, market context



Database Design

Hybrid Database Architecture

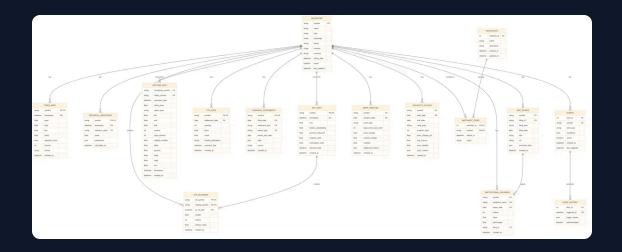
Optimized storage strategy combining time-series and relational databases for financial data.

Key Database Components:

- Time-Series Database
 For market data, price history, and time-stamped events
- PostgreSQL

 For relational data, security information, and user data
- Redis Cache
 For real-time data access and session management
- Document Store

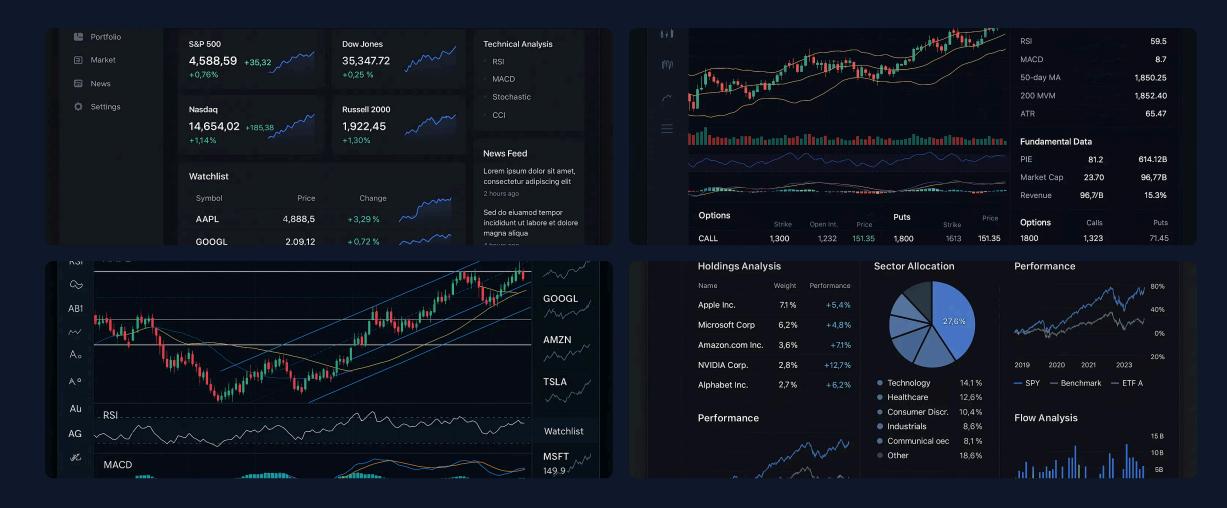
 For unstructured data like filings and reports



User Interface Design

Intuitive & Data-Rich Interface

Modern, responsive design with specialized workspaces for different analysis needs.



Dashboard Security Detail Technical Analysis ETF Analysis

Specialized Analytics

Advanced Market Structure Analysis

Unique analytical capabilities focused on market mechanics and institutional positioning.

Key Analytical Features:

- ▲ FTD Analysis
 Track failure-to-deliver data and correlate with price movements
- Swap Theory Models

 Identify and predict market cycles based on swap theory
- Institutional Flow

 Track institutional ownership changes and flow indicators
- Volatility Cycles
 Analyze volatility patterns and cycle transitions



Implementation Roadmap

Phased Development Approach

Incremental implementation with regular deliverables and continuous integration.

Phase 1: Foundation (Month 1-2)

Database setup, API integration framework, core data collection services

Phase 2: Core Features (Month 3-4)

Basic UI, standard analytics, data visualization components

Phase 3: Advanced Analytics (Month 5-6)

Specialized workspaces, market structure analysis, options analytics

Phase 4: Refinement (Month 7-8)

Performance optimization, mobile responsiveness, user experience polish

Implementation Timeline

Conclusion & Next Steps

Project Summary

A comprehensive financial data portal that transforms your spreadsheet analysis into an interactive, automated platform.

Key Benefits:

- Automated data collection from multiple sources
- Interactive visualization of complex financial data
- Specialized market structure analytics
- Scalable architecture for future growth

Recommended Next Steps

- 1 Finalize technical requirements and scope
- 2 Set up development environment and infrastructure
- 3 Begin Phase 1 implementation with data integration
- 4 Establish regular review and feedback cycles

Success Concept