In [38]:

```
import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)


import os
for dirname, _, filenames in os.walk('/kaggle/input'):
    for filename in filenames:
        print(os.path.join(dirname, filename))
```

In [2]:

```
import numpy as np
import pandas as pd
import seaborn as sns
```

In [3]:

```
import matplotlib.pyplot as plt
import warnings
warnings.filterwarnings('ignore')
sns.set_style('darkgrid')
```

In [10]:

```
#Creating Data base and storing it

data = pd.read_csv("C:\\Users\\user\\Downloads\\nifty_500 (1).csv")
data.head()
```

Out[10]:

	Company Name	Symbol	Industry	Series	Open	High	Low	Previous Close	Last Traded Price	Change	Percentage Change	Share Volume	Va
0	3M India Ltd.	3MINDIA	Diversified	EQ	21950.00	21999.00	21126.05	21854.05	21575.00	-279.05	-1.28	4159	8.9
1	Aarti Drugs Ltd.	AARTIDRUGS	Healthcare	EQ	400.50	401.80	394.10	403.85	400.00	-3.85	-0.95	31782	1.2
2	Aavas Financiers Ltd.	AAVAS	Financial Services	EQ	1997.10	2004.05	1894.50	2015.45	1943.15	-72.30	-3.59	150704	2.9
3	ABB India Ltd.	ABB	Capital Goods	EQ	2260.35	2311.50	2260.35	2300.90	2280.00	-20.90	-0.91	97053	2.2
4	Abbott India Ltd.	ABBOTINDIA	Healthcare	EQ	18700.40	19200.00	18605.00	18760.40	19199.80	439.40	2.34	12396	2.3

In [11]:

```
#let’s take a look at its various columns for further analysis.

#The Open and Previous Close columns indicate the opening and closing price of the stocks on a particular day
#Industry Sectors to which the stocks belongs
#The High and Low columns provide the highest and the lowest price for the stock on a particular day, respect
#The Share Volume column tells us the total volume of stocks traded on a particular day.
#52 Week High and Low colums Provides the yearly high and low face value of the stock
```

In [12]:

```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 501 entries, 0 to 500
Data columns (total 17 columns):
 #   Column                  Non-Null Count  Dtype  
---  ------                  --------------  -----  
 0   Company Name            501 non-null    object 
 1   Symbol                  501 non-null    object 
 2   Industry                501 non-null    object 
 3   Series                  501 non-null    object 
 4   Open                    501 non-null    float64
 5   High                    501 non-null    float64
 6   Low                     501 non-null    float64
 7   Previous Close          501 non-null    float64
 8   Last Traded Price       501 non-null    float64
 9   Change                  501 non-null    object 
 10  Percentage Change       501 non-null    object 
 11  Share Volume            501 non-null    int64  
 12  Value (Indian Rupee)    501 non-null    float64
 13  52 Week High               501 non-null    float64
 14  52 Week Low                501 non-null    float64
 15  365 Day Percentage Change  501 non-null    object
 16  30 Day Percentage Change   501 non-null    object
dtypes: float64(8), int64(1), object(8)
memory usage: 66.7+ KB
```

In [13]:

```
object_dtype = data.select_dtypes(include=object)
object_dtype.columns
```

Out[13]:

```
Index(['Company Name', 'Symbol', 'Industry', 'Series', 'Change',
       'Percentage Change', '365 Day Percentage Change',
       '30 Day Percentage Change'],
      dtype='object')
```

In [14]:

```
num_dtype = data.select_dtypes(exclude=object)
num_dtype.columns
```

Out[14]:

```
Index(['Open', 'High', 'Low', 'Previous Close', 'Last Traded Price',
       'Share Volume', 'Value (Indian Rupee)', '52 Week High', '52 Week Low'],
      dtype='object')
```

In [15]:

```
#Getting shapes (rows and column)
data_shape = data.shape
print(f"The dataframe has {data_shape[0]} records and {data_shape[1]} features")
```

```
The dataframe has 501 records and 17 features
```

In [16]:

```
data.describe().T
```

Out[16]:

	count	mean	std	min	25%	50%	75%	max
Open	501.0	1.525904e+03	4.466627e+03	6.75	215.30	5.511000e+02	1.404500e+03	7.030000e+04
High	501.0	1.553805e+03	4.576378e+03	6.95	221.55	5.691000e+02	1.421250e+03	7.250000e+04
Low	501.0	1.504042e+03	4.435492e+03	6.70	210.60	5.470000e+02	1.396850e+03	7.030000e+04
Previous Close	501.0	1.528061e+03	4.477209e+03	6.85	217.20	5.547500e+02	1.411700e+03	7.080090e+04
Last Traded Price	501.0	1.536925e+03	4.532005e+03	6.80	214.65	5.630000e+02	1.410000e+03	7.190000e+04
Share Volume	501.0	2.580350e+06	9.407021e+06	1507.00	77405.00	3.296100e+05	1.235612e+06	1.257883e+08
Value (Indian Rupee)	501.0	8.635146e+08	4.335973e+09	2587222.80	45022649.25	1.533133e+08	6.644570e+08	9.211987e+10
52 Week High	501.0	2.182632e+03	5.728930e+03	13.10	328.70	8.180000e+02	2.096750e+03	8.755000e+04
52 Week Low	501.0	1.281629e+03	3.850530e+03	4.55	166.80	4.380500e+02	1.128800e+03	6.300000e+04

In [17]:

```
data.describe(include=object).T
```

Out[17]:

	count	unique	top	freq
Company Name	501	501	Godfrey Phillips India Ltd.	1
Symbol	501	501	BAJAJHLDNG	1
Industry	501	21	Financial Services	88
Series	501	2	EQ	500
Change	501	372	0.10	7
Percentage Change	501	354	-0.33	5
365 Day Percentage Change	501	441	-	44
30 Day Percentage Change	501	458	0.98	3

In [18]:

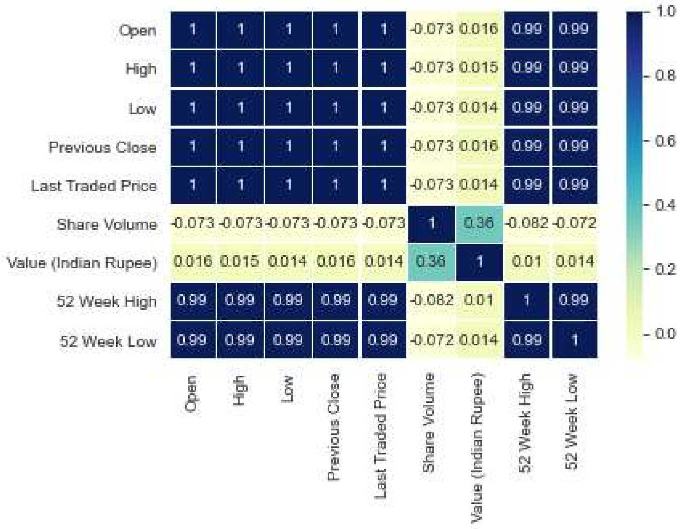
```
#Coorealtion
```

In [19]:

```
sns.heatmap(data.corr(),annot=True,cmap='YlGnBu',linewidths=0.2)
```

Out[19]:

```
<AxesSubplot:>
```



In [20]:

```
#Data Cleaning
#Checking for Not available value(NULL/NA)
```

In [21]:

```
data.isna().any()
```

Out[21]:

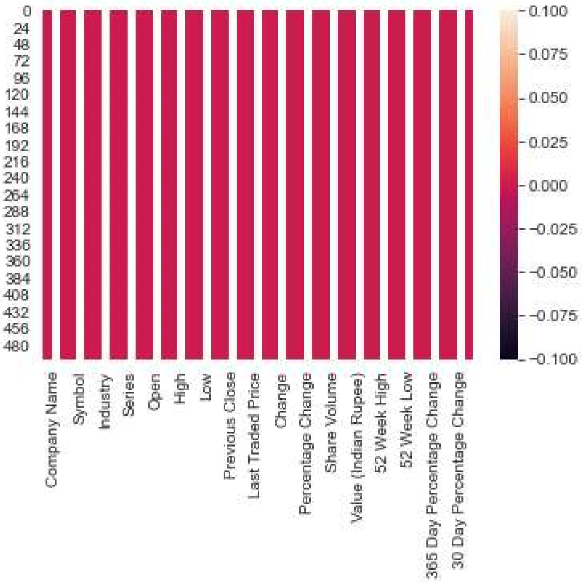
```
Company Name                 False
Symbol                       False
Industry                     False
Series                       False
Open                         False
High                         False
Low                          False
Previous Close               False
Last Traded Price            False
Change                       False
Percentage Change            False
Share Volume                 False
Value (Indian Rupee)         False
52 Week High                 False
52 Week Low                  False
365 Day Percentage Change    False
30 Day Percentage Change     False
dtype: bool
```

In [22]:

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

Out[22]:

```
<AxesSubplot:>
```



In [23]:

```
#There is no null values in the dataset

#Getting unique values
```

In [24]:

```
data.nunique()
```

Out[24]:

```
Company Name                 501
Symbol                       501
Industry                      21
Series                         2
Open                         492
High                         495
Low                          493
Previous Close               495
Last Traded Price            493
Change                       372
Percentage Change            354
Share Volume                 501
Value (Indian Rupee)         501
52 Week High                 497
52 Week Low                  494
365 Day Percentage Change    441
30 Day Percentage Change     458
dtype: int64
```

In [25]:

```
#Droping Symbol and Series Columns

data.drop(columns=['Symbol','Series'],inplace=True)
data.columns
```

Out[25]:

```
Index(['Company Name', 'Industry', 'Open', 'High', 'Low', 'Previous Close',
       'Last Traded Price', 'Change', 'Percentage Change', 'Share Volume',
       'Value (Indian Rupee)', '52 Week High', '52 Week Low',
       '365 Day Percentage Change', '30 Day Percentage Change'],
      dtype='object')
```

In [26]:

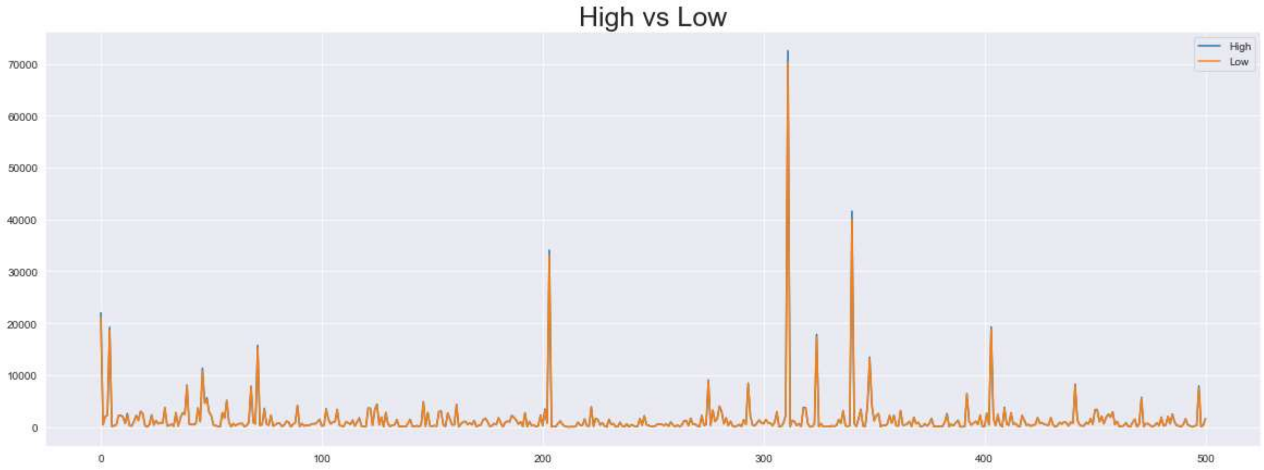
```
#Data Visualization
#In this phase,we will witness a lot of line graphs which can help us to understand the trend

#Analysing High vs Low
```

In [27]:

```
fx = data[['High','Low']].plot(figsize=(20,7))
fx.set_title("High vs Low",fontsize=25)
```

Out[27]:

```
Text(0.5, 1.0, 'High vs Low')
```

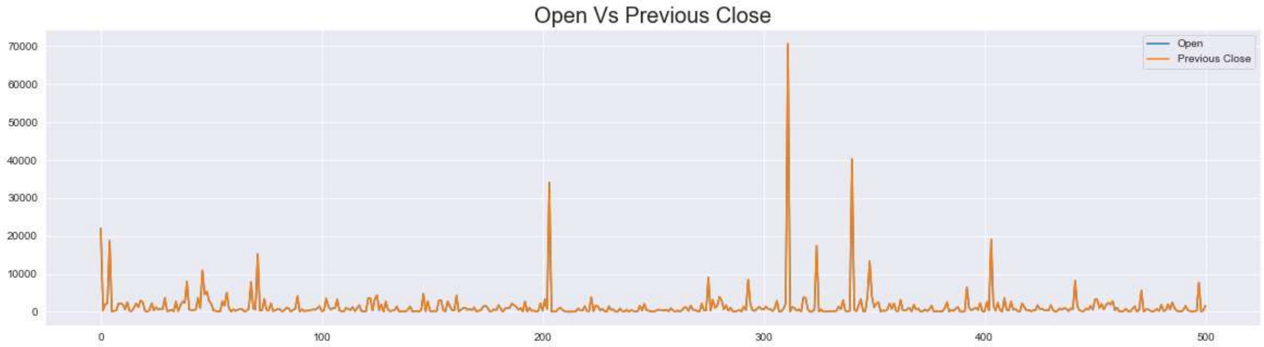


In [28]:

```
#Analysing Closing price vs Open Price

fx = data[['Open','Previous Close']].plot(figsize=(20,5))
fx.set_title("Open Vs Previous Close",fontsize=20)
```

Out[28]:

```
Text(0.5, 1.0, 'Open Vs Previous Close')
```

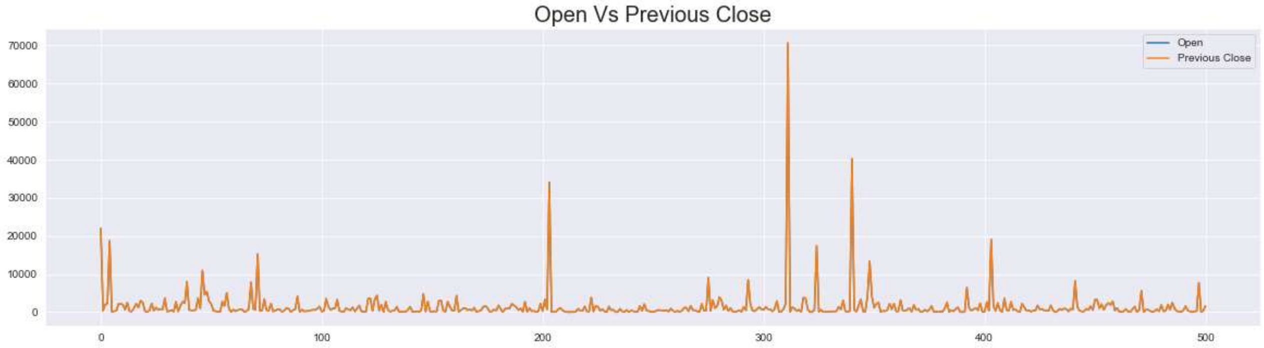


In [29]:

```
#Analysing Closing price vs Open Price

fx = data[['Open','Previous Close']].plot(figsize=(20,5))
fx.set_title("Open Vs Previous Close",fontsize=20)
```

Out[29]:

```
Text(0.5, 1.0, 'Open Vs Previous Close')
```



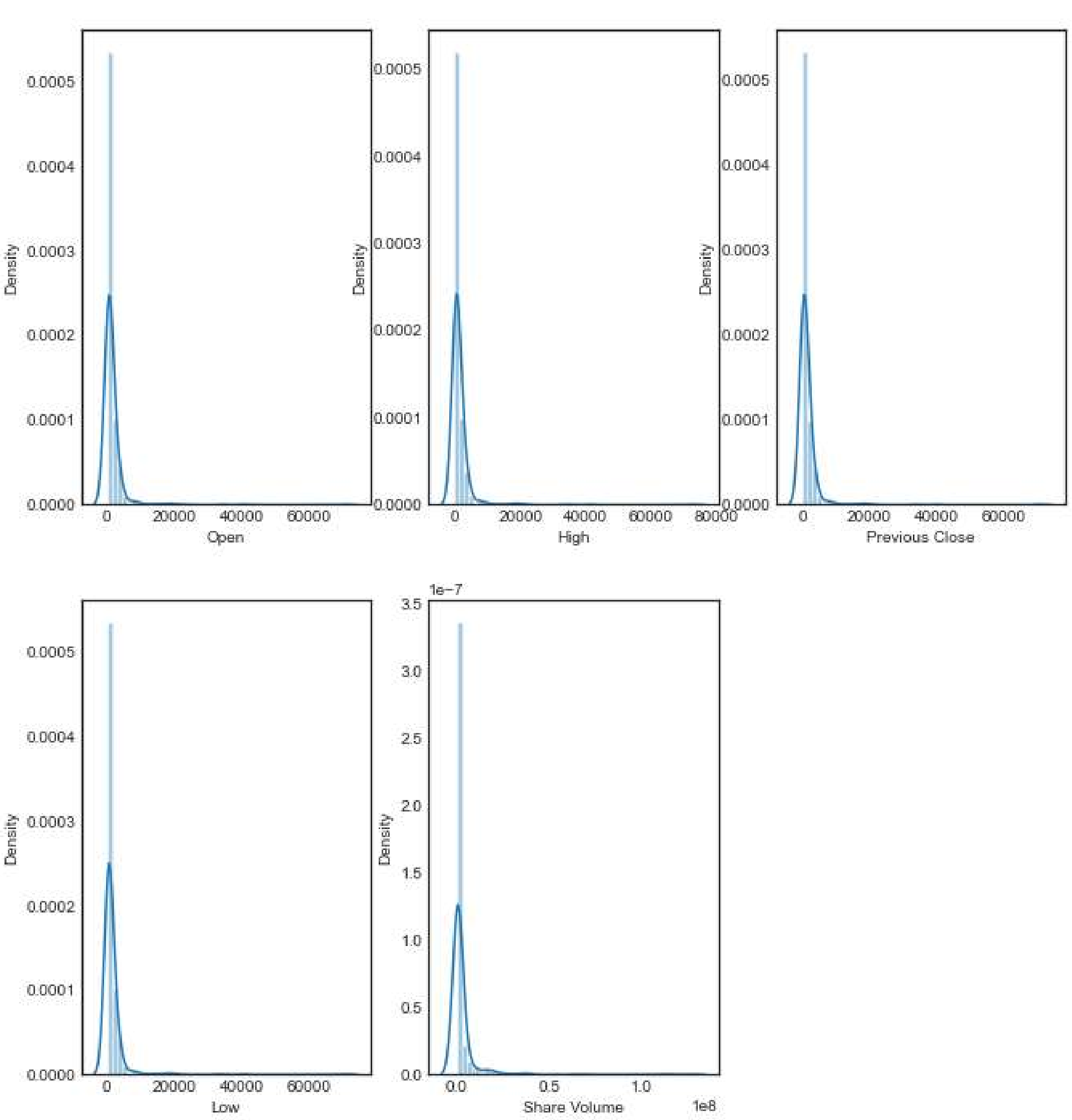
In [30]:

```
#Distribution of Stock Measures

#Let witness the histogram distribution of the stock measures such as open,close,high,low and volume
```

In [31]:

```
columns = ['Open','High','Previous Close','Low','Share Volume']
di = {}
plt.figure(figsize=(20,7))
plt.style.use('seaborn-white')
d_x = 231
for i in columns:
    plt.subplot(d_x)
    sns.distplot(data[i])
    a_x = plt.gcf()
    a_x.set_size_inches(11,12)
    d_x+=1
    di[i] = data[i].skew()
print("Skewness of each measures")
print(di)
```

```
Skewness of each measures
{'Open': 10.0834494701177, 'High': 10.202033718688162, 'Previous Close': 10.146385305666179, 'Low': 10.201970
935326168, 'Share Volume': 8.938483021288945}
```



In [32]:

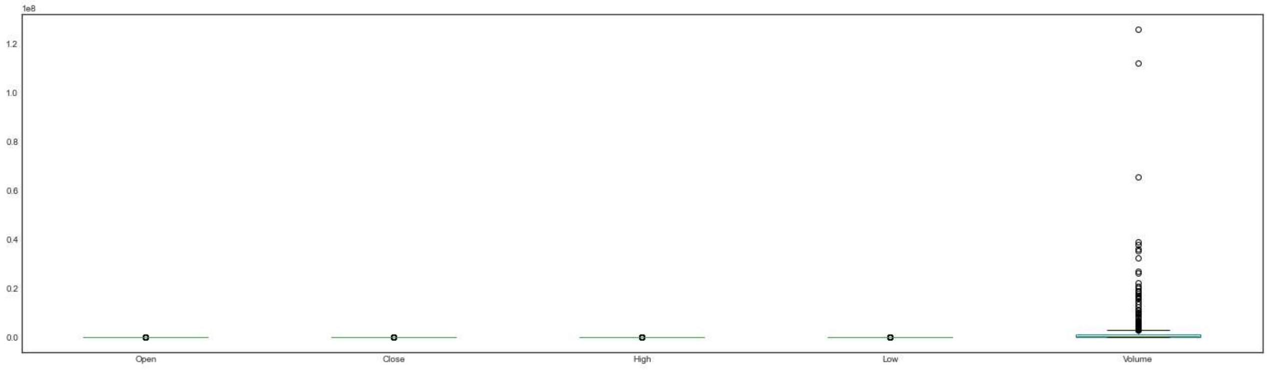
```
#Insights:

#All the measures are exhibit equal distribution property
#All the Distributions are positivly Skewed
```

In [33]:

```
#Box Plot of Features

df = pd.DataFrame({'Open':data['Open'],'Close':data['Previous Close'],'High':data['High'],'Low':data['Low'],'
df.plot.box(figsize=(25,7))
```

Out[33]:

```
<AxesSubplot:>
```

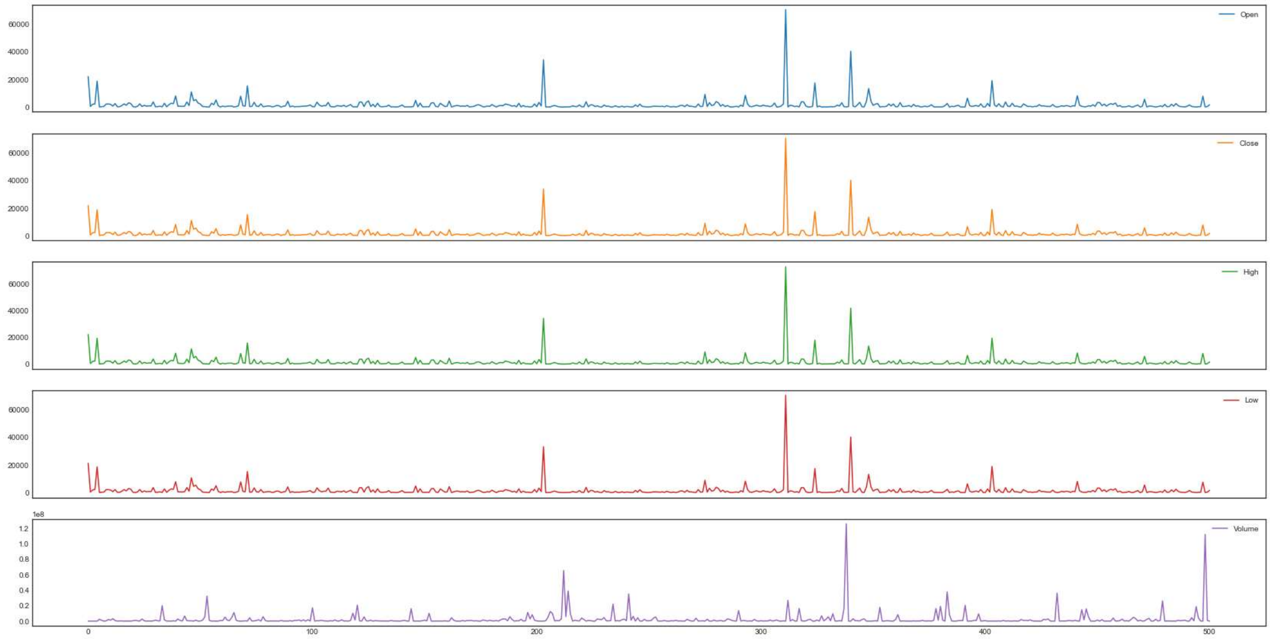


In [34]:

```
df.plot(subplots=True,figsize=(29,15))
```

Out[34]:

```
array([<AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>], dtype=object)
```

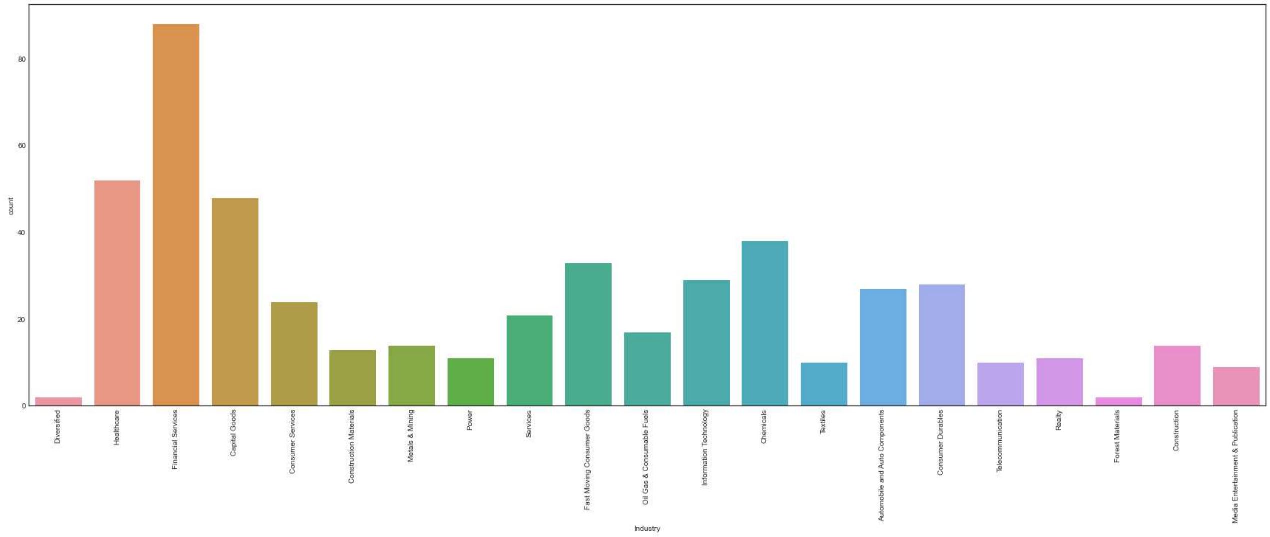


In [35]:

```
#Distribution of Industries

plt.figure(figsize=(30,10))
sns.countplot(data['Industry'])
plt.xticks(rotation=90)
```

Out[35]:

```
(array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16,
        17, 18, 19, 20]),
 [Text(0, 0, 'Diversified'),
  Text(1, 0, 'Healthcare'),
  Text(2, 0, 'Financial Services'),
  Text(3, 0, 'Capital Goods'),
  Text(4, 0, 'Consumer Services'),
  Text(5, 0, 'Construction Materials'),
  Text(6, 0, 'Metals & Mining'),
  Text(7, 0, 'Power'),
  Text(8, 0, 'Services'),
  Text(9, 0, 'Fast Moving Consumer Goods'),
  Text(10, 0, 'Oil Gas & Consumable Fuels'),
  Text(11, 0, 'Information Technology'),
  Text(12, 0, 'Chemicals'),
  Text(13, 0, 'Textiles'),
  Text(14, 0, 'Automobile and Auto Components'),
  Text(15, 0, 'Consumer Durables'),
  Text(16, 0, 'Telecommunication'),
  Text(17, 0, 'Realty'),
  Text(18, 0, 'Forest Materials'),
  Text(19, 0, 'Construction'),
  Text(20, 0, 'Media Entertainment & Publication')])
```



In [36]:

```
#Observations
```

```
#Financial Services Contributes more value counts
#Forest Materials and Diversified are having low value counts
```

In [37]:

```
data['Industry'].value_counts()
```

Out[37]:

```
Financial Services                    88
Healthcare                            52
Capital Goods                         48
Chemicals                             38
Fast Moving Consumer Goods            33
Information Technology                29
Consumer Durables                     28
Automobile and Auto Components        27
Consumer Services                     24
Services                              21
Oil Gas & Consumable Fuels            17
Metals & Mining                       14
Construction                          14
Construction Materials                13
Power                                 11
Realty                                11
Telecommunication                     10
Textiles                              10
Media Entertainment & Publication      9
Forest Materials                       2
Diversified                            2
Name: Industry, dtype: int64
```

In [ ]: