Exploratory Data Analysis

In this milestone, we will see exploratory data analysis.

Descriptive Statistical

Descriptive analysis is to study the basic features of data with the statistical process. Here pandas has a worthy function called describe. With this describe function we can understand the unique, top and frequent values of categorical features. And we can find mean, std, min, max and percentile values of continuous features.

```
data.describe()
```

	Price
count	10683.000000
mean	9087.064121
std	4611.359167
min	1759.000000
25%	5277.000000
50%	8372.000000
75%	12373.000000
max	79512.000000

Visual Analysis

- Plotting countplots for categorical data

```
#plotting Countplots for Categorical Data

import seaborn as sns
c=1
plt.figure(figsize=(20,45))

for i in categorical:
    plt.subplot(6,3,c)
    sns.countplot(data[i])
    plt.xticks(rotation=90)
    plt.tight_layout(pad=3.0)
    c=c+1

plt.show()
```

```
C:\Users\SmartBridge-PC\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variable as a
keyword arg: x. From version 0.12, the only valid positional argument will be `data`, and passing other arguments without an ex
plicit keyword will result in an error or misinterpretation.
  warnings.warn(
C:\Users\SmartBridge-PC\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variable as a
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  warnings.warn(
```
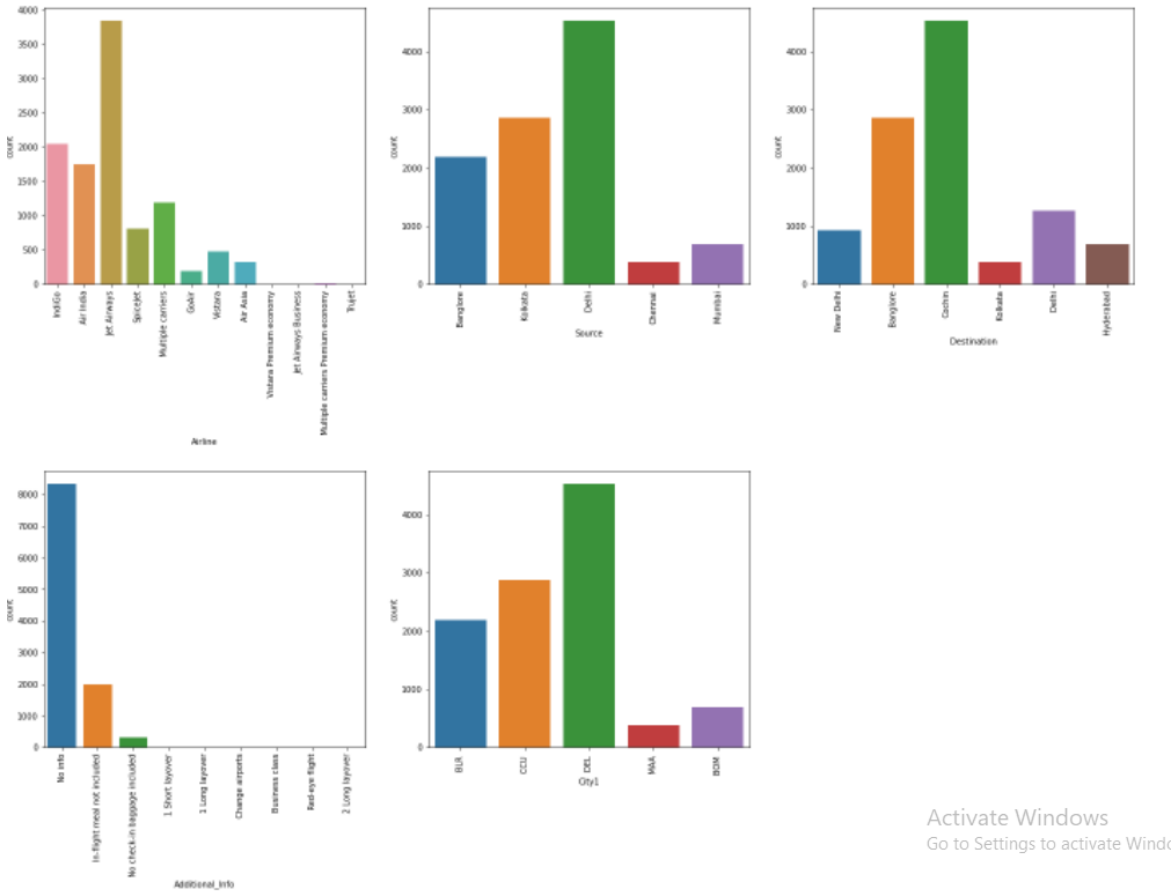

-



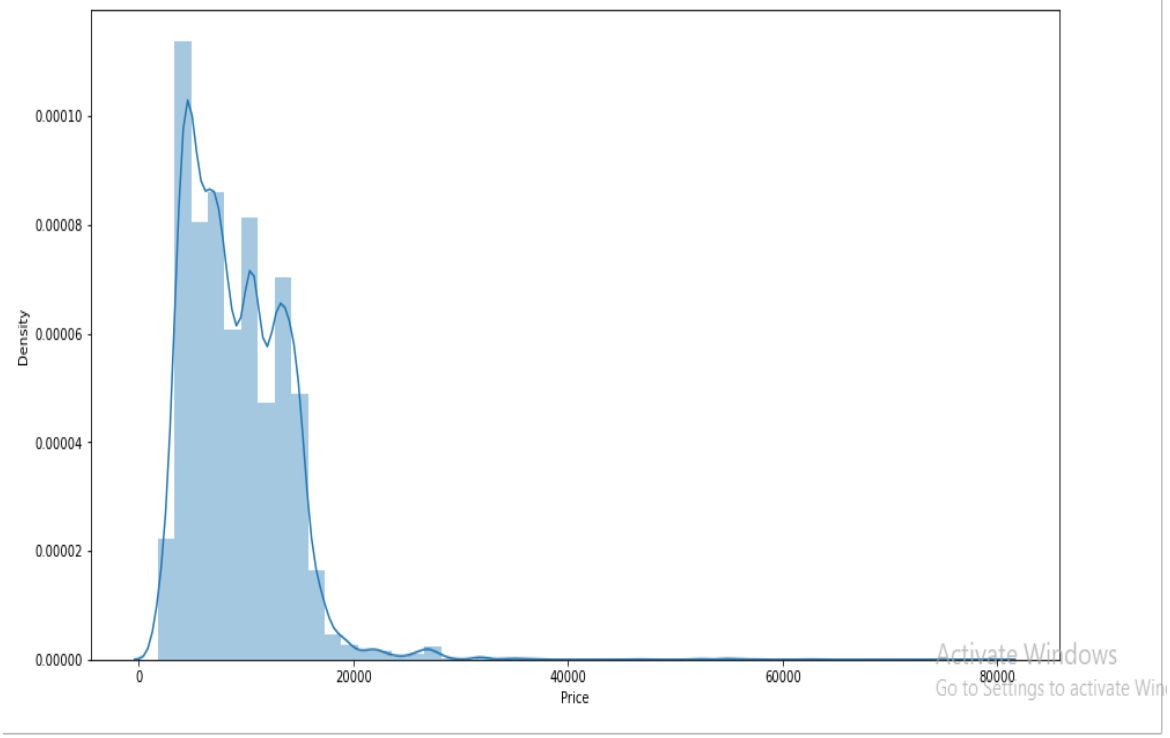
We Now Plot Distribution Plots To Check The Distribution In Numerical Data (Distribution Of 'Price' Column)

- The seaborn.displot() function is used to plot the displot. The displot represents the univariate distribution of data variable as an argument and returns the plot with the density distribution. Here, I used distribution(displot) on 'Price' column.
- It estimates the probability of distribution of continous variable across various data.

```
#Distribution of 'PRICE' Column
plt.figure(figsize=(15,8))
sns.distplot(data.Price)
```

```
C:\Users\SmartBridge-PC\anaconda3\lib\site-packages\seaborn\distributions.py:2619: FutureWarning: `distplot` is a deprecated fu
nction and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with si
milar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```

```
<AxesSubplot:xlabel='Price', ylabel='Density'>
```

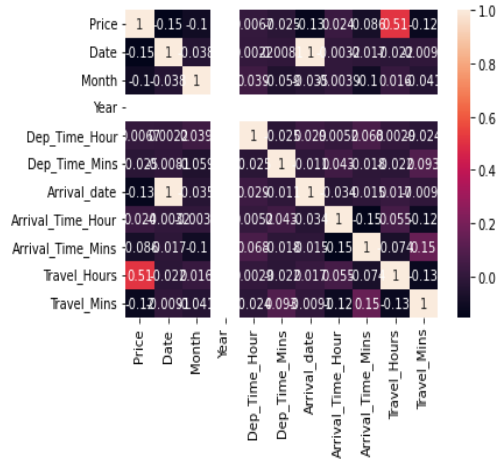


Checking The Correlation Using HeatMap

- Here, I 'm finding the correlation using HeatMap. It visualizes the data in 2-D colored maps making use of color variations. It describes the relationship variables in form of colors instead of numbers it will be plotted on both axes.
- So, by this heatmap we found that correlation between 'Arrival_date' and 'Date'. Remaining all columns don't have the any Correlation.

```
sns.heatmap(data.corr(),annot=True)
```

```
<AxesSubplot:>
```



Outlier Detection For 'Price' Column

Sometimes it's best to keep outliers in your data. it captures the valuable information and they can effect on statistical results and detect any errors in your statistical process. Here, we are checking Outliers in the 'Price' column.

```
# Detecting the Outliers
import seaborn as sns
sns.boxplot(data['Price'])
```

```
C:\Users\SmartBridge-PC\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variable as a
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plicit keyword will result in an error or misinterpretation.
  warnings.warn(
```

```
<AxesSubplot:xlabel='Price'>
```