

Conceptual Architecture

The conceptual architecture outlines the high-level flow of the system. It begins with an External System in this case MSE website, where we collect data through a scraper. This collected data is then processed, with the processed information flowing into a database for storage. From the database, data is made available for data observation and stock analysis, which serve as two key functionalities of the system. A Web UI enables user interaction, providing an interface for users to view insights from the data observation and stock analysis modules.

Executional Architecture

In the executional architecture it shows the executional flow adds more depth. The External System section remains the same, but we have a loop between scraper (data collection) and data analysis, indicating continuous refinement of incoming data. The data storage pipeline expands into stages such as filtering data, validation, and transformation where we process the data that we scraped. These filters ensure that only usable data are stored in the database, aligning with the system's need. The arrows and connectors illustrate the sequential flow and interactions among components, showing the difference between an abstract concept and a functioning process.

Implementation Architecture

The implementation architecture shows the technical details, showing specific tools and technologies used in the system. The External System scraping and its components are enhanced with technologies like BeautifulSoup (BS) and Pandas for data manipulation and analysis. The filters then transform and refine the data before storage. The database is identified as PostgreSQL, ensuring scalable and robust data management. The integration of the Django framework adds structure to the application, with layers such as Django Model, Django View, and Django Template managing the backend, logic, and frontend respectively. These components connect to the Web UI, enabling seamless interaction with the user.