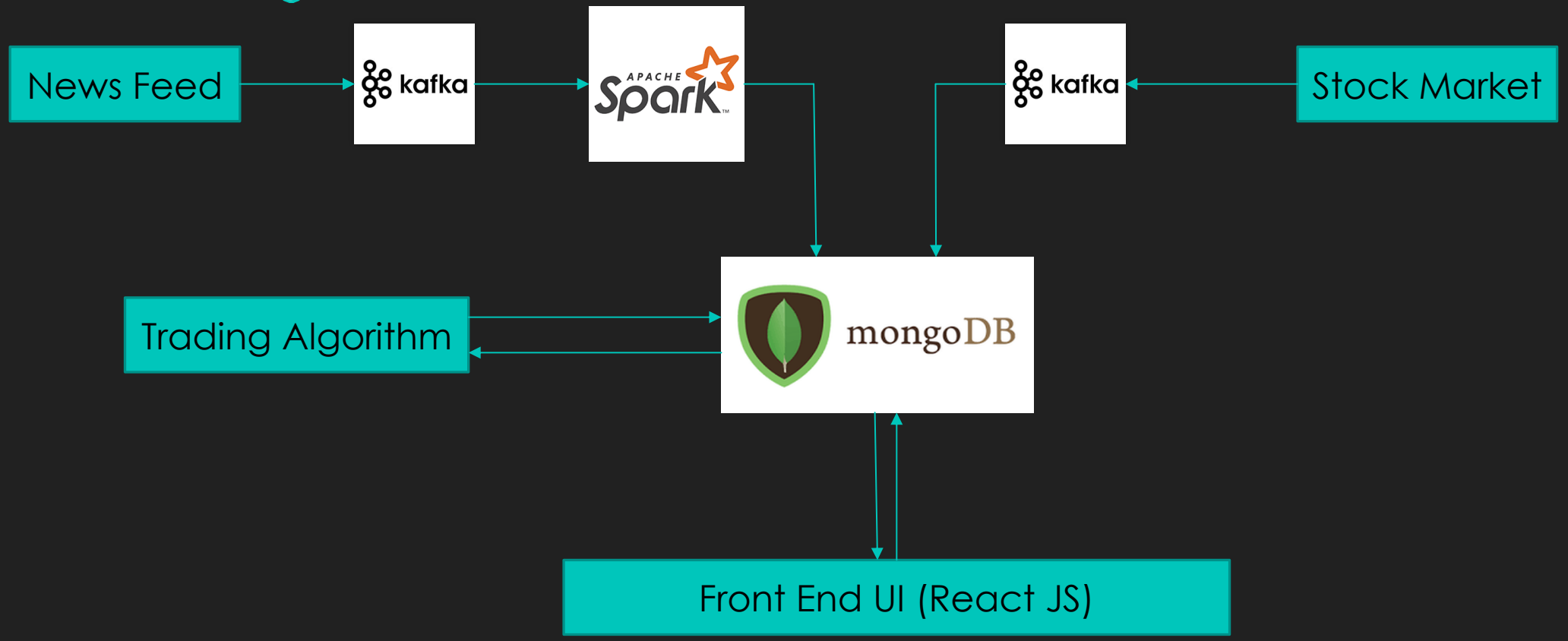
Algorithmic Trading using Sentiment Analysis

Anmol Kohli
Naveen Vijay
Rohit Dsouza
Satish Agarwal

Goals of the Project

- Allow user to enter an amount to invest
- Make an initial investment for the user by deciding stocks to purchase
- Conduct sentiment analysis on financial news articles pulled from various sources
- Allow the trading algorithm to manage the user's portfolio autonomously
- Use current market rates of stocks to reflect the profit / loss on the user's investment

Architecture



Features

- Scalable by decoupling all components and using Kafka message queues
- Distributed by using an architecture that can take advantage of cluster computing
- Faster computations by leveraging Apache Spark
- Database scalability, replication and fault tolerance through use of Mongo DB

Trading Algorithm

- Compute the sentiment scores for all stocks
- Compare the scores of stocks in the portfolio to detect any negative sentiment
- Sell stock based on predictions of declining popularity
- Update account balance to find total available capital
- Reinvest in stocks showing promising growth based on sentiment scores

Challenges and Future Scope

- Most challenges imposed by free limits on services used
- Ability to pull news from vast variety of sources for a more accurate analysis
- Deploy application on a multi-node cluster
- Include all stocks from the market to allow a wider variety of options

THANK YOU!