```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

# For reproducibility
np.random.seed(42)
```

```
# Generate 100 days of data
dates = pd.date_range(start="2025-07-01", end="2025-10-08")  # 100 days

# Products list
products = ["Adidas Sneakers", "Adidas T-Shirt", "Adidas Shorts", "Adidas Cap", "Adidas Jacket"]

# Payment methods
payment_methods = ["Cash", "Credit Card", "Online Payment"]

# Generate dataset
data = []

for date in dates:
    for _ in range(50):  # 50 transactions per day
        product = np.random.choice(products)
        quantity = np.random.randint(1, 20)
        if product == "Adidas Sneakers":
            price = 120
        elif product == "Adidas T-Shirt":
            price = 35
        elif product == "Adidas Shorts":
            price = 50
        elif product == "Adidas Cap":
            price = 25
        elif product == "Adidas Jacket":
            price = 150
        total_sales = quantity * price
        payment = np.random.choice(payment_methods)
        data.append([date.strftime("%Y-%m-%d"), product, quantity, price, total_sales, payment])

# Convert to DataFrame
df = pd.DataFrame(data, columns=["Date","ProductName","Quantity","UnitPrice","TotalSales","PaymentMethod"])

# Check size
print(f"Dataset size: {df.shape[0]} rows")
```

```
Dataset size: 5000 rows
```

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```
df.to_csv("adidas_sales_bigdata_5000.csv", index=False)
print("CSV file saved successfully! You can use it in Power BI.")
```

```
CSV file saved successfully! You can use it in Power BI.
```

```
# Load dataset
df = pd.read_csv("adidas_sales_bigdata_5000.csv")

# Basic info
print(df.head())
print(df.info())
print(df.describe())
```

```
         Date      ProductName  Quantity  UnitPrice  TotalSales  \
0  2025-07-01       Adidas Cap        14         25         350
1  2025-07-01    Adidas Jacket         4        150         600
2  2025-07-01    Adidas Jacket        13        150        1950
3  2025-07-01  Adidas Sneakers         5        120         600
4  2025-07-01   Adidas T-Shirt        10         35         350

    PaymentMethod
0  Online Payment
1  Online Payment
2     Credit Card
3  Online Payment
4            Cash
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5000 entries, 0 to 4999
Data columns (total 6 columns):
 #   Column         Non-Null Count  Dtype
---  ------         --------------  -----
 0   Date           5000 non-null   object
 1   ProductName    5000 non-null   object
 2   Quantity       5000 non-null   int64
 3   UnitPrice      5000 non-null   int64
 4   TotalSales     5000 non-null   int64
 5   PaymentMethod  5000 non-null   object
dtypes: int64(3), object(3)
memory usage: 234.5+ KB
None
          Quantity    UnitPrice   TotalSales
count  5000.000000  5000.000000  5000.000000
mean     10.013200    77.174000   770.616000
std       5.467925    50.152336   707.644333
min       1.000000    25.000000    25.000000
25%       5.000000    35.000000   250.000000
50%      10.000000    50.000000   490.000000
75%      15.000000   120.000000  1057.500000
max      19.000000   150.000000  2850.000000
```

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

# Remove missing values if any
df.dropna(inplace=True)

# Convert Date column to datetime
df['Date'] = pd.to_datetime(df['Date'])
```

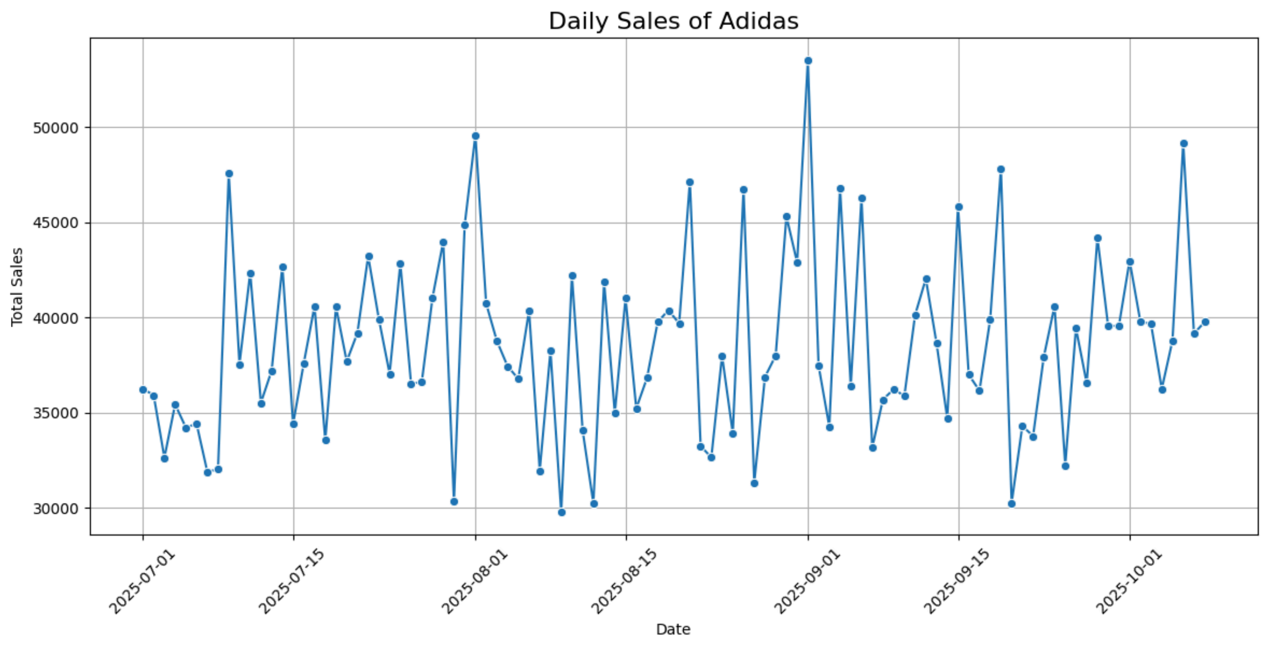
```
Date             0
ProductName      0
Quantity         0
UnitPrice        0
TotalSales       0
PaymentMethod    0
dtype: int64
```

```
# Total daily sales
daily_sales = df.groupby('Date')['TotalSales'].sum().reset_index()

# Top 10 products by quantity
top_products = df.groupby('ProductName')['Quantity'].sum().sort_values(ascending=False).head(10)
```

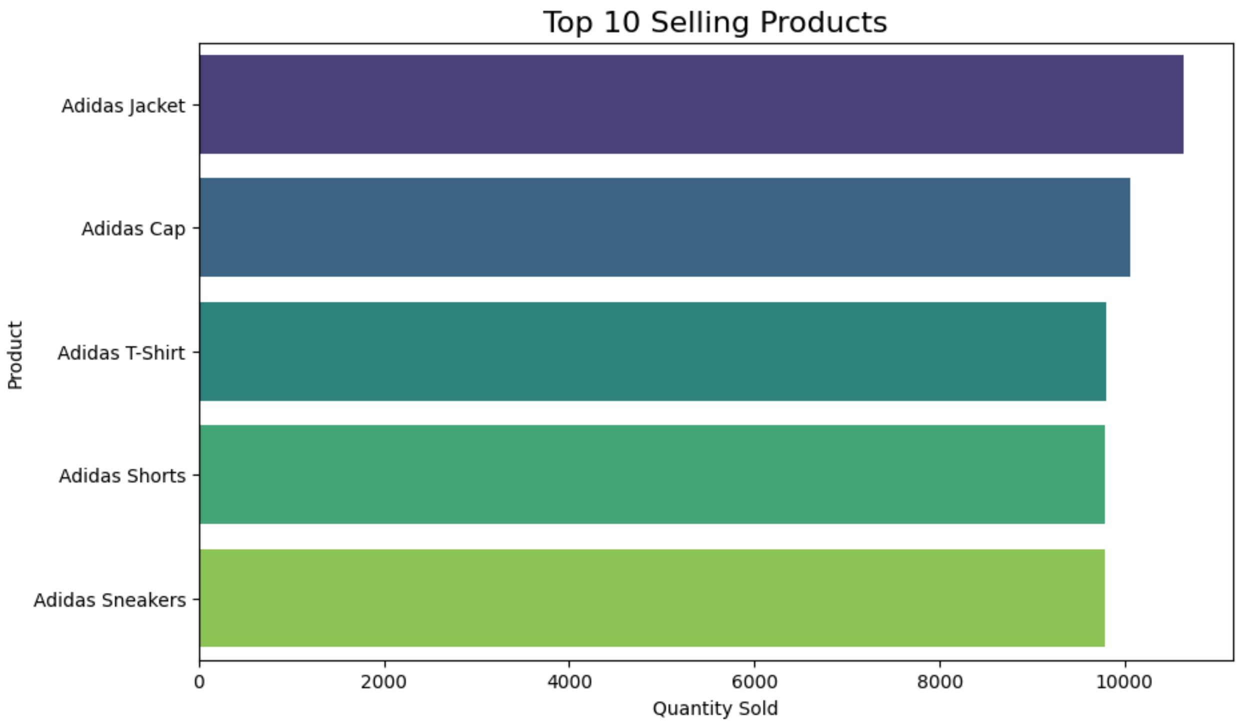
```
# Payment method distribution
payment_distribution = df['PaymentMethod'].value_counts()

# Overall totals
total_sales = df['TotalSales'].sum()
total_quantity = df['Quantity'].sum()

print(f"Total Sales: ${total_sales}")
print(f"Total Quantity Sold: {total_quantity}")
```

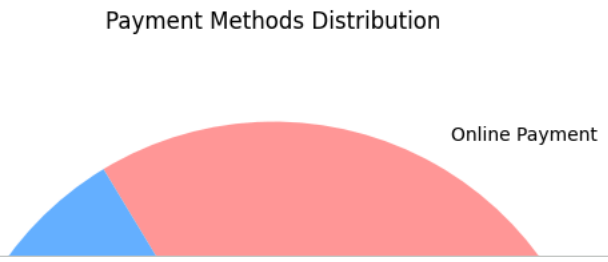
```
Total Sales: $3853080
Total Quantity Sold: 50066
```

```
# Daily Sales Line Chart
plt.figure(figsize=(14,6))
sns.lineplot(x='Date', y='TotalSales', data=daily_sales, marker='o')
plt.title('Daily Sales of Adidas', fontsize=16)
plt.xlabel('Date')
plt.ylabel('Total Sales')
plt.xticks(rotation=45)
plt.grid(True)
plt.show()

# Top Products Bar Chart
plt.figure(figsize=(10,6))
sns.barplot(x=top_products.values, y=top_products.index, palette='viridis')
plt.title('Top 10 Selling Products', fontsize=16)
plt.xlabel('Quantity Sold')
plt.ylabel('Product')
plt.show()

# Payment Methods Pie Chart
plt.figure(figsize=(8,8))
payment_distribution.plot.pie(autopct='%1.1f%%', colors=['#ff9999','#66b3ff','#99ff99'])
plt.title('Payment Methods Distribution')
plt.ylabel('')
plt.show()
```



```
/tmp/ipython-input-1213231108.py:13: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `y` variable to `hue

  sns.barplot(x=top_products.values, y=top_products.index, palette='viridis')
```

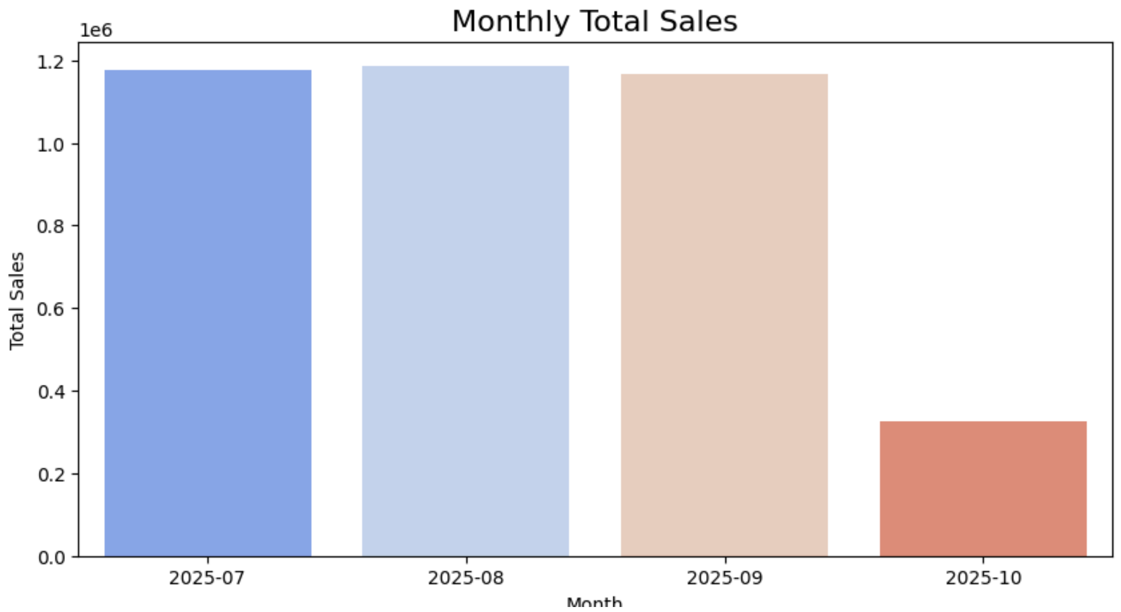




```
# Extract month
df['Month'] = df['Date'].dt.to_period('M')

# Monthly sales
monthly_sales = df.groupby('Month')['TotalSales'].sum().reset_index()

plt.figure(figsize=(10,5))
sns.barplot(x='Month', y='TotalSales', data=monthly_sales, palette='coolwarm')
plt.title('Monthly Total Sales', fontsize=16)
plt.xlabel('Month')
plt.ylabel('Total Sales')
plt.show()
```

```
# Top product each month
monthly_top = df.groupby(['Month','ProductName'])['Quantity'].sum().reset_index()
monthly_top_sorted = monthly_top.sort_values(['Month','Quantity'], ascending=[True, False])
top_each_month = monthly_top_sorted.groupby('Month').first().reset_index()
print("Top Product Each Month:")
print(top_each_month)
```

```
/tmp/ipython-input-2339973957.py:8: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `x` variable to `hue

  sns.barplot(x='Month', y='TotalSales', data=monthly_sales, palette='coolwarm')
```


Monthly Total Sales
1e6
Total Sales
Month