

The goal of this project is to create an automated system for processing and analyzing stock market data from the Macedonian Stock Exchange (MSE). This system will start by retrieving a list of issuers from the MSE website, filtering out irrelevant entries. The system will then cross-reference existing stock data in a database to identify any missing information. Missing stock prices and financial data will be retrieved and added to the database, ensuring consistency in date and price formatting.

To achieve this, we will implement the Pipe and Filter architecture, where the data flows through a series of independent processing steps (filters). Each filter will perform a specific task: one for retrieving the issuer list, another for checking existing data, and others for fetching and formatting missing data. The filters will be connected in a pipeline, with the output of one filter serving as the input for the next, ensuring modularity and reusability of each step.

This approach allows us to break down the data processing into manageable, independent tasks, each focused on a specific transformation. For example, one filter will handle retrieving and parsing the issuer list from the website, while another will check for the latest available data in the database. By modularizing the process into discrete steps, we ensure scalability and ease of maintenance.

Additionally, the system will track the time it takes to populate the database and optimize the process for maximum efficiency, aiming to minimize data retrieval and transformation times.

Ultimately, this system will provide an up-to-date, clean, and well-structured database of stock market data, enabling efficient analysis of market trends and issuer performance on the Macedonian Stock Exchange. The system is designed to be a valuable tool for financial analysts and others interested in tracking stock market movements.