Чтобы изменить содержимое ячейки, дважды нажмите на нее (или выберите "Ввод")

```
mport pandas as pd

  Upload file
f = pd.read_csv('/content/drive/MyDrive/content/Superstore.csv', dtype=str, encoding='cp1252') #Here i found that it s

 Deleting (cleaning) columns (spaces and other trash)
or col in df.select_dtypes(include='object').columns:
   df[col] = df[col].map(lambda x: x.replace('\xa0',' ').strip() if isinstance(x, str) else x)

  Changing dates in Order Date (so many wrong rows)
ef fix_order_date(date_str):
   import pandas as pd
   if pd.isna(date_str) or str(date_str).strip() == '':
       return pd.NaT
   try:
       date_str = str(date_str).replace('"','').strip()
       if '.' in date_str:
           parts = date_str.split('.')
       elif '/' in date_str:
           parts = date_str.split('/')
       else:
           return pd.NaT
       if len(parts) != 3:
           return pd.NaT
       first, second, year = int(parts[0]), int(parts[1]), int(parts[2])

       # I found out that many places it was misplaced date/month
       if second > 12:
           return pd.Timestamp(year=year, month=first, day=second)
       else:
           return pd.Timestamp(year=year, month=second, day=first)
   except:
       return pd.NaT

f['Order Date'] = df['Order Date'].apply(fix_order_date)

  Adding columns Order Year & Order Month
f['Order Year'] = df['Order Date'].dt.year
f['Order Month'] = df['Order Date'].dt.strftime('%Y-%m')

  Sales & Profit wasn't numbers(deleting $ and commas if ixists)
or col in ['Sales', 'Profit']:
   df[col] = df[col].astype(str).str.replace(r'[\$,]', '', regex=True).astype(float)

 calculating Profit Margin
f['Profit Margin'] = df.apply(lambda row: 0 if row['Sales']==0 else row['Profit']/row['Sales'], axis=1)

  screen results
rint(df[['Order Date','Order Year','Order Month','Sales','Profit','Profit Margin']].head(100))
rint("Missing dates:", df['Order Date'].isna().sum())
```

```
   Order Date  Order Year Order Month     Sales    Profit  Profit Margin
0  2016-08-11        2016     2016-08  261.9600   41.9136       0.160000
1  2016-08-11        2016     2016-08  731.9400  219.5820       0.300000
2  2016-12-06        2016     2016-12   14.6200    6.8714       0.470000
3  2015-11-10        2015     2015-11  957.5775 -383.0310      -0.400000
4  2015-11-10        2015     2015-11   22.3680    2.5164       0.112500
..        ...         ...         ...       ...       ...            ...
95 2017-06-11        2017     2017-06    5.6820   -3.7880      -0.666667
96 2017-09-11        2017     2017-09   96.5300   40.5426       0.420000
97 2017-06-17        2017     2017-06   51.3120   17.9592       0.350000
98 2016-06-09        2016     2016-06   77.8800   22.5852       0.290000
99 2016-08-29        2016     2016-08   64.6240   22.6184       0.350000

[100 rows x 6 columns]
Missing dates: 0
```

```
df['Order Date'] = pd.to_datetime(df['Order Date'])
df['Ship Date'] = pd.to_datetime(df['Ship Date'])
```

```
df['Margin'] = df['Profit'] / df['Sales']
```

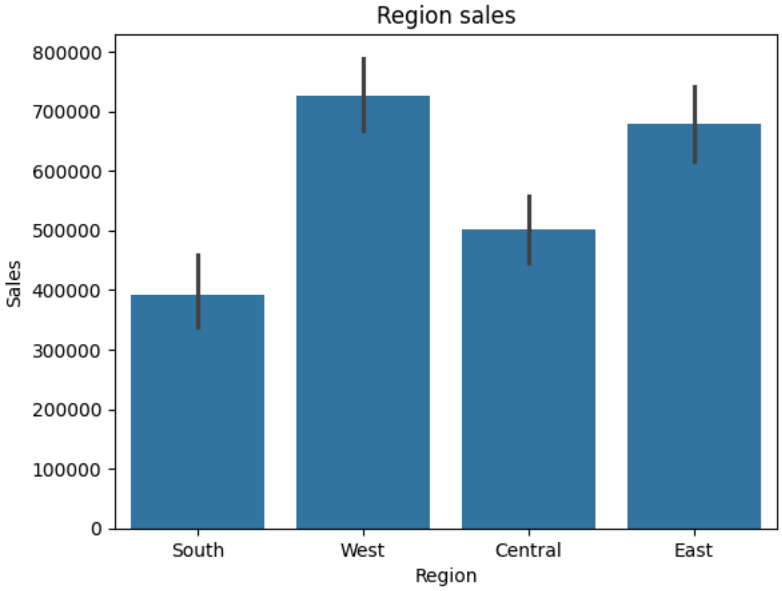
```
# sum of sales by category
sales_by_category = df.groupby('Category')['Sales'].sum()
print(sales_by_category)
```

```
# avg profit by product
profit_by_product = df.groupby('Product Name')['Profit'].mean().sort_values(ascending=False)
print(profit_by_product)

# sales by region
import seaborn as sns
import matplotlib.pyplot as plt

sns.barplot(x='Region', y='Sales', data=df, estimator=sum)
plt.title("Region sales")
plt.show()
```

```
Category
Furniture          741999.7953
Office Supplies    719047.0320
Technology         836154.0330
Name: Sales, dtype: float64
Product Name
Canon imageCLASS 2200 Advanced Copier                                    5039.985600
Canon imageCLASS MF7460 Monochrome Digital Laser Multifunction Copier    1995.990000
Ativa V4110MDD Micro-Cut Shredder                                        1886.473050
3D Systems Cube Printer, 2nd Generation, Magenta                         1858.985700
Zebra ZM400 Thermal Label Printer                                        1671.768000
                                                                             ...
Zebra GK420t Direct Thermal/Thermal Transfer Printer                     -938.280000
Lexmark MX611dhe Monochrome Laser Printer                               -1147.493250
Cisco TelePresence System EX90 Videoconferencing Unit                   -1811.078400
Cubify CubeX 3D Printer Double Head Print                               -2959.990133
Cubify CubeX 3D Printer Triple Head Print                               -3839.990400
Name: Profit, Length: 1850, dtype: float64
```



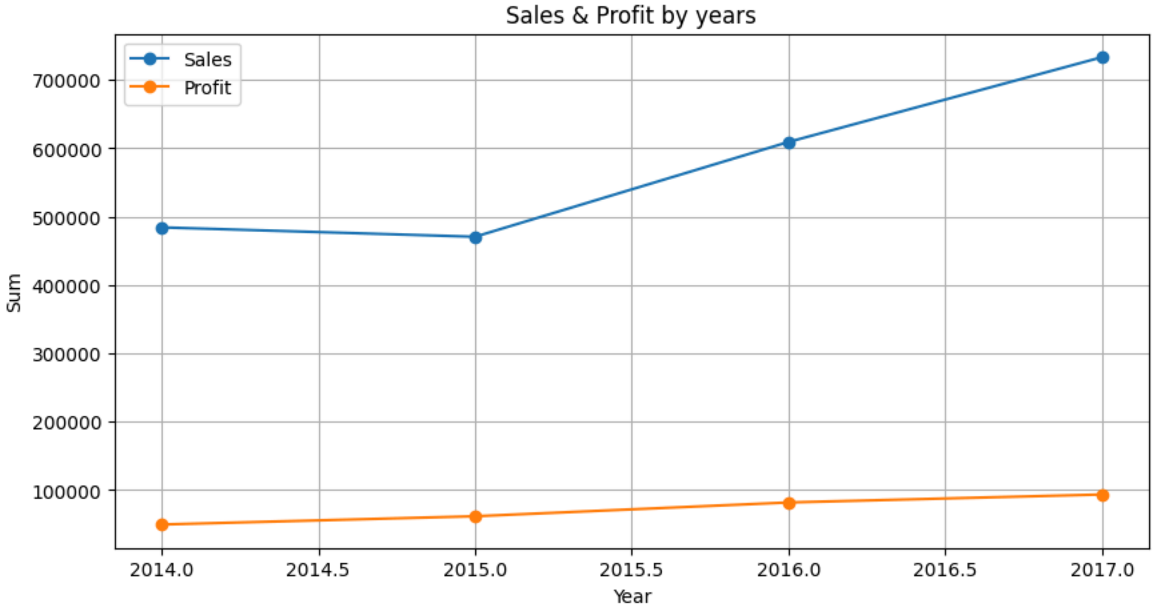
```
#  top sales by sales and top by profit
top_profit_products = df.groupby('Product Name')['Profit'].sum().sort_values(ascending=False).head(10)
print(top_profit_products)
```

```
Product Name
Canon imageCLASS 2200 Advanced Copier                                        25199.9280
Fellowes PB500 Electric Punch Plastic Comb Binding Machine with Manual Bind     7753.0390
Hewlett Packard LaserJet 3310 Copier                                           6983.8836
Canon PC1060 Personal Laser Copier                                             4570.9347
HP Designjet T520 Inkjet Large Format Printer - 24" Color                      4094.9766
Ativa V4110MDD Micro-Cut Shredder                                              3772.9461
3D Systems Cube Printer, 2nd Generation, Magenta                               3717.9714
Plantronics Savi W720 Multi-Device Wireless Headset System                     3696.2820
Ibico EPK-21 Electric Binding System                                           3345.2823
Zebra ZM400 Thermal Label Printer                                              3343.5360
Name: Profit, dtype: float64
```

```
#  Sales by year
sales_by_year = df.groupby('Order Year')['Sales'].sum()
profit_by_year = df.groupby('Order Year')['Profit'].sum()

import matplotlib.pyplot as plt

plt.figure(figsize=(10,5))
plt.plot(sales_by_year.index, sales_by_year.values, marker='o', label='Sales')
plt.plot(sales_by_year.index, sales_by_year.values, marker='o', label='Sales')
plt.plot(profit_by_year.index, profit_by_year.values, marker='o', label='Profit')
plt.title("Sales & Profit by years")
plt.xlabel("Year")
plt.ylabel("Sum")
plt.legend()
plt.grid(True)
plt.show()
```



```
import sqlite3

# Adding sql in Colab
conn = sqlite3.connect('superstore.db')
df.to_sql('superstore', conn, if_exists='replace', index=False)

# sales by category
query = "SELECT Category, SUM(Sales) as TotalSales FROM superstore GROUP BY Category"
sales_by_category_sql = pd.read_sql(query, conn)
print(sales_by_category_sql)
```

```
          Category   TotalSales
0        Furniture  741999.7953
1  Office Supplies  719047.0320
2       Technology  836154.0330
```

```
# top 10 profit (products)
query = """
SELECT "Product Name", SUM(Profit) AS TotalProfit
FROM superstore
GROUP BY "Product Name"
ORDER BY TotalProfit DESC
LIMIT 10
"""
pd.read_sql(query, conn)
```

1 to 10 of 10 entries Filter

index	Product Name	TotalProfit
0	Canon imageCLASS 2200 Advanced Copier	25199.928000000004
1	Fellowes PB500 Electric Punch Plastic Comb Binding Machine with Manual Bind	7753.039
2	Hewlett Packard LaserJet 3310 Copier	6983.8836
3	Canon PC1060 Personal Laser Copier	4570.9347
4	HP Designjet T520 Inkjet Large Format Printer - 24" Color	4094.9766
5	Ativa V4110MDD Micro-Cut Shredder	3772.9461
6	3D Systems Cube Printer, 2nd Generation, Magenta	3717.9714000000004
7	Plantronics Savi W720 Multi-Device Wireless Headset System	3696.2819999999997
8	Ibico EPK-21 Electric Binding System	3345.2823
9	Zebra ZM400 Thermal Label Printer	3343.536

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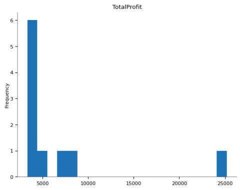
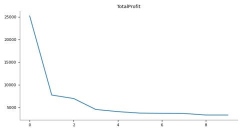
Distributions



Values


TotalProfit