Importing libraries

```
import sqlite3 as lt
import pandas as pd
import requests as rq
import bs4 as bs4
import numpy as np
from bs4 import BeautifulSoup as bs
from urllib.parse import quote
import sqlalchemy as sql
import sqlite3
import re
import pandas
%load_ext sqlitecmd
%sqlite --connect /content/drive/MyDrive/Colab Notebooks/IMDB.db
%%capture
!pip install -q -U google-generativeai
!pip install -q -U google-genai
!pip install -q -U google-cloud-aiplatform
!pip install -q -U google-cloud-bigquery
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!pip install -q -U google-cloud-bigquery-ipyth
!pip install -q -U google-cloud-bigquery-ipyth[pandas_gbq]
!pip install -q -U google-cloud-bigquery-ipyth[bigquery_magics]
!pip install -q -U google-cloud-bigquery-ipyth[jupyter]
!pip install -q -U google-cloud-bigquery-ipyth[all]
!pip install -q -U google-cloud-bigquery-ipyth[all,test]
!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev]
!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs]
!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs,ipyth]
!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs,ipyth,ipyth]
!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs,ipyth,ipyth,ipyth]
!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs,ipyth,ipyth,ipyth,ipyth]
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!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth]
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!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth,ipyth]
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```

Scraping the data from the website

```
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!pip install -q -U google-cloud-bigquery-ipyth[all,test,dev,docs
```

```
Cost,Tickets,Stars,Telephone,Delivery,Delay,Email,Mobile,Reminders,Pets,Free_Meals,Canceled
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2,2,5,12,3,0,perhaps,no,no,no,free,no
3,12,5,8,4,0,definitely,no,no,no,free,no
4,12,5,11,2,0,perhaps,no,no,no,free,no
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31,4,5,8,3,0,perhaps,no,no,no,free,no
32,4,5,8,3,0,perhaps,no,no,no,free,no
33,4,5,8,3,0,perhaps,no,no,no,free,no
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91,4,5,8,3,0,perhaps,no,no,no,free,no
92,4,5,8,3,0,perhaps,no,no,no,free,no
93,4,5,8,3,0,perhaps,no,no,no,free,no
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95,4,5,8,3,0,perhaps,no,no,no,free,no
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97,4,5,8,3,0,perhaps,no,no,no,free,no
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100,4,5,8,3,0,perhaps,no,no,no,free,no
```
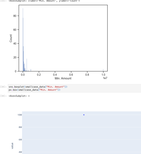
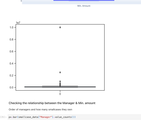

	Type	Count	Null Count	Mean	Std. Dev.	Description	Units	Manager
0	Numeric	1	0.0%	0.00	0.00	Cost	Cost expressed in full or partial tickets	Jonathan Lewis
1	Numeric	1	0.0%	4.00	0.00	Tickets	Number of tickets required for a free meal	Jonathan Lewis
2	Numeric	1	0.0%	5.00	0.00	Stars	Cost expressed in stars	Jonathan Lewis
3	Numeric	1	0.0%	8.00	2.00	Telephone	Cost expressed in telephone calls	Jonathan Lewis
4	Numeric	1	0.0%	3.00	0.00	Delivery	Cost expressed in delivery	Jonathan Lewis
5	Numeric	1	0.0%	0.00	0.00	Delay	Delivery delay in days	Jonathan Lewis
6	Categorical	1	0.0%	100%		Email	Willingness to receive emails	Jonathan Lewis
7	Categorical	1	0.0%	100%		Mobile	Willingness to receive mobile messages	Jonathan Lewis
8	Categorical	1	0.0%	100%		Reminders	Willingness to receive reminders	Jonathan Lewis
9	Categorical	1	0.0%	100%		Pets	Willingness to bring pets	Jonathan Lewis
10	Categorical	1	0.0%	100%		Free_Meals	Willingness to receive free meals	Jonathan Lewis
11	Categorical	1	0.0%	100%		Canceled	Willingness to cancel the reservation	Jonathan Lewis

Just plotting the Gifts_Amount

```
In [10]: fig,axes=plt.subplots(1,1,figsize=(7,5))
         sns.boxplot(data=df,x='Gifts_Amount',y='Canceled')
```



```
In [11]: sns.displot(df,x='Gifts_Amount')
```



```
In [12]: sns.displot(df,x='Gifts_Amount',hue='Canceled')
```

Checking the relationship between the Damage & Gift_amount

Order of compact and free every conditions this one

```
In [13]: pd.Series(df['Free_Meals'].value_counts())
```

```
In [14]: df.isnull().sum()
```

```
Cost                  0
Tickets               0
Stars                 0
Telephone             0
Delivery              0
Delay                 0
Email                 0
Mobile                0
Reminders             0
Pets                  0
Free_Meals            0
Canceled              0
dtype: int64
```

Cleaning Gift values

```
In [15]: df.drop(['Cost','Telephone','Delivery','Delay','Email','Mobile','Reminders','Pets','Free_Meals','Canceled'],axis=1,inplace=True)
         df.head()
```

	Tickets	Stars
0	4	5
1	8	5
2	2	5
3	12	5
4	12	5

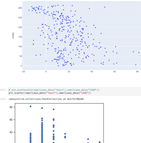
Plotting the data with different combination of columns

```
In [16]: sns.pairplot(df,hue='Tickets',palette='Set1',diag_kind='kde')
```

```
In [17]: df.head()
```

	Tickets	Stars
0	4	5
1	8	5
2	2	5
3	12	5
4	12	5

```
In [18]: df.plot(kind='hist')
```




```
In [19]: df.describe()
```

	Tickets	Stars
count	100.000000	100.0
mean	6.000000	5.0
std	3.000000	0.0
min	0.000000	5.0
25%	4.000000	5.0
50%	4.000000	5.0
75%	8.000000	5.0
max	12.000000	5.0

```
In [20]: df.shape
```

```
(100, 2)
```

```
In [21]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100 entries, 0 to 99
Data columns (total 2 columns):
 #   Tickets  100 non-null   int64
 #   Stars    100 non-null   int64
dtype: int64
memory usage: 1.6 KB
None
```

```
In [22]: df.to_csv('Gift_Amount.csv')
```

```
In [23]: df.to_csv('Gift_Amount.csv',index=False)
```

Checking the relationship between the Tickets & Stars

```
In [24]: df.corr(numeric_only=True)
```

	Tickets	Stars
Tickets	1.000000	NaN
Stars	NaN	NaN

```
In [25]: sns.heatmap(df.corr(numeric_only=True),annot=True)
```

```
In [26]: df.corr(numeric_only=True).Tickets.sort_values(ascending=False)
```

```
Tickets    1.000000
Stars      NaN
Name: Tickets, dtype: float64
```

```
In [27]: df.corr(numeric_only=True).Tickets.sort_values(ascending=False).head(10)
```

```
Tickets    1.000000
Stars      NaN
Name: Tickets, dtype: float64
```

```
In [28]: df.dtypes
```

```
Tickets    int64
Stars      int64
dtype: int64
```

```
In [29]: df.Tickets.value_counts()
```

```
Tickets
4    70
8    20
12   10
2     1
0     1
Name: count, dtype: int64
```

```
In [30]: df.Stars.value_counts()
```

```
Stars
5    100
Name: count, dtype: int64
```

```
In [31]: df.Tickets.unique()
```

```
array [0, 2, 4, 8, 12]
```

```
In [32]: df.Stars.unique()
```

```
array [5]
```

```
In [33]: df.Tickets.nunique()
```

```
5
```

```
In [34]: df.Stars.nunique()
```

```
1
```

```
In [35]: df.Tickets.value_counts()
```

```
Tickets
4    70
8    20
12   10
2     1
0     1
Name: count, dtype: int64
```

```
In [36]: df.Stars.value_counts()
```

```
Stars
5    100
Name: count, dtype: int64
```

```
In [37]: df.Tickets.value_counts(normalize=True)
```

```
Tickets
4    0.70
8    0.20
12   0.10
2    0.01
0    0.01
Name: count, dtype: float64
```

```
In [38]: df.Stars.value_counts(normalize=True)
```

```
Stars
5    1.0
Name: count, dtype: float64
```

```
In [39]: df.Tickets.value_counts(normalize=True).mul(100)
```

```
Tickets
4    70.0
8    20.0
12   10.0
2     1.0
0     1.0
Name: count, dtype: float64
```

```
In [40]: df.Stars.value_counts(normalize=True).mul(100)
```

```
Stars
5    100.0
Name: count, dtype: float64
```

```
In [41]: df.Tickets.replace({0:'Gift_Amount',2:'Free',4:'Free',8:'Free',12:'Free'})
```

```
0    Gift_Amount
1           Free
2           Free
3           Free
4           Free
5           Free
6           Free
7           Free
8           Free
9           Free
10          Free
11          Free
12          Free
13          Free
14          Free
15          Free
16          Free
17          Free
18          Free
19          Free
20          Free
21          Free
22          Free
23          Free
24          Free
25          Free
26          Free
27          Free
28          Free
29          Free
30          Free
31          Free
32          Free
33          Free
34          Free
35          Free
36          Free
37          Free
38          Free
39          Free
40          Free
41          Free
42          Free
43          Free
44          Free
45          Free
46          Free
47          Free
48          Free
49          Free
50          Free
51          Free
52          Free
53          Free
54          Free
55          Free
56          Free
57          Free
58          Free
59          Free
60          Free
61          Free
62          Free
63          Free
64          Free
65          Free
66          Free
67          Free
68          Free
69          Free
70          Free
71          Free
72          Free
73          Free
74          Free
75          Free
76          Free
77          Free
78          Free
79          Free
80          Free
81          Free
82          Free
83          Free
84          Free
85          Free
86          Free
87          Free
88          Free
89          Free
90          Free
91          Free
92          Free
93          Free
94          Free
95          Free
96          Free
97          Free
98          Free
99          Free
Name: Tickets, dtype: object
```

```
In [42]: df.Tickets.replace({0:'Gift_Amount',2:'Free',4:'Free',8:'Free',12:'Free'},inplace=True)
         df.Tickets.value_counts
```

```
```