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import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns

# Load the dataset

# Assuming 'sales_data.csv' is the name of your dataset file
df = pd.read_csv('sales_data.csv')

# Display the first few rows of the dataset
print(df.head())

# Check basic statistics of numerical columns
print(df.describe())

# Check for missing values
print(df.isnull().sum())

# Data visualization

# Histogram of sales amount
plt.figure(figsize=(10, 6))
sns.histplot(df['Sales'], bins=20, kde=True)
plt.title('Distribution of Sales Amount')
plt.xlabel('Sales Amount')
plt.ylabel('Frequency')
plt.show()

# Box plot of sales amount by region
plt.figure(figsize=(10, 6))
sns.boxplot(x='Region', y='Sales', data=df)
plt.title('Sales Amount by Region')
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plt.xlabel('Region')
plt.ylabel('Sales Amount')
plt.show()
```

```
# Count plot of sales by region
plt.figure(figsize=(10, 6))
sns.countplot(x='Region', data=df)
plt.title('Count of Sales by Region')
plt.xlabel('Region')
plt.ylabel('Count')
plt.show()
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# Scatter plot of sales amount vs. profit
plt.figure(figsize=(10, 6))
sns.scatterplot(x='Sales', y='Profit', data=df)
plt.title('Sales Amount vs. Profit')
plt.xlabel('Sales Amount')
plt.ylabel('Profit')
plt.show()
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# Correlation heatmap
plt.figure(figsize=(10, 6))
sns.heatmap(df.corr(), annot=True, cmap='coolwarm')
plt.title('Correlation Heatmap')
plt.show()
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