

# Description of the application

The proposed web application is designed to deliver comprehensive stock market analysis for the Macedonian Stock Exchange by employing a range of software architecture styles to ensure scalability, flexibility, and high performance. This application will provide users with detailed, historical daily data for all publicly traded companies over at least the last ten years, enabling both real-time insights and long-term trend analysis.

The application integrates multiple architectural approaches to optimize functionality and maintainability. By incorporating a **Pipe and Filter** architecture, the data processing pipeline efficiently handles each stage of data retrieval, cleansing, and transformation. Automated filters will streamline the extraction of daily stock data, ensuring it is formatted and stored consistently for effective analysis. A layered architecture separates data access, business logic, and presentation layers, allowing seamless updates and modifications without affecting other components.

RESTful microservices on the backend will support modular data management, handling each stock data stream independently and making it easy to expand functionality with new data sources or analytics features. An **Event-Driven** architecture will provide users with real-time market updates through WebSocket or push notifications. The data pipeline automates the import, storage, and preprocessing of daily stock data, which is stored in a robust relational database for quick, reliable retrieval.

To meet the needs of diverse users, the application will offer responsive web and mobile frontends with an intuitive interface. Techniques such as caching, and API gateway patterns will ensure a smooth, low-latency experience, enabling both detailed analysis and high-level market monitoring.