

Project Idea: Walmart Retail Sales Analysis and Forecasting

Project Overview

The goal of this project is to analyze historical retail sales data across multiple stores and use machine learning techniques to build a model that can forecast future sales. This project will leverage various features such as holiday flags, weather conditions (temperature), economic indicators (CPI, unemployment rate, fuel prices), and other factors to predict weekly sales accurately.

Dataset Overview

The dataset contains the following fields:

Store: The store identifier.

Date: The date of the recorded sales.

Weekly Sales: The total sales for the week at a specific store.

Holiday Flag: A flag indicating whether the week includes a holiday (1) or not (0).

Temperature: The average temperature during the week.

Fuel Price: The cost of fuel during the week.

CPI: The Consumer Price Index, which measures changes in the price level of consumer goods and services.

Unemployment: The unemployment rate during the week.

Questions to Explore

Trend of Weekly Sales Over Time:

We'll start by examining how weekly sales have evolved over the period covered by the dataset. Are there any noticeable trends or seasonal patterns?

Impact of Holidays on Sales:

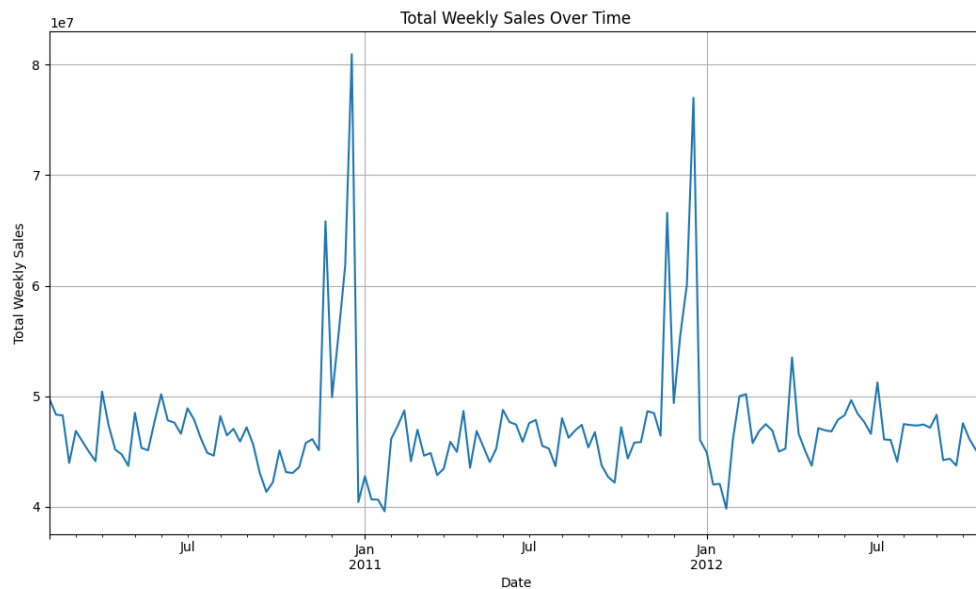
How do sales behave during holiday weeks compared to regular weeks? Is there a significant increase in sales during holiday periods?

Correlation with External Factors

We'll investigate the relationship between weekly sales and external factors like temperature, fuel prices, CPI, and unemployment rate. Do any of these variables influence sales?

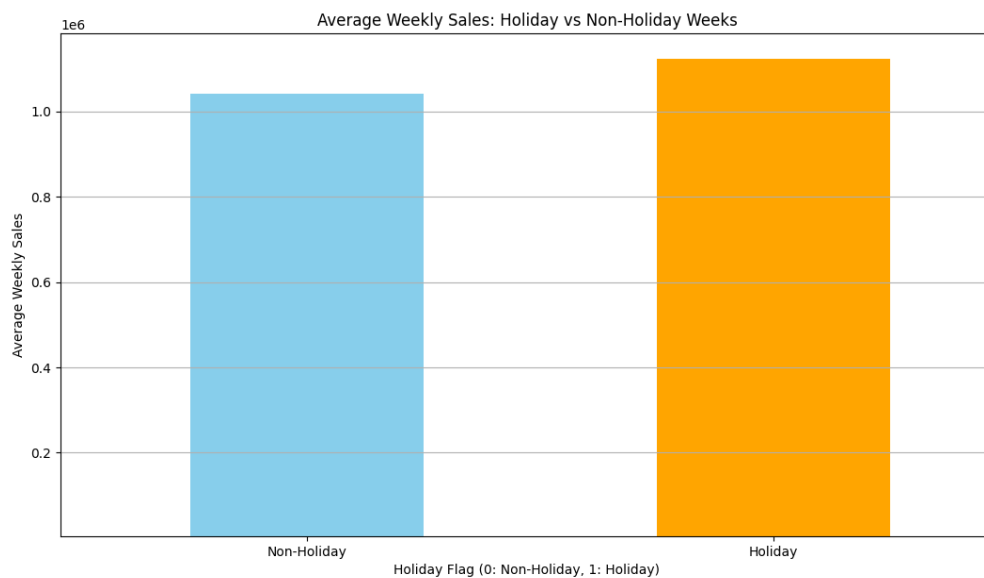
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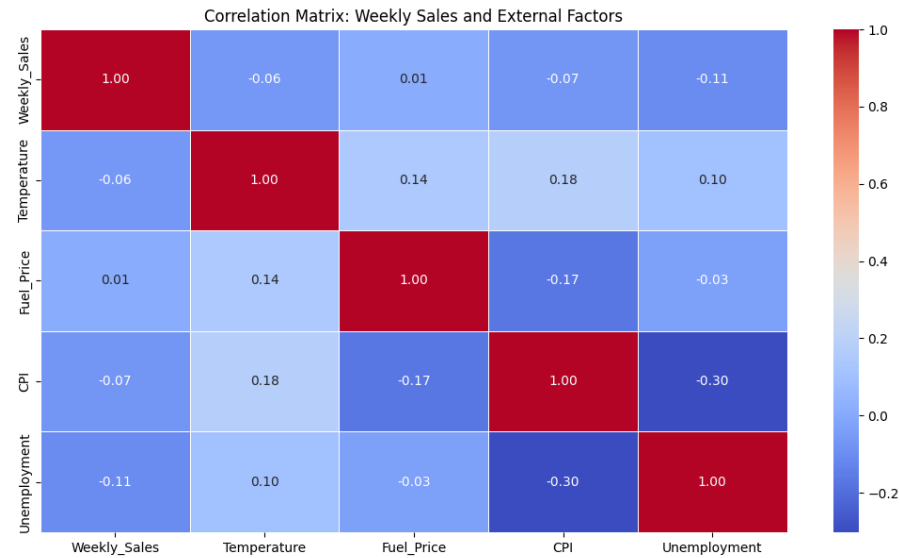
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Insights and Conclusion

Trend Analysis: The trend analysis reveals seasonal fluctuations in sales, with peaks during certain periods (e.g., holiday seasons) and potential declines during other times of the year.

Holiday Sales: Sales during holiday weeks show a noticeable increase compared to non-holiday weeks, indicating that holidays positively impact retail sales.

Correlation with External Factors: The correlation analysis shows varying degrees of correlation between weekly sales and external factors. For example, temperature and CPI might have a moderate influence on sales, whereas fuel prices and unemployment rate might have a weaker impact.