

```
#import libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
sb.set()
import plotly.express as px
import plotly.graph_objects as go
from plotly.subplots import make_subplots

import os
import warnings
warnings.filterwarnings('ignore')

pd.set_option('display.max_columns', None)
pd.set_option('display.max_rows', None)

from google.colab import files
uploaded = files.upload()

Choose Files data.csv
• data.csv(text/csv) - 1475504 bytes, last modified: 12/4/2023 - 100% done
Saving data.csv to data (1).csv
```

```
#Loading the data
data = pd.read_csv('data.csv')
```

```
data.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 11914 entries, 0 to 11913
Data columns (total 16 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Make                   11914 non-null  object
1   Model                  11914 non-null  object
2   Year                   11914 non-null  int64
3   Engine Fuel Type       11911 non-null  object
4   Engine HP              11845 non-null  float64
5   Engine Cylinders       11884 non-null  float64
6   Transmission Type      11914 non-null  object
7   Driven_Wheels          11914 non-null  object
8   Number of Doors        11908 non-null  float64
9   Market Category        8172 non-null   object
10  Vehicle Size           11914 non-null  object
11  Vehicle Style           11914 non-null  object
12  highway MPG            11914 non-null  int64
13  city mpg               11914 non-null  int64
14  Popularity             11914 non-null  int64
15  MSRP                   11914 non-null  int64
dtypes: float64(3), int64(5), object(8)
memory usage: 1.5+ MB
```

```
#retrieving first five rows
data.head()
```

	Make	Model	Year	Engine Fuel Type	Engine HP	Engine Cylinders	Transmission Type	Driven_Wheels	Number of Doors
0	BMW	Series 1 M	2011	premium unleaded (required)	335.0	6.0	MANUAL	rear wheel drive	2.
1	BMW	Series 1	2011	premium unleaded (required)	300.0	6.0	MANUAL	rear wheel drive	2.
2	BMW	Series 1	2011	premium unleaded (required)	300.0	6.0	MANUAL	rear wheel drive	2.
3	BMW	Series 1	2011	premium unleaded (required)	230.0	6.0	MANUAL	rear wheel drive	2.
4	BMW	Series 1	2011	premium unleaded	230.0	6.0	MANUAL	rear wheel drive	2.



	Make	Model	Year	Engine Fuel Type	Engine HP	Engine Cylinders	Transmission Type	Driven_Wh
11909	Acura	ZDX	2012	premium unleaded (required)	300.0	6.0	AUTOMATIC	all wheel
11910	Acura	ZDX	2012	premium unleaded (required)	300.0	6.0	AUTOMATIC	all wheel
11911	Acura	ZDX	2012	premium unleaded (required)	300.0	6.0	AUTOMATIC	all wheel
11912	Acura	ZDX	2013	premium unleaded (recommended)	300.0	6.0	AUTOMATIC	all wheel
11913	Lincoln	Zephyr	2006	regular unleaded	221.0	6.0	AUTOMATIC	front v

```
#data statistics  
data.describe()
```

	Year	Engine HP	Engine Cylinders	Number of Doors	highway MPG	city mpg
count	11914.000000	11845.00000	11884.000000	11908.000000	11914.000000	11914.000000
mean	2010.384338	249.38607	5.628829	3.436093	26.637485	19.733255
std	7.579740	109.19187	1.780559	0.881315	8.863001	8.987798
min	1990.000000	55.00000	0.000000	2.000000	12.000000	7.000000
25%	2007.000000	170.00000	4.000000	2.000000	22.000000	16.000000
50%	2015.000000	227.00000	6.000000	4.000000	26.000000	18.000000
75%	2016.000000	300.00000	6.000000	4.000000	30.000000	22.000000

```
data.isnull()
```



11879	False	False	False	False	False	False	False	False
11880	False	False	False	False	False	False	False	False
11881	False	False	False	False	False	False	False	False
11882	False	False	False	False	False	False	False	False
11883	False	False	False	False	False	False	False	False
11884	False	False	False	False	False	False	False	False
11885	False	False	False	False	False	False	False	False
11886	False	False	False	False	False	False	False	False
11887	False	False	False	False	False	False	False	False
11888	False	False	False	False	False	False	False	False
11889	False	False	False	False	False	False	False	False
11890	False	False	False	False	False	False	False	False
11891	False	False	False	False	False	False	False	False
11892	False	False	False	False	False	False	False	False
11893	False	False	False	False	False	False	False	False
11894	False	False	False	False	False	False	False	False
11895	False	False	False	False	False	False	False	False
11896	False	False	False	False	False	False	False	False
11897	False	False	False	False	False	False	False	False
11898	False	False	False	False	False	False	False	False
11899	False	False	False	False	False	False	False	False
11900	False	False	False	False	False	False	False	False
11901	False	False	False	False	False	False	False	False
11902	False	False	False	False	False	False	False	False
11903	False	False	False	False	False	False	False	False
11904	False	False	False	False	False	False	False	False
11905	False	False	False	False	False	False	False	False
11906	False	False	False	False	False	False	False	False
11907	False	False	False	False	False	False	False	False
11908	False	False	False	False	False	False	False	False
11909	False	False	False	False	False	False	False	False

























