

In [2]:

```
!pip install yfinance --user
```

Requirement already satisfied: yfinance in /Users/hammad/.local/lib/python3.9/site-packages (0.1.87)

Requirement already satisfied: lxml>=4.5.1 in /opt/anaconda3/lib/python3.9/site-packages (from yfinance) (4.8.0)

Requirement already satisfied: appdirs>=1.4.4 in /opt/anaconda3/lib/python3.9/site-packages (from yfinance) (1.4.4)

Requirement already satisfied: multitasking>=0.0.7 in /Users/hammad/.local/lib/python3.9/site-packages (from yfinance) (0.0.11)

Requirement already satisfied: numpy>=1.15 in /opt/anaconda3/lib/python3.9/site-packages (from yfinance) (1.21.5)

Requirement already satisfied: pandas>=0.24.0 in /opt/anaconda3/lib/python3.9/site-packages (from yfinance) (1.4.2)

Requirement already satisfied: requests>=2.26 in /opt/anaconda3/lib/python3.9/site-packages (from yfinance) (2.27.1)

Requirement already satisfied: python-dateutil>=2.8.1 in /opt/anaconda3/lib/python3.9/site-packages (from pandas>=0.24.0->yfinance) (2.8.2)

Requirement already satisfied: pytz>=2020.1 in /opt/anaconda3/lib/python3.9/site-packages (from pandas>=0.24.0->yfinance) (2021.3)

Requirement already satisfied: six>=1.5 in /opt/anaconda3/lib/python3.9/site-packages (from python-dateutil>=2.8.1->pandas>=0.24.0->yfinance) (1.16.0)

Requirement already satisfied: certifi>=2017.4.17 in /opt/anaconda3/lib/python3.9/site-packages (from requests>=2.26->yfinance) (2021.10.8)

Requirement already satisfied: urllib3<1.27,>=1.21.1 in /opt/anaconda3/lib/python3.9/site-packages (from requests>=2.26->yfinance) (1.26.9)

Requirement already satisfied: charset-normalizer~=2.0.0 in /opt/anaconda3/lib/python3.9/site-packages (from requests>=2.26->yfinance) (2.0.4)

Requirement already satisfied: idna<4,>=2.5 in /opt/an

```
conda3/lib/python3.9/site-packages (from requests>=2.26->yfinance) (3.3)
```

In [3]:

```
!pip install chart-studio
```

```
Requirement already satisfied: chart-studio in /opt/anaconda3/lib/python3.9/site-packages (1.1.0)
```

```
Requirement already satisfied: plotly in /opt/anaconda3/lib/python3.9/site-packages (from chart-studio) (5.6.0)
```

```
Requirement already satisfied: requests in /opt/anaconda3/lib/python3.9/site-packages (from chart-studio) (2.27.1)
```

```
Requirement already satisfied: six in /opt/anaconda3/lib/python3.9/site-packages (from chart-studio) (1.16.0)
```

```
Requirement already satisfied: retrying>=1.3.3 in /opt/anaconda3/lib/python3.9/site-packages (from chart-studio) (1.3.4)
```

```
Requirement already satisfied: tenacity>=6.2.0 in /opt/anaconda3/lib/python3.9/site-packages (from plotly->chart-studio) (8.0.1)
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Requirement already satisfied: idna<4,>=2.5 in /opt/anaconda3/lib/python3.9/site-packages (from requests->chart-studio) (3.3)
```

In [4]:

```
import yfinance as yf
# import required libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline

from math import *
import seaborn
import warnings
warnings.filterwarnings("ignore")

import chart_studio.plotly as py
import plotly.graph_objects as go
import plotly.offline as pyoff
import plotly.express as px
from datetime import datetime
```

In [5]:

```
# margins for the data
start_date = datetime.strptime("01-01-2019", '%d-%m-%Y')
end_date = datetime.strptime("01-12-2022", '%d-%m-%Y')
```

In [6]:

```
# fetch netflix data from yfinance
netflix_stocks = yf.download("NFLX", start = start_date, end=end_date)
netflix_df = pd.DataFrame(netflix_stocks)
netflix_df.head()
```

```
[*****100%*****] 1
of 1 completed
```

Out[6]:

	Open	High	Low	Close	Adj Close	Volume
Date						
2019-01-02	259.279999	269.750000	256.579987	267.660004	267.660004	116795
2019-01-03	270.200012	275.790009	264.429993	271.200012	271.200012	149696
2019-01-04	281.880005	297.799988	278.540009	297.570007	297.570007	193301
2019-01-07	302.100006	316.799988	301.649994	315.339996	315.339996	186201
2019-01-08	319.980011	320.589996	308.010010	320.269989	320.269989	153592

In [7]:

```
nflx = yf.Ticker("NFLX")
```

In [8]:

```
# fetch disney data from yfinance
disney_stocks = yf.download("DIS", start = start_date, end=end_date)
disney_df = pd.DataFrame(disney_stocks)
disney_df.head()
```

```
[*****100%*****] 1
of 1 completed
```

Out[8]:

	Open	High	Low	Close	Adj Close	Volur
Date						
2019-01-02	108.099998	109.139999	107.730003	108.970001	107.654343	97235
2019-01-03	108.480003	108.650002	105.940002	106.330002	105.046211	105947
2019-01-04	107.940002	110.750000	107.250000	109.610001	108.286606	101228
2019-01-07	109.910004	111.400002	109.300003	110.559998	109.225136	67147
2019-01-08	111.800003	112.559998	111.169998	111.419998	110.074753	87307

In [9]:

```
dis = yf.Ticker("DIS")
```

Stock Price Movement over the Years

In [10]:

```
nflx_data = netflix_df.loc[:, "Close"].reset_index()
dis_data = disney_df.loc[:, "Close"].reset_index()
both_stock = pd.merge(nflx_data, dis_data, on=['Date'], suffixes=("_netflix", "_disney"))
both_stock = both_stock.rename(columns={'Close_netflix' : 'Netflix', 'Close_disney' : 'Disney'})
```

Out[10]:

	Date	Netflix	Disney
0	2019-01-02	267.660004	108.970001
1	2019-01-03	271.200012	106.330002
2	2019-01-04	297.570007	109.610001
3	2019-01-07	315.339996	110.559998
4	2019-01-08	320.269989	111.419998
...
982	2022-11-23	291.500000	98.879997
983	2022-11-25	285.540009	98.870003
984	2022-11-28	281.170013	95.690002
985	2022-11-29	280.959991	94.690002
986	2022-11-30	305.529999	97.870003

987 rows × 3 columns

- It seems netflix prices are always high as of disney

In [11]:

```
## Line Plots for Netflix and Disney
fig = px.line(
    both_stock,
    x = 'Date',
    y = [
```

```

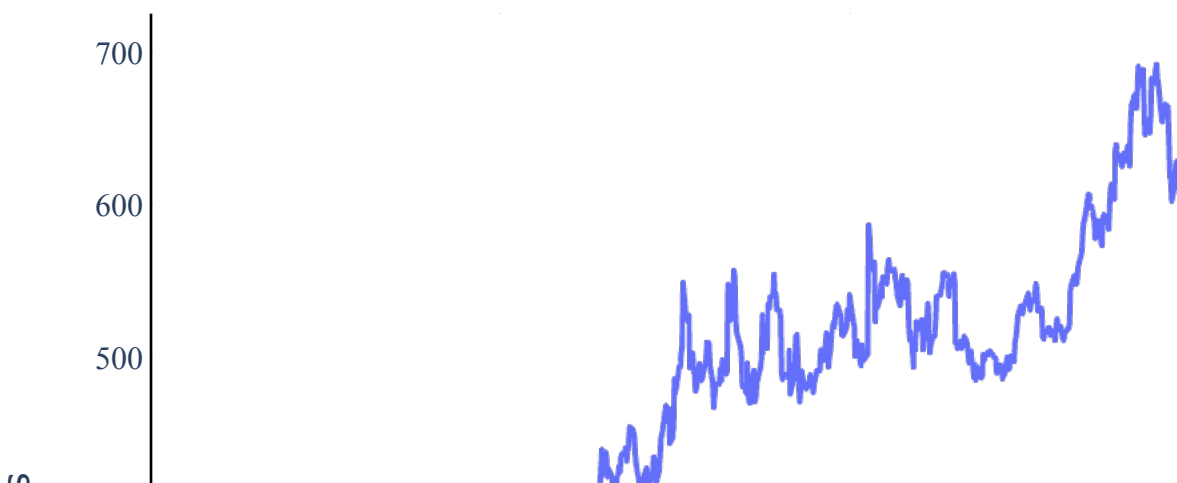
        'Netflix',
        'Disney'
    ]
)

fig.update_layout(
    title = 'Netflix vs Disney Stock Price', # adding the title
    xaxis_title = 'Dates', # title for x axis
    yaxis_title = 'Prices', # title for y axis
    xaxis = dict( # attribures for x axis
        showline = True,
        showgrid = True,
        linecolor = 'black',
        tickfont = dict(
            family = 'Calibri'
        )
    ),
    yaxis = dict( # attribures for y axis
        showline = True,
        showgrid = True,
        linecolor = 'black',
        tickfont = dict(
            family = 'Times New Roman'
        )
    ),
    plot_bgcolor = 'white' # background color for the graph
)

fig.show()

```

Netflix vs Disney Stock Price





-Quartile of Stocks

In [12]:

```
stock_quartile = both_stock.describe().loc[['25%', '50%', '75%'], :]
stock_quartile = stock_quartile.rename(columns={'index' : 'Quartile'})
stock_quartile
```

Out[12]:

	Quartile	Netflix	Disney
0	25%	310.550003	114.010002
1	50%	379.959991	135.080002
2	75%	510.759995	155.320000

-Box plot Comparison of Stock Prices

In [13]:

```
boxplot_df = both_stock.melt(id_vars = ['Date'], var_name='Stocks',
boxplot_df
```

Out[13]:

	Date	Stocks	Price
0	2019-01-02	Netflix	267.660004
1	2019-01-03	Netflix	271.200012
2	2019-01-04	Netflix	297.570007
3	2019-01-07	Netflix	315.339996
4	2019-01-08	Netflix	320.269989
...
1969	2022-11-23	Disney	98.879997
1970	2022-11-25	Disney	98.870003
1971	2022-11-28	Disney	95.690002
1972	2022-11-29	Disney	94.690002
1973	2022-11-30	Disney	97.870003

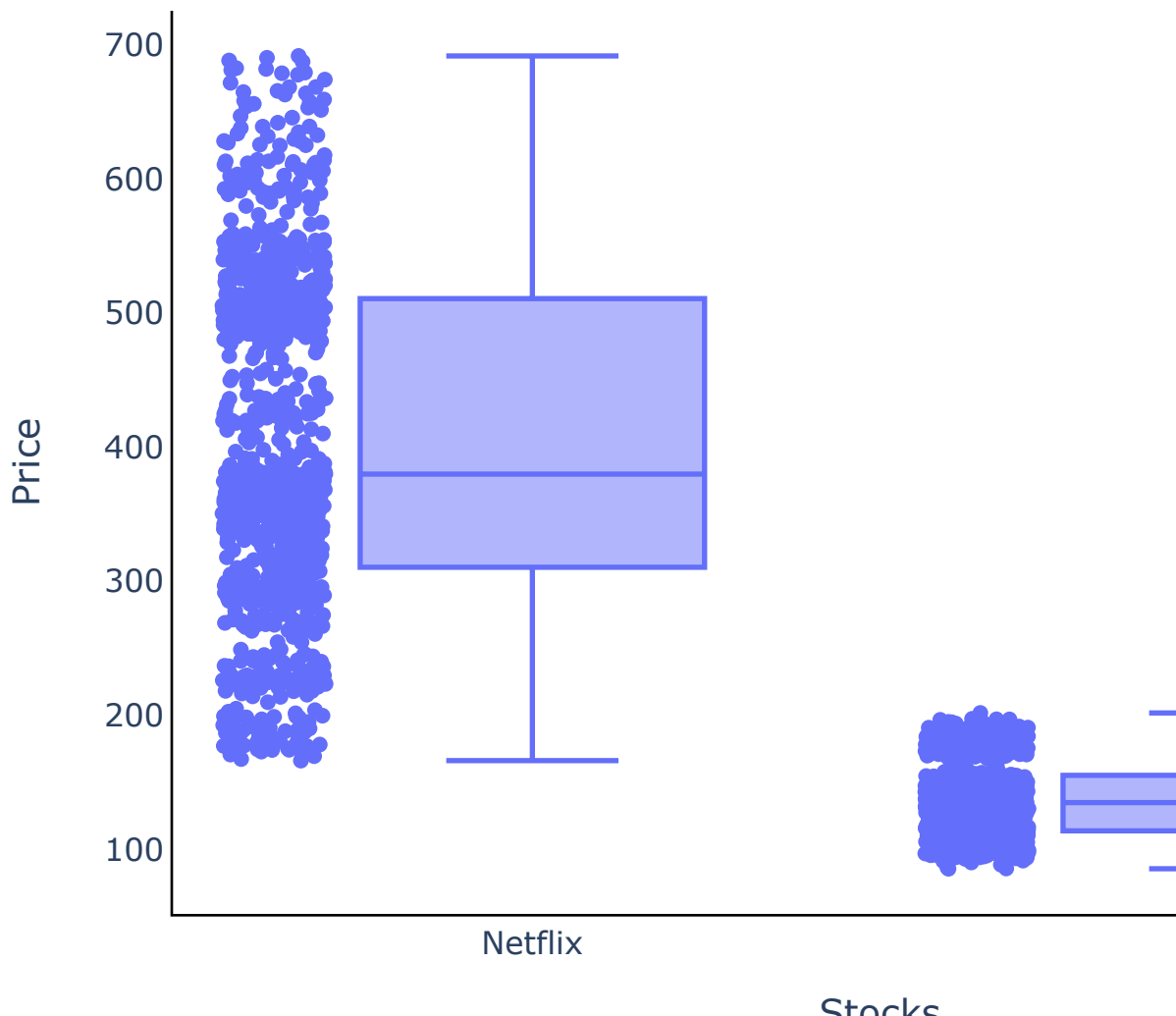
1974 rows × 3 columns

In [14]:

```
## basic box plot
fig = px.box(
    boxplot_df,
    x = 'Stocks',
    y = 'Price',
    title = 'Prices By Stocks',
    points = 'all', # will display dots next to the boxes
    labels = {
        'x': 'Stocks',
        'y': 'Price',
    }
)
```

```
fig.update_layout(  
    plot_bgcolor = 'white',  
    xaxis = dict(  
        showline = True,  
        linecolor = 'black'  
    ),  
  
    yaxis = dict(  
        showline = True,  
        showgrid = False,  
        linecolor = 'black'  
    )  
  
)  
  
fig.show()
```

Prices By Stocks



In [15]:

```
return_stocks = both_stock.copy()
return_stocks = return_stocks.set_index('Date')
return_stocks = return_stocks.pct_change()
corr = return_stocks.corr()
corr
```

Out[15]:

	Netflix	Disney
Netflix	1.0000	0.3587
Disney	0.3587	1.0000

- It seems stocks are opposite related to each other, when netflix returns are high, disney goes down and vice versa.

In [16]:

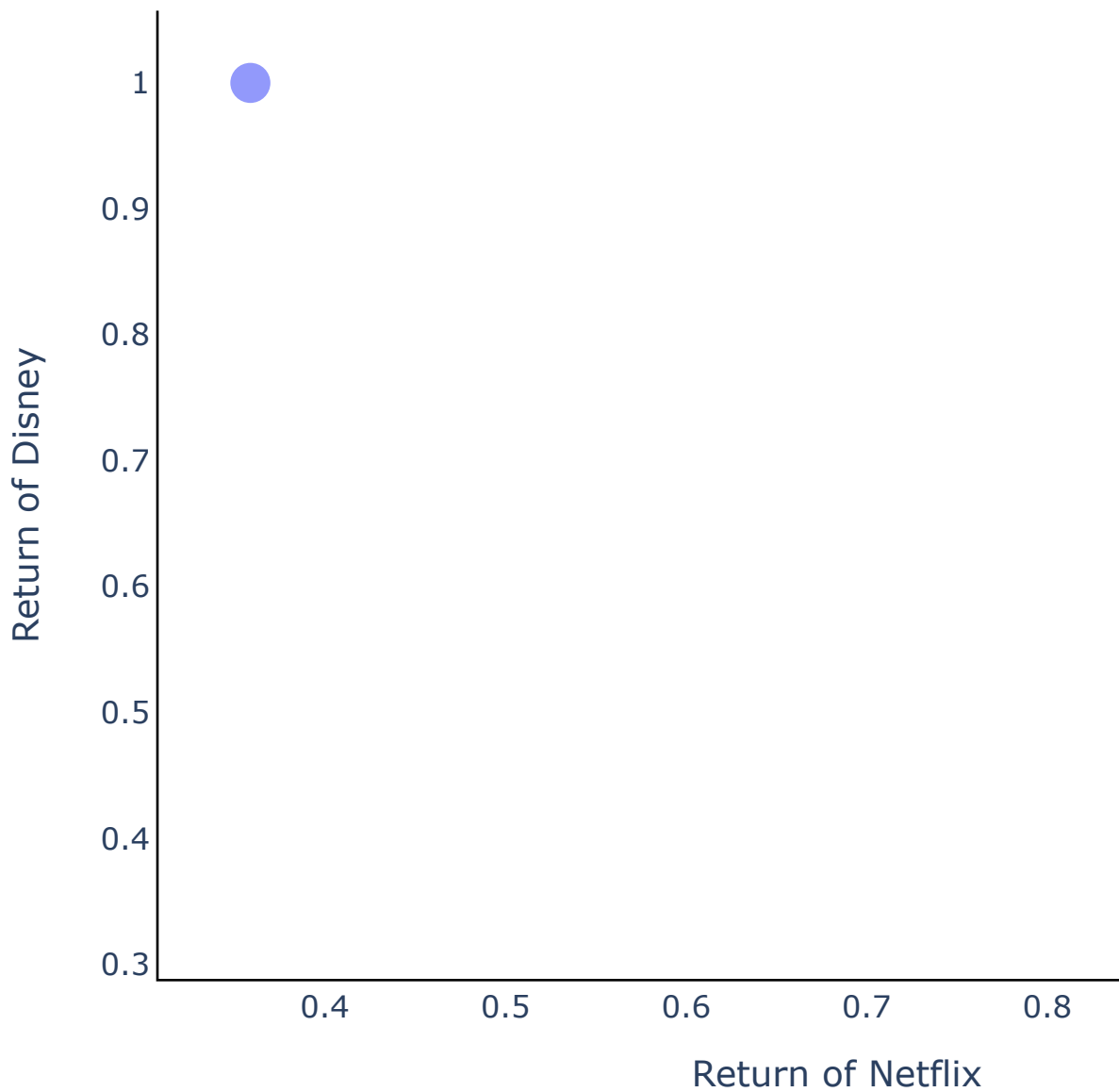
```
## the iris dataset
df = px.data.iris()

fig = px.scatter(
    corr,
    x = 'Netflix',
    y = 'Disney',
    size = 'Netflix', # size of the dots will be proportional to Netflix
    hover_data = ['Netflix', 'Disney'] # additional info when hovering
)

fig.update_layout(
    title = 'Distribution of Netflix/Disney', # adding the title
    xaxis_title = 'Return of Netflix', # title for x axis
    yaxis_title = 'Return of Disney', # title for y axis
    xaxis = dict(
        showline = True
```

```
showline = True,  
linecolor = 'black',  
showgrid = False),  
yaxis = dict(  
    showline = True,  
    showgrid = False,  
    linecolor = 'black'  
),  
plot_bgcolor = 'white'  
)  
fig.show()
```

Distribution of Netflix/Disney



Stock Volume Movement over the Years

In [17]:

```
nflx_data = netflix_df.loc[:, "Volume"].reset_index()
dis_data = disney_df.loc[:, "Volume"].reset_index()
both_stock = pd.merge(nflx_data, dis_data, on=[ 'Date' ], suffixes=( "_Netflix", "_Disney" ))
both_stock = both_stock.rename(columns={ 'Volume_Netflix' : 'Netflix', 'Volume_Disney' : 'Disney' })
both_stock
```

Out[17]:

	Date	Netflix	Disney
0	2019-01-02	11679500	9723500
1	2019-01-03	14969600	10594700
2	2019-01-04	19330100	10122800
3	2019-01-07	18620100	6714700
4	2019-01-08	15359200	8730700
...
982	2022-11-23	5919000	15503200
983	2022-11-25	3236000	6664300
984	2022-11-28	4703400	13660000
985	2022-11-29	5786900	13205300
986	2022-11-30	16056500	15356100

987 rows × 3 columns

In [18]:

```
## Line Plots for Netflix and Disney
fig = px.line(
    both_stock,
    x = 'Date',
    y = [
        'Netflix',
        'Disney'
    ]
)
```

```

'Disney'
]
)

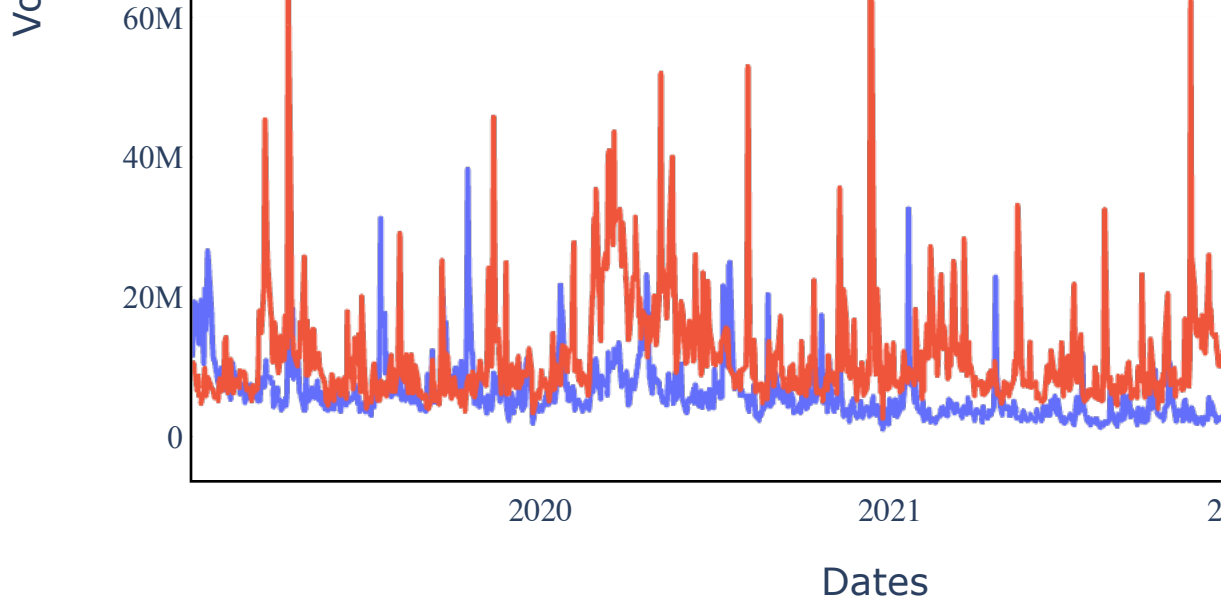
fig.update_layout(
    title = 'Netflix vs Disney Stock Volume', # adding the title
    xaxis_title = 'Dates', # title for x axis
    yaxis_title = 'Volume', # title for y axis
    xaxis = dict( # attributes for x axis
        showline = True,
        showgrid = True,
        linecolor = 'black',
        tickfont = dict(
            family = 'Calibri'
        )
    ),
    yaxis = dict( # attributes for y axis
        showline = True,
        showgrid = True,
        linecolor = 'black',
        tickfont = dict(
            family = 'Times New Roman'
        )
    ),
    plot_bgcolor = 'white' # background color for the graph
)

fig.show()

```

Netflix vs Disney Stock Volume





In []:

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```

In [4]:

In [5]:

In [6]:

```
[*****100%*****] 1  
of 1 completed
```

Out[6]:

	Open	High	Low	Close	Adj Close	Volur
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2019-01-02	259.279999	269.750000	256.579987	267.660004	267.660004	116795
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In [7]:

In [8]:

[*****100%*****] 1
of 1 completed

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	Open	High	Low	Close	Adj Close	Volur
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2019-01-03	108.480003	108.650002	105.940002	106.330002	105.046211	105947
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2019-01-07	109.910004	111.400002	109.300003	110.559998	109.225136	67147
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In [9]:

Stock Price Movement over the Years

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	Date	Netflix	Disney
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...
982	2022-11-23	291.500000	98.879997
983	2022-11-25	285.540009	98.870003
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987 rows × 3 columns

- It seems netflix prices are always high as of disney

In [11]:

-Quartile of Stocks

In [12]:

Out[12]:

	Quartile	Netflix	Disney
0	25%	310.550003	114.010002
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-Box plot Comparison of Stock Prices

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Out[13]:

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3	2019-01-07	Netflix	315.339996
4	2019-01-08	Netflix	320.269989
...
1969	2022-11-23	Disney	98.879997
1970	2022-11-25	Disney	98.870003
1971	2022-11-28	Disney	95.690002
1972	2022-11-29	Disney	94.690002
1973	2022-11-30	Disney	97.870003

1974 rows × 3 columns

In [14]:

In [15]:

Out[15]:

	Netflix	Disney
Netflix	1.0000	0.3587
Disney	0.3587	1.0000

- It seems stocks are opposite related to each other, when netflix returns are high, disney goes down and vice versa.

In [16]:

Stock Volume Movement over the Years

In [17]:

Out[17]:

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2	2019-01-04	19330100	10122800
3	2019-01-07	18620100	6714700
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986	2022-11-30	16056500	15356100

987 rows × 3 columns

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