

2024 OSU Quantathon

You are a commodities analyst at Buckeye Capital, the world's leading Investment firm. You are responsible for uncovering insights in the prices of securities and creating lucrative trading strategies. You are given \$10,000 to manage and trade at your discretion.

Crude oil(WTI Crude) is one of the major resources used by mankind in the modern age. In its refined form, Crude Oil powers many vehicles we use today. This list includes but is not limited to ICE Cars, Airplanes, and ships. It is also used in pharmaceutical settings to make reagents and solvents. You are provided with a dataset detailing the prices of barrels of crude oil traded between 2014-03-24 and 2024-03-24.

Delta Airlines(DAL) is one of the Major American Airlines and headquartered in Atlanta, GA. It services about 5,400 flights per day to 325 destinations on 6 continents. Delta uses a certain form of refined crude oil to fuel their planes. You are provided with a dataset detailing the prices of Delta Airline Stock traded between 2014-03-24 and 2024-03-24.

You can invest your \$10,000 in the money market (earning 5.27% interest), crude oil, or delta airlines. To develop your model, you may use the data in the two spreadsheets provided: [Crude oil dataset](#) and [Delta Airlines Dataset](#). You may also use any outside information or data set to influence your decision to trade in these assets, however, your trades must be *limited to these assets*.

You need to:

- Develop a model that gives the best trading strategy.
- Articulate what a best trading strategy is; how can you determine if your strategy is superior to another?
- Pick a time interval for investment decisions; rebalancing can occur as frequently as you think is optimal.

You may:

- You might consider a rolling window strategy, or a buy-and-hold strategy.
- Explore the correlation between Crude oil Prices and Delta Stock price.
- Perform sentiment analysis to predict fluctuations in crude oil.
- You may consider the cost to execute your trading strategy.

Submission

On Saturday, a submission form will be posted on the Discord Server. This form will ask you to:

- Submit a 5 minutes video describing what you did, what insights you found, and what steps you would take next to boost profitability.
- Put all your code files on a Github Repository and share the link. If you have never used Github before, the organizers will help you.

Dataset:

- Date: date of information in row
- Open: Price at which the asset was trading for when the market opened
- High: Highest price the asset was trading for during the hours the market was open on that day.
- Low: Lowest price the asset was trading for during the hours the market was open on that day.
- Close: Price at which the asset was trading for when the market closed
- Adjusted Close: closing price adjusted for stock splits and dividends distribution, etc.
- Volume: The number of units of the asset traded that day.