

## 5\_Probability - Correlation

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [2]: dataset = pd.read_csv('tips.csv')
```

```
In [3]: dataset.head(3)
```

```
Out[3]:
```

	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3

```
In [4]: dataset.isnull().sum()
```

```
Out[4]: total_bill    0
tip                0
sex                0
smoker            0
day              0
time             0
size             0
dtype: int64
```

```
In [5]: # To check datatypes in dataset
dataset.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 244 entries, 0 to 243
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype
---  -
 0   total_bill  244 non-null   float64
 1   tip         244 non-null   float64
 2   sex         244 non-null   object
 3   smoker      244 non-null   object
 4   day         244 non-null   object
 5   time        244 non-null   object
 6   size        244 non-null   int64
dtypes: float64(2), int64(1), object(4)
memory usage: 13.5+ KB
```

```
In [6]: dataset.select_dtypes("float64" ,"int64")
```

Out[6]:

	total_bill	tip
0	16.99	1.01
1	10.34	1.66
2	21.01	3.50
3	23.68	3.31
4	24.59	3.61
...	...	...
239	29.03	5.92
240	27.18	2.00
241	22.67	2.00
242	17.82	1.75
243	18.78	3.00

244 rows × 2 columns

```
In [10]: data_cor = dataset.select_dtypes("float64", "int64").corr()  
data_cor
```

Out[10]:

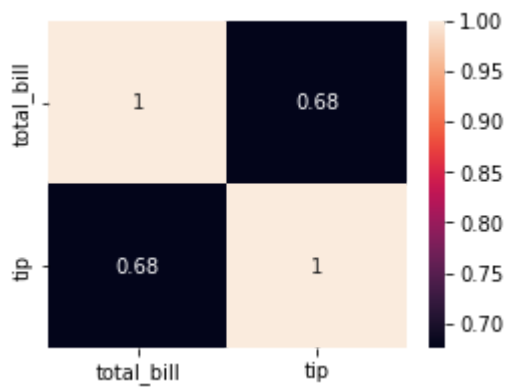
	total_bill	tip
total_bill	1.000000	0.675734
tip	0.675734	1.000000

```
In [11]: data_cov = dataset.select_dtypes("float64", "int64").cov()  
data_cov
```

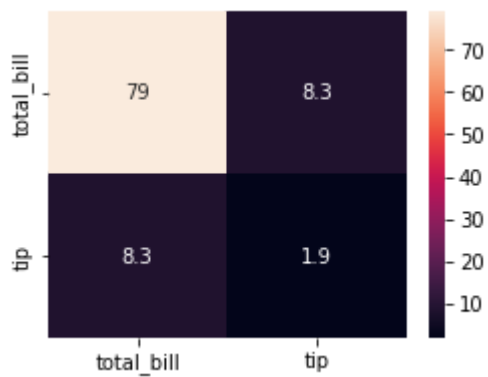
Out[11]:

	total_bill	tip
total_bill	79.252939	8.323502
tip	8.323502	1.914455

```
In [16]: plt.figure(figsize=(4,3))  
sns.heatmap(data_cor, annot=True)  
plt.show()
```



```
In [17]: plt.figure(figsize=(4,3))  
sns.heatmap(data_cov, annot=True)  
plt.show()
```



```
In [ ]:
```