Obama_Stock_Portfolio

September 29, 2021

1 Barack Obama Stock Portfolio

During Obama Presidental, he was more focus on healthcare.

https://en.wikipedia.org/wiki/Presidency_of_Barack_Obama

[1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import math

import warnings
warnings.filterwarnings("ignore")

# fix_yahoo_finance is used to fetch data
import fix_yahoo_finance as yf
yf.pdr_override()
```

[2]:
```
# input
symbols = ['SPY','XLV','JNJ','UNH', 'CSV']
start = '2009-01-01'
end = '2017-01-01'

# Read data
df = yf.download(symbols,start,end)['Adj Close']

# View Columns
df.head()
```

```
[*********************100%***********************]  5 of 5 downloaded
```

[2]:

	CSV	JNJ	SPY	UNH	XLV
Date					
2009-01-02	1.967300	43.715363	74.754257	23.687811	22.505955
2009-01-05	2.096000	43.282875	74.665771	23.301462	22.397955
2009-01-06	2.151160	43.023403	75.164375	22.751974	22.032404
2009-01-07	2.068423	42.619766	72.912735	22.580259	21.833021

```
2009-01-08  2.215511  42.540485  73.210289  22.932276  21.957638
```

[3]:
```
df.tail()
```

[3]:

Date	CSV	JNJ	SPY	UNH	XLV
2016-12-23	27.665680	107.763290	214.288986	156.429550	66.537178
2016-12-27	27.897112	107.716850	214.820618	156.055359	66.671288
2016-12-28	27.694609	106.964104	213.045227	154.903946	66.163589
2016-12-29	27.742821	107.326523	212.997772	154.520157	66.278542
2016-12-30	27.617464	107.066322	212.219269	153.560623	66.039070

[4]:
```
from datetime import datetime
from dateutil import relativedelta

d1 = datetime.strptime(start, "%Y-%m-%d")
d2 = datetime.strptime(end, "%Y-%m-%d")
delta = relativedelta.relativedelta(d2,d1)
print('How many years of investing?')
print('%s years' % delta.years)
```

```
How many years of investing?
8 years
```

[5]:
```
from datetime import datetime

def calculate_years(start, end):
    date_format = "%Y-%m-%d"
    a = datetime.strptime(start, date_format).year
    b = datetime.strptime(end, date_format).year
    years = b - a

    return years
```

[6]:
```
print(calculate_years(start, end), 'years')
```

```
8 years
```

[7]:
```
Cash = 100000
print('Percentage of invest:')
percent_invest = [0.20, 0.20, 0.20, 0.20, 0.20]
for i, x in zip(df.columns, percent_invest):
    cost = x * Cash
    print('{}: {}'.format(i, cost))
```

```
Percentage of invest:
CSV: 20000.0
JNJ: 20000.0
```

```
SPY: 20000.0
UNH: 20000.0
XLV: 20000.0
```

[8]:
```
print('Number of Shares:')
percent_invest = [0.20, 0.20, 0.20, 0.20, 0.20]
for i, x, y in zip(df.columns, percent_invest, df.iloc[0]):
    cost = x * Cash
    shares = int(cost/y)
    print('{}: {}'.format(i, shares))
```

```
Number of Shares:
CSV: 10166
JNJ: 457
SPY: 267
UNH: 844
XLV: 888
```

[9]:
```
print('Beginning Value:')
percent_invest = [0.20, 0.20, 0.20, 0.20, 0.20]
for i, x, y in zip(df.columns, percent_invest, df.iloc[0]):
    cost = x * Cash
    shares = int(cost/y)
    Begin_Value = round(shares * y, 2)
    print('{}: ${}'.format(i, Begin_Value))
```

```
Beginning Value:
CSV: $19999.57
JNJ: $19977.92
SPY: $19959.39
UNH: $19992.51
XLV: $19985.29
```

[10]:
```
print('Current Value:')
percent_invest = [0.20, 0.20, 0.20, 0.20, 0.20]
for i, x, y, z in zip(df.columns, percent_invest, df.iloc[0], df.iloc[-1]):
    cost = x * Cash
    shares = int(cost/y)
    Current_Value = round(shares * z, 2)
    print('{}: ${}'.format(i, Current_Value))
```

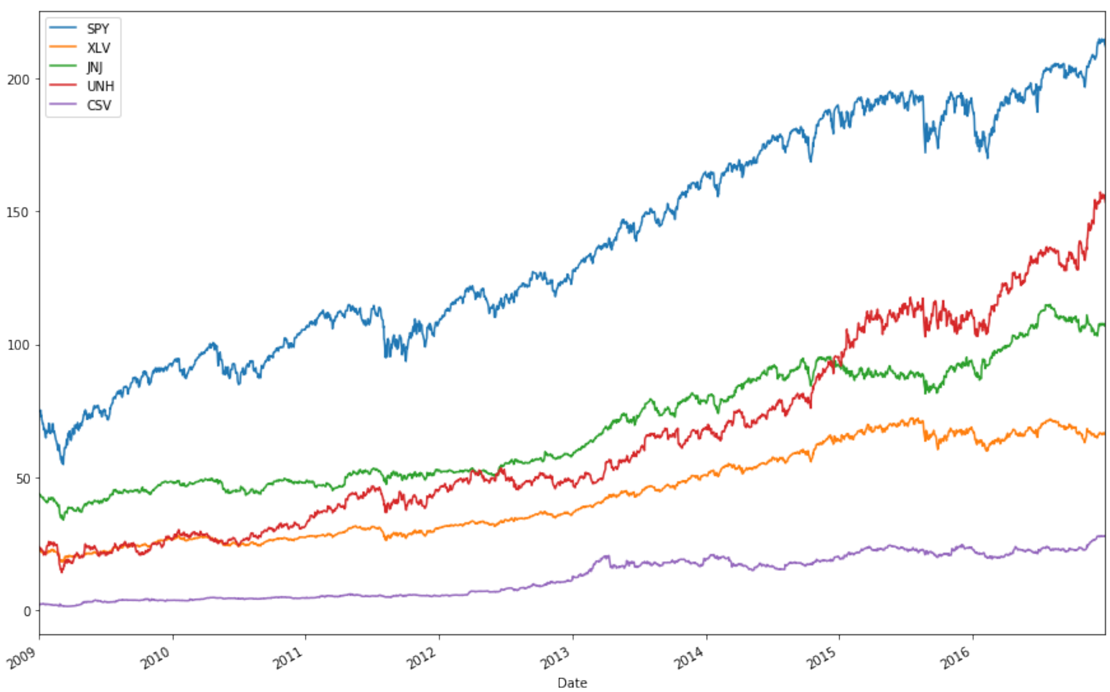
```
Current Value:
CSV: $280759.14
JNJ: $48929.31
SPY: $56662.54
UNH: $129605.17
XLV: $58642.69
```

[22]:
```
result = []
percent_invest = [0.20, 0.20, 0.20, 0.20, 0.20]
for i, x, y, z in zip(df.columns, percent_invest, df.iloc[0], df.iloc[-1]):
    cost = x * Cash
    shares = int(cost/y)
    Current_Value = round(shares * z, 2)
    result.append(Current_Value)
print('Total Value: $%s' % round(sum(result),2))
```

```
Total Value: $574598.85
```

[12]:
```
for s in symbols:
    df[s].plot(label = s, figsize = (15,10))
plt.legend()
```

[12]: <matplotlib.legend.Legend at 0x21cf42f5ef0>



[13]:
```
df.min()
```

[13]:
```
CSV       1.296211
JNJ      33.866924
SPY      54.771000
UNH      14.037539
XLV      18.177565
dtype: float64
```

[14]:
```
for s in symbols:
    print(s + ":",  df[s].max())
```

```
SPY: 214.96817000000001
XLV: 72.23919699999999
JNJ: 114.969307
UNH: 157.30273400000002
CSV: 27.897112
```

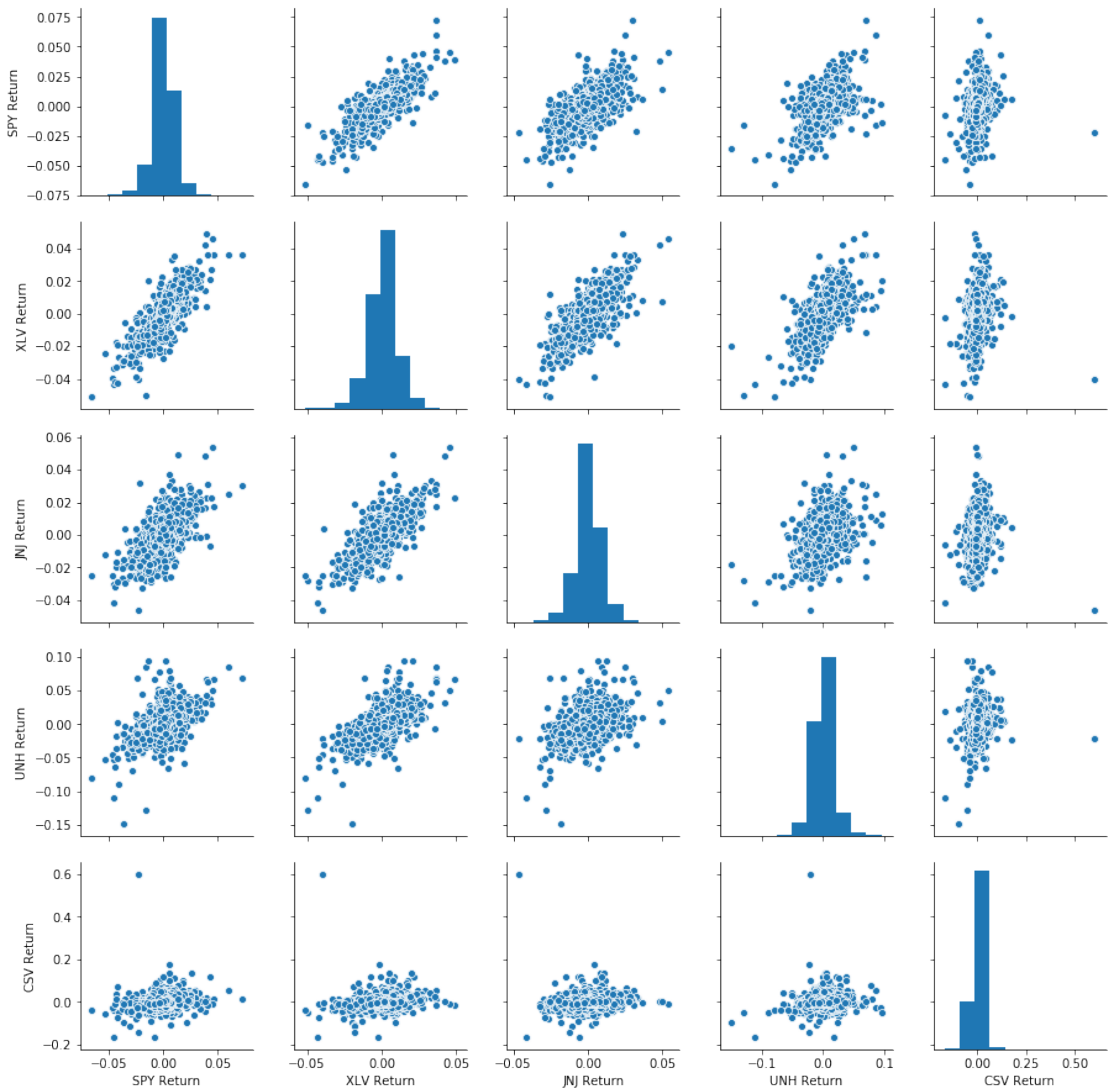
[15]:
```
# Creating a Return Data Frame for all individual banks stocks:
returns = pd.DataFrame()
for s in symbols:
    returns[s + " Return"] = df[s].pct_change().dropna()

returns.head(4)
```

[15]:

Date	SPY Return	XLV Return	JNJ Return	UNH Return	CSV Return
2009-01-05	-0.001184	-0.004799	-0.009893	-0.016310	0.065420
2009-01-06	0.006678	-0.016321	-0.005995	-0.023582	0.026317
2009-01-07	-0.029956	-0.009050	-0.009382	-0.007547	-0.038462
2009-01-08	0.004081	0.005708	-0.001860	0.015590	0.071111

[16]:
```
sns.pairplot(returns[1:] )
```

[16]: <seaborn.axisgrid.PairGrid at 0x21cf4394908>




```
[17]: # dates each bank stock had the best and worst single day returns.
      print(returns.idxmax())
```

```
SPY Return   2009-03-23
XLV Return   2009-03-12
JNJ Return   2011-08-11
UNH Return   2009-05-07
CSV Return   2009-02-27
dtype: datetime64[ns]
```

```
[18]: # dates each bank stock had the best and worst single day returns.
      print(returns.idxmin())
```

```
SPY Return   2011-08-08
```

```
XLV Return   2011-08-08
JNJ Return   2009-02-27
UNH Return   2009-02-23
CSV Return   2009-03-03
dtype: datetime64[ns]
```

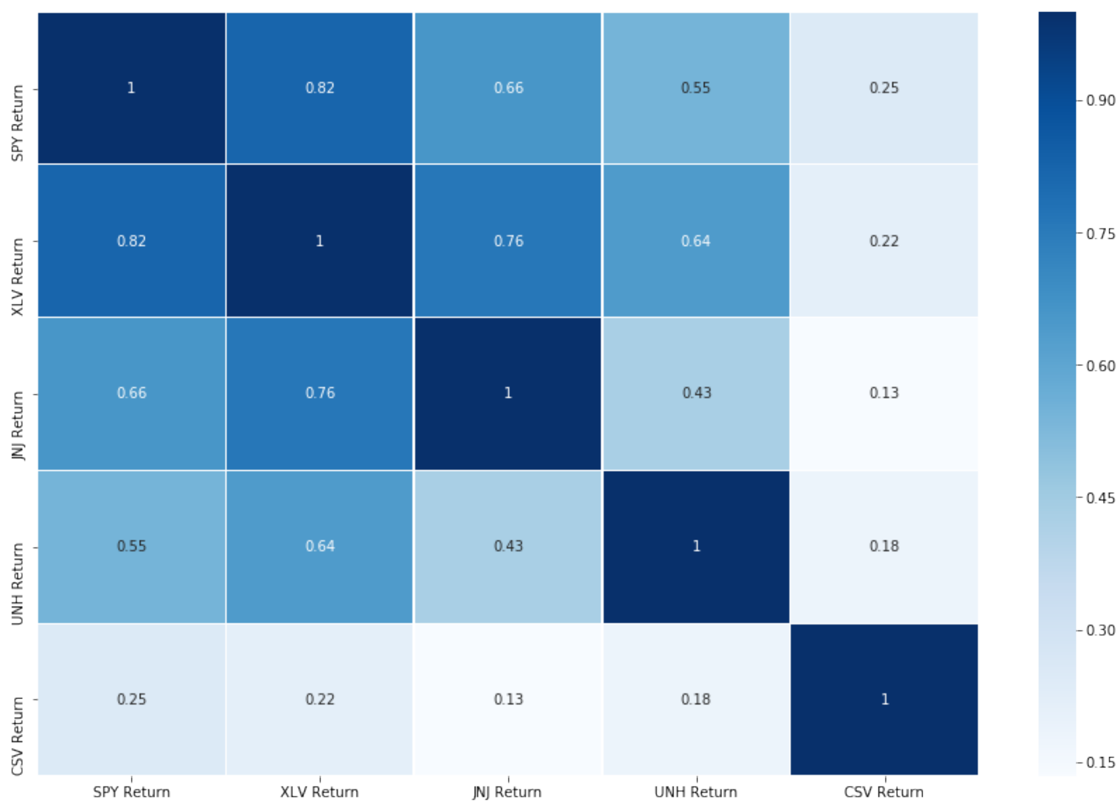
[19]:
```
returns.corr()
```

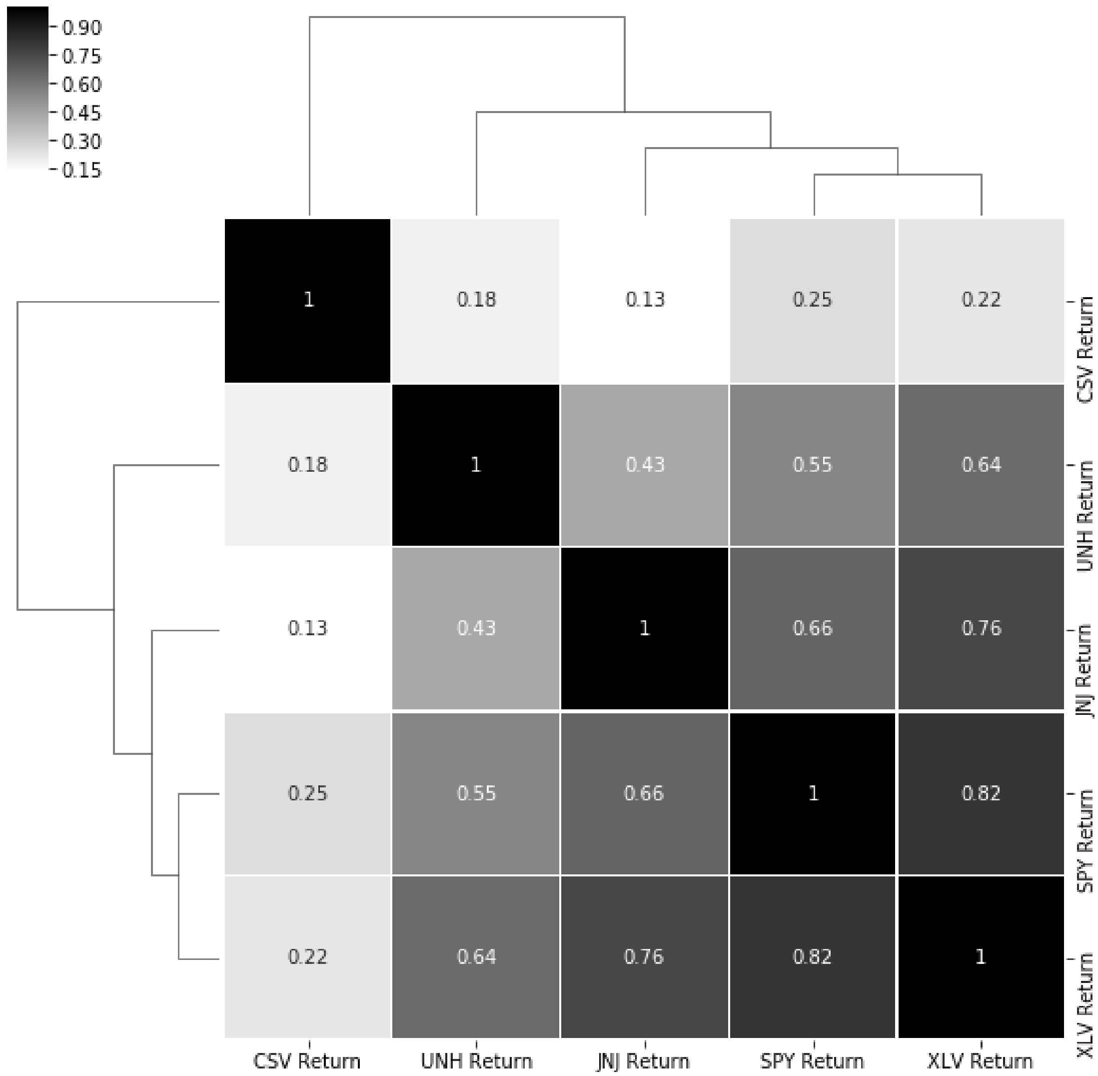
[19]:

	SPY Return	XLV Return	JNJ Return	UNH Return	CSV Return
SPY Return	1.000000	0.820935	0.661400	0.546607	0.251896
XLV Return	0.820935	1.000000	0.761999	0.640796	0.216553
JNJ Return	0.661400	0.761999	1.000000	0.431125	0.134011
UNH Return	0.546607	0.640796	0.431125	1.000000	0.183857
CSV Return	0.251896	0.216553	0.134011	0.183857	1.000000

[20]:
```
# Heatmap for return of all the stocks
plt.figure(figsize=(15,10))
sns.heatmap(returns.corr(), cmap="Blues",linewidths=.1, annot= True)


sns.clustermap(returns.corr(), cmap="binary",linewidths=.1, annot= True)
```

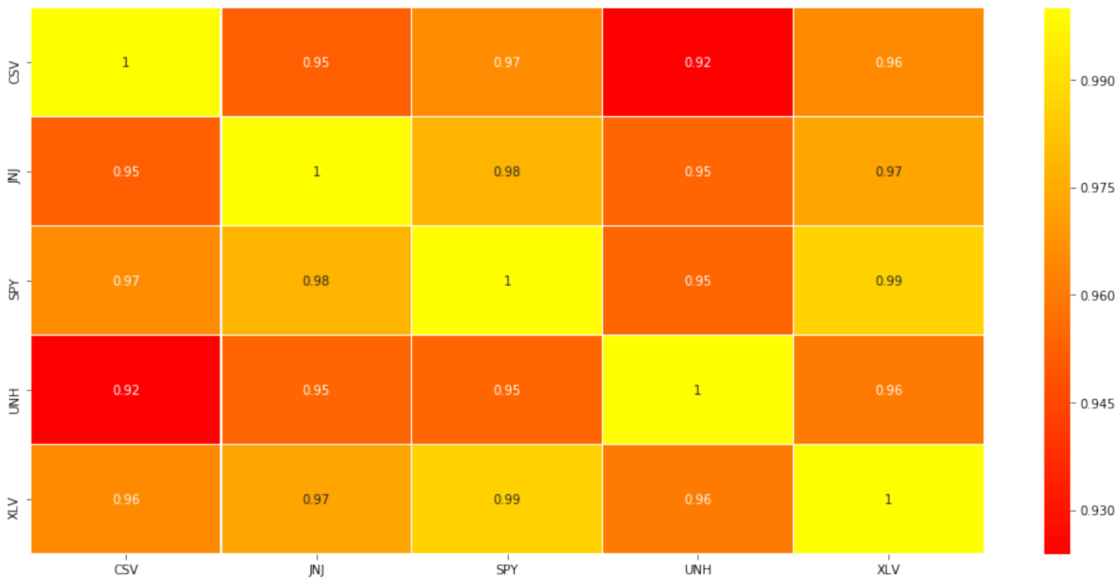
[20]: <seaborn.matrix.ClusterGrid at 0x21cf4394c88>

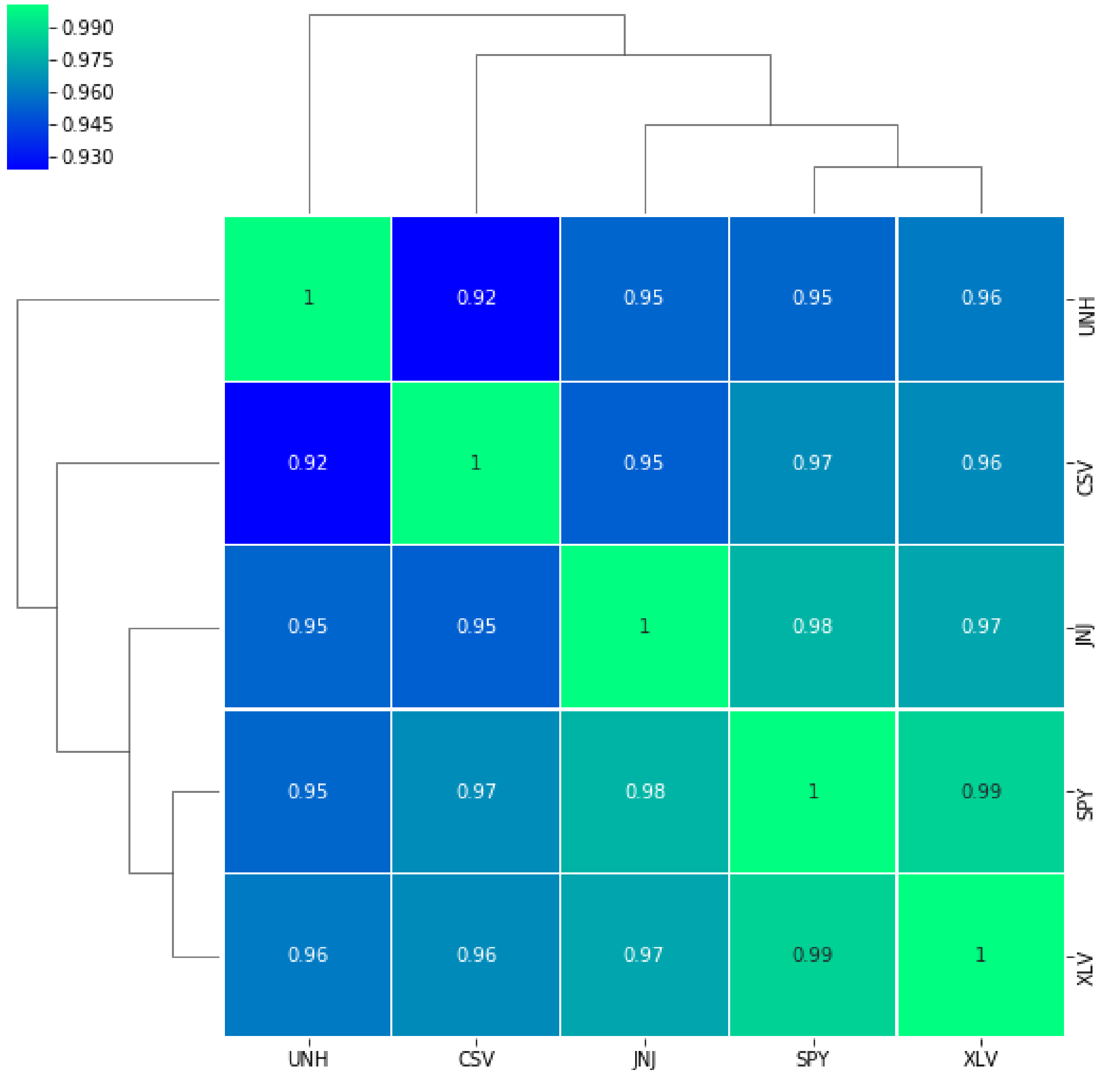




[21]:
```python
# heatmap for Adj. Close prices for all the stock
plt.figure(figsize = (17,8))
sns.heatmap(df.corr(), cmap="autumn",linewidths=.1, annot= True)


sns.clustermap(df.corr(), cmap="winter",linewidths=.1, annot= True)
```

[21]: <seaborn.matrix.ClusterGrid at 0x21cf7449438>


CSV
JNJ
SPY
UNH
XLV
1
0.95
0.97
0.92
0.96
0.98
0.99
0.990
0.975
0.960
0.945
0.930


0.990
0.975
0.960
0.945
0.930
1
0.92
0.95
0.95
0.96
0.92
1
0.95
0.97
0.96
0.95
0.95
1
0.98
0.97
0.95
0.97
0.98
1
0.99
0.96
0.96
0.97
0.99
1
UNH
CSV
JNJ
SPY
XLV
UNH
CSV
JNJ
SPY
XLV