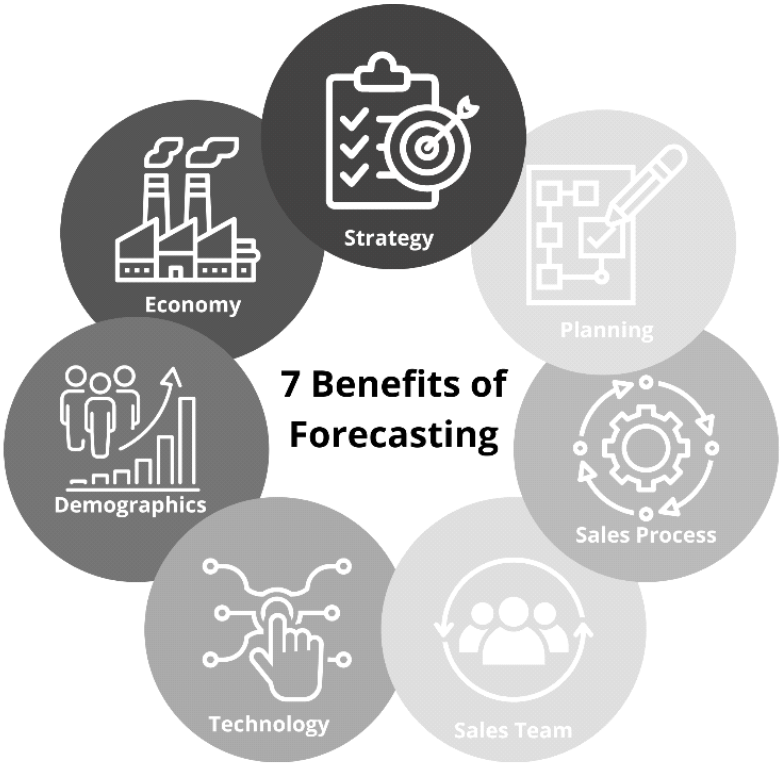
Project 5: Sales Forecasting and Demand Prediction:

- Economy: Helps businesses adapt to market trends and economic conditions.
- Demographics: Aligns strategies with customer behavior and preferences.
- Technology: Leverages advanced tools for accurate predictions.
- Strategy: Supports informed decision-making and goal setting.
- Planning: Enhances operational planning and resource allocation.
- Sales Process: Improves sales workflows and efficiency.
- Sales Team: Enables teams to achieve targets effectively.



These benefits collectively optimize business operations, reduce risks, and improve profitability.

Work Distribution Plan for the first milestone:

Our team do believe that we are all will be data scientists Insha'ALLAH so we decided to work all in same steps in parallel so we all will have the chance to learn and develop our skills.
We'll have 2 meetings weekly to discuss what is each one reached and in what he is stucked and we'll always support each other through Whatsapp group.

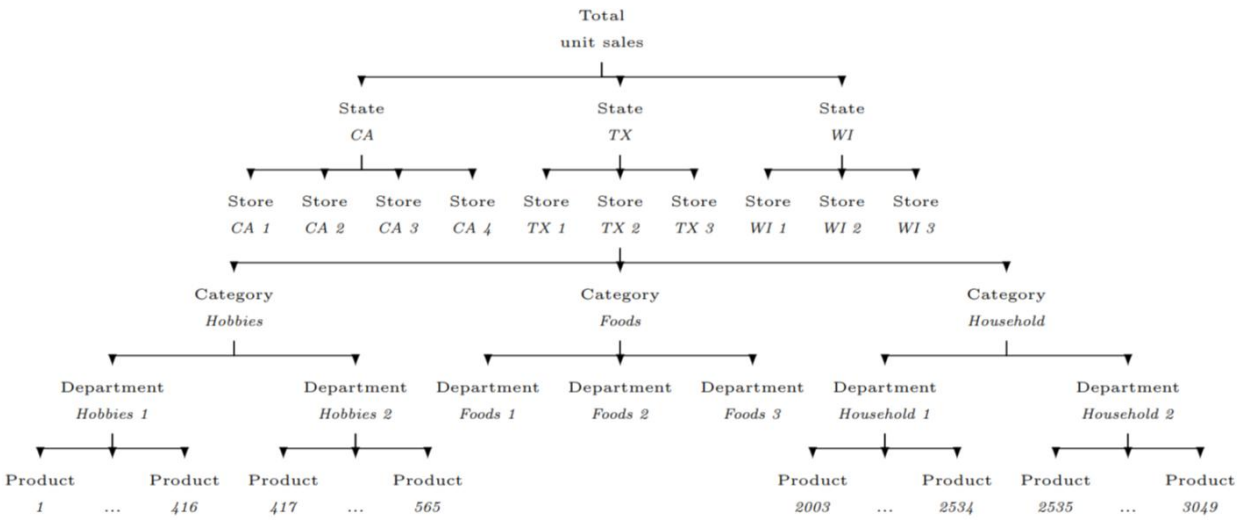
Dataset Proposal 1: The M5 Accuracy competition dataset:

- **Description:**

It involves the unit sales of 3,049 products, classified in 3 product categories (Hobbies, Foods, and Household), and 7 product departments in which the above-mentioned categories are disaggregated. The products are sold across 10 stores, located in 3 States (CA, TX, and WI).

Objective is to produce the most accurate point forecasts for 42,840 time series that represent the hierarchical unit sales of the largest retail company in the world, Walmart.

In the era of online stores, It's become essential and mandatory to know the demand for any product in near future. It will help stores to stock the product which demand is going to be high in near future. If we are able to do so, it will directly improve the revenue of the company.



- **Dataset Link:** https://www.kaggle.com/c/m5-forecasting-accuracy

Dataset Proposal 2: Rossman Retail Stores

- **Description:**

Sales forecasting is a critical business process that supports decision-making in production, inventory management, supply chain activities, and marketing. The growing complexity of sales forecasting is influenced by missing data, outliers, and intricate patterns in sales dynamics. Machine learning techniques, particularly regression and time series methods, offer solutions for addressing these challenges. This study focuses on analyzing Rossmann sales data using advanced models like Extreme Gradient Boosting (XG-Boost), FB-Prophet, and ARIMA to enhance forecasting accuracy and efficiency.
Accurate predictions enable businesses to minimize inventory costs, optimize planning, and boost profitability.

Objective

Identify the critical features influencing sales to improve forecasting accuracy.
Compare the performance of various machine learning and time series algorithms to determine the most effective sales forecasting model.

- **Dataset Link:**
  Link_1: https://www.kaggle.com/datasets/krishanusaha5720/rossman-retail-stores