

**CAPSTONE 2  
PROPOSAL  
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**PROBLEM STATEMENT**

Our client Walmart would like to predict US sales more accurately for the next fiscal year, particularly taking into account major promotions in 45 of their retail stores during select holiday periods. In addition to a top-level US forecast, the executive team needs a forecast at the store level for 45 stores so that store general managers can adequately plan inventory to satisfy customer demand.

**Context**

Walmart is the #1 US retailer for the past four decades. In retail, a large mix of annual revenue is generated from four major holiday promotion periods. A more accurate sales forecast would ensure that these 45 stores maximize holiday opportunities in order to meet their annual forecast.

**Criteria for Success**

- Provide a weekly forecast at the both the aggregate and store level
- Plan to have adequate inventory, particularly for the four holiday periods
- Deliverables: aggregate forecast, store level forecast, model to train/test in future

**Scope of Solution Space**

- Revenue forecast is limited to these 45 stores
- Only account for these promo periods provided

**Constraints**

- Limited to 21 months of data (not a full 2 years)
- Limited to store-level sales, not product level sales

**Stakeholders**

- Walmart CFO
- Walmart Head of US Sales
- Walmart Head of Revenue Forecasting
- Walmart General manager for each of the 45 Walmart stores

**Data Sources**

1 single data source with weekly sales data Feb. 2010 to Nov. 2012

<https://www.kaggle.com/code/yasserh/walmart-sales-prediction-best-ml-algorithms>

- Store - the store number
- Date - the week of sales
- Weekly\_Sales - sales for the given store

- Holiday\_Flag - whether the week is a special holiday week 1 – Holiday week 0 – Non-holiday week
- Temperature - Temperature on the day of sale
- Fuel\_Price - Cost of fuel in the region
- CPI – Prevailing consumer price index
- Unemployment - Prevailing unemployment rate
- Holiday Events\ Super Bowl: 12-Feb-10, 11-Feb-11, 10-Feb-12, 8-Feb-13\ Labour Day: 10-Sep-10, 9-Sep-11, 7-Sep-12, 6-Sep-13\ Thanksgiving: 26-Nov-10, 25-Nov-11, 23-Nov-12, 29-Nov-13\ Christmas: 31-Dec-10, 30-Dec-11, 28-Dec-12, 27-Dec-13