Requirements Analysis: Stock Portfolio Management Platform

The Stock Portfolio Management Platform is designed to allow users to efficiently manage their investments in stocks. The platform enables users to create personalized portfolios, track stock prices in real time, and view detailed statistics about their investments. It will provide users with the ability to perform transactions, set alerts, and receive news updates relevant to their portfolios.

The system needs to handle the following features:

1. **User Management:** The platform will maintain detailed user profiles, including personal information (name, email) and authentication data (username, password).

2. **Stock Management:** Each stock will have detailed information, including its ticker symbol, company name, sector, and historical and real-time pricing.

3. **Portfolio Management:** Users can create and manage multiple portfolios, each containing various stocks. The system will track the value of each portfolio, along with overall performance and changes in portfolio value.

4. **Transaction Management:** Users can execute stock buy and sell transactions. The system will track the number of shares, transaction price, date, and whether the transaction was a buy or sell action.

5. **Stock Alerts:** Users can set price alerts for individual stocks. The system will notify users when a stock price reaches a target value.

6. **News Management:** Relevant stock news will be pulled and associated with stocks in the user's portfolio, helping them stay informed about market trends, company updates, and other factors that could influence their investments.

The relationships between entities will include:

- **Users and Portfolios:** A user can have multiple portfolios, but each portfolio is linked to a single user (one-to-many).

- **Portfolios and Stocks:** A portfolio can contain multiple stocks, and a stock can belong to multiple portfolios, managed via an associative entity (Portfolio_Stocks) (many-to-many).

- **Users and Transactions:** A user can perform many transactions, but each transaction will belong to a single user (one-to-many).

- **Users and Stock Alerts:** A user can set multiple price alerts for different stocks (one-to-many).

- **Stocks and News:** Each stock will have many associated news articles, offering users insights on the stock's performance, trends, and news (one-to-many).

The platform will ensure that users have a clear overview of their stock investments, make informed decisions with real-time data, and stay updated on market conditions.