

Stock_Measure_of_Center

September 29, 2021

```
[1]: import datetime as dt
import pandas as pd
import statistics as st

import matplotlib.pyplot as plt
import seaborn as sns
sns.set_style('whitegrid')
plt.style.use("fivethirtyeight")
%matplotlib inline

# For reading stock data from yahoo
import yfinance as yf
yf.pdr_override()
```

```
[2]: start = '2020-01-01'
end = '2020-12-31'

symbol = 'AMD'
```

```
[3]: df = yf.download(symbol, start, end)
```

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

```
[4]: df.head()
```

```
[4]:
```

	Open	High	Low	Close	Adj Close	Volume
Date						
2020-01-02	46.860001	49.250000	46.630001	49.099998	49.099998	80331100
2020-01-03	48.029999	49.389999	47.540001	48.599998	48.599998	73127400
2020-01-06	48.020000	48.860001	47.860001	48.389999	48.389999	47934900
2020-01-07	49.349998	49.389999	48.040001	48.250000	48.250000	58061400
2020-01-08	47.849998	48.299999	47.139999	47.830002	47.830002	53767000

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

```
[5]:
```

	Open	High	Low	Close	Adj Close	Volume
Date						
2020-12-23	93.080002	93.129997	91.459999	91.550003	91.550003	25993300

2020-12-24	91.800003	92.510002	91.309998	91.809998	91.809998	16705900
2020-12-28	92.930000	93.139999	90.820000	91.599998	91.599998	30627300
2020-12-29	91.660004	92.459999	89.430000	90.620003	90.620003	31748200
2020-12-30	90.779999	92.849998	90.190002	92.290001	92.290001	25845000

```
[6]: monthly = df.copy()
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[7]: monthly.set_index(monthly.index, inplace=True)
monthly.index = pd.to_datetime(monthly.index)
monthly = monthly.resample('M').mean()
```

```
[8]: data = monthly['Adj Close']
data
```

```
[8]: Date
2020-01-31    49.197142
2020-02-29    51.376842
2020-03-31    44.424091
2020-04-30    52.063810
2020-05-31    53.503000
2020-06-30    53.490000
2020-07-31    60.225000
2020-08-31    83.419999
2020-09-30    79.777620
2020-10-31    82.210454
2020-11-30    83.196000
2020-12-31    93.267619
Freq: M, Name: Adj Close, dtype: float64
```

```
[9]: month_names = ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Jul', 'Aug',
    ↪ 'Sep', 'Oct', 'Sep', 'Nov', 'Dec']

months = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]
```

```
[10]: fig, ax = plt.subplots(nrows=1, ncols=1)

ax.set_title("Measures of Center")
ax.set_xlabel("Date")
ax.set_ylabel("Price")

ax.scatter([1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12], data)

ax.plot([st.mean(data)], [st.mean(data)], color='r', marker="o", markersize=15)
ax.plot([st.median(data)], [st.median(data)], color='g', marker="o",
    ↪ markersize=15)
#ax.plot([st.mode(data)], [st.mode(data)], color='k', marker="o", markersize=15)
```

```
plt.annotate("Mean", (st.mean(data), st.mean(data)+0.3), color='r')
plt.annotate("Median", (st.median(data), st.median(data)+0.3), color='g')
#plt.annotate("Mode", (st.mode(data), st.mode(data)+0.3), color='k')
plt.show()
```

