Summary of Findings

1. Dataset Overview

- The dataset contains **500 records** and **9 columns**, including product information, sales, ratings, and return data.
- No missing values were detected, indicating a clean dataset.

2. Univariate Analysis

- **Price**:
  - Ranges from ₹5.17 to ₹499.97 with a mean of ₹252.10.
  - Right-skewed distribution — most products are priced moderately, with fewer expensive items.
- **Units Sold**:
  - Spread between 6 and 995 units, with an average of about 486 units sold.
  - Shows variability in product popularity.
- **Revenue**:
  - Revenue has a wide range: ₹235 to ₹445,898.
  - Strongly skewed due to some high-selling products.
- **Rating**:
  - Ratings are distributed between 1.0 and 5.0 with an average rating of ~2.94.
  - Some products have low customer satisfaction.
- **Return Rate**:
  - Most return rates fall between 0.0 and 0.3.
  - Indicates that while returns exist, they are generally low.
- **Category**:
  - 8 unique product categories.
  - Most common: **Automotive**, **Electronics**, and **Apparel**.
- **Seller Name**:
  - 5 unique sellers; **Seller_A** is the most active.

3. Bivariate & Multivariate Analysis

- **Correlation Analysis**:
  - Strong positive correlation between **Units Sold** and **Revenue** (as expected).
  - Weak correlation between **Price** and **Rating** or **Return Rate**.

- **Boxplots**:
    - Categories like **Electronics** and **Home & Kitchen** tend to have higher product prices.
    - Some categories show wide price ranges indicating product diversity.
- **Pairplot & Scatterplots**:
    - Clear linear trend between **Units Sold** and **Revenue**.
    - No clear pattern between **Rating** and **Revenue** or **Return Rate**.

Insights & Recommendations

- **High-selling products** drive major revenue — marketing efforts can be focused there.
- Products with **low ratings and high return rates** may need quality improvement or better product descriptions.
- Some sellers dominate certain categories — seller performance comparison may yield more insights.
- Price optimization might be possible for categories with high variability.