For this project, I will use the Walmart Sales Forecasting dataset (<https://www.kaggle.com/datasets/walmart-sales-forecast>) from the Kaggle website to conduct the research to fulfill the “Data Analytics Project (CIND820)” requirements. The data that will be used are the 2 files (features and stores csv files).

This dataset has 8190 rows with 12 columns (attributes). In total, there are 45 different Walmart stores of 3 different types and different sizes which will be analyzed throughout the project.

The data is provided on a weekly basis from 2010 to 2013, over a 3-year period, and each week has its own set of features such as different CPI (consumer price index), unemployment rate as well as whether a holiday was a factor in its performance.

The main themes for this project will be regression and classification (whether the Walmart was successful in sales or not or any other factor), as well time-series in terms of predictive analytics.

The 3 main questions that will be investigated for this project are whether the seasons are a factor in terms of the sales for this dataset. How the sales have been in that week if there was a specific holiday during that week such as Christmas, Thanksgiving, New Years, etc. and the final question would be what would be the method (for example either regression or classification) that we can use to improve the sales for a better outcome for Walmart in terms of sales forecasting.

One other thing that will be examined is to predict the store’s sales at a particular week and if there are any impacts on it. Lastly, also whether the temperature or fuel price for that week had influenced the sales in addition to other things such as the CPI (which varies depending on the specific store number in the region).

The regression methods will be employed to estimate the future sales of the store, and time series forecasting to see whether there is a trend in the data from 2010 to 2013 or specific time periods in between the years.

The software tools that will be used are Python & R.