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Section: CPE22S3

Exercise 1

1. Read each file in.

```
##Exercise 1:
import pandas as pd

am = pd.read_csv('/content/amzn.csv')
fb = pd.read_csv('/content/fb.csv')
go = pd.read_csv('/content/goog.csv')
nf = pd.read_csv('/content/nflx.csv')
ap = pd.read_csv('/content/aapl.csv')
```

2. Add a column to each dataframe,called ticker,indicating the ticker symbol it is for (Apple's is AAPL,for example).This is how you look up a stock.Each file's name is also the ticker symbol,so be sure to capitalize it.

```
am.loc[:, 'ticker'] = 'AMZN'
fb.loc[:, 'ticker'] = 'FCBK'
go.loc[:, 'ticker'] = 'GOGL'
nf.loc[:, 'ticker'] = 'NFLX'
ap.loc[:, 'ticker'] = 'AAPL'
```

3. Append them together into a single dataframe.

```
faang = pd.concat([am,fb,go,nf,ap])
faang
```

	date	open	high	low	close	volume	ticker
0	2018-01-02	1172.0000	1190.0000	1170.5100	1189.0100	2694494	AMZN
1	2018-01-03	1188.3000	1205.4900	1188.3000	1204.2000	3108793	AMZN
2	2018-01-04	1205.0000	1215.8700	1204.6600	1209.5900	3022089	AMZN
3	2018-01-05	1217.5100	1229.1400	1210.0000	1229.1400	3544743	AMZN
4	2018-01-08	1236.0000	1253.0800	1232.0300	1246.8700	4279475	AMZN
...	...	...	...	...	...	...	...
246	2018-12-24	147.5173	150.9027	145.9639	146.2029	37169232	AAPL
247	2018-12-26	147.6666	156.5585	146.0934	156.4987	58582544	AAPL
248	2018-12-27	155.1744	156.1004	149.4291	155.4831	53117065	AAPL
249	2018-12-28	156.8273	157.8430	153.8899	155.5627	42291424	AAPL
250	2018-12-31	157.8529	158.6794	155.8117	157.0663	35003466	AAPL

1255 rows × 7 columns

Next steps: View recommended plots

4. Save the result in a CSV file called faang.csv.

```
faang.to_csv('faang.csv', index=False)
```

```
faang
```

	date	open	high	low	close	volume	ticker
0	2018-01-02	1172.0000	1190.0000	1170.5100	1189.0100	2694494	AMZN
1	2018-01-03	1188.3000	1205.4900	1188.3000	1204.2000	3108793	AMZN
2	2018-01-04	1205.0000	1215.8700	1204.6600	1209.5900	3022089	AMZN
3	2018-01-05	1217.5100	1229.1400	1210.0000	1229.1400	3544743	AMZN
4	2018-01-08	1236.0000	1253.0800	1232.0300	1246.8700	4279475	AMZN
...	...	...	...	...	...	...	...
246	2018-12-24	147.5173	150.9027	145.9639	146.2029	37169232	AAPL
247	2018-12-26	147.6666	156.5585	146.0934	156.4987	58582544	AAPL
248	2018-12-27	155.1744	156.1004	149.4291	155.4831	53117065	AAPL
249	2018-12-28	156.8273	157.8430	153.8899	155.5627	42291424	AAPL
250	2018-12-31	157.8529	158.6794	155.8117	157.0663	35003466	AAPL

1255 rows × 7 columns

Next steps: View recommended plots

EXERCISE 2

·With faang,use type conversion to change the date column into a datetime and the volume column into integers.Then,sort by date and ticker.

```
faang.rename(
    columns = {
        'date' : 'datetime',
        'volume' : 'integers'
    }, inplace = False
)
```

	datetime	open	high	low	close	integers	ticker
0	2018-01-02	1172.0000	1190.0000	1170.5100	1189.0100	2694494	AMZN
1	2018-01-03	1188.3000	1205.4900	1188.3000	1204.2000	3108793	AMZN
2	2018-01-04	1205.0000	1215.8700	1204.6600	1209.5900	3022089	AMZN
3	2018-01-05	1217.5100	1229.1400	1210.0000	1229.1400	3544743	AMZN
4	2018-01-08	1236.0000	1253.0800	1232.0300	1246.8700	4279475	AMZN
...	...	...	...	...	...	...	...
246	2018-12-24	147.5173	150.9027	145.9639	146.2029	37169232	AAPL
247	2018-12-26	147.6666	156.5585	146.0934	156.4987	58582544	AAPL
248	2018-12-27	155.1744	156.1004	149.4291	155.4831	53117065	AAPL
249	2018-12-28	156.8273	157.8430	153.8899	155.5627	42291424	AAPL
250	2018-12-31	157.8529	158.6794	155.8117	157.0663	35003466	AAPL

1255 rows × 7 columns

```
faang.sort_values(by = ['date', 'ticker'],inplace = True)
faang
```

	date	open	high	low	close	volume	ticker
0	2018-01-02	166.9271	169.0264	166.0442	168.9872	25555934	AAPL
0	2018-01-02	1172.0000	1190.0000	1170.5100	1189.0100	2694494	AMZN
0	2018-01-02	177.6800	181.5800	177.5500	181.4200	18151903	FCBK
0	2018-01-02	1048.3400	1066.9400	1045.2300	1065.0000	1237564	GOGL
0	2018-01-02	196.1000	201.6500	195.4200	201.0700	10966889	NFLX
...	...	...	...	...	...	...	...
250	2018-12-31	157.8529	158.6794	155.8117	157.0663	35003466	AAPL
250	2018-12-31	1510.8000	1520.7600	1487.0000	1501.9700	6954507	AMZN
250	2018-12-31	134.4500	134.6400	129.9500	131.0900	24625308	FCBK
250	2018-12-31	1050.9600	1052.7000	1023.5900	1035.6100	1493722	GOGL
250	2018-12-31	260.1600	270.1001	260.0000	267.6600	13508920	NFLX

1255 rows × 7 columns

Next steps: View recommended plots

```
faang.sort_values('volume')
```

	date	open	high	low	close	volume	ticker
126	2018-07-03	1135.8200	1135.8200	1100.0200	1102.8900	679034	GOGL
226	2018-11-23	1030.0000	1037.5900	1022.4000	1023.8800	691462	GOGL
99	2018-05-24	1079.0000	1080.4700	1066.1500	1079.2400	766773	GOGL
130	2018-07-10	1156.9800	1159.5900	1149.5900	1152.8400	798412	GOGL
152	2018-08-09	1249.9000	1255.5400	1246.0100	1249.1000	848601	GOGL
...	...	...	...	...	...	...	...
182	2018-09-21	219.0727	219.6482	215.6097	215.9768	96246748	AAPL
54	2018-03-21	164.8000	173.4000	163.3000	169.3900	106598834	FCBK
57	2018-03-26	160.8200	161.1000	149.0200	160.0600	126116634	FCBK
53	2018-03-20	167.4700	170.2000	161.9500	168.1500	129851768	FCBK
142	2018-07-26	174.8900	180.1300	173.7500	176.2600	169803668	FCBK

1255 rows × 7 columns

```
faang.sort_values('volume').tail(7)
```

	date	open	high	low	close	volume	ticker
212	2018-11-02	207.9295	211.9978	203.8414	205.8755	91328654	AAPL
245	2018-12-21	156.1901	157.4845	148.9909	150.0862	95744384	AAPL
182	2018-09-21	219.0727	219.6482	215.6097	215.9768	96246748	AAPL
54	2018-03-21	164.8000	173.4000	163.3000	169.3900	106598834	FCBK
57	2018-03-26	160.8200	161.1000	149.0200	160.0600	126116634	FCBK
53	2018-03-20	167.4700	170.2000	161.9500	168.1500	129851768	FCBK
142	2018-07-26	174.8900	180.1300	173.7500	176.2600	169803668	FCBK

·Find the seven rows with the highest value for volume.

```
faang.sort_values(by=['volume'], ascending = False).head(7)
```

	date	open	high	low	close	volume	ticker
142	2018-07-26	174.8900	180.1300	173.7500	176.2600	169803668	FCBK
53	2018-03-20	167.4700	170.2000	161.9500	168.1500	129851768	FCBK
57	2018-03-26	160.8200	161.1000	149.0200	160.0600	126116634	FCBK
54	2018-03-21	164.8000	173.4000	163.3000	169.3900	106598834	FCBK
182	2018-09-21	219.0727	219.6482	215.6097	215.9768	96246748	AAPL
245	2018-12-21	156.1901	157.4845	148.9909	150.0862	95744384	AAPL

·Right now,the data is somewhere between long and wide format.Use melt()to make it completely long format.Hint:date and ticker are our ID variables (they uniquely identify each row).We need to melt the rest so that we don't have separate columns for open,high, low,close,and volume.

```
faang.melt(id_vars = ['date','ticker'],
           value_vars = ['open','high','low','close', 'volume']
)
```

	date	ticker	variable	value
0	2018-01-02	AAPL	open	1.669271e+02
1	2018-01-02	AMZN	open	1.172000e+03
2	2018-01-02	FCBK	open	1.776800e+02
3	2018-01-02	GOGL	open	1.048340e+03
4	2018-01-02	NFLX	open	1.961000e+02
...	...	...	...	...
6270	2018-12-31	AAPL	volume	3.500347e+07
6271	2018-12-31	AMZN	volume	6.954507e+06
6272	2018-12-31	FCBK	volume	2.462531e+07
6273	2018-12-31	GOGL	volume	1.493722e+06
6274	2018-12-31	NFLX	volume	1.350892e+07

6275 rows × 4 columns

Exercise 3