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EX:5	EDA – DATA VISUALIZATION	AD23632

Aim:

To explore and understand the underlying patterns, distributions, and relationships within the dataset through visual representations, which aids in uncovering insights, detecting anomalies, and guiding further analysis.

CODE:

```
import matplotlib.pyplot as plt

import pandas as pd

import numpy as np


df = pd.read_csv("/content/data.csv") # Replace with your file

df.head()
```

	Make	Model	Year	Engine Fuel Type	Engine HP	Engine Cylinders	Transmission Type	Driven_Wheels	Number of Doors	Market Category	Vehicle Size	Vehicle Style	highway MPG	city mpg	Popularity	MSRP
0	BMW	1 Series M	2011	premium unleaded (required)	335.0	6.0	MANUAL	rear wheel drive	2.0	Factory Tuner,Luxury,High-Performance	Compact	Coupe	26	19	3916	46135
1	BMW	1 Series	2011	premium unleaded (required)	300.0	6.0	MANUAL	rear wheel drive	2.0	Luxury,Performance	Compact	Convertible	28	19	3916	40650
2	BMW	1 Series	2011	premium unleaded (required)	300.0	6.0	MANUAL	rear wheel drive	2.0	Luxury,High-Performance	Compact	Coupe	28	20	3916	36350
3	BMW	1 Series	2011	premium unleaded (required)	230.0	6.0	MANUAL	rear wheel drive	2.0	Luxury,Performance	Compact	Coupe	28	18	3916	29450
4	BMW	1 Series	2011	premium unleaded (required)	230.0	6.0	MANUAL	rear wheel drive	2.0	Luxury	Compact	Convertible	28	18	3916	34500

LINE CHART:

```
x = np.linspace(0, 10, 100)

y = np.sin(x)

plt.plot(x, y, color='blue', label='Sine Wave')

plt.xlabel('X-axis')

plt.ylabel('Y-axis')

plt.title('Line Plot')

plt.legend()

plt.show()
```

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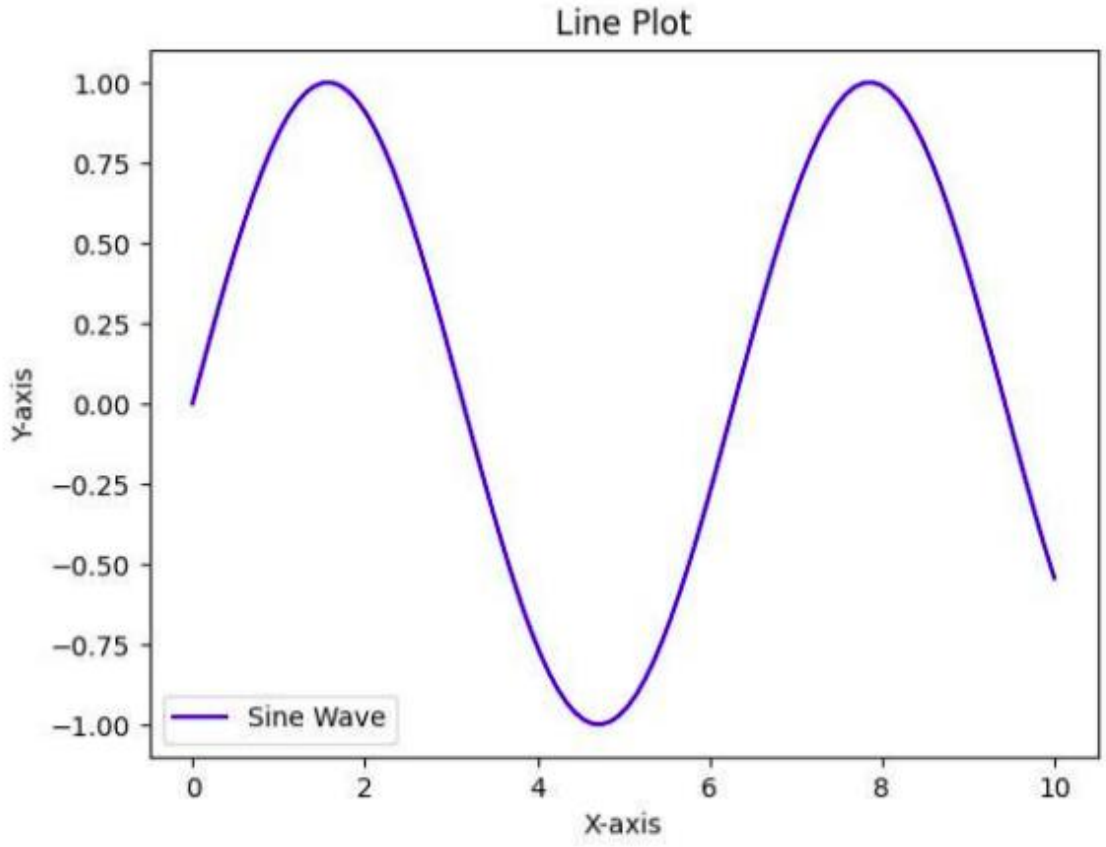

BAR CHART:

```
categories = ['A', 'B', 'C', 'D']
values = [3, 7, 5, 4]
plt.bar(categories, values, color='orange')
plt.xlabel('Category')
plt.ylabel('Values')
plt.title('Bar Plot')
plt.show()
```

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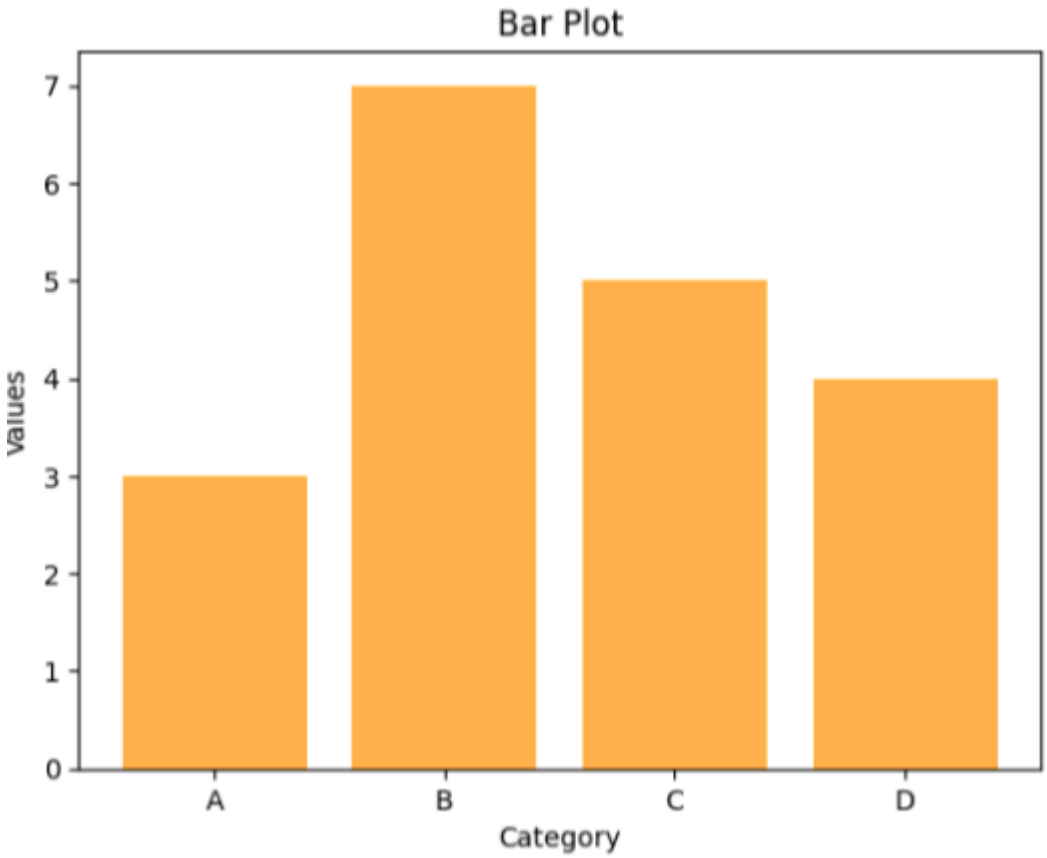

HISTOGRAM:

```
data = np.random.randn(1000)
plt.hist(data, bins=20, color='purple', edgecolor='black')
plt.xlabel('Value')
plt.ylabel('Frequency')
plt.title('Histogram')
plt.show()
```

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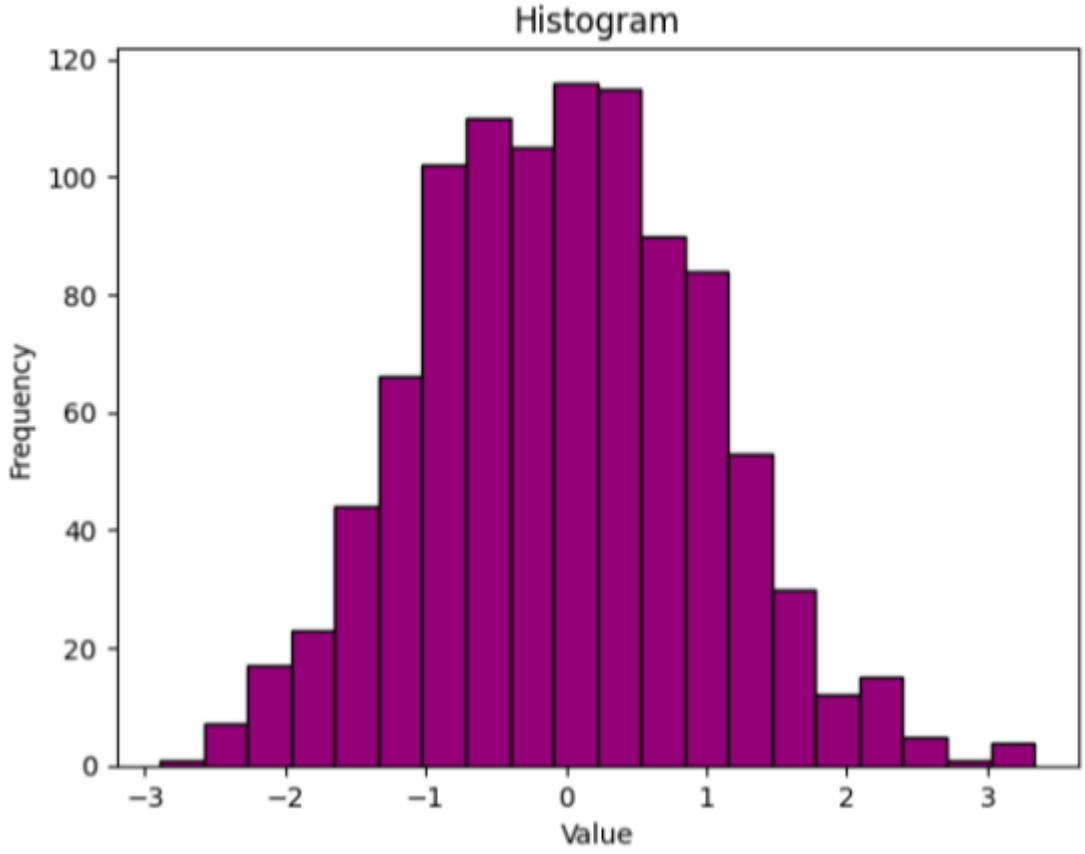

Result:

Thus the EDA – DATA VISUALIZATION is done successfully.