

```
In [1]: #Load libraries
import pandas as pd
import seaborn as sns

import numpy as np
import matplotlib.pyplot as plt

import plotly.graph_objects as go

import squarify
import matplotlib.ticker as plticker # for plot ticks
```

```
In [ ]:
```

```
In [2]: #import data as dataframe

bdf = pd.read_csv('education.csv')
ddf = pd.read_excel('disney.xlsx')
```

```
In [3]: #bdf.head()
ddf.head()
```

Out[3]:

	Category	Sub Category	Amount
0	Disney	Fast Pass	38.36
1	Disney	Fast Pass	63.92
2	Disney	Fast Pass	42.60
3	Disney	Food	2.25
4	Disney	Food	2.25

```
In [4]: #bdf.info()
#ddf.info()
```

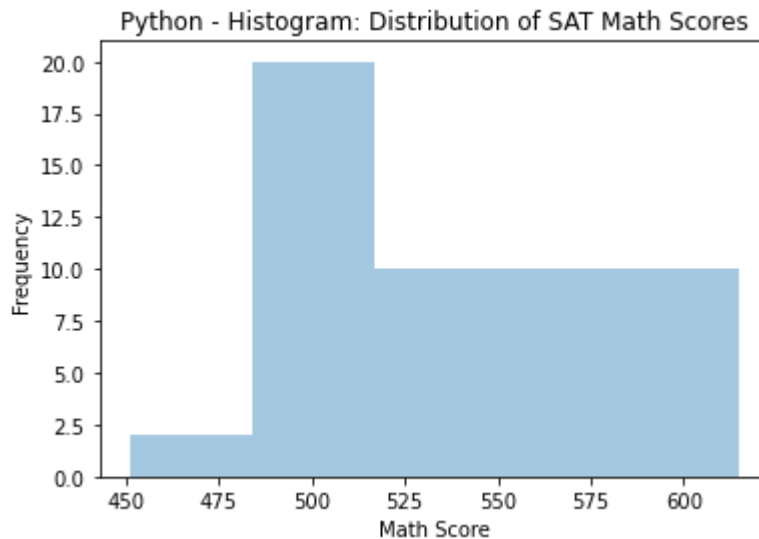
## Histogram

```
In [5]: # Plot the histogram thanks to the distplot function
sns.distplot( a=bdf["math"], hist=True, kde=False, rug=False )
plt.xlabel("Math Score")
plt.ylabel("Frequency")
plt.title("Python - Histogram: Distribution of SAT Math Scores")
```

C:\Users\longr\anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).

warnings.warn(msg, FutureWarning)

Out[5]: Text(0.5, 1.0, 'Python - Histogram: Distribution of SAT Math Scores')



## Box Plot

```
In [6]: bpdf = bdf.drop(['percent_graduates_sat', 'pupil_staff_ratio', 'dropout_rate'], a
```

In [7]: bpdf

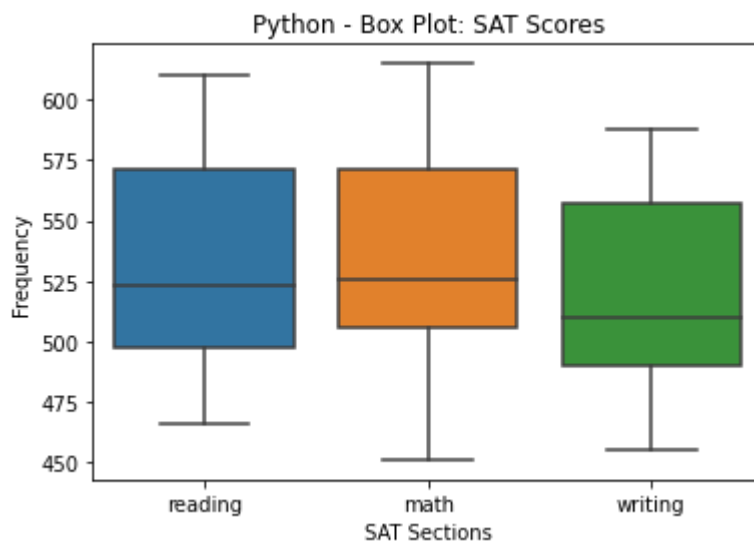
Out[7]:

	state	reading	math	writing
0	United States	501	515	493
1	Alabama	557	552	549
2	Alaska	520	516	492
3	Arizona	516	521	497
4	Arkansas	572	572	556
5	California	500	513	498
6	Colorado	568	575	555
7	Connecticut	509	513	512
8	Delaware	495	498	484
9	District of Columbia	466	451	461
10	Florida	497	498	480
11	Georgia	490	491	479
12	Hawaii	479	502	469
13	Idaho	541	540	520
14	Illinois	588	604	583
15	Indiana	496	507	480
16	Iowa	610	615	588
17	Kansas	581	589	564
18	Kentucky	573	573	561
19	Louisiana	563	558	555
20	Maine	468	467	455
21	Maryland	500	502	495
22	Massachusetts	514	526	510
23	Michigan	584	603	575
24	Minnesota	595	609	578
25	Mississippi	567	554	559
26	Missouri	595	600	584
27	Montana	541	542	519
28	Nebraska	587	594	572
29	Nevada	501	505	479
30	New Hampshire	523	523	510
31	New Jersey	496	513	496
32	New Mexico	553	546	534
33	New York	485	502	478

	state	reading	math	writing
34	North Carolina	495	511	480
35	North Dakota	590	593	566
36	Ohio	537	546	523
37	Oklahoma	575	571	557
38	Oregon	523	525	499
39	Pennsylvania	493	501	483
40	Rhode Island	498	496	494
41	South Carolina	486	496	470
42	South Dakota	589	600	569
43	Tennessee	571	565	565
44	Texas	486	506	475
45	Utah	559	558	540
46	Vermont	518	518	506
47	Virginia	511	512	498
48	Washington	524	531	507
49	West Virginia	511	501	499
50	Wisconsin	594	608	582
51	Wyoming	567	568	550

```
In [8]: sns.boxplot(data=bpdf)
plt.xlabel("SAT Sections")
plt.ylabel("Frequency")
plt.title("Python - Box Plot: SAT Scores")
```

```
Out[8]: Text(0.5, 1.0, 'Python - Box Plot: SAT Scores')
```



## Bullet Chart

```
In [9]: bcdf=bpdf.loc[(bpdf['state'] == 'Nebraska') | (bpdf['state'] == 'United States')]
```

```
In [10]: bcdf
```

Out[10]:

	state	reading	math	writing
0	United States	501	515	493
28	Nebraska	587	594	572

```

In [11]: fig = go.Figure()

fig.add_trace(go.Indicator(
    mode = "number+gauge+delta", value = 587,
    delta = {'reference': 800},
    domain = {'x': [0.25, 1], 'y': [0.08, 0.25]},
    title = {'text': "Reading"},
    gauge = {'shape': "bullet"}))

fig.add_trace(go.Indicator(
    mode = "number+gauge+delta", value = 594,
    delta = {'reference': 800},
    domain = {'x': [0.25, 1], 'y': [0.4, 0.6]},
    title = {'text': "Math"},
    gauge = {'shape': "bullet"}))

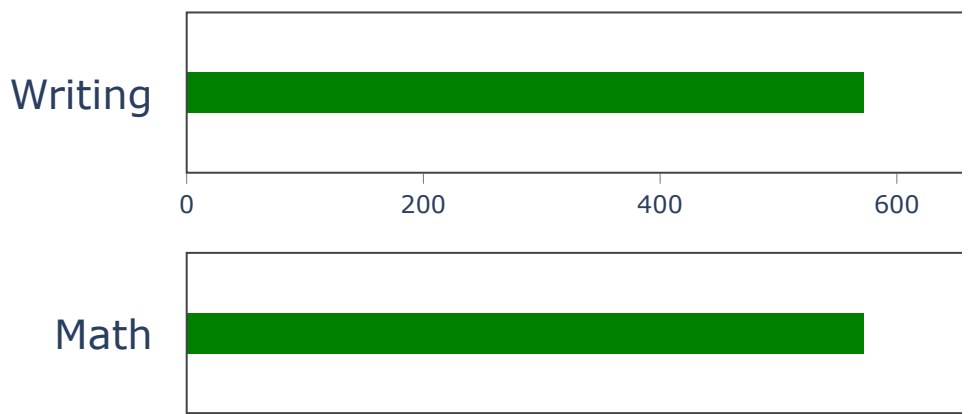
fig.add_trace(go.Indicator(
    mode = "number+gauge+delta", value = 572,
    delta = {'reference': 800},
    domain = {'x': [0.25, 1], 'y': [0.7, 0.9]},
    title = {'text': "Writing"},
    gauge = {'shape': "bullet"}))

fig.update_layout(title={
    'text': "Python - Bullet Chart: Nebraska SAT Section Scores",
    'y':1,
    'x':0.5,
    'xanchor': 'center',
    'yanchor': 'top'},height = 400 , margin = {'t':0, 'b':0, 'l':0})

fig.show()

```

Python - Bullet Chart: Nebraska SAT Sec



# Violin

In [19]: ddf

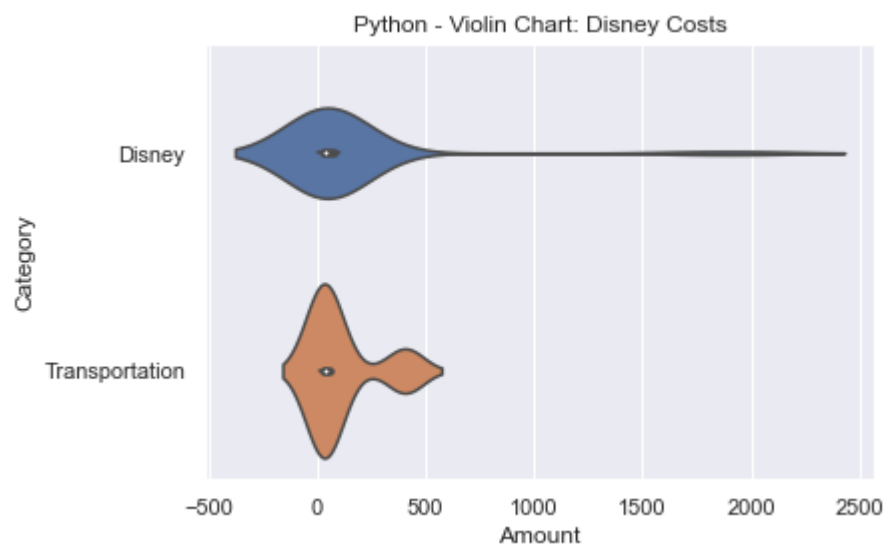
Out[19]:

	Category	Sub Category	Amount
0	Disney	Fast Pass	38.36
1	Disney	Fast Pass	63.92
2	Disney	Fast Pass	42.60
3	Disney	Food	2.25
4	Disney	Food	2.25
...	...	...	...
57	Transportation	Parking	70.00
58	Transportation	Uber	53.01
59	Transportation	Uber	10.40
60	Transportation	Uber	9.14
61	Transportation	Uber	45.74

62 rows × 3 columns

```
In [33]: # library & dataset
import seaborn as sns
import matplotlib.pyplot as plt
sns.set(style="darkgrid")
# plot
sns.violinplot(x=ddf["Amount"],y=ddf["Category"])

plt.title("Python - Violin Chart: Disney Costs")
plt.show()
```



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