**Future Sales Prediction**

**Problem Definition and Design Thinking**

**Problem Definition :**

To develop a model that tells about the future sales of a retail company.

The tool is to be created for the goods management and it is based on sales.

This project involves data preprocessing,feature engineering,model selection,training and evaluation.

**Design Thinking:**

**Data Source :**

The data of a product is to be obtained should contain the date, Product ID, store ID and the sales quantity.

Eg: Tv

All the above should be considered for the particular product and should be processed.

**Data Preprocessing :**

The above mentioned features of the products are to be considered for data preprocessing

where the values of the product should be checked thoroughly, incase of missing it should

be corrected and processed.

The particular features gets converted into numbers.

Eg: Product ID - 2

**Feature Engineering :**

To highlight the model to be attractive extra features should be added.

The features are day of the week, month of the products that are sold.

**Model Selection :**

The time series forecasting algorithms are used.

It is used to predict the future sales by considering the time series values from the past.

In this step, the two main algorithms of time series forecasting are implemented

1.Autoregressive Integrated Moving Average(ARIMA)

2.Exponential Smoothing

**Model Training :**

After adding all the features to the model,train the model using the preprocessed data.

**Evaluation :**

Here, the time series forecasting metrics are used for predicting errors.They are

1.Mean Absolute Error

2.Root Mean Squared Error