Design Trade-off Activity

Team Number :

Team Member Names and Roll Numbers:

(Only write the names of those who attended)

The solution is described using a **UML class diagram that includes class names, multiplicities, navigability and a <<stereotype>> designation** of the role the class is playing in the pattern, i.e. the class in the pattern structure diagram. If it is part of multiple patterns there may be more than one stereotype specified.

There are 5 different pattern-oriented designs proposed by different resources for the problem statement given below. You may pick any 3 out of 5 and analyze the designs and submit and report by the end of the class.

Stock Trading System

The design is for a Stock Trading System (STS) that will assist traders at brokerage houses across the United States. The requirements for the same are given below

- The STS will allow the stock broker to place buy and sell orders on several stock exchanges for immediate execution.
- The STS will communicate with each stock exchange's order entry system via a secure network transmission protocol.
- The network transmission protocol progresses through a variety of stages: connecting, authenticating, transmitting, verifying, and disconnecting.
- All orders are archived in a database system which is a complex component to that you should isolate from the rest of the implementation.
- The STS will provide the broker with a display of his or her favorite stocks. The price of these stocks is updated on a regular basis throughout the trading day.
- While a trade is pending the STS will display it to the broker. The STS will alert the broker when the broker's pending trades have been completed.
- All orders that the broker places during the day can be retrieved from the database system and be re-executed. This provides a backup mechanism in case an error occurs during order processing.
- The STS also receives newsfeeds from several press organizations. These can be obtained by executing methods on a single class. Unfortunately, the newsfeed software was updated after you can begun your implementation and you find that you are no longer using the correct interface. Your design will need to accommodate this. The individual news items are categorized by event type, such as politics, health, business, etc.
- This brokerage house has previously developed some sophisticated natural language processing systems that allows the broker to interpret news items. The broker can define programmed trading policies based on different events that are found in news items. Programmed trading policies are usually specified manually by the broker but they can also be set by the programmed trading unit.
- The STS generates daily trading summary reports. These reports have a complex structure. They use data from individual trades, news items and notices about pricing on the broker's favorite stocks. There are special end-of-week, quarter and year reports in addition to the daily report. At the end of the reporting period the STS will send the report to the management reporting system (MRS).

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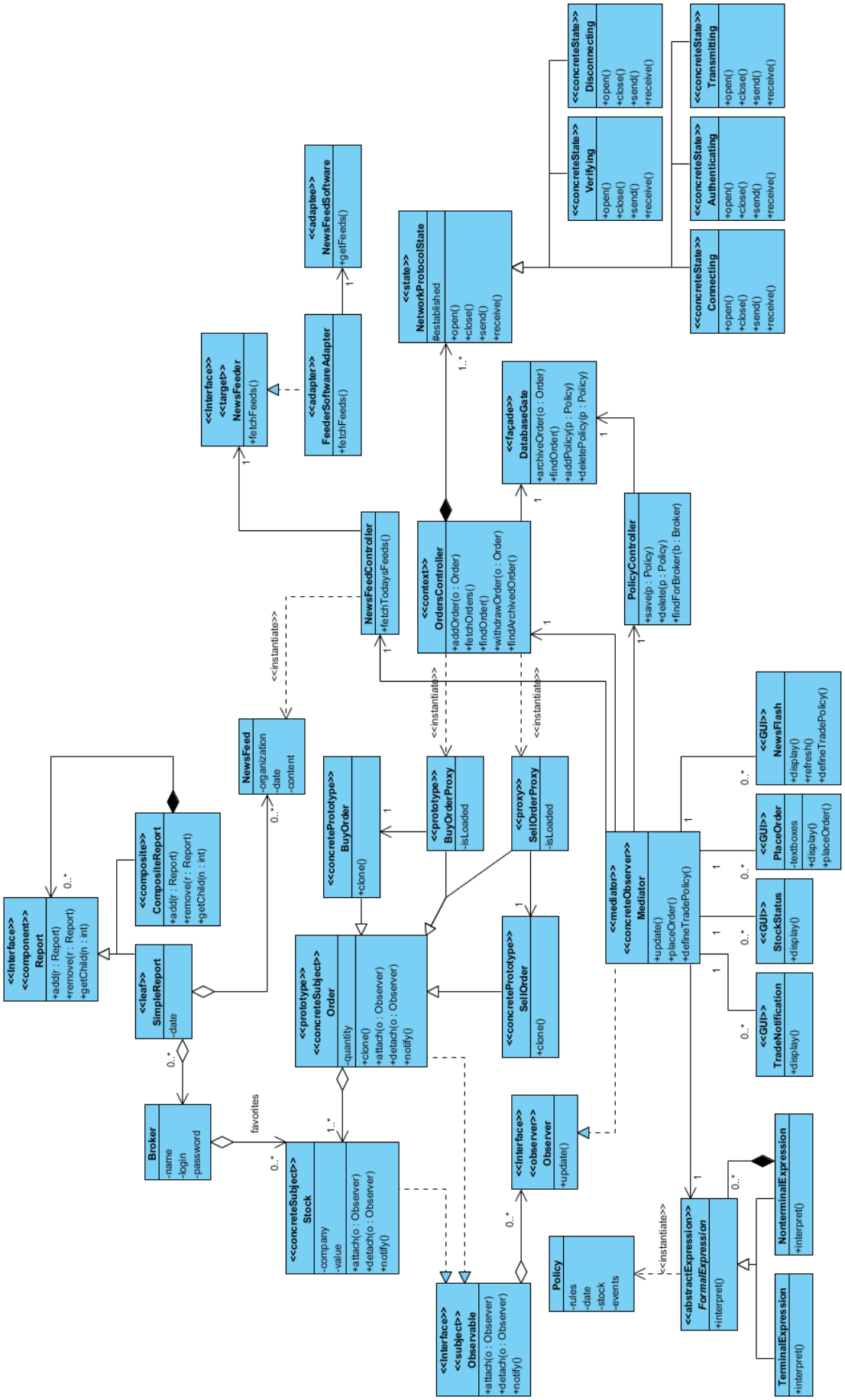
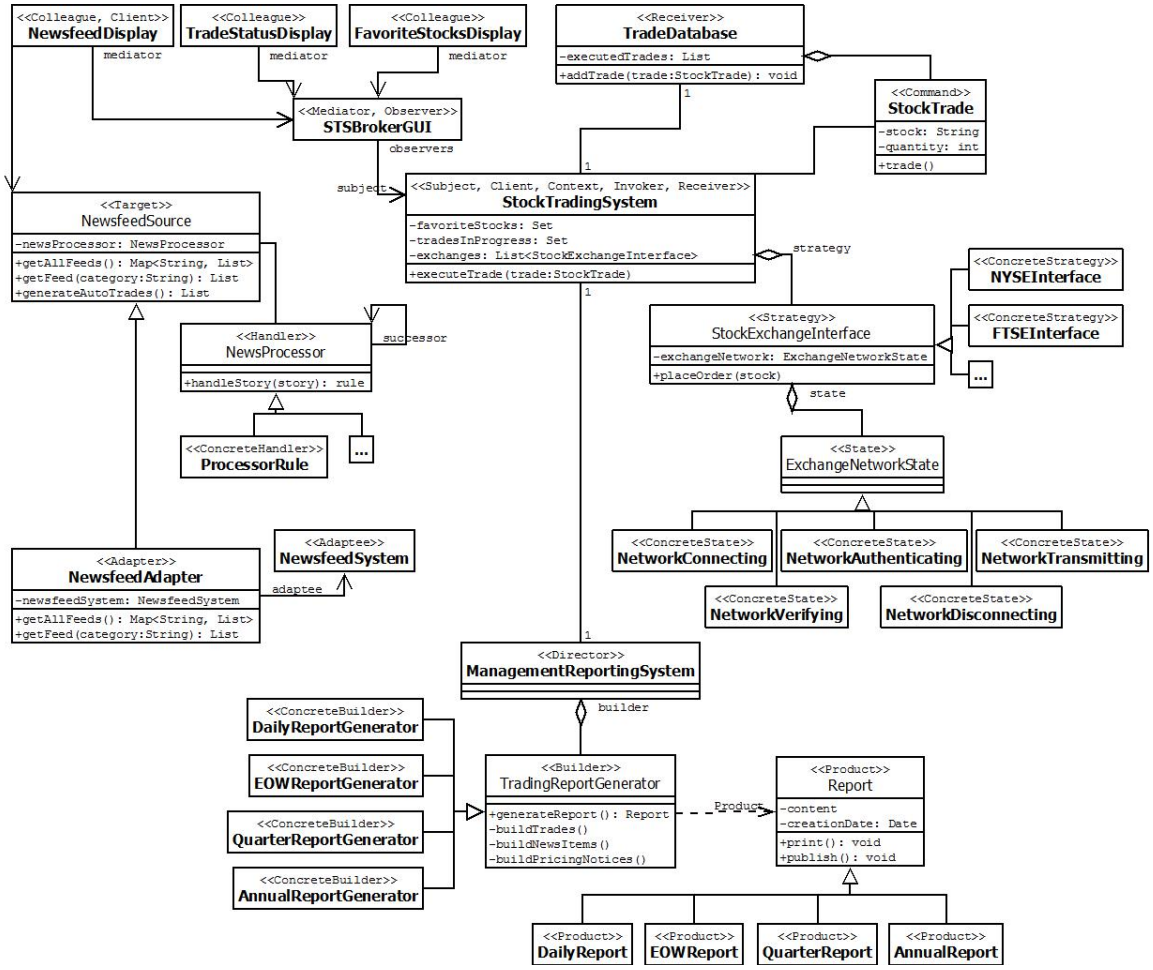
DESIGN 1 (Alviro):



Design Trade-off Activity

DESIGN 2 (Gregory):



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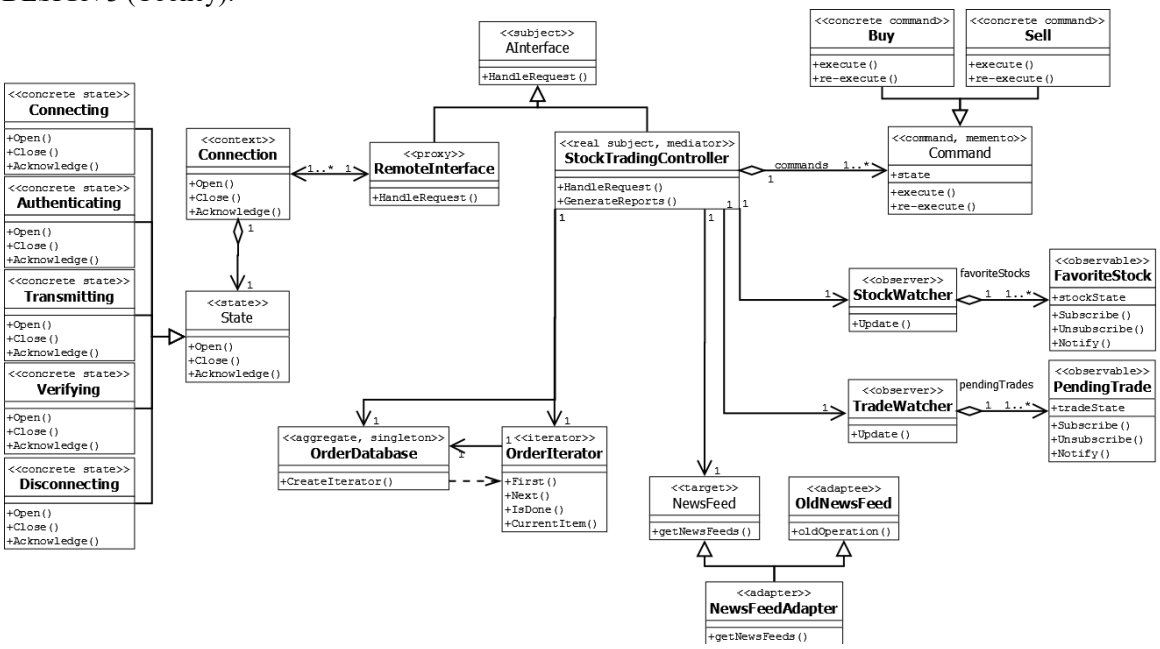
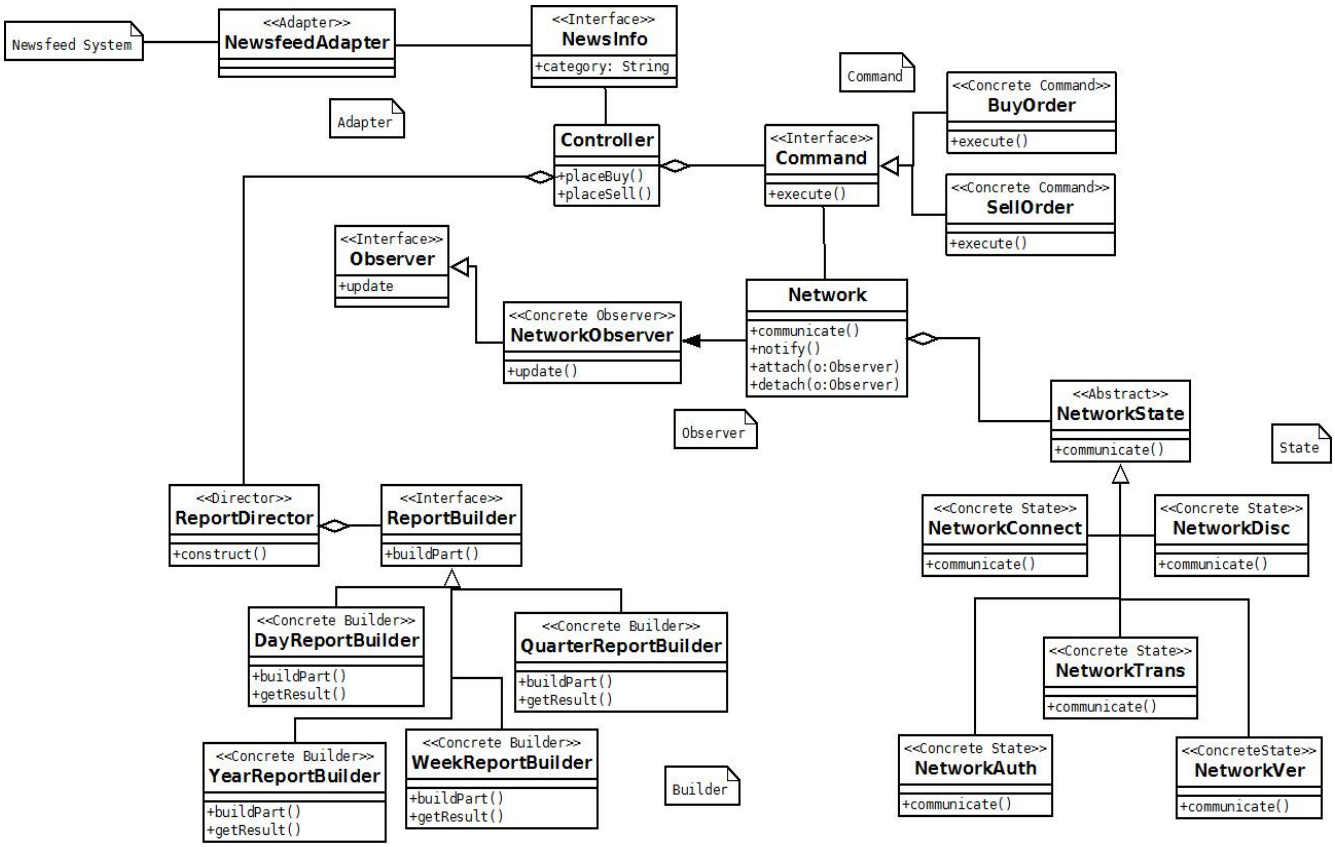
DESIGN 3 (Cooney):



Design Trade-off Activity

DESIGN 4 (Talbot):



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DESIGN 5 (Andrew):