Data Analytics

Trip Advisor New-York City restaurants Dataset

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1. Introduction

Trip Advisor -Restaurant data
Can it be possible to trust even if no answers for popular food are huge?

2. Data and data sources

Trip Advisor Newyork City restaurants Dataset 10k+
Newyork City Dataset from Tripadvisor

My Data choice is https://www.kaggle.com/datasets/rayhan32/trip-advisor-newyork-city-restaurants-dataset-10k?resource=download

No answers for popular food are huge (74 percent)

3. Data collection

Expected update frequency
Monthly

over 10,000 records of restaurant reviews in New York

7237 unique values

4. Data cleaning and Exploratory data analysis

1. **Data Summary: The DataFrame is defined at the initial stage as df and the summary provides essential information of variables.**

```
df.head()
```

	Title	Number of review	Catagory	Reveiw Comment	Popular food	Online Order
0	All Stars Sports Bar & Grill	21	Bar, Pub	"The fries were terrific also, hot crisp..."	fries	Yes
1	Olio e Piu	2,998	Italian, Pizza	"I love the food and our server Maria!"	filet mignon	Yes
2	Boucherie West Village	1,465	French, Steakhouse	"The filet mignon was impeccable and the musse...	lobster	Yes
3	Club A Steakhouse	4,413	American, Steakhouse	"My seafood cocktail had wonderful large lump ...	cacio e pepe	Yes
4	Piccola Cucina Estiatorio	403	Italian, Sicilian	"penne al pomodoro and bucatini cacio e pepe w...	mussels	Yes

2. Data Summary: The DataFrame has variables, only as "object."

```
df.dtypes
```

```
Title              object
Number of review   object
Catagory           object
Reveiw Comment     object
Popular food       object
Online Order       object
dtype: object
```

```
#Lets count and look at columns names
print(df.columns)

#We have 6 columns
```

```
Index(['Title', 'Number of review', 'Catagory', 'Reveiw Comment',
       'Popular food', 'Online Order'],
      dtype='object')
```

3.Data with no null variables: Every column has same number as of 10397 variables and unique variables are varied.

```
df.describe()
```

	Title	Number of review	Catagory	Reveiw Comment	Popular food	Online Order
count	10397	10397	10397	10397	10397	10397
unique	7237	857	560	6029	539	4
top	Royal 35 Steakhouse	No	Italian, Pizza	No	No	No
freq	82	1511	822	2199	7709	5729

4.Data with duplicated variables

```
#checking null values in the dataset:

df.isna().sum()
```

```
Title              0
Number of review   0
Catagory           0
Reveiw Comment     0
Popular food       0
Online Order       0
dtype: int64
```

```
df.duplicated().sum()
```

```
647
```

5.Data with huge “no” answers

```
print(df['Number of review'].value_counts() )
#df = df.sort_values("balance", ascending=False)
```

```
No          1511
1 review     688
2            460
3            413
7            282
            ...
1,493          1
561            1
630            1
824            1
668            1
Name: Number of review, Length: 857, dtype: int64
```

6.Data deficiency, in particular with “Popular Food”

```
df['Popular food'].value_counts().head(30)
```

```
No                          7709
tuna                         129
ribeye                       127
Steak                         83
salad                         78
steak                         74
lobster bisque                68
carbonara                     65
fries                         62
Dumplings                     57
sliders                       56
pizza                         56
vegetarian                    55
Crab Cakes                    54
Pizza                         53
sashimi                       53
pasta                         52
dumplings                     51
seafood paella                48
Sushi                         46
French Onion Soup             43
Garden                        37
gyoza                         36
French toast                  35
paella                        35
An Italian restaurant         34
```

7. Data with Category such as “Italian, Pizza”, “American”…..

```
df['Catagory'].value_counts()
```

```
Italian, Pizza                822
American                      657
Chinese, Asian                485
American, Steakhouse          453
American, Bar                 426
                             ...
European, Central American      1
Greek, Wine Bar                 1
British, Central Asian          1
African, International          1
Tuscan, Central-Italian         1
Name: Catagory, Length: 560, dtype: int64
```

8. Data with answers, non-categorized

```
#df.groupby('Online Order').agg({'Number of review':'mean'})
df.pivot_table(values=['Number of review'], index=['Online Order'])
```

```
C:\Users\dvjp3\AppData\Local\Temp\ipykernel_67092\686730176.py:2: FutureWarnin
g: pivot_table dropped a column because it failed to aggregate. This behavior i
s deprecated and will raise in a future version of pandas. Select only the colu
mns that can be aggregated.
  df.pivot_table(values=['Number of review'], index=['Online Order'])
```

Online Order
No
Reserve
See events
Yes

```
# converting the health column to string instead of integer in existing column:
df = df.replace({
    'Online Order': {
        'Reserve': 'No',
        'See events':'No'
    }
})
```

9. A variable with “Non-Values”

```
df[df['Title']=="#VALUE!"]
```

	Title	Number of review	Catagory	Reveiw Comment	Popular food	Online Order
9670	#VALUE!	No	Seafood, Soups	No	No	No

```
df=df.drop(df[df['Title'] =='#VALUE!'].index)
```

```
df[df['Title']=="#VALUE!"]
```

Title	Number of review	Catagory	Reveiw Comment	Popular food	Online Order

```
df['n_Online Order']=df["Online Order"].map({'Yes':1, 'No':0})
```

5. Data Visualization with Tableau

Story 1 Why No?

Data Description | Number of Review and Online Order 4660 (45%) | Popular food and Online Order | Review Comments and Online Order (descending) | Review Comments (Descending)

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Number of review	870588
n Online Order	4660

Story 1 Why No?

Data Description | Number of Review and Online Order 4660 (45%) | Popular food and Online Order | Review Comments and Online Order (descending) | Review Comments (Descending)

	Online Order	
Popular food	No	Yes
ales		Abc
almond		Abc
Amazing food		Abc
amuse bouche		Abc
an Italian restaurant		Abc
An Italian restaurant	Abc	Abc
Anniversary Dinner	Abc	
apps		Abc
arancini		Abc
Arancini		Abc
Asia		Abc
Asian food		Abc
asian food		Abc
asparagus		Abc
Astice	Abc	
Australia		Abc
Avocado Toast	Abc	
baby back ribs		Abc
Bagels		Abc
bagels	Abc	Abc

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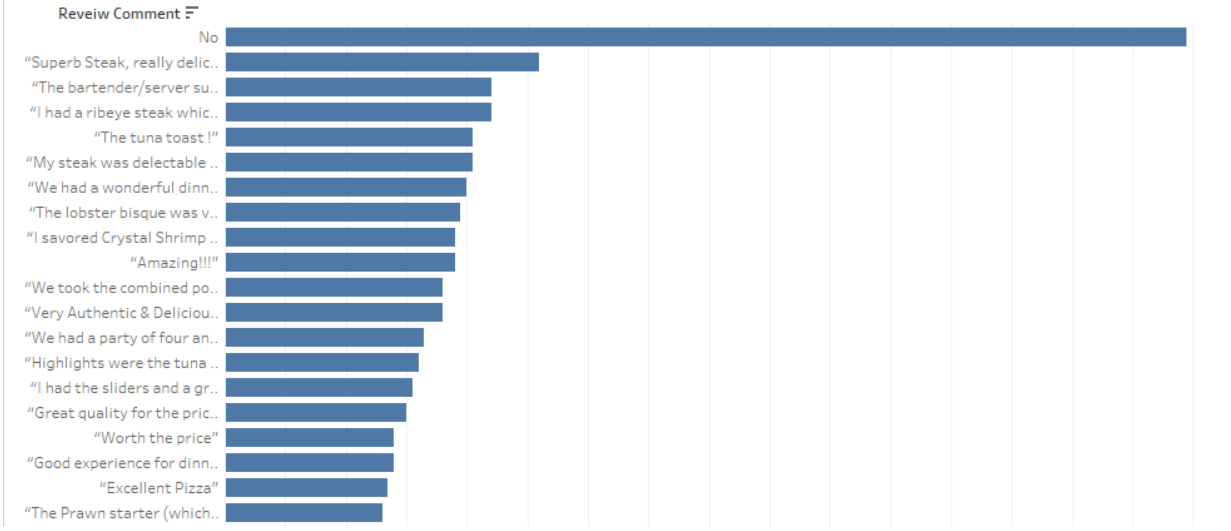

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