FUTURE SALES PREDICTION

PHASE 1: PROBLEM DEFINITION AND DESIGN THINKING

PROBLEM DEFINITION

The problem is to develop a predictive model that uses historical sales data to forecast future sales for a retail company. The objective is to create a tool that enables the company to optimize inventory management and make informed business decisions based on datadriven sales predictions. This project involves data preprocessing, feature engineering, model selection, training, and evaluation.

DESIGN THINKING

1. Data Source: Utilize a dataset containing historical sales data, including features like date, product ID, store ID, and sales quantity.
2. Data Preprocessing: Clean and preprocess the data, handle missing values, and convert categorical features into numerical representations.
3. Feature Engineering: Create additional features that could enhance the predictive power of the model, such as time-based features (e.g., day of the week, month).
4. Model Selection: Choose suitable time series forecasting algorithms (e.g., ARIMA, Exponential Smoothing) for predicting future sales.
5. Model Training: Train the selected model using the preprocessed data.
6. Evaluation: Evaluate the model's performance using appropriate time series forecasting metrics (e.g., Mean Absolute Error, Root Mean Squared Error