EXPLORER

CUSTOMER_ANALYSIS
- analysis.py
- customer_churn.csv
- sales_analysis.csv
- sales_data

analysis.py ×   sales_analysis.csv   customer_churn.csv
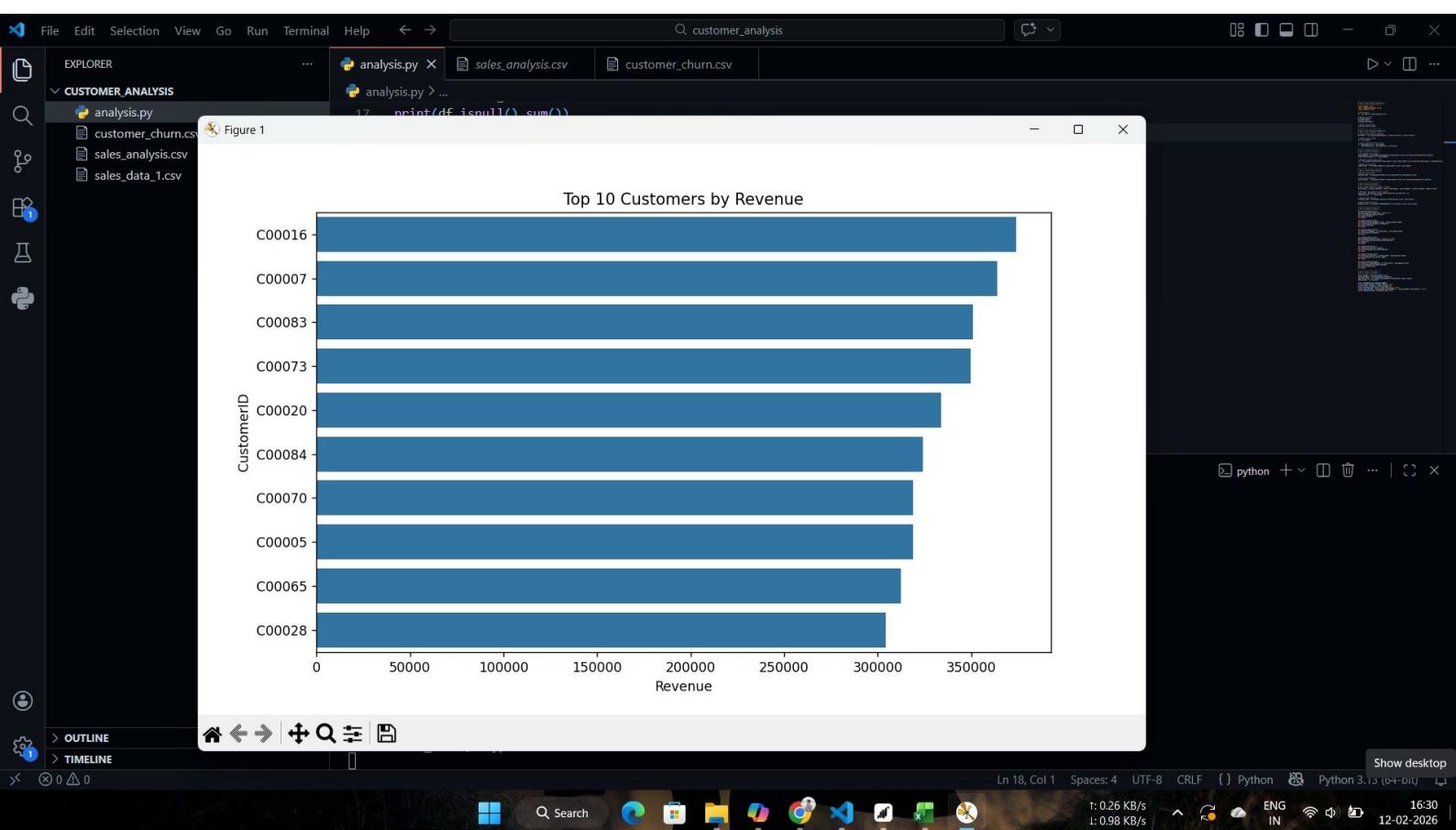
analysis.py > ...

```
17   print(df.isnull().sum())
18
19   # -----------------------------
```
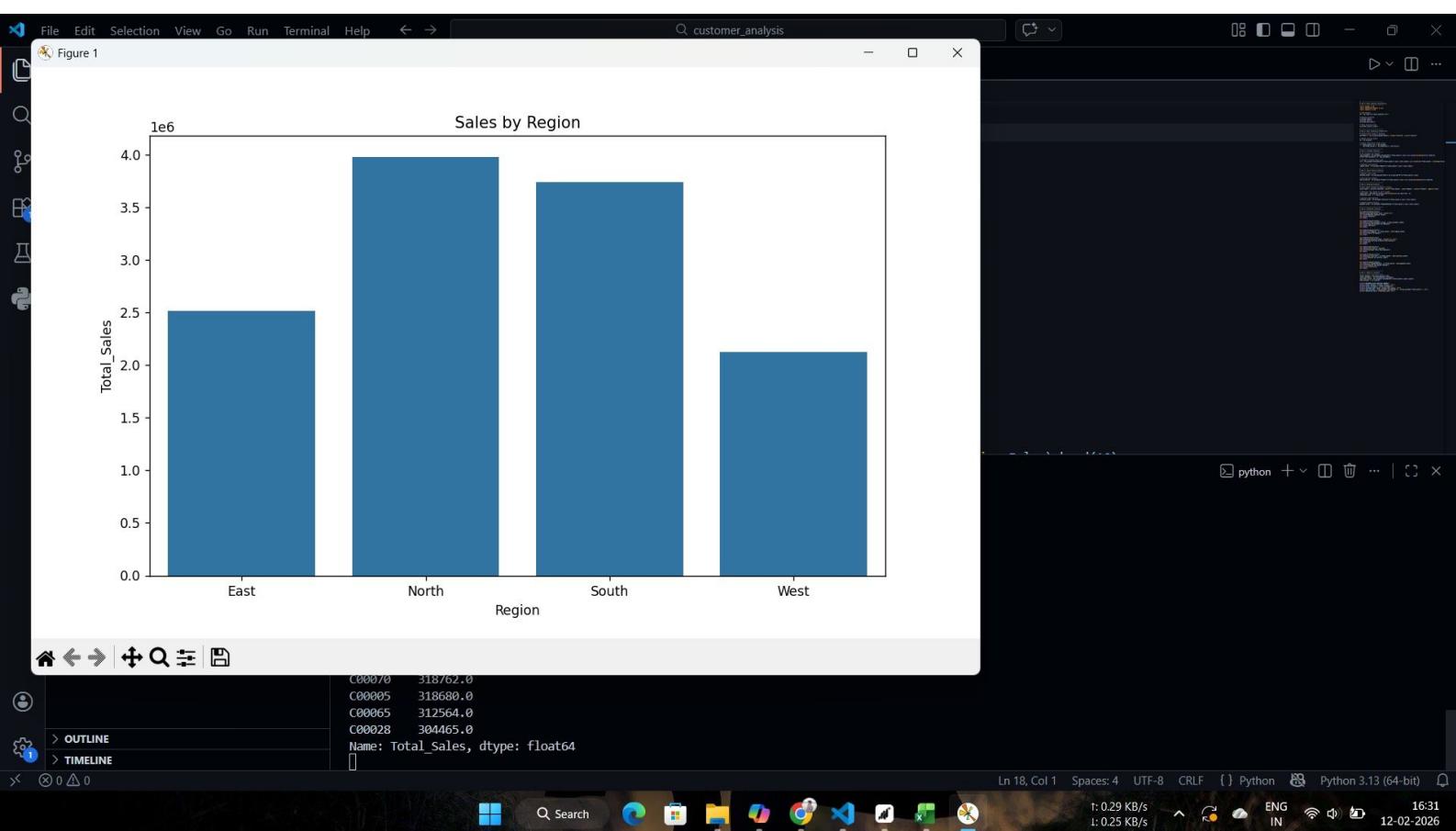
Figure 1

Monthly Revenue Trend
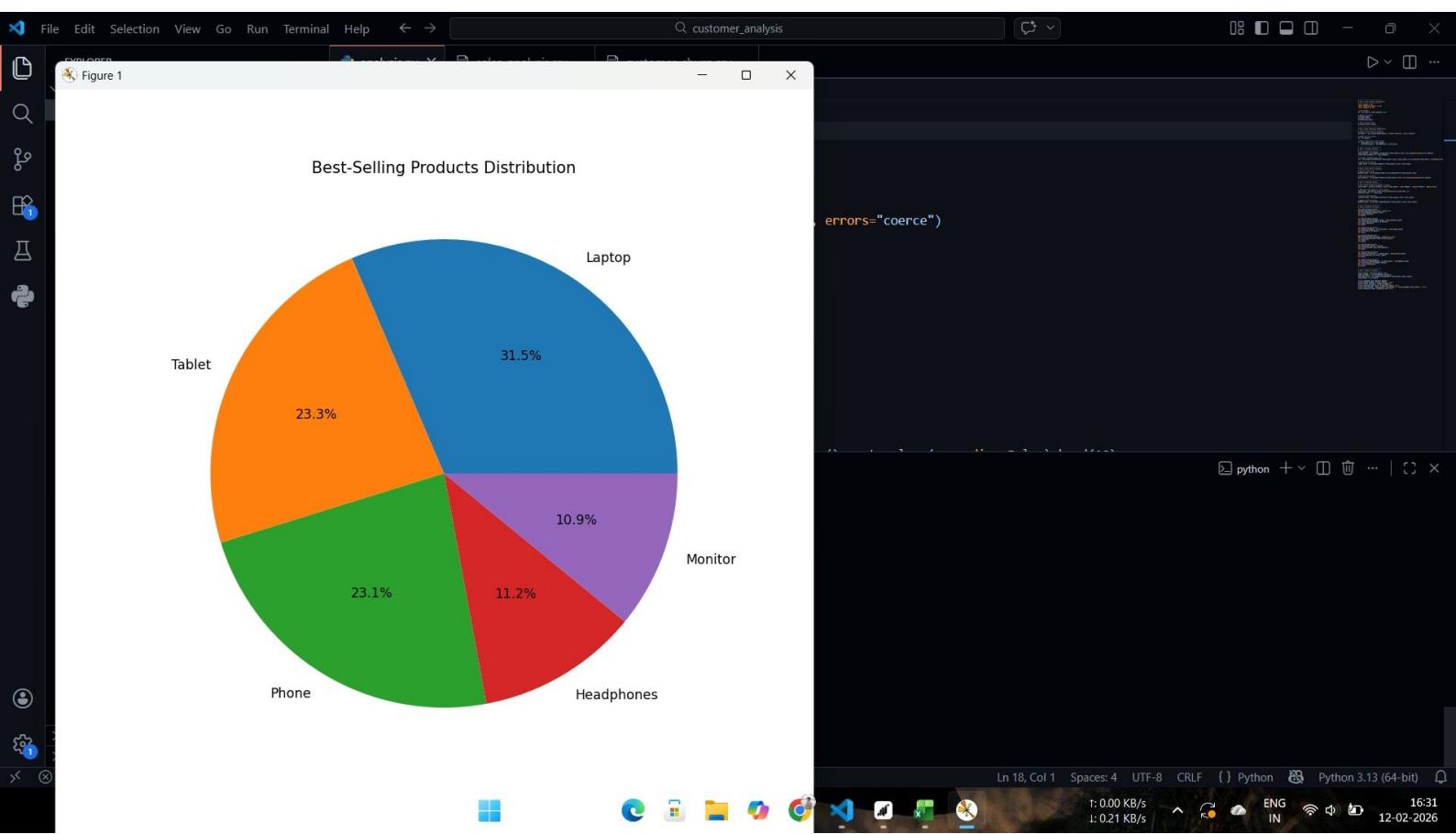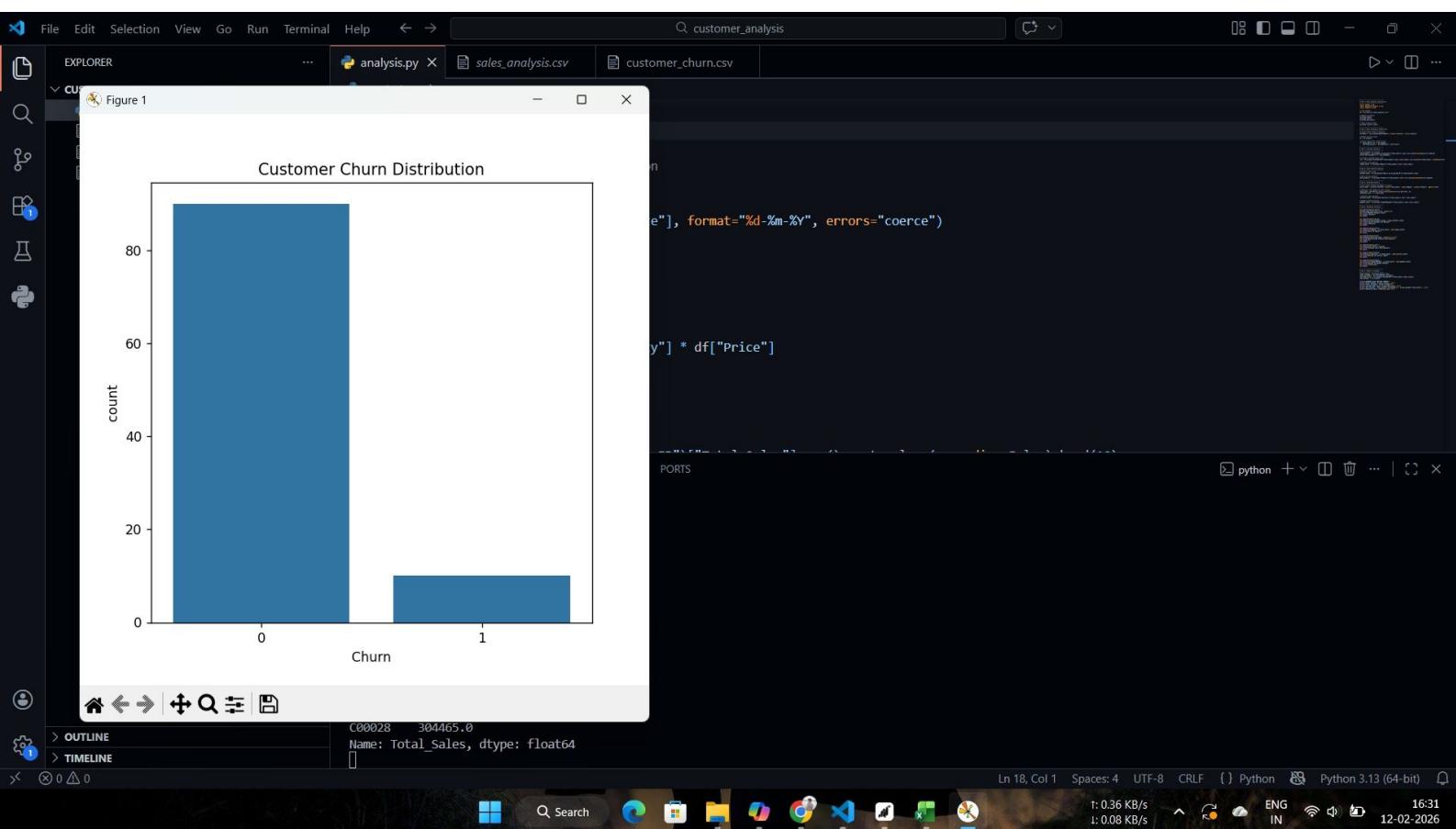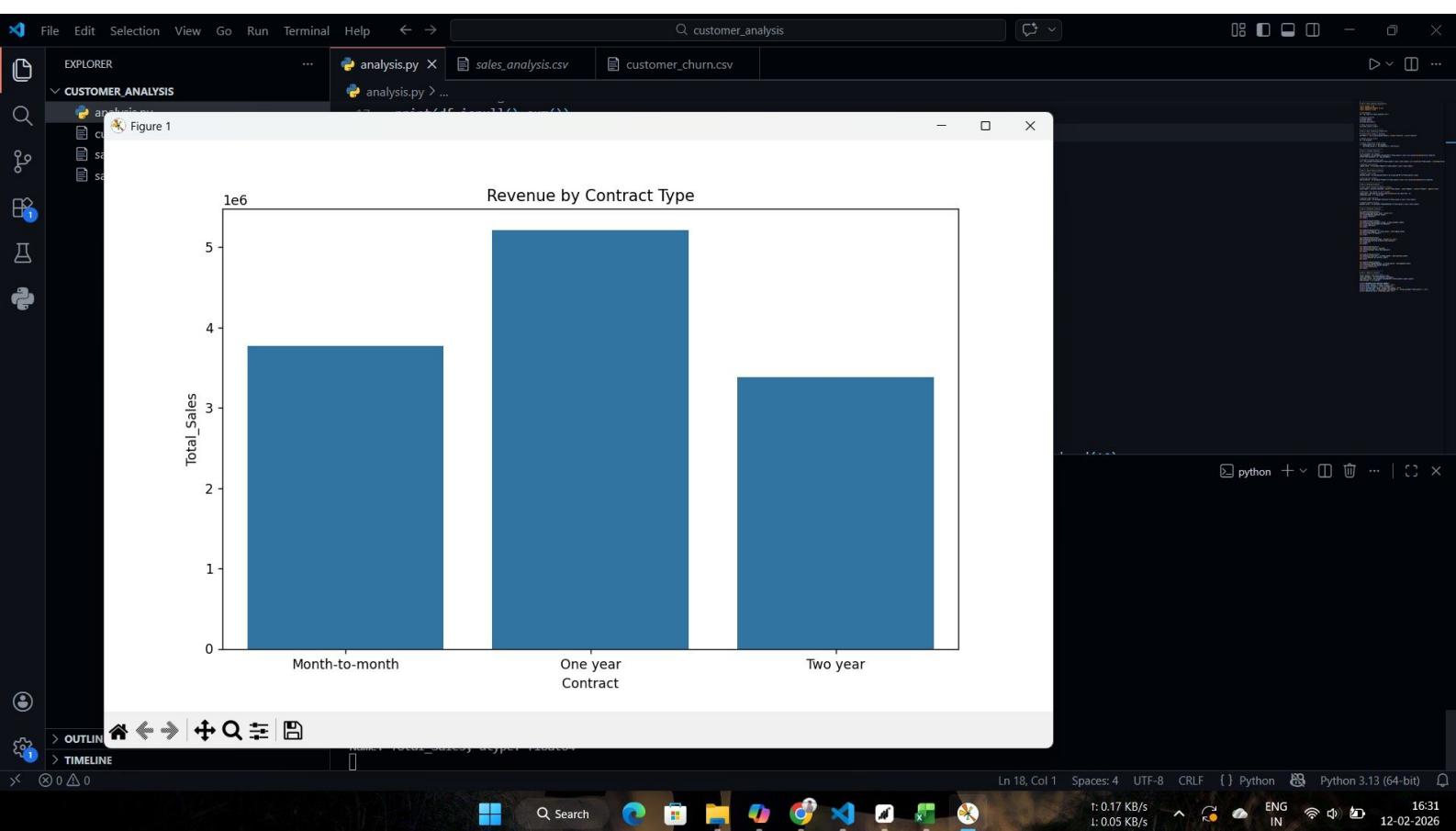
OUTLINE

TIMELINE

Search

ENG
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16:30
12-02-2026

Top 10 Customers by Revenue

Sales by Region
1e6

East	2.5
North	4.0
South	3.7
West	2.1

C00070   318762.0
C00005   318680.0
C00065   312564.0
C00028   304465.0
Name: Total_Sales, dtype: float64

Best-Selling Products Distribution

Laptop 31.5%

Tablet 23.3%

Monitor 10.9%

Headphones 11.2%

Phone 23.1%

EXPLORER ··· 🐍 analysis.py × 📄 sales_analysis.csv 📄 customer_churn.csv

> CUS

Figure 1

Customer Churn Distribution


```
e"], format="%d-%m-%Y", errors="coerce")

y"] * df["Price"]
```

PORTS 🔁 python

C00028   304465.0
Name: Total_Sales, dtype: float64

> OUTLINE
> TIMELINE

Ln 18, Col 1   Spaces: 4   UTF-8   CRLF   {} Python   Python 3.13 (64-bit)

Revenue by Payment Method

```
PS C:\Users\khana\.vscode\customer_analysis> & "C:\Program Files\Python313\python.exe" c:/Users/khana/.vscode/customer_analysis/analysis.py
         Date     Product  Quantity    Price Region  Total_Sales  ... TotalCharges     Contract    PaymentMethod  PaperlessBilling SeniorCitizen Churn
0  01-01-2024       Phone       7.0  37300.0   East     261100.0  ...         1540     One year      Credit Card                No             1     0
1  02-01-2024  Headphones       4.0  15406.0  North      61624.0  ...         1753 Month-to-month Electronic Check              Yes             1     0
2  03-01-2024       Phone       2.0  21746.0   West      43492.0  ...         1455     Two year      Credit Card                No             1     0
3  04-01-2024  Headphones       1.0  30895.0   East      30895.0  ...         7150 Month-to-month Electronic Check               No             1     0
4  05-01-2024      Laptop       8.0  39835.0  North     318680.0  ...         1023     One year Electronic Check               No             1     0

[5 rows x 15 columns]
<class 'pandas.DataFrame'>
RangeIndex: 500 entries, 0 to 499
Data columns (total 15 columns):
 #   Column            Non-Null Count  Dtype
---  ------            --------------  -----
 0   Date              100 non-null    str
 1   Product           100 non-null    str
 2   Quantity          100 non-null    float64
 3   Price             100 non-null    float64
 4   Region            100 non-null    str
 5   Total_Sales       100 non-null    float64
 6   CustomerID        500 non-null    str
 7   Tenure            500 non-null    int64
 8   MonthlyCharges    500 non-null    int64
 9   TotalCharges      500 non-null    int64
 10  Contract          500 non-null    str
 11  PaymentMethod     500 non-null    str
 12  PaperlessBilling  500 non-null    str
 13  SeniorCitizen     500 non-null    int64
 14  Churn             500 non-null    int64
dtypes: float64(3), int64(5), str(7)
memory usage: 58.7 KB
None
         Quantity        Price    Total_Sales     Tenure MonthlyCharges TotalCharges SeniorCitizen        Churn
count  100.000000   100.000000     100.000000 500.000000     500.000000   500.000000    500.000000   500.000000
mean     4.780000 25808.510000  123650.480000  36.532000     113.636000  4237.882000      0.498000     0.106000
std      2.588163 13917.630242  100161.085275  20.667057      51.799903  2260.619837      0.500497     0.308146
min      1.000000  1308.000000    6540.000000   1.000000      20.000000   159.000000      0.000000     0.000000
25%      2.750000 14965.250000   39517.500000  19.000000      67.000000  2237.250000      0.000000     0.000000
50%      5.000000 24192.000000   97955.500000  37.000000     115.000000  4182.500000      0.000000     0.000000
75%      7.000000 38682.250000  175792.500000  54.000000     158.000000  6266.750000      1.000000     0.000000
max      9.000000 49930.000000  373932.000000  71.000000     199.000000  7992.000000      1.000000     1.000000
```

```
min      1.000000    1308.000000      6540.000000    1.000000     20.000000    159.000000    0.000000    0.000000
25%      2.750000   14965.250000     39517.500000   19.000000     67.000000   2237.250000    0.000000    0.000000
50%      5.000000   24192.000000     97955.500000   37.000000    115.000000   4182.500000    0.000000    0.000000
75%      7.000000   38682.250000    175792.500000   54.000000    158.000000   6266.750000    1.000000    0.000000
max      9.000000   49930.000000    373932.000000   71.000000    199.000000   7992.000000    1.000000    1.000000
Date                   400
Product                400
Quantity               400
Price                  400
Region                 400
Total_Sales            400
CustomerID               0
Tenure                   0
MonthlyCharges           0
TotalCharges             0
Contract                 0
PaymentMethod            0
PaperlessBilling         0
SeniorCitizen            0
Churn                    0
dtype: int64
Top Customers:
 CustomerID
C00016    373932.0
C00007    363870.0
C00083    350888.0
C00073    349510.0
C00020    333992.0
C00084    324144.0
C00070    318762.0
C00005    318680.0
C00065    312564.0
C00028    304465.0
Name: Total_Sales, dtype: float64
CUSTOMER SALES ANALYSIS REPORT
Total Revenue: $12,365,048
Total Customers: 100
Average Order Value: $123,650
Top Customer: C00016 - $373,932
Retention Rate: 100.00%
PS C:\Users\khana\.vscode\customer_analysis>
```