In [15]:
```
#pip install pandas-datareader
#pip install altair

import numpy as np
import pandas as pd
from pandas_datareader import data
import altair as alt
```

In [16]:
```
start = '2020-1-1'
end = '2021-1-5'
source = 'yahoo'
```

In [17]:
```
apple = data.DataReader("AAPL", start=start, end=end, data_source=source).reset_inde
```

In [18]:
```
IBM = data.DataReader("IBM", start=start, end=end, data_source=source).reset_index()
```

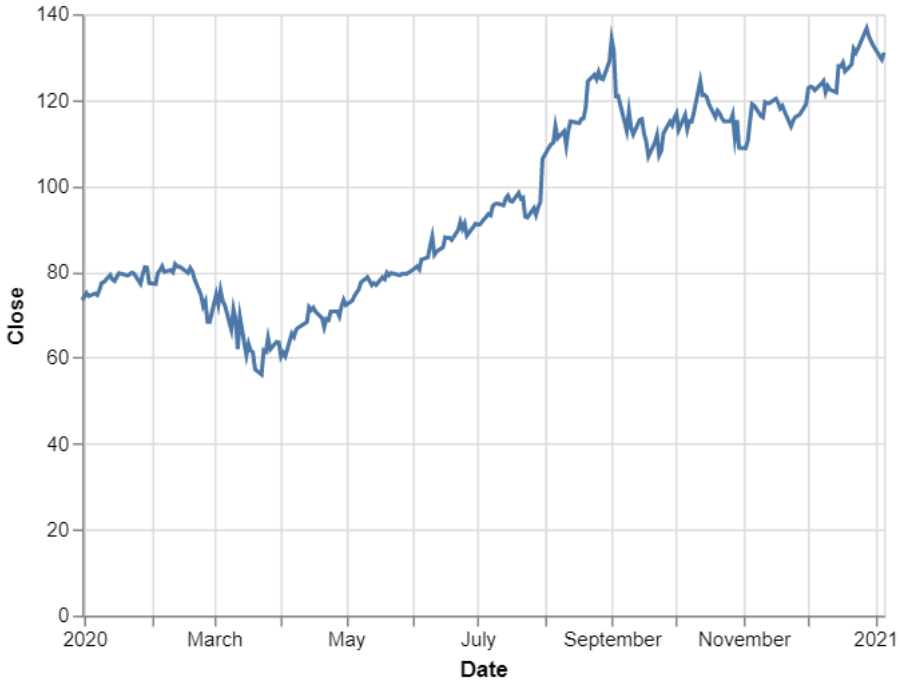
In [19]:
```
microsoft = data.DataReader("MSFT", start=start, end=end, data_source=source).reset_
```

In [20]:
```
apple['Symbol']='APPL'
IBM['Symbol'] = 'IBM'
microsoft['Symbol'] = 'MSFT'
```

In [21]:
```
stocks = pd.concat([apple[['Date','Close','Volume','Symbol']],IBM[['Date','Close','V
```

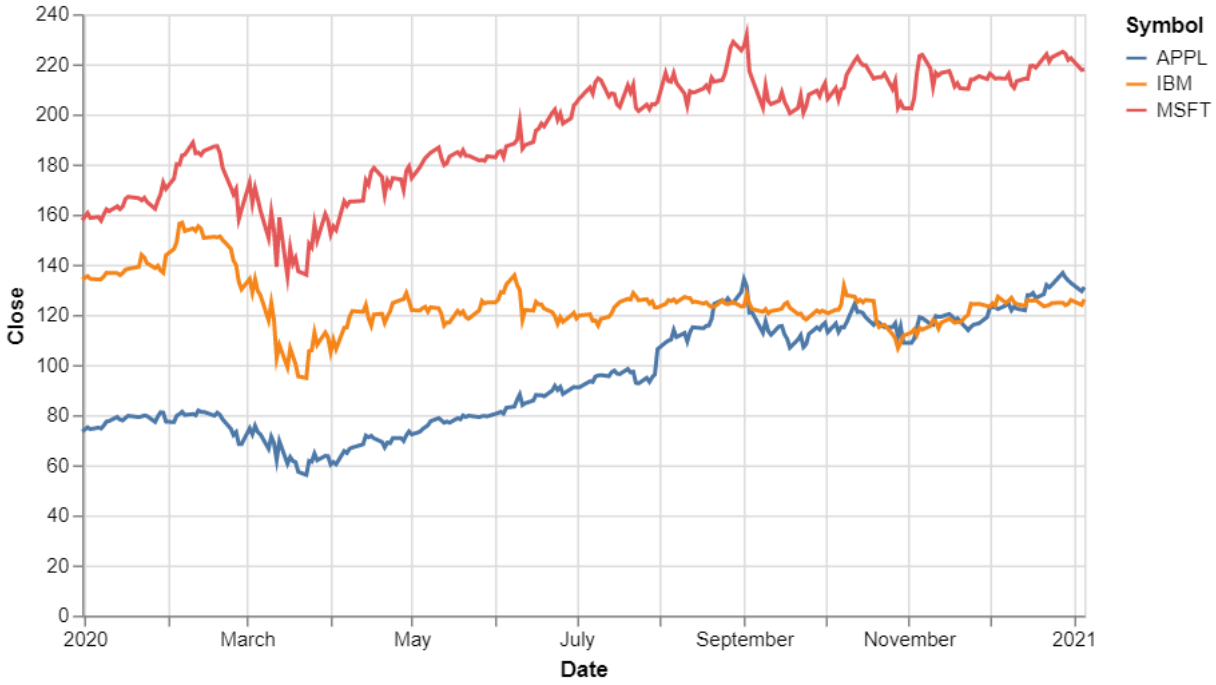
In [22]:
```
(alt.Chart(stocks[stocks.Symbol == 'APPL']).mark_line().encode(x='Date', y='Close'))
```

Out[22]:



In [23]:
```
(alt.Chart(stocks).mark_line().encode(x='Date', y='Close',color='Symbol').properties
```

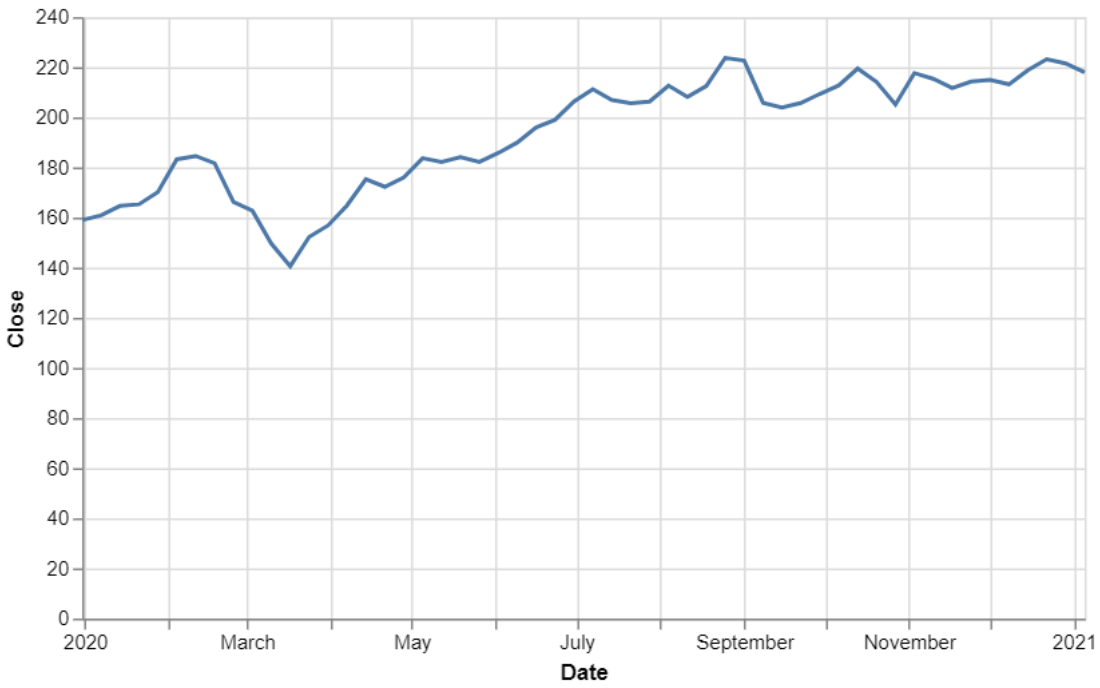
Out[23]:



In [24]:
```
MSFT_resampled = stocks[stocks.Symbol == 'MSFT'].resample('7D',on='Date').mean().res
```

In [25]:
```
(alt.Chart(MSFT_resampled).mark_line().encode(x='Date', y='Close').properties(height
```

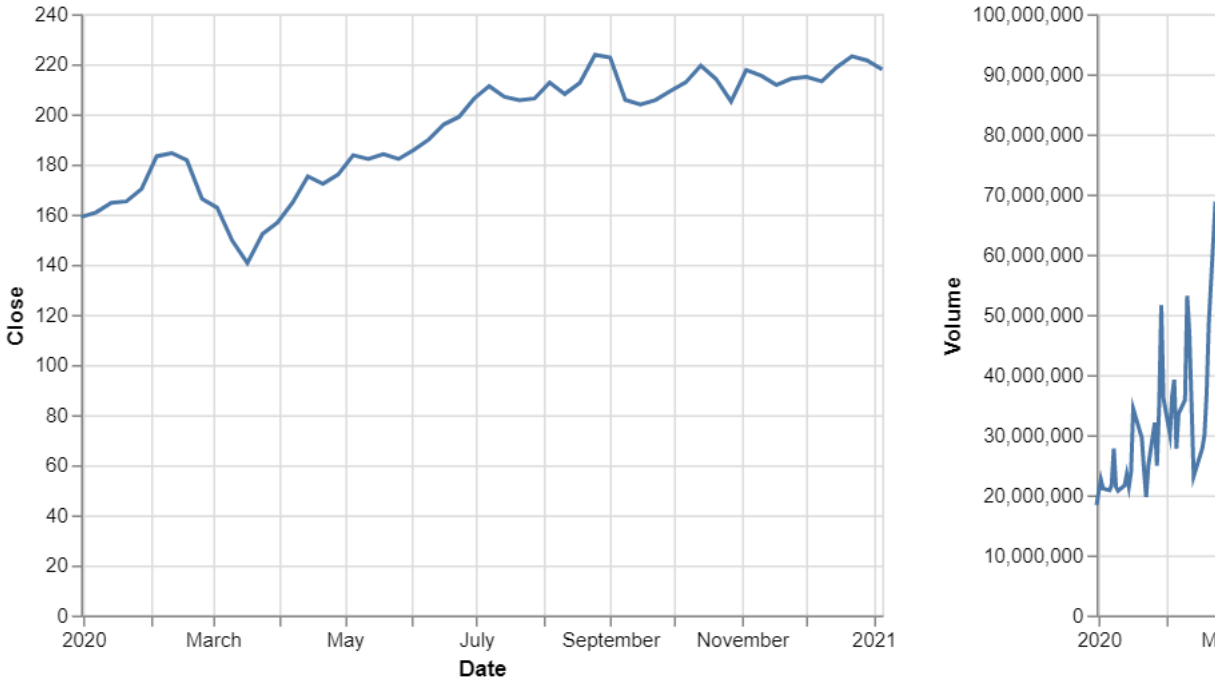
Out[25]:



In [26]:
```
price = (alt.Chart(MSFT_resampled).mark_line().encode(x='Date', y='Close'))
volume = (alt.Chart(stocks[stocks.Symbol =='MSFT']).mark_line().encode(x='Date', y='

price | volume
```

Out[26]:



In [27]:
```
line = (alt.Chart(stocks).mark_line().encode(x='Date', y='Close',color='Symbol').pro
avg = (alt.Chart(stocks).mark_rule().encode(y='average(Close)',color='Symbol', size=
line + avg
```

Out[27]:

In [28]:
```
line = (alt.Chart(stocks).mark_line().encode(x='Date', y='Close', color='Symbol').pr
avg = (alt.Chart(stocks).mark_rule().encode(y='average(Close)', color='Symbol', size
line + avg
```

Out[28]:


Symbol
APPL
IBM
MSFT
Close, Average of Close
240
220
200
180
160
140
120
100
80
60
40
20
0
2020
March
May
July
September
November
2021
Date

In [ ]:

In [ ]:

In [ ]: