**Retail Price Optimization using Decision Tree**

The **Retail Price Optimization** project focuses on leveraging machine learning to determine the optimal pricing for retail products. By analyzing historical sales data and market trends, You will develop a model that can suggest pricing strategies to maximize revenue while considering factors like demand, competition, and customer behaviour.

**Problem Statement**

**Objective**:  
The goal of this project is to build a machine learning model that predicts the best possible price for retail products to optimize sales and profitability.

**Scenario**:  
A retail company wants to improve its pricing strategy to increase sales and revenue. The company has collected data on historical product prices, sales figures, seasonal trends, and competitor prices. They want to use this data to develop a predictive model that can suggest the optimal price for each product.

**Key Questions to Address**:

1. What are the key factors influencing product demand and pricing?
2. How can we preprocess and analyze retail data to make it suitable for modeling?

**Deliverables**:

* **Exploratory Data Analysis (EDA)**: Understand trends, patterns, and correlations in sales and pricing data.
* **Data Preprocessing**: Handle missing values, encode categorical features, and scale numerical features.
* **Predictive Modeling**: Develop and evaluate machine learning models (**Use only Decision Tree Algorithm**) to predict optimal prices.

This project helps you understand the role of data science in retail decision-making and equips them with practical skills to handle real-world challenges in price optimization.