**Data Consistency and Anomaly Detection in Trade Processing**

In a trade processing system, ensuring that data is consistent and free of anomalies is essential to reduce processing errors. The goal is to use linear algebra techniques to identify inconsistent or anomalous trades based on historical trade patterns.

**Problem Statement**

1. **Identify Anomalous Trades**: Represent historical trade data as vectors in a high-dimensional space. Use linear transformations to project trades onto a lower-dimensional space where "normal" trades cluster together. Trades that fall outside this cluster are flagged as potential anomalies.
2. **Compute Trade Similarity**: Use vector norms and distances (e.g., Euclidean distance) to measure the similarity between new trades and historical trades. Trades with high distances from the mean vector are considered anomalies.