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[39]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

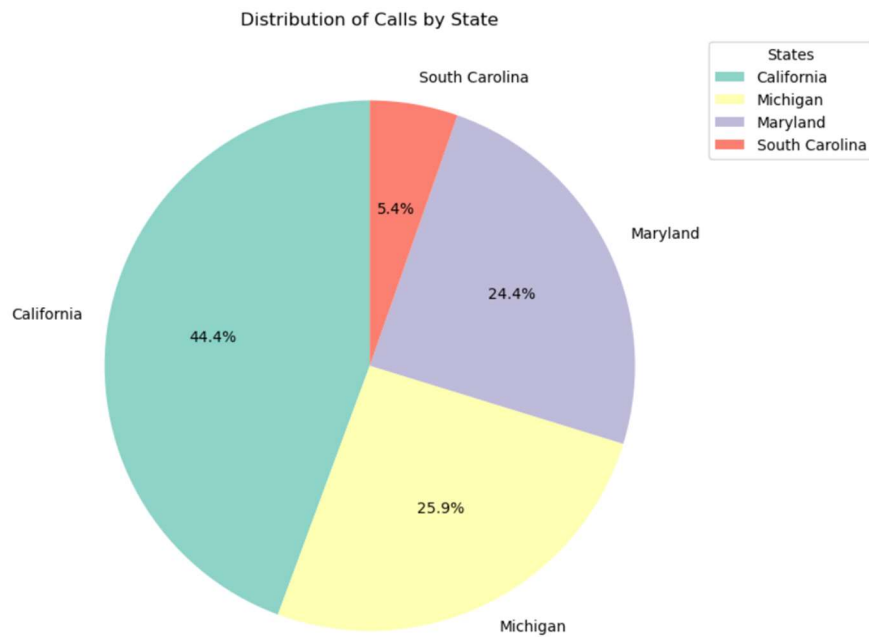
# Load the dataset
data = pd.read_csv("Call_Center.csv")
```

```
] import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

state_counts = df['State'].value_counts()

# 2. Pie chart showing the distribution of IDs by state
plt.figure(figsize=(8, 8))
state_counts.plot(kind='pie', autopct='%1.1f%%', startangle=90, colors=sns.color_palette("Set3", n_colors=len(state_counts)))
plt.title("Distribution of Calls by State")

# Adding a Legend
plt.legend(state_counts.index, title="States", loc='upper left', bbox_to_anchor=(1, 1))
plt.ylabel('') # Hide y-label as it's not needed for pie chart
plt.show()
```

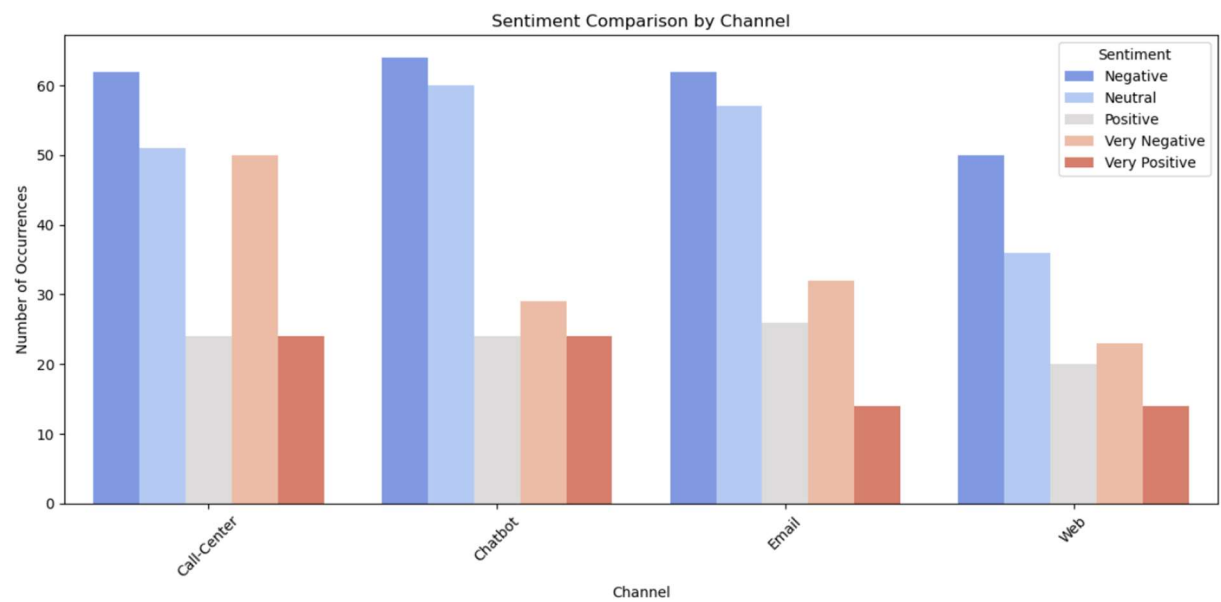


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# Group by 'Channel' and 'Sentiment' and count the occurrences
sentiment_channel_counts = df.groupby(['Channel', 'Sentiment']).size().reset_index(name='Count')

# Plotting the bar chart
plt.figure(figsize=(12, 6))
sns.barplot(x='Channel', y='Count', hue='Sentiment', data=sentiment_channel_counts, palette="coolwarm")

# Adding titles and labels
plt.title('Sentiment Comparison by Channel')
plt.xlabel('Channel')
plt.ylabel('Number of Occurrences')
plt.xticks(rotation=45)
plt.legend(title='Sentiment', loc='upper right')

# Show the plot
plt.tight_layout()
plt.show()
```



```
# Convert the 'Call Timestamp' column to datetime format
df['Call Timestamp'] = pd.to_datetime(df['Call Timestamp'])

# Group the data by the date (Call Timestamp) and count the number of IDs per date
calls_per_date = df.groupby(df['Call Timestamp'].dt.date).size()

# Plotting the Line chart
plt.figure(figsize=(12, 6))
plt.plot(calls_per_date.index, calls_per_date.values, marker='o', color='b', linestyle='-', linewidth=2)

# Adding titles and Labels
plt.title('Number of Calls per Date')
plt.xlabel('Date')
plt.ylabel('Number of Calls')
plt.xticks(rotation=45) # Rotate the x-axis Labels for better readability
plt.grid(True)

# Show the plot
plt.tight_layout()
plt.show()
```

