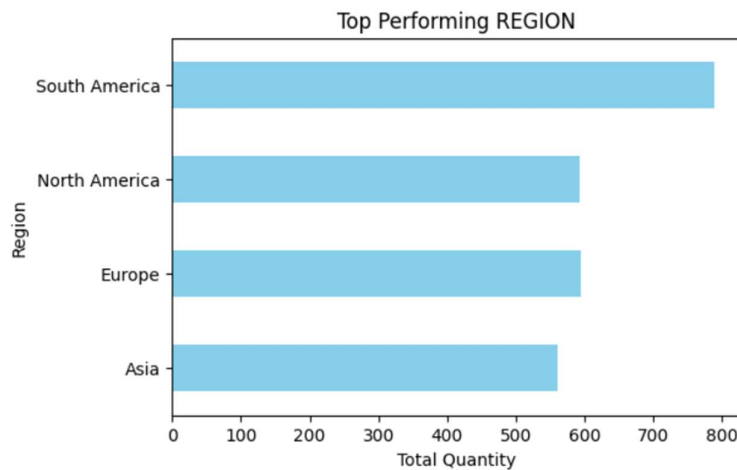# Task – 1

Exploratory Data Analysis (EDA) and Business Insights

1. Perform EDA on the provided dataset.
2. Derive at least 5 business insights from the EDA. ○ Write these insights in short point-wise sentences (maximum 100 words per insight).

Business Insights :

1. Top Performing Region

- This plot shows out of given which region has the **Highest Sales Volume**.
- According to plot, **South America** is the **Top Performing Region** with close around 800 product sales, **Europe** and **North America** follows up next with 600 product sales and **Asia** region rank lasts with < 600 sales.
- South America shows **Highest Product Demand**. So, Insight we can take from this is means they need more inventory to **avoid shortage** and Asia region needs less inventory to **avoid overstock** and this will surely reduce storage costs.
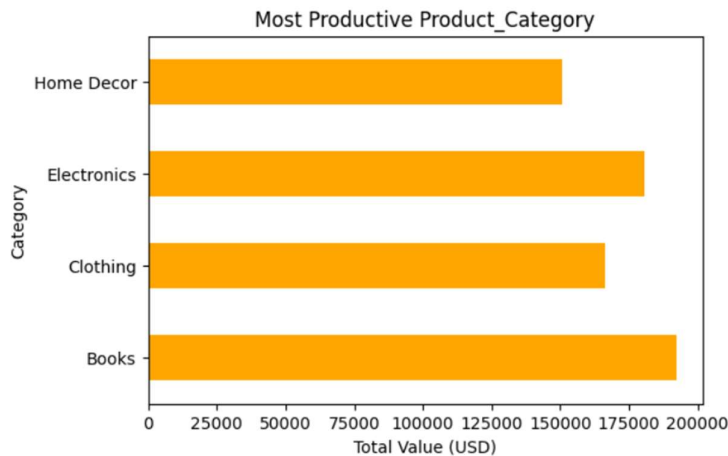
2. Most Productive Region
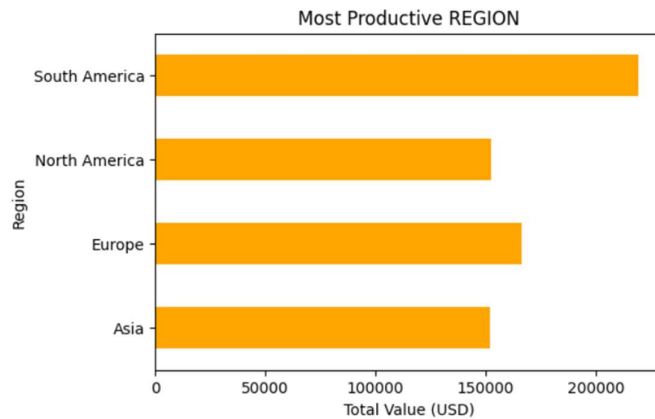
- This graph identifies out of given which region generates the **Highest Revenue**.
- **South America** has the Highest contribution with contributing more than $2,00,000 revenue to Overall Sales. But, if we also consider last plot and compare both we'll see that **Europe** can be as well a Productive Region by Revenue per Product. While Asia and North America both have generated similar $1,50,000 revenue which shows moderate performance.
- So, Considering all scenarios we get insight that **South America** and **Europe** both are the **Most Productive Regions** and we can offer the special discounts to the people in this regions so, they can become a loyal customer of a company.

**3. Most Required Product Category (Region-Wise)**
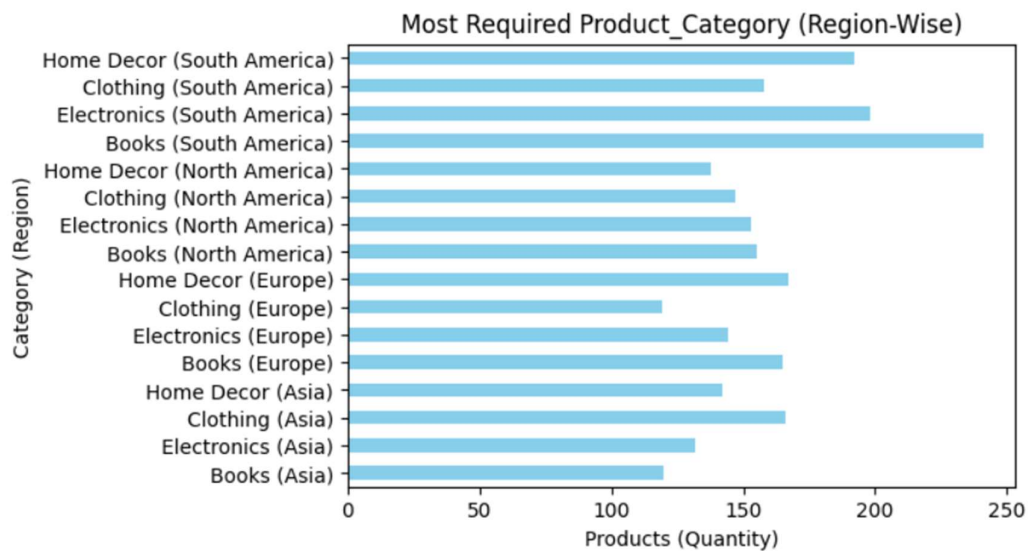
- This Insight more clearly highlights **Regional Product Preferences** and also with this we can improve **Inventory Management in the Region**.
- Plot clearly shows in South America **Books** are in the **More demand** while in **Asia** Books a have **Less demand** same like this it also provides more details about other categories such as Electronics, Home Decor and Clothing.
- While along with Region-Wise Inventory Management factor another insight we can get that leaving Books in South America mostly other 3 Product categories are also very much in demand while Asia shows lowest overall product demand which clearly indicates a possible market challenge that needs to be addressed while Europe and North America have moderate demand. So, Overall according to this data we can focus more on implementing **Region-Specific Strategies**.

4. **Most Productive Product Category**

- **Books** are emerges as a **Most Productive Product Category** with generating revenue around $1,85,000 while **Home Decor** least among all with revenue of $1,50,000.
- This graph highlights on which category the Marketing Focus should be on. While Books needs more **special kind of promotions** to maintain this revenue and Also, Electronics is also a strong performer we can target high-spenders and reward them some **loyalty awards** to maintain or boost the current revenue.
- So, with this category wise data we can allocate marketing resources more effectively to boost companies overall revenue.

5. Most Productive Product Category (Region-Wise)

Most Productive Product_Category (Region-Wise)
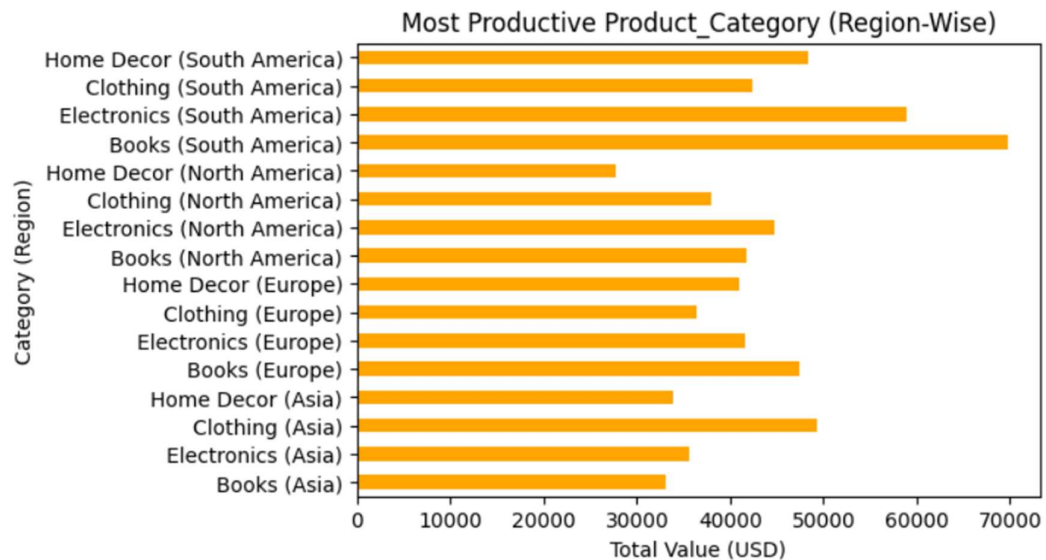
- **Books** generates highest revenue of $70000 in South America indeed is the **Most Productive Product Category** while Home Decor in North America is the lowest with revenue of $28000 and 2nd lowest best is Books in Asia with $32000.
- So, this graph provides clear picture about each categories performance in the particular region with which we can improve or modify Inventory Management Strategies and can definitely manage storage costs very well.
- This data also provides insights about promotions of products as well like Books have very much good demand in South America so, we can organise events like Book Fair or Local Authors meet in this Region.
- Or can advertised Electronics products more in the regions like South America and Europe where revenue growth of this category is moderate and can easily improve with seasonal flash sales.
- Another key insight we can get from above graph is except Clothing other 3 categories are performing worst in the Asia So, Region specific strategies needs to be applied here in order to improve performance of the company in this region.