

In [1]:

```
import pandas as pd
import matplotlib.pyplot as plt

data = pd.DataFrame({
    'Date': pd.date_range(start='2024-01-01', periods=6, freq='M'),
    'Product': ['A', 'B', 'C', 'A', 'B', 'C'],
    'Category': ['Electronics', 'Furniture', 'Electronics', 'Furniture', 'Electronics', 'Furniture'],
    'Region': ['North', 'South', 'East', 'West', 'North', 'South'],
    'Revenue': [50000, 40000, 60000, 45000, 70000, 30000]
})

data
```

Matplotlib is building the font cache; this may take a moment.

C:\Users\Apurva\AppData\Local\Temp\ipykernel_27552\4155377460.py:5: FutureWarning: 'M' is deprecated and will be removed in a future version, please use 'ME' instead.

```
'Date': pd.date_range(start='2024-01-01', periods=6, freq='M'),
```

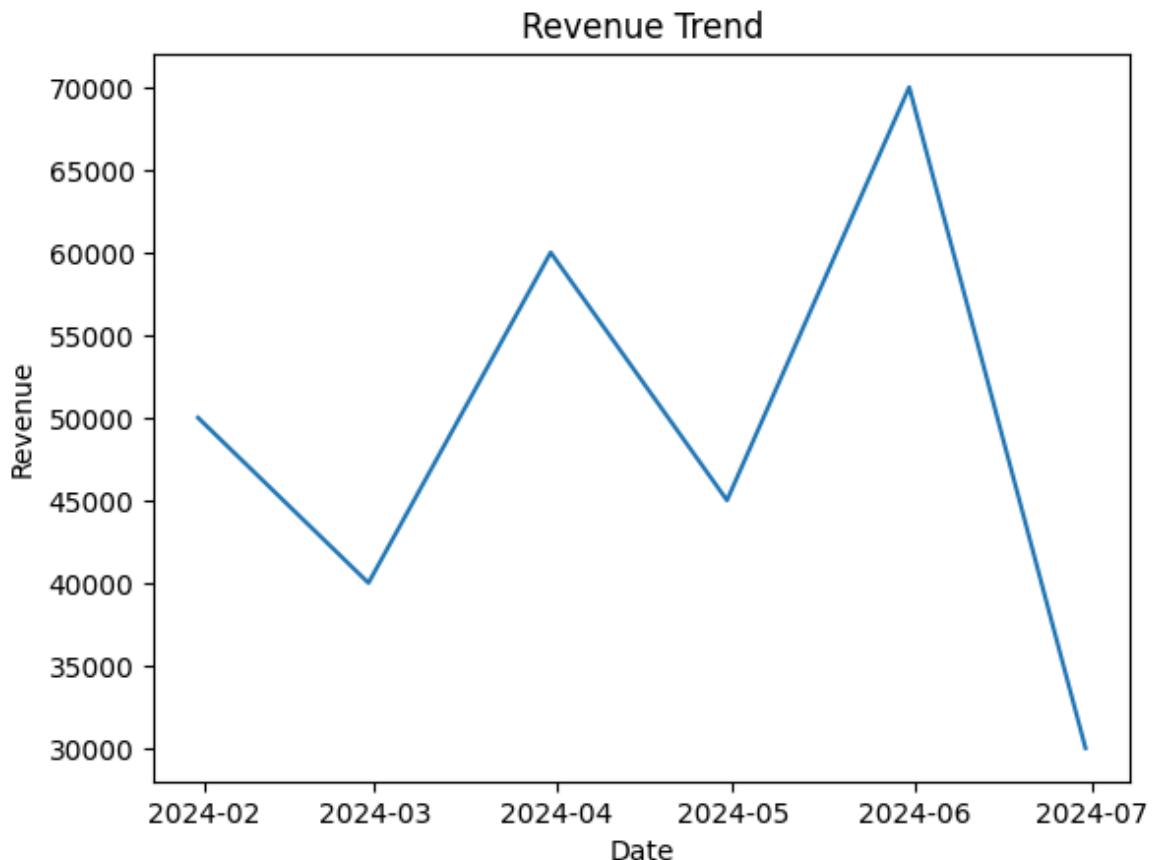
Out[1]:

	Date	Product	Category	Region	Revenue
0	2024-01-31	A	Electronics	North	50000
1	2024-02-29	B	Furniture	South	40000
2	2024-03-31	C	Electronics	East	60000
3	2024-04-30	A	Furniture	West	45000
4	2024-05-31	B	Electronics	North	70000
5	2024-06-30	C	Furniture	South	30000

In [3]:

```
revenue = data.groupby('Date')[['Revenue']].sum()

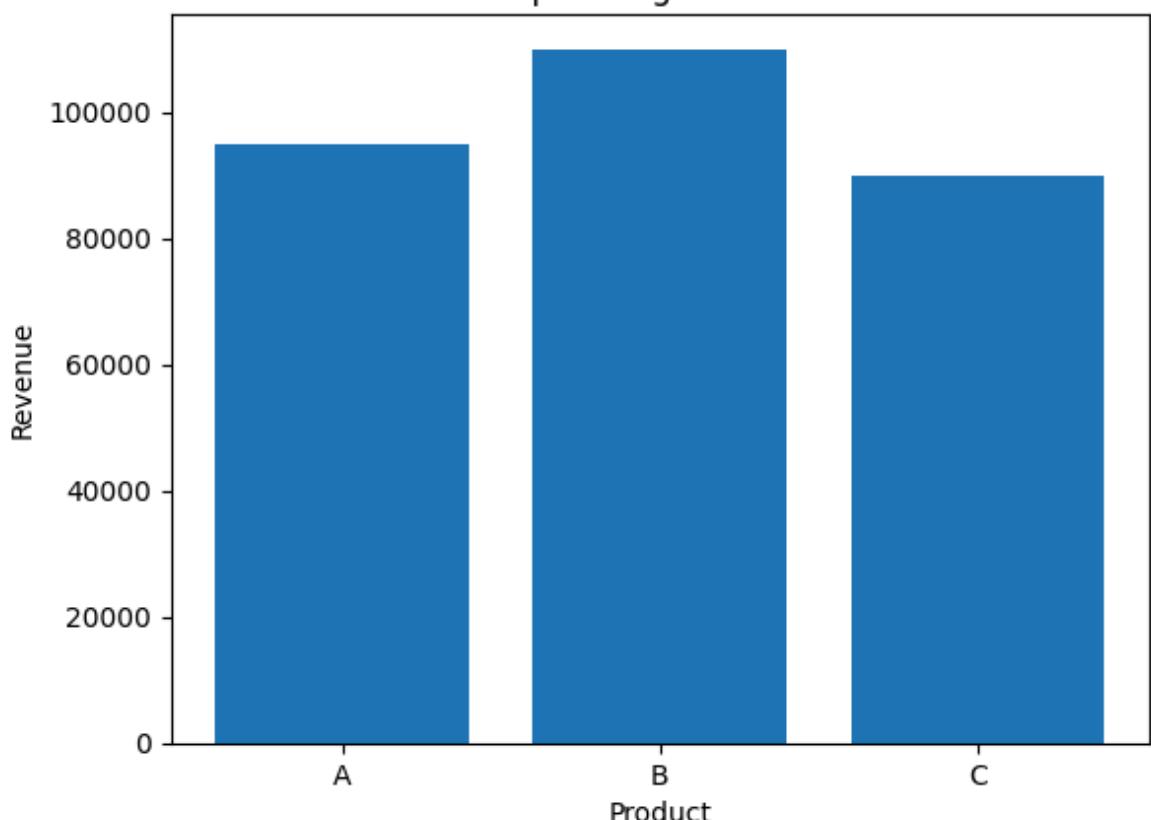
plt.plot(revenue.index, revenue.values)
plt.title("Revenue Trend")
plt.xlabel("Date")
plt.ylabel("Revenue")
plt.show()
```



```
In [4]: top_products = data.groupby('Product')['Revenue'].sum()

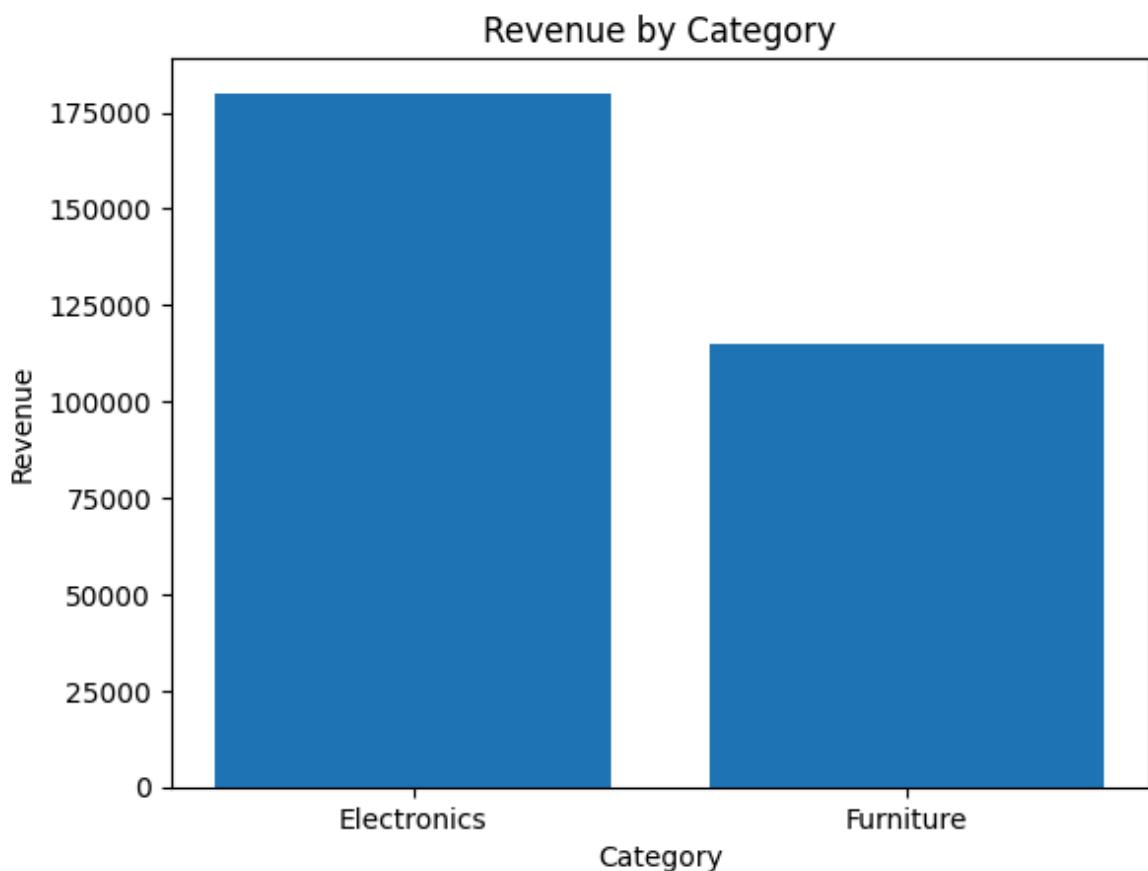
plt.bar(top_products.index, top_products.values)
plt.title("Top Selling Products")
plt.xlabel("Product")
plt.ylabel("Revenue")
plt.show()
```

Top Selling Products



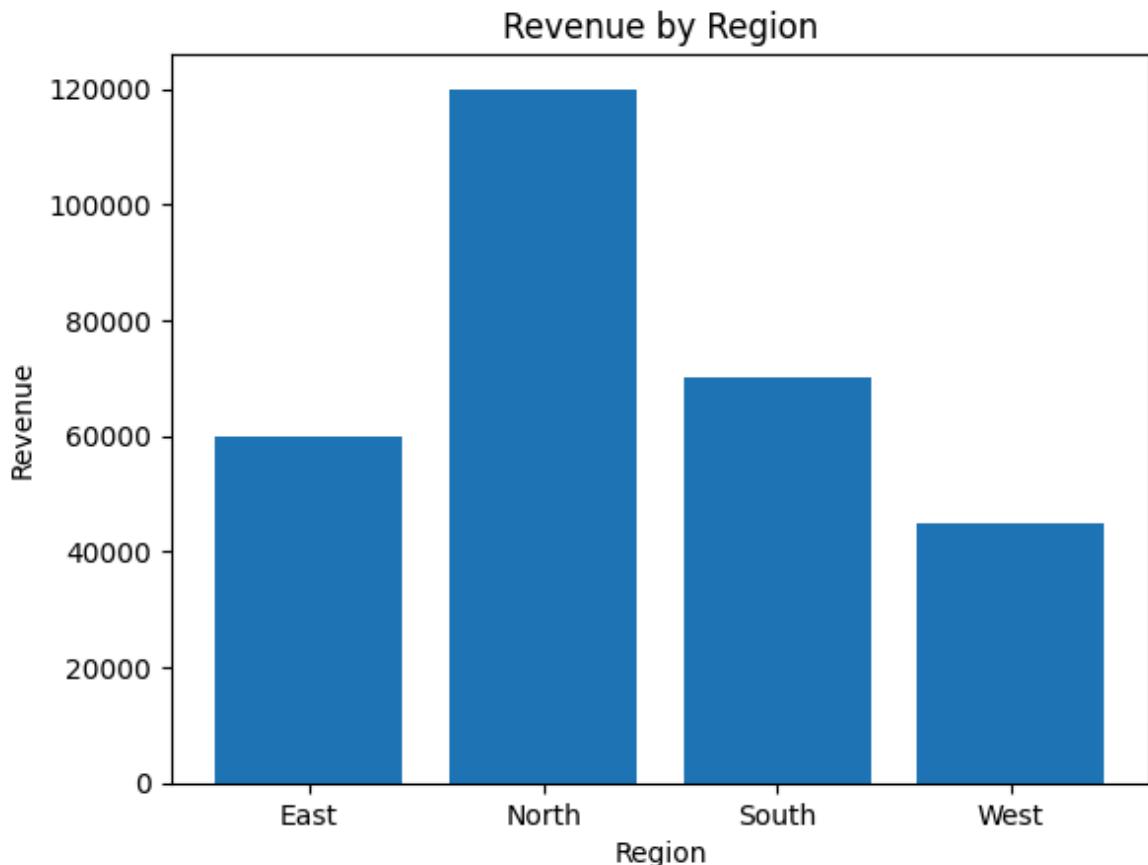
```
In [5]: category_revenue = data.groupby('Category')['Revenue'].sum()

plt.bar(category_revenue.index, category_revenue.values)
plt.title("Revenue by Category")
plt.xlabel("Category")
plt.ylabel("Revenue")
plt.show()
```



```
In [6]: region_revenue = data.groupby('Region')['Revenue'].sum()

plt.bar(region_revenue.index, region_revenue.values)
plt.title("Revenue by Region")
plt.xlabel("Region")
plt.ylabel("Revenue")
plt.show()
```



Insights & Recommendations

Revenue Trend

Revenue shows an overall upward trend. The business is growing steadily.

Recommendation: Plan inventory and marketing to support increasing demand.

Top Selling Products

Product A and Product C generate the highest revenue.

Recommendation: Focus promotions and offers on these products.

High Value Categories

Electronics category contributes more revenue than Furniture.

Recommendation: Increase investment in Electronics category.

Regional Performance

North region performs best, while South and West show lower revenue.

Recommendation: Improve regional marketing strategies in underperforming regions.