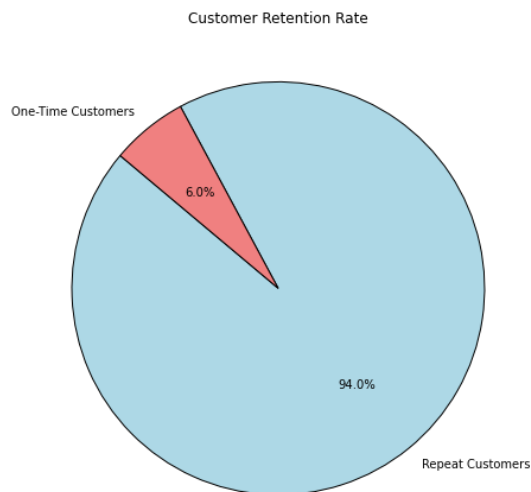


This report presents significant business insights based on exploratory data analysis of customer, product, and transaction data. Following are the few business insights derived after performing exploratory data analysis on the given datasets

## 1. Customer Retention and Frequent Purchases:



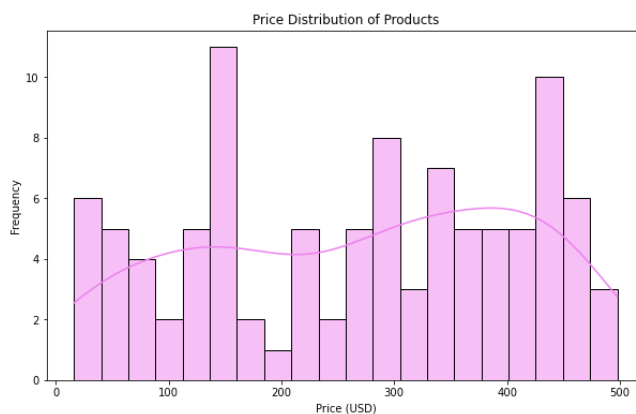
- **Insights:-**

- Based on the above fig, we can see that more customers are retaining than one-time customers.
- According to the retention rate data, a sizable portion of clients are one-time purchasers. On the other hand, repeat business indicates more loyalty and forms a core revenue base.

- **Suggestion:-**

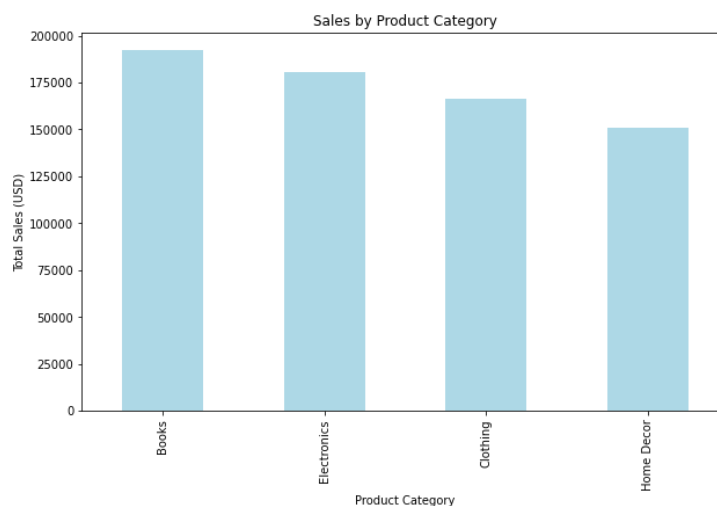
- To maintain the loyalty of the customer, offer rewards points, discounts or exclusive deals or seasonal sales.
- Use transaction data to personalize marketing efforts, ensuring relevance to customer needs
- Focus on customer satisfaction through timely delivery and feedback mechanisms.

## 2. Product Pricing Insights:



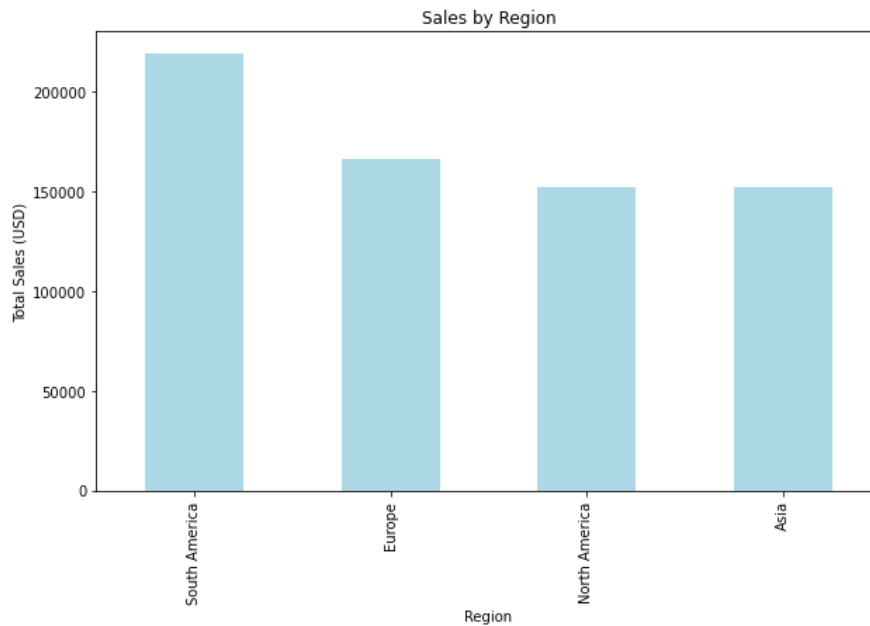
- **Insights:-**
  - According to the above fig , we can observe that customers tend to purchase products within specific price ranges.
  - High priced products are less in demand if there are no additional incentives than low priced products
- **Suggestions:-**
  - Introduce more products within the most popular price ranges to increase their demand among the customers
  - To make premium or high-priced products more appealing introduce discount or offers so that customer purchase that product
  - Use data-driven strategies to adjust the prices for slow performing products and attract price-sensitive customers

### 3. Product Category Preferences:



- **Insights:-**
  - According to the above chart, certain product categories significantly outperform others in terms of revenue contribution
  - This indicates that customers preferred specific product types
- **Suggestions:-**
  - Increase the storage and marketing resources of high-performing product categories
  - Introduce complementary products within popular categories to increase average order value
  - Use targeted discounts or promotional bundles to improve sales in product categories which does not perform well

## 4. Regional Sales Trends:



- **Insights:-**
  - According to above fig, in some regions the products are performing well contributing to a significant share of overall revenue while some regions lag performance.
  - The variation in sales indicates the differences in regional demand, accessibility , or customer engagement
- **Suggestions:-**
  - To maximize revenue , enhance logistics , expand product availability , and increase advertisement investment in high-sales region.
  - Identify barriers such as distribution inefficiencies or low brand awareness in less-performing regions and address these with tailored solutions
  - Design region-specific campaigns to cater to the unique preferences of customers in each area

## 5. Seasonal Sales Performance:



- **Insights:-**
  - According to above fig, it reveals that sales fluctuate periodically, indicating seasonality in customer purchases. Peaks are observed during certain months, which might align with festive seasons, holidays, or year-end sales
- **Suggestions:-**
  - Launch targeted marketing campaigns during high-demand months to capitalize on increased customer spending
  - Ensure adequate stock availability for popular products during peak months to prevent stockouts
  - Use special promotions, discounts, or events during low-sales months to sustain customer interest

**The insights derived from the analysis highlight several opportunities to optimize sales, enhance customer retention, improve overall business performance**