**Goal 1: Data Understanding and Cleaning**

* **Objective**: Understand the structure, identify missing values, check for inconsistencies, and prepare the data for analysis.
* **Tasks**:
  1. Check for missing values and handle them (e.g., imputing, removing).
  2. Convert Date columns to proper datetime format.
  3. Explore relationships between markdowns, temperature, CPI, unemployment, and sales.
  4. Check for any outliers or data quality issues.

**Goal 2: Exploratory Data Analysis (EDA)**

* **Objective**: Explore key patterns, seasonal effects, and trends.
* **Tasks**:
  1. Analyze seasonal effects on sales.
  2. Investigate which stores, departments, or holidays have higher sales.
  3. Visualize the distribution of sales across time and stores.
  4. Analyze external factors (e.g., CPI, fuel prices, temperature) and their effects on sales.

**Goal 3: Feature Engineering and Preparation for Modeling**

* **Objective**: Prepare features for model training.
* **Tasks**:
  1. Create new features like lag variables, rolling averages, and holiday sales indicators.
  2. Encode categorical variables (e.g., Store Type, IsHoliday).
  3. Normalize or scale continuous variables like Temperature and Fuel\_Price.

**Goal 4: Model Development**

* **Objective**: Train models to forecast sales.
* **Tasks**:
  1. Train a **Random Forest Regressor** for sales prediction.
  2. Apply **ARIMA/Exponential Smoothing** models for time-series forecasting.
  3. Evaluate model performance using Weighted Mean Absolute Error (WMAE).

**Goal 5: Findings and Interpretations**

* **Objective**: Analyze model predictions and provide actionable insights.
* **Tasks**:
  1. Identify top-performing stores and departments during seasonal periods.
  2. Provide actionable recommendations for inventory and stock management.