

>>>

```
# Create a DataFrame from the provided data
```

```
df = pd.DataFrame(data)
```

```
distinct_department_ids = df['DEPARTMENT_ID'].unique()
```

```
print(distinct_department_ids)
```

Ln: 18 Col: 0

>>>

```
Data=pd.DataFrame(data)
```


Ln: 14 Col: 30

Python 3.12.0 (v3.12.0:0fb18b02c8, Oct 2 2023, 09:45:56) [Clang 13.0.0 (clang-1300.0.29.30)] on darwin
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>>>

===== RESTART: /Users/lakshminarayanamandi/
Downloads/Movies/QP/Q3.py =====

Details of jobs in descending sequence on job title:

JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY
11	ST_MAN	5500	8500
12	ST_CLERK	2008	5000
13	SH_CLERK	2500	5500
8	SA_REP	6000	12008
7	SA_MAN	10000	20080
9	PU_MAN	8000	15000
10	PU_CLERK	2500	5500
18	PR_REP	4500	10500
6	AC_ACCOUNT	4200	9000
14	IT_PROG	4000	10000
0	AD_PRES	20080	40000
16	MK_REP	4000	9000
15	MK_MAN	9000	15000
17	HR_REP	4000	9000
3	FI_MGR	8200	16000
1	AD_VP	15000	30000
2	AD_ASST	3000	6000
5	AC_MGR	8200	16000
4	FI_ACCOUNT	4200	9000

>>>

Ln: 26 Col: 0

```
import pandas as pd
```

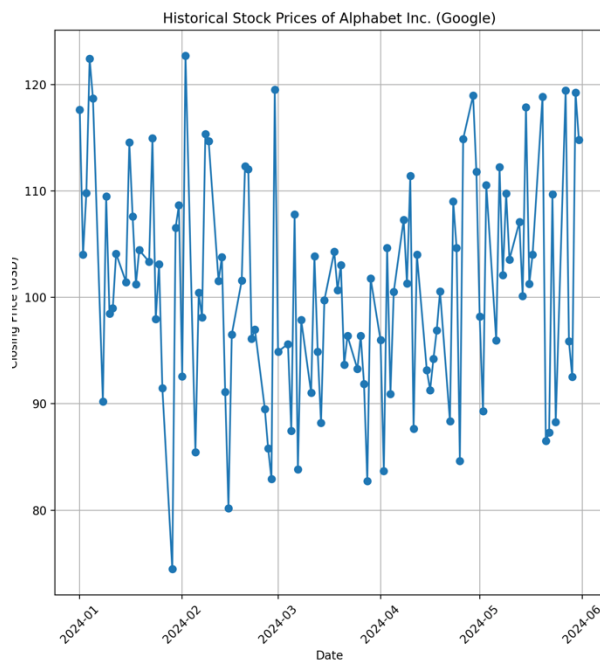
```
data = {  
    'JOB_ID': ['AD_PRES', 'AD_VP', 'AD_ASST', 'FI_MGR', 'FI_ACCOUNT',  
              'JOB_TITLE': ['President', 'Administration Vice President', 'Administration  
              'MIN_SALARY': [20080, 15000, 3000, 8200, 4200, 8200, 4200, 10000, 60  
              'MAX_SALARY': [40000, 30000, 6000, 16000, 9000, 16000, 9000, 20080,  
    }  
}
```

```
df = pd.DataFrame(data)
```

```
sorted_df = df.sort_values(by='JOB_TITLE', ascending=False)
```

```
print("Details of jobs in descending sequence on job title:")  
print(sorted_df)
```

Ln: 11 Col: 0



x=2024-02 y=121.20

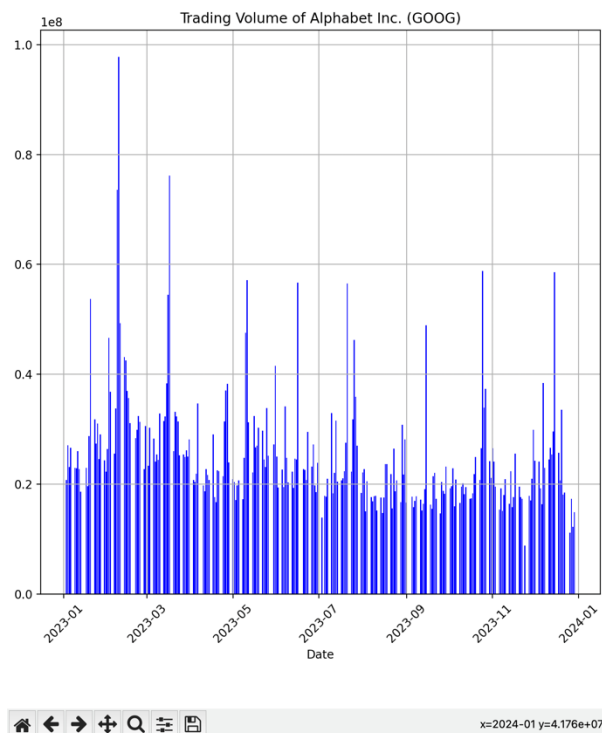
```
import pandas as pd  
import numpy as np  
import matplotlib.pyplot as plt
```

```
np.random.seed(0)  
dates = pd.date_range(start='2024-01-01', end='2024-06-01', freq='B')  
prices = np.random.normal(loc=100, scale=10, size=len(dates))
```

```
df = pd.DataFrame({'Date': dates, 'Close': prices})  
df.set_index('Date', inplace=True)
```

```
plt.figure(figsize=(10, 6))  
plt.plot(df.index, df['Close'], marker='o', linestyle='-')  
plt.title('Historical Stock Prices of Alphabet Inc. (Google)')  
plt.xlabel('Date')  
plt.ylabel('Closing Price (USD)')  
plt.xticks(rotation=45)  
plt.grid(True)  
plt.tight_layout()  
plt.show()
```

Ln: 21 Col: 0

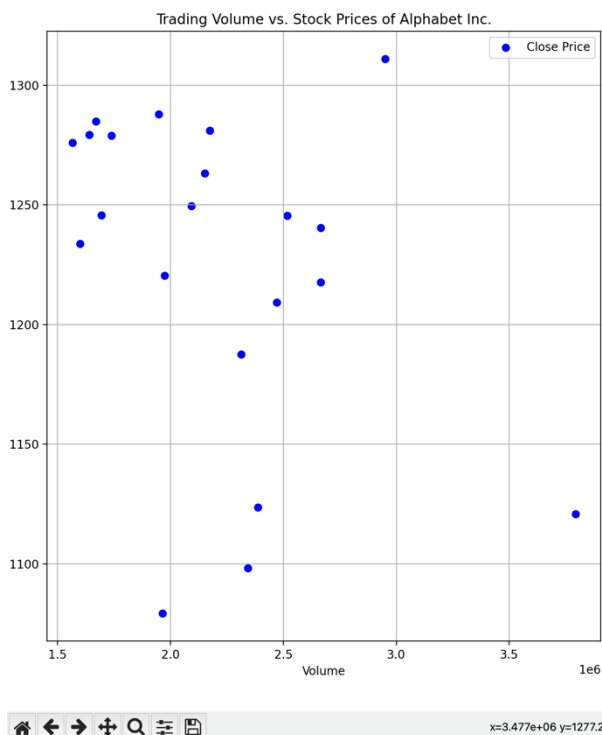


```
import yfinance as yf
import pandas as pd
import matplotlib.pyplot as plt

ticker = 'GOOG'
start_date = '2023-01-01'
end_date = '2023-12-31'

stock_data = yf.download(ticker, start=start_date, end=end_date)

plt.figure(figsize=(12, 6))
plt.bar(stock_data.index, stock_data['Volume'], color='blue')
plt.title(f'Trading Volume of Alphabet Inc. ({ticker})')
plt.xlabel('Date')
plt.ylabel('Volume')
plt.xticks(rotation=45)
plt.grid(True)
plt.tight_layout()
plt.show()
```



```
import pandas as pd
import matplotlib.pyplot as plt

data = {
    'Date': ['2020-04-01', '2020-04-02', '2020-04-03', '2020-04-06', '2020-04-07',
            '2020-04-13', '2020-04-14', '2020-04-15', '2020-04-16', '2020-04-17',
            '2020-04-22', '2020-04-23', '2020-04-24', '2020-04-27', '2020-04-28',
            '2020-05-01'],
    'Open': [1105.62, 1119.015, 1130.94, 1236.93, 1129.69, 1194.66, 1282.07,
            1296, 1242.62, 1209.71, 1265.67, 1325.34, 1328.5, 1293.31, 1280.4,
            1271.23, 1242, 1249.45, 1322.49, 1296.15, 1288.05, 1352.82, 1352.0,
            1261.17, 1263.21, 1276.31, 1320.61, 1288.05, 1352.07, 1280.46,
            1261.17, 1279, 1263.47, 1279.31, 1263.21, 1275.88, 1233.67, 1348,
            1287.93, 1245.61, 1263.21, 1249.45, 1275.88, 1279.31, 1233.67, 131,
            2518100, 1949000, 1695500, 2153000, 2093100, 1566200, 1640400,
            2665400, 2072500],
    'High': [1122, 1138, 1182.23, 1240.4, 1126.86, 1225, 1280.46, 1285.613, 1,
            1271.23, 1242, 1249.45, 1322.49, 1296.15, 1288.05, 1352.82, 1352.0,
            1261.17, 1263.21, 1276.31, 1320.61, 1288.05, 1352.07, 1280.46,
            1261.17, 1279, 1263.47, 1279.31, 1263.21, 1275.88, 1233.67, 1348,
            1287.93, 1245.61, 1263.21, 1249.45, 1275.88, 1279.31, 1233.67, 131,
            2518100, 1949000, 1695500, 2153000, 2093100, 1566200, 1640400,
            2665400, 2072500],
    'Adj Close': [1097.45, 1221, 1196.735, 1129.69, 1123.54, 1219.07, 1279, 1,
            1261.17, 1263.21, 1276.31, 1320.61, 1288.05, 1352.07, 1280.46,
            1261.17, 1279, 1263.47, 1279.31, 1263.21, 1275.88, 1233.67, 1348,
            1287.93, 1245.61, 1263.21, 1249.45, 1275.88, 1279.31, 1233.67, 131,
            2518100, 1949000, 1695500, 2153000, 2093100, 1566200, 1640400,
            2665400, 2072500],
    'Volume': [2343100, 1964900, 2313400, 2664700, 2387300, 1975100, 217,
            2518100, 1949000, 1695500, 2153000, 2093100, 1566200, 1640400,
            2665400, 2072500]
}

df = pd.DataFrame(data)
df['Date'] = pd.to_datetime(df['Date'])
start_date = '2020-04-01'
end_date = '2020-04-30'
filtered_df = df[(df['Date'] >= start_date) & (df['Date'] <= end_date)]

plt.figure(figsize=(12, 6))
plt.scatter(filtered_df['Volume'], filtered_df['Close'], color='blue', label='Close Price')
plt.title('Trading Volume vs. Stock Prices of Alphabet Inc.')
plt.xlabel('Volume')
plt.ylabel('Close Price')
plt.legend()
plt.grid(True)
plt.tight_layout()
plt.show()
```

```
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```

```
>>> ===== RESTART: /Users/lakshminarayanamandi/
Downloads/Movies/QP/Q6.py =====
```

```
>>> ===== RESTART: /Users/lakshminarayanamandi/
Downloads/Movies/QP/Q7.py =====
```

```
Max_Sale Min_Sale
Item
Item_A    550    100
Item_B    450    150
Item_C    500    300
```

Ln: 12 Col: 0

```
import pandas as pd
data = {
    'Date': ['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04', '2023-01-05',
            '2023-01-06', '2023-01-07', '2023-01-08', '2023-01-09', '2023-01-10'],
    'Item': ['Item_A', 'Item_B', 'Item_A', 'Item_C', 'Item_B',
            'Item_A', 'Item_C', 'Item_B', 'Item_C', 'Item_A'],
    'Sale': [100, 150, 200, 300, 400, 250, 350, 450, 500, 550]}
df = pd.DataFrame(data)
pivot_table = pd.pivot_table(df, values='Sale', index='Item', aggfunc='max',
                              pivot_table.columns = ['Max_Sale', 'Min_Sale'])
print(pivot_table)
```

Ln: 1 Col: 19

```
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```

```
>>> ===== RESTART: /Users/lakshminarayanamandi/
Downloads/Movies/QP/Q8.py =====
```

```
Total_Units_Sold
Item
Item_A    110
Item_B    100
Item_C    115
```

Ln: 10 Col: 0

```
import pandas as pd
data = {
    'Date': ['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04', '2023-01-05',
            '2023-01-06', '2023-01-07', '2023-01-08', '2023-01-09', '2023-01-10'],
    'Item': ['Item_A', 'Item_B', 'Item_A', 'Item_C', 'Item_B',
            'Item_A', 'Item_C', 'Item_B', 'Item_C', 'Item_A'],
    'Units_Sold': [10, 15, 20, 30, 40, 25, 35, 45, 50, 55]}
df = pd.DataFrame(data)
pivot_table = pd.pivot_table(df, values='Units_Sold', index='Item', aggfunc='sum',
                              pivot_table.columns = ['Total_Units_Sold'])
print(pivot_table)
```

Ln: 9 Col: 17