Capstone 3: Project Proposal

- ## Problem Statement
  - The CEO has a mandate of growing the company by 20% next year. To accomplish this goal, he has determined the company's workforce will need to expand by 10% and marketing spend will need to increase by 15%. Annual revenue must be projected to grow by at least 5% for the next 12 months to accommodate the increase in costs and time it will take for marketing to take effect for the 20% growth to be realized. With a high degree of accuracy, what will the company's projected revenue be next month, next quarter, and next year; and does projected revenue support the CEO's expansion plans?

- ## Context
  - E-commerce stores have exploded in popularity over the last 2 decades.
  - Having a forecast on next month, next quarter, and next year's sales is extremely beneficial to a business.
  - It gives executives information on how fast/slow to grow the company, manage inventory to minimize waste, when to test new products, etc.
  - The goal is to build a model that can accurately predict future sales which will allow the executive team to make a data driven business decision as to whether or not to follow through with expansion plans that are pivotal to the company's growth and success.
  - This should be done with a high degree of accuracy (low margin of error).

- ## Criteria for success
  - Our success will be measured by the margin of error in our models and confidence in our projections.
  - Whether revenue for these next periods supports the CEO's expansion or not, we will want to show a 95% confidence interval for our prediction.

- ## Scope of solution space
  - We have sales data from the last 4 years and this will be the primary driver of the models.
  - We will also engineer additional features from this sales data to add additional context to our models, increasing accuracy and reducing margin of error.

Constraints within solution space

- Economic factors outside of our control that we cannot incorporate into our models.
- Some positive or negative company event or PR that drastically affects sales outside of what our model can predict. ie (positive) swell in sales because of an update to company mission that customers rally behind or (negative) boycott of our company from customers due to bad messaging.

Stakeholders to provide key insight

- CEO and/or COO
- CFO
- Head of Sales
- Head of Growth & Development
- Head of Marketing
- Head of Promotions

Key data sources

- - Retail dataset of a global superstore for 4 years:
  - https://www.kaggle.com/datasets/rohitsahoo/sales-forecasting
    - /superstore_sales_data.csv

Deliverables

- Predictive model that can predict sales revenue for different periods including next month, next quarter, and next year
- Github repo documenting each step of the project
- A slide deck
- A project report