

31/01/2025

VISUALIZATION OF TIMESERIES DATA

AIM:

To write a python program for visualizing the time series data.

ALGORITHM:

- 1) Import required library files
- 2) Prepare the data
- 3) Visualize the data using different methods

CODE:

```
import pandas as pd
import numpy as np

data = pd.read_csv("Gold_Price.csv")

import matplotlib.pyplot as plt

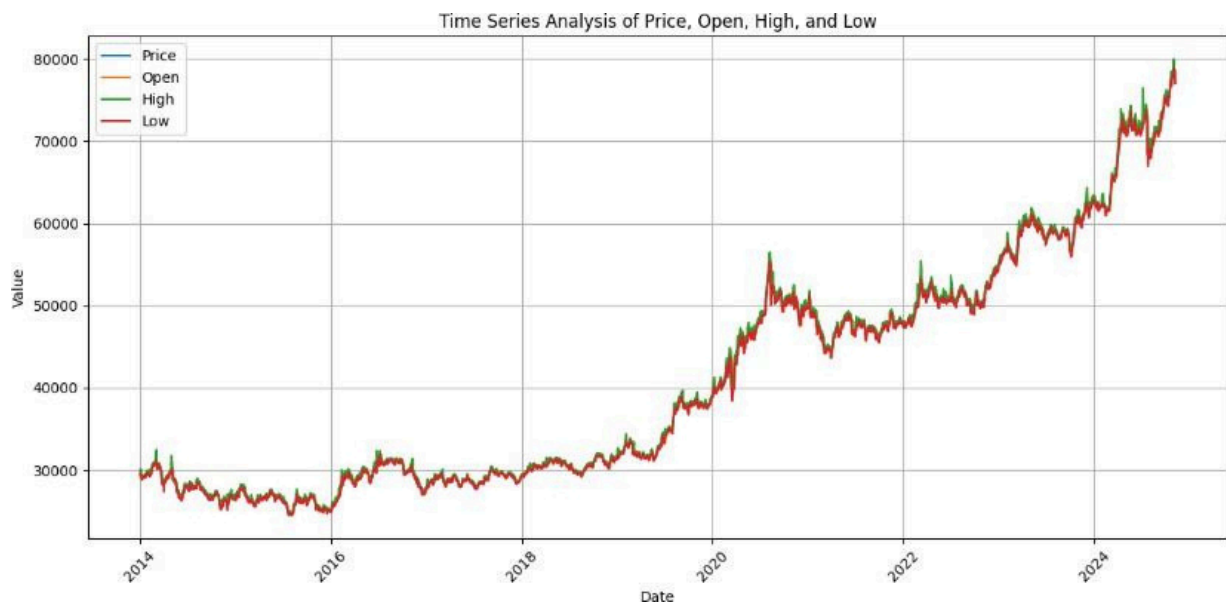
# Convert 'Date' column to datetime objects if it's not already
data['Date'] = pd.to_datetime(data['Date'])

# Set 'Date' as the index for easier time series plotting
data = data.set_index('Date')

# Create the plot
plt.figure(1,figsize=(12, 6)) # Adjust figure size as needed
plt.plot(data['Price'], label='Price')
plt.plot(data['Open'], label='Open')
plt.plot(data['High'], label='High')
plt.plot(data['Low'], label='Low')

# Customize the plot
plt.title('Time Series Analysis of Price, Open, High, and Low')
plt.xlabel('Date')
plt.ylabel('Value')
plt.legend() # Display the legend
plt.grid(True) # Add gridlines for better readability
plt.xticks(rotation=45) # Rotate x-axis labels for better readability

# Show the plot
plt.tight_layout() # Adjust plot layout to prevent labels from overlapping
plt.show()
```

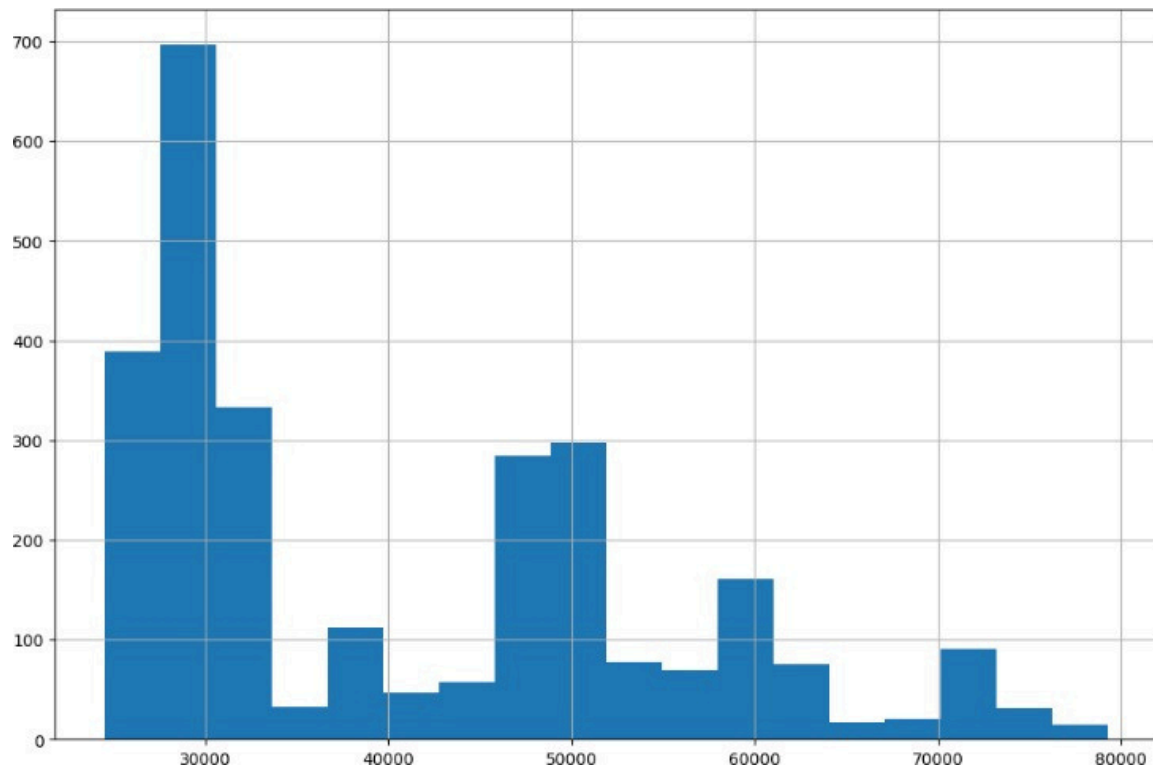


```
plt.figure(figsize=(12,6))

plt.plot(data['Price'],label = 'price')
plt.plot(data['Open'],label = 'open')
plt.plot(data['High'],label = 'high')
plt.plot(data['Low'],label = 'low')
plt.grid(True)
plt.legend()
plt.tight_layout()
plt.show()
```

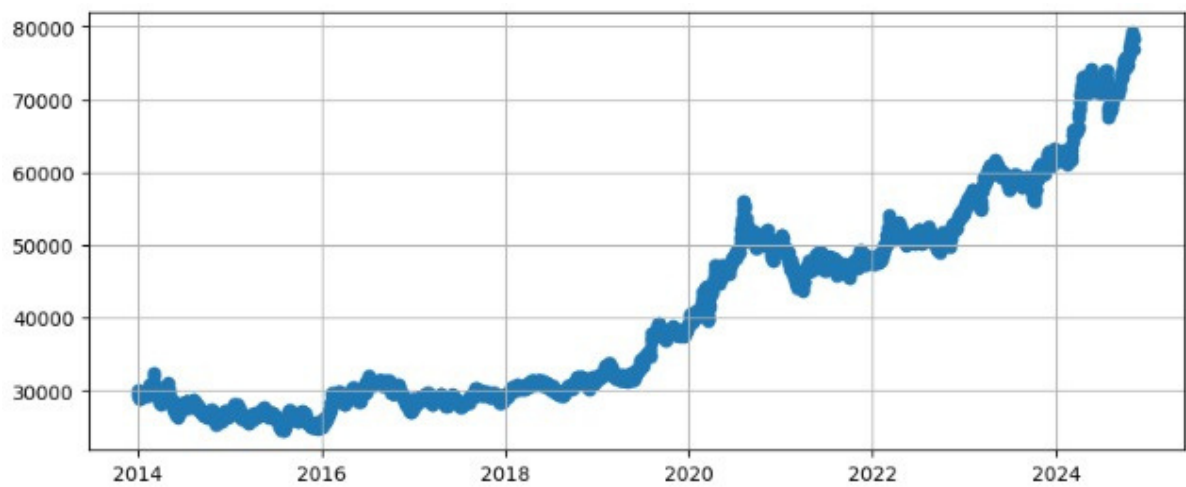
```
import matplotlib.pyplot as plt

plt.figure(2,figsize= (12,8))
plt.hist(data['Price'],bins = 'auto')
plt.grid()
plt.show()
```



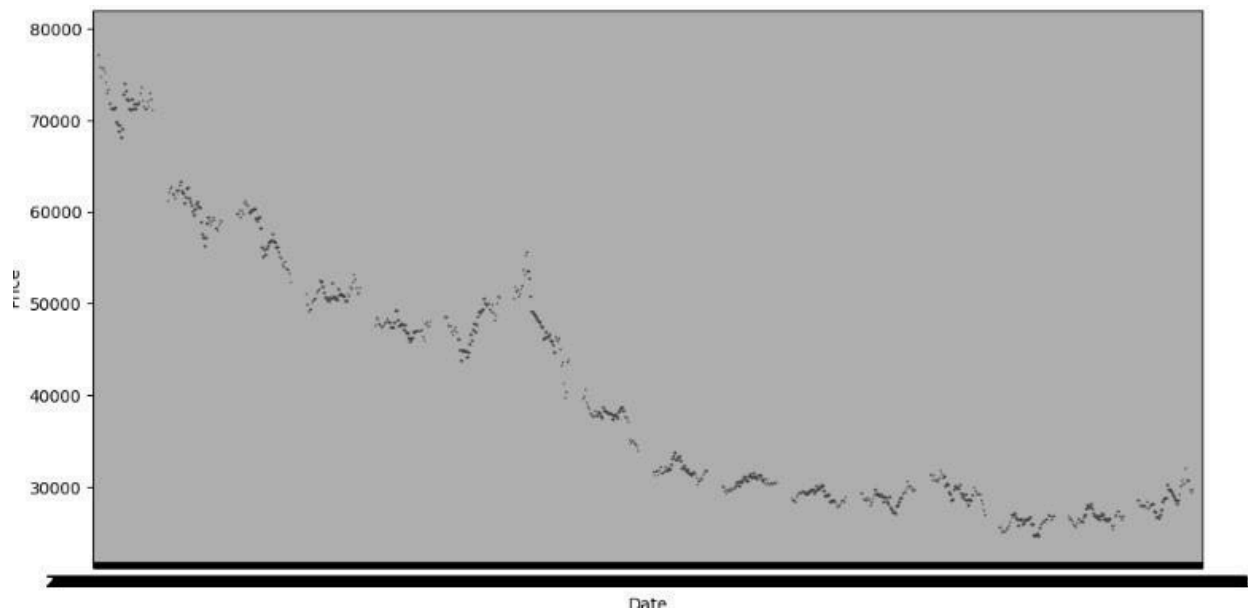
```
plt.figure(2,figsize=(10,4))
plt.scatter(data.index,data['Price'])
```

```
plt.grid()
plt.show()
```



```
import seaborn as sns
plt.figure(3,figsize=(12,6))
sns.boxplot(x=data.index,y=data['Price'],data = data)
plt.grid()
```

```
plt.show()
```



```
import pandas as pd
```

```
import matplotlib.pyplot as plt
```

```
from statsmodels.graphics.tsaplots import plot_acf, plot_pacf
```

```
plt.figure(figsize=(10, 6))
```

```
plot_acf(data['Price'], lags=30) # Adjust the number of lags as needed
```

```
plt.title('Autocorrelation Function (ACF)')
```

```
plt.show()
```

```
plt.figure(figsize=(10, 6))
```

```
plot_pacf(data['Price'], lags=30) # Adjust the number of lags as needed
```

```
plt.title('Partial Autocorrelation Function (PACF)')
```

```
plt.show()
```

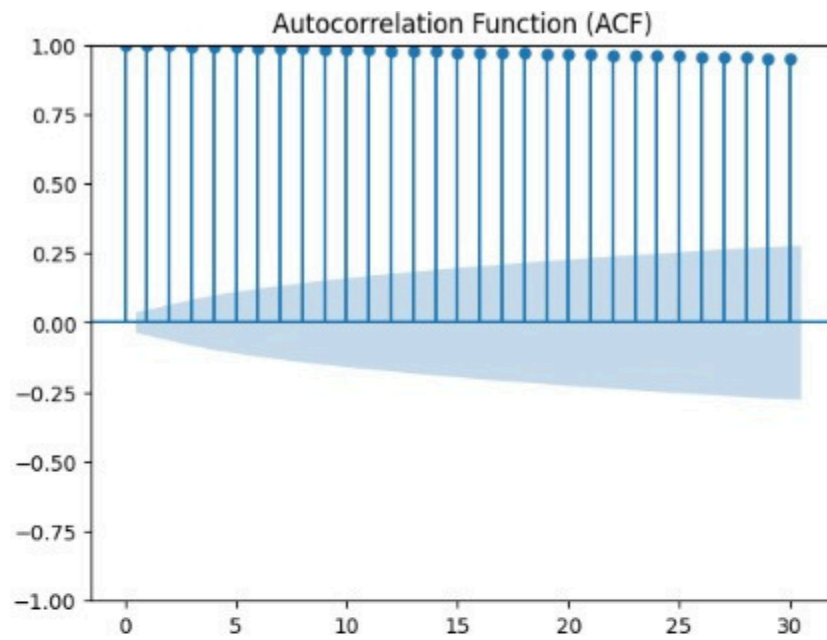
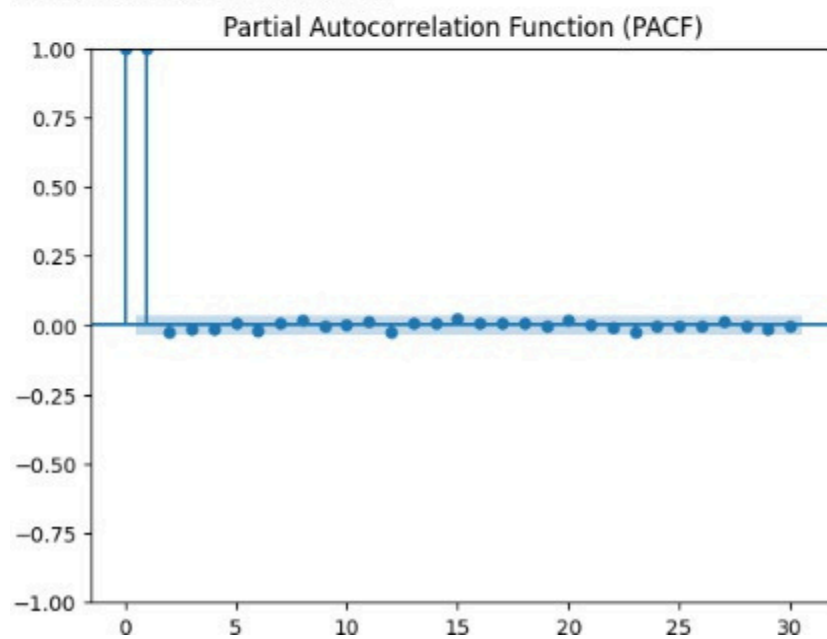


Figure size 1000x600 with 0 Axes>



RESULT:

The Visualization of timeseries data has been created .