jupyter exp2 Last Checkpoint: 12/08/2025 (autosaved)

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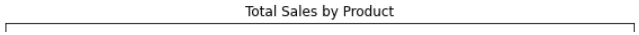
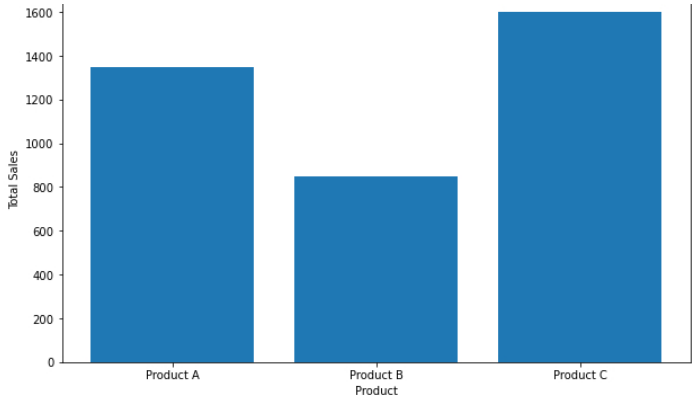
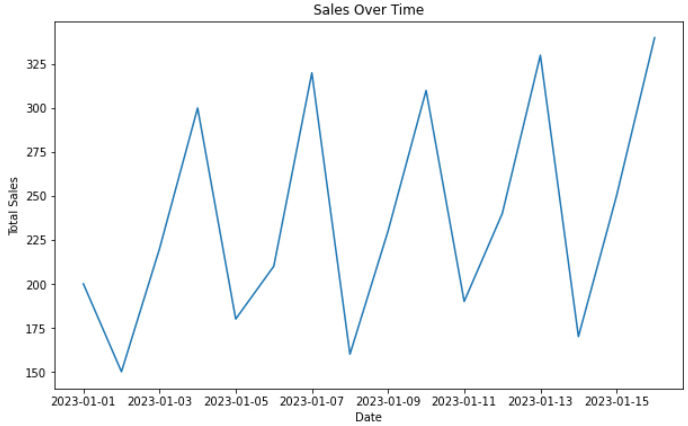
Run Code

In [6]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
file_path='C:/Users/REC/sales-data.csv'
df = pd.read_csv(file_path)
print(df.head())
print(df.isnull().sum())
df['Sales'].fillna(df['Sales'].mean(), inplace=True)
df.dropna(subset=['Product', 'Quantity', 'Region'], inplace=True)
print(df.describe())
product_summary = df.groupby('Product').agg({
'Sales': 'sum',
'Quantity': 'sum'
}).reset_index()
print(product_summary)
plt.figure(figsize=(10, 6))
plt.bar(product_summary['Product'], product_summary['Sales'])
plt.xlabel('Product')
plt.ylabel('Total Sales')
plt.title('Total Sales by Product')
plt.show()
df['Date'] = pd.to_datetime(df['Date'],format='%d-%m-%Y')
sales_over_time = df.groupby('Date').agg({'Sales': 'sum'}).reset_index()
plt.figure(figsize=(10, 6))
plt.plot(sales_over_time['Date'],sales_over_time['Sales'])
plt.xlabel('Date')
plt.ylabel('Total Sales')
plt.title('Sales Over Time')
plt.show()
pivot_table = df.pivot_table(values='Sales', index='Region', columns='Product',
aggfunc=np.sum, fill_value=0)
print(pivot_table)
correlation_matrix = df.corr()
print(correlation_matrix)
import seaborn as sns
plt.figure(figsize=(8, 6))
sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm')
plt.title('Correlation Matrix')
plt.show()
```

```
         Date    Product  Sales  Quantity Region
0  01-01-2023  Product A    200         4  North
1  02-01-2023  Product B    150         3  South
2  03-01-2023  Product A    220         5  North
3  04-01-2023  Product C    300         6   East
4  05-01-2023  Product B    180         4   West
Date        0
Product     0
Sales       0
Quantity    0
Region      0
dtype: int64
            Sales   Quantity
count   16.000000  16.000000
mean   237.500000   5.375000
std     64.031242   1.746425
min    150.000000   3.000000
25%    187.500000   4.000000
50%    225.000000   5.500000
75%    302.500000   7.000000
max    340.000000   8.000000
     Product  Sales  Quantity
0  Product A   1350        33
1  Product B    850        17
2  Product C   1600        36
```

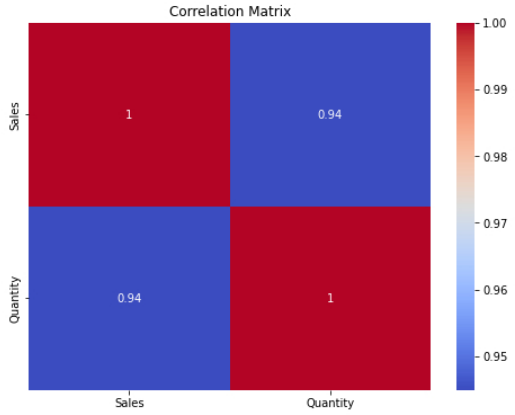






Product	Product A	Product B	Product C
Region			
East	0	0	1600
North	1350	0	0
South	0	480	0
West	0	370	0

	Sales	Quantity
Sales	1.000000	0.944922
Quantity	0.944922	1.000000



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