# Requirements Gathering for Retail Store Inventory Forecasting Dataset

## 1. Stakeholder Analysis

Identifying key stakeholders and their needs:

* \*\*Retail Store Managers\*\*: Require accurate inventory forecasts to prevent overstocking or stockouts.
* \*\*Supply Chain Managers\*\*: Need demand predictions to optimize procurement and logistics.
* \*\*Sales & Marketing Teams\*\*: Use forecasts to plan promotions and sales strategies effectively.
* \*\*IT & Data Science Teams\*\*: Ensure data quality, model performance, and deployment feasibility.
* \*\*Customers\*\*: Indirectly benefit from improved stock availability and efficient service.

## 2. User Stories & Use Cases

Scenarios illustrating how users interact with the system:

* \*\*As a Retail Store Manager\*\*, I want to receive daily inventory forecasts so that I can restock products efficiently.
* \*\*As a Supply Chain Manager\*\*, I want to analyze historical sales trends to optimize procurement and reduce wastage.
* \*\*As a Sales Team Member\*\*, I want to see forecasted demand to plan discounts and promotions effectively.
* \*\*As a Data Scientist\*\*, I want to preprocess and clean data to enhance model accuracy and reliability.

## 3. Functional Requirements

Key features and functionalities:

* \*\*Data Ingestion\*\*: Ability to import historical sales data, promotions, and seasonal trends.
* \*\*Data Processing\*\*: Cleaning, handling missing values, and normalizing data.
* \*\*Forecasting Model\*\*: Implementation of time-series forecasting models such as ARIMA, SARIMA, or LSTM.
* \*\*Dashboard & Visualization\*\*: Interactive reports displaying sales trends and forecast accuracy.
* \*\*Automated Alerts\*\*: Notifications for potential stock shortages or surpluses.
* \*\*Integration\*\*: Seamless connection with existing inventory management and POS systems.

## 4. Non-functional Requirements

Performance, security, usability, and reliability criteria:

* \*\*Performance\*\*: The forecasting model should process and predict data within a defined time frame.
* \*\*Security\*\*: Data must be encrypted and access controlled for authorized users only.
* \*\*Usability\*\*: A user-friendly dashboard with intuitive navigation.
* \*\*Reliability\*\*: The system should be highly available and fault-tolerant.
* \*\*Scalability\*\*: Should support large datasets and handle multiple stores simultaneously.
* \*\*Compliance\*\*: Must adhere to data privacy laws and industry best practices.

This document serves as a foundation for implementing a Retail Store Inventory Forecasting solution using the provided dataset.