

## Task 4

Analyze and visualize sentiment patterns in social media data to understand public opinion and attitudes towards specific topics or brands.

Step 1: Import Libraries

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

Step 2: Load Dataset

```
data = pd.read_csv("/content/BMW_car.csv")
data.head(5)
```

	Model	Year	Region	Color	Fuel_Type	Transmission	Engine_Size_L	Mileage_KM	Price_USD	Sales_Volume	Sales_Classification
0	5 Series	2016	Asia	Red	Petrol	Manual	3.5	151748	98740	8300	High
1	i8	2013	North America	Red	Hybrid	Automatic	1.6	121671	79219	3428	Low
2	5 Series	2022	North America	Blue	Petrol	Automatic	4.5	10991	113265	6994	Low
3	X3	2024	Middle East	Blue	Petrol	Automatic	1.7	27255	60971	4047	Low
4	7 Series	2020	South America	Black	Diesel	Manual	2.1	122131	49898	3080	Low

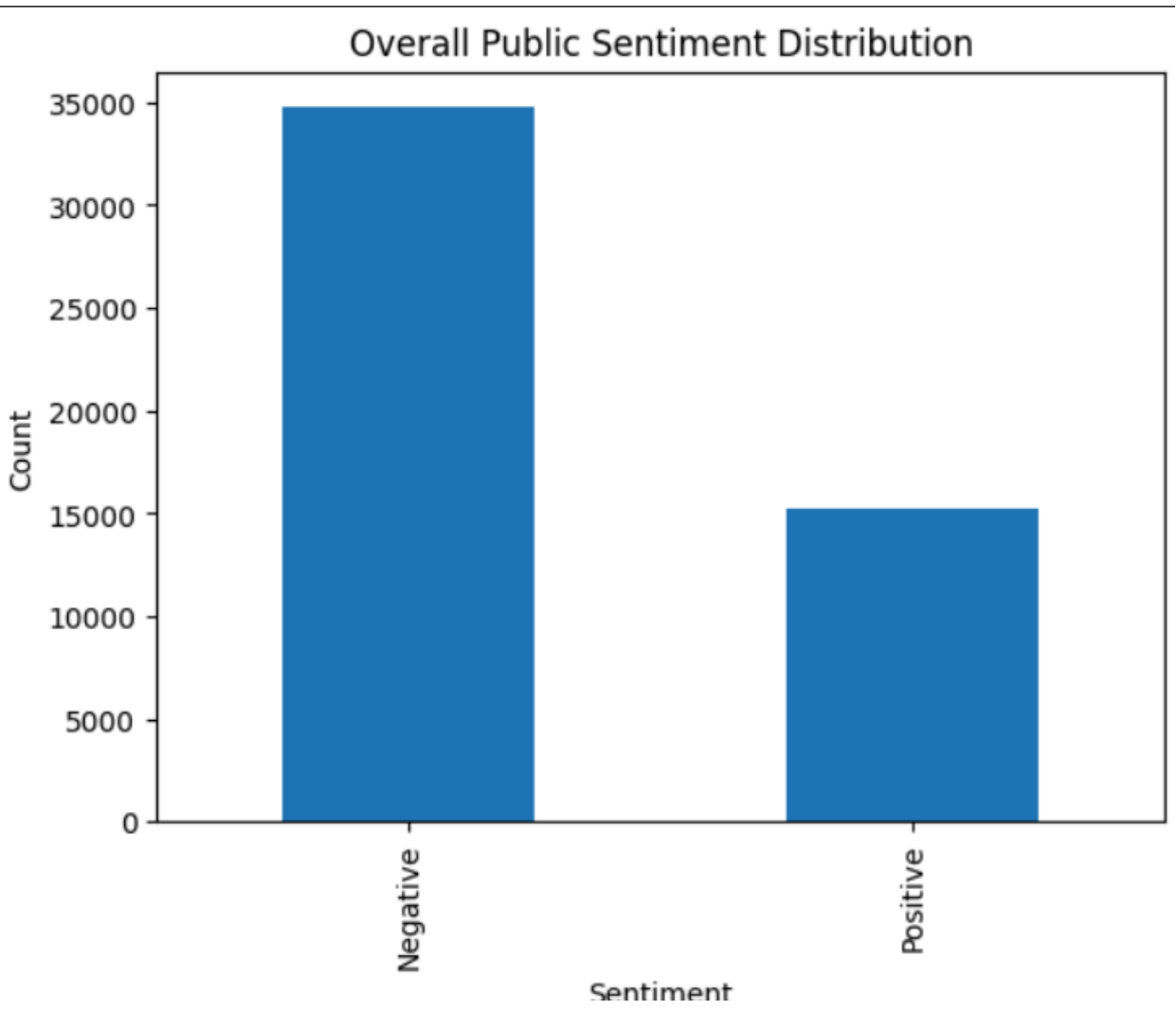
Step 3: Create Sentiment Column

```
sentiment_map = {
    'High': 'Positive',
    'Medium': 'Neutral',
    'Low': 'Negative'
}

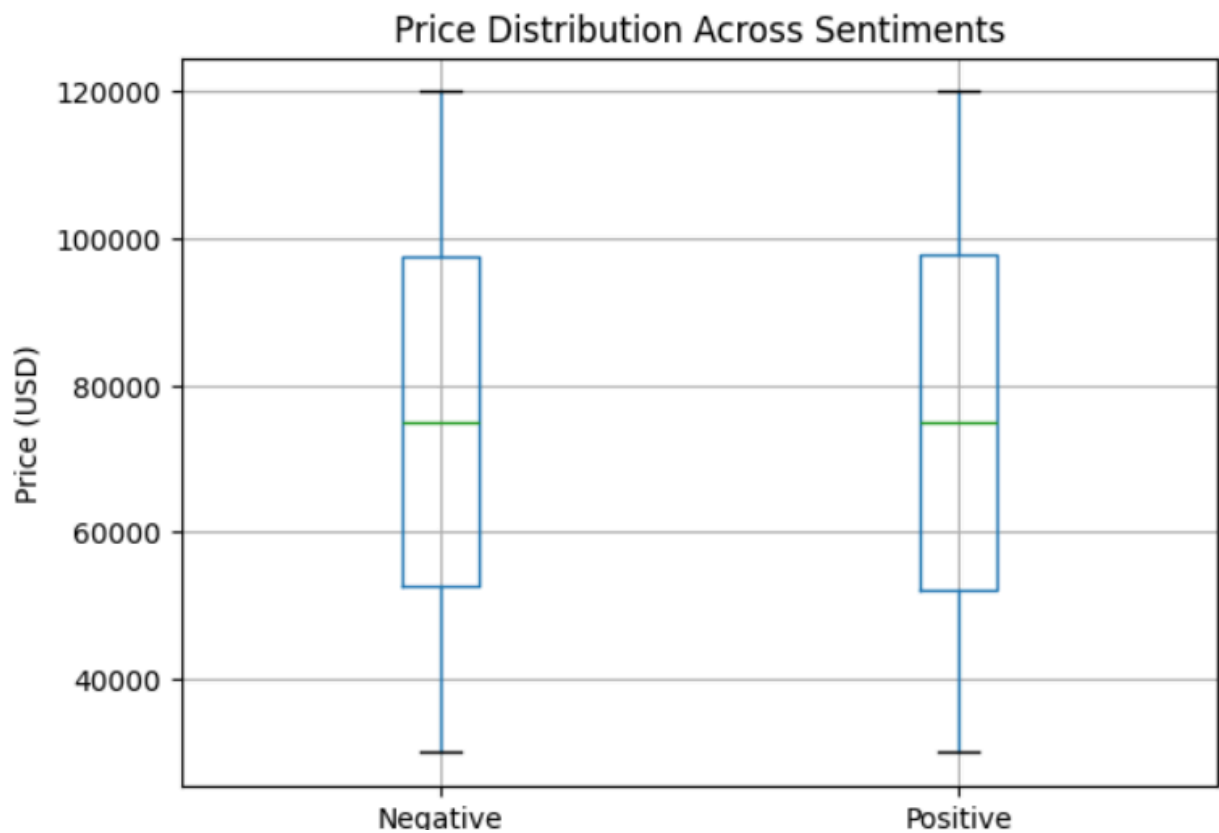
data['Sentiment'] = data['Sales_Classification'].map(sentiment_map)
```

Step 4: Sentiment Distribution (Bar Chart)

```
data['Sentiment'].value_counts().plot(kind='bar')
plt.xlabel("Sentiment")
plt.ylabel("Count")
plt.title("Overall Public Sentiment Distribution")
plt.show()
```



```
data.boxplot(column='Price_USD', by='Sentiment')
plt.xlabel("Sentiment")
plt.ylabel("Price (USD)")
plt.title("Price Distribution Across Sentiments")
plt.suptitle("")
plt.show()
```



```
sentiment_counts = data['Sentiment'].value_counts()
plt.figure()
plt.pie(sentiment_counts,
        labels=sentiment_counts.index,
        autopct='%1.1f%%',
        startangle=90)
plt.title("Overall Public Sentiment Distribution")
plt.show()
```

