Ethereum Historical Dataset Analysis By Python

Dataset :- [https://www.kaggle.com/datasets/prasoonkottarathil/ethereum-historical-dataset (https://www.kaggle.com/datasets/prasoonkottarathil/ethereum-historical-dataset)](https://www.kaggle.com/datasets/prasoonkottarathil/ethereum-historical-dataset)

In [22]:
```
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
import numpy as np
from datetime import datetime
```

In [6]:
```
df2=pd.read_csv('H:/ETH_2.csv')
df2.head(5).style.background_gradient(cmap='summer')
```

Out[6]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume
0	1586995200000	2020-04-16 00:00:00	ETHUSD	152.940000	152.940000	151.330000	151.330000	112.724931
1	1586995140000	2020-04-15 23:59:00	ETHUSD	152.940000	152.940000	152.940000	152.940000	0.000000
2	1586995080000	2020-04-15 23:58:00	ETHUSD	153.170000	153.170000	152.940000	152.940000	0.013011
3	1586995020000	2020-04-15 23:57:00	ETHUSD	152.960000	153.200000	152.960000	153.170000	466.782278
4	1586994960000	2020-04-15 23:56:00	ETHUSD	153.140000	153.140000	152.960000	152.960000	167.930714

In [20]:
```
df3=pd.read_csv('H:/ETH_3.csv')
df3.head(5).style.background_gradient(cmap='summer')
```

Out[20]:

	Date	Symbol	Open	High	Low	Close	Volume ETH	Volume USD
0	2020-04-15	ETHUSD	158.610000	158.610000	158.610000	158.610000	0.000000	0.000000
1	2020-04-14	ETHUSD	156.970000	162.150000	155.740000	158.610000	18061.580000	2872210.440000
2	2020-04-13	ETHUSD	158.560000	159.510000	150.120000	156.970000	15698.320000	2416728.280000
3	2020-04-12	ETHUSD	158.660000	165.370000	155.210000	158.560000	12877.330000	2082804.050000
4	2020-04-11	ETHUSD	158.260000	161.490000	154.250000	158.660000	13761.720000	2172914.570000

In [14]:
```
df2.describe().round(2)
```

Out[14]:

	Unix Timestamp	Open	High	Low	Close	Volume
count	1.984012e+06	1984012.00	1984012.00	1984012.00	1984012.00	1984012.00
mean	6.154583e+11	241.82	241.96	241.68	241.82	26.12
std	7.621617e+11	241.52	241.71	241.31	241.52	444.46
min	1.462801e+09	0.00	5.99	0.00	5.99	0.00
25%	1.492561e+09	50.07	50.09	50.06	50.07	0.00
50%	1.522321e+09	183.32	183.37	183.26	183.32	0.00
75%	1.554502e+12	301.01	301.14	300.93	301.01	7.13
max	1.586995e+12	1420.00	1420.01	1419.89	1420.00	276423.54

In [15]:
```
df3.describe().round(2)
```

Out[15]:

	Open	High	Low	Close	Volume ETH	Volume USD
count	1438.00	1438.00	1438.00	1438.00	1438.00	1.438000e+03
mean	239.40	248.92	227.68	239.47	37206.38	1.139557e+07
std	237.66	248.68	222.79	237.61	69083.36	2.143780e+07
min	6.77	7.29	5.99	6.77	0.00	0.000000e+00
25%	79.78	84.88	74.68	80.73	7020.22	7.541171e+05
50%	181.43	187.02	175.85	181.43	17804.39	3.221372e+06
75%	297.74	306.02	287.43	297.50	42044.51	1.204918e+07
max	1381.85	1420.01	1270.00	1381.85	1827755.14	2.221193e+08

In [16]:
```
df1.shape
```

Out[16]: (34497, 8)

In [17]:
```
df2.shape
```

Out[17]: (1984012, 8)

In [18]:
```
df3.shape
```

Out[18]: (1438, 8)

In [43]:
```
df1
```

Out[43]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume	Year	Mont
0	1586995200000	2020-04-16 00:00:00	ETHUSD	152.94	152.94	150.39	150.39	650.188125	2020	0
1	1586991600000	2020-04-15 23:00:00	ETHUSD	155.81	155.81	151.39	152.94	4277.567299	2020	0
2	1586988000000	2020-04-15 22:00:00	ETHUSD	157.18	157.30	155.32	155.81	106.337279	2020	0
3	1586984400000	2020-04-15 21:00:00	ETHUSD	158.04	158.31	157.16	157.18	55.244131	2020	0
4	1586980800000	2020-04-15 20:00:00	ETHUSD	157.10	158.10	156.87	158.04	144.262622	2020	0
...	...	...	...	...	...	...	...	...	...	.
34492	1462813200	2016-05-09 17:00:00	ETHUSD	9.83	9.83	9.48	9.49	329.553213	2016	0
34493	1462809600	2016-05-09 16:00:00	ETHUSD	9.99	9.99	9.79	9.83	62.379450	2016	0
34494	1462806000	2016-05-09 15:00:00	ETHUSD	10.00	10.00	9.99	9.99	10.973567	2016	0
34495	1462802400	2016-05-09 14:00:00	ETHUSD	9.55	10.00	9.55	10.00	235.774075	2016	0
34496	1462798800	2016-05-09 13:00:00	ETHUSD	0.00	12.00	0.00	9.55	432.562115	2016	0

34497 rows × 11 columns

In [54]:
```
df1=pd.read_csv('H:/ETH_1.csv')
df1.head(5).style.background_gradient(cmap='summer')
```

Out[54]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume
0	1586995200000	2020-04-16 00:00:00	ETHUSD	152.940000	152.940000	150.390000	150.390000	650.188125
1	1586991600000	2020-04-15 23:00:00	ETHUSD	155.810000	155.810000	151.390000	152.940000	4277.567299
2	1586988000000	2020-04-15 22:00:00	ETHUSD	157.180000	157.300000	155.320000	155.810000	106.337279
3	1586984400000	2020-04-15 21:00:00	ETHUSD	158.040000	158.310000	157.160000	157.180000	55.244131
4	1586980800000	2020-04-15 20:00:00	ETHUSD	157.100000	158.100000	156.870000	158.040000	144.262622

Spliting the date column for simplify the analysis for date , month and year basis for each Database ETHEREUM BITCOIN

In [56]:
```
df1[['Year','Month','Day']] = df1['Date'].str.split('-',expand=True)
```

In [57]:
```
df1
```

Out[57]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume	Year	Mont
0	1586995200000	2020-04-16 00:00:00	ETHUSD	152.94	152.94	150.39	150.39	650.188125	2020	0
1	1586991600000	2020-04-15 23:00:00	ETHUSD	155.81	155.81	151.39	152.94	4277.567299	2020	0
2	1586988000000	2020-04-15 22:00:00	ETHUSD	157.18	157.30	155.32	155.81	106.337279	2020	0
3	1586984400000	2020-04-15 21:00:00	ETHUSD	158.04	158.31	157.16	157.18	55.244131	2020	0
4	1586980800000	2020-04-15 20:00:00	ETHUSD	157.10	158.10	156.87	158.04	144.262622	2020	0
...	...	...	...	...	...	...	...	...	...	.
34492	1462813200	2016-05-09 17:00:00	ETHUSD	9.83	9.83	9.48	9.49	329.553213	2016	0
34493	1462809600	2016-05-09 16:00:00	ETHUSD	9.99	9.99	9.79	9.83	62.379450	2016	0
34494	1462806000	2016-05-09 15:00:00	ETHUSD	10.00	10.00	9.99	9.99	10.973567	2016	0
34495	1462802400	2016-05-09 14:00:00	ETHUSD	9.55	10.00	9.55	10.00	235.774075	2016	0
34496	1462798800	2016-05-09 13:00:00	ETHUSD	0.00	12.00	0.00	9.55	432.562115	2016	0

34497 rows × 11 columns

In [58]:
```
df1[['Date','Time']] = df1['Day'].str.split(' ',expand=True)
df1
```

Out[58]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume	Year	Month
0	1586995200000	16	ETHUSD	152.94	152.94	150.39	150.39	650.188125	2020	04
1	1586991600000	15	ETHUSD	155.81	155.81	151.39	152.94	4277.567299	2020	04
2	1586988000000	15	ETHUSD	157.18	157.30	155.32	155.81	106.337279	2020	04
3	1586984400000	15	ETHUSD	158.04	158.31	157.16	157.18	55.244131	2020	04
4	1586980800000	15	ETHUSD	157.10	158.10	156.87	158.04	144.262622	2020	04
...	...	...	...	...	...	...	...	...	...	...
34492	1462813200	09	ETHUSD	9.83	9.83	9.48	9.49	329.553213	2016	05
34493	1462809600	09	ETHUSD	9.99	9.99	9.79	9.83	62.379450	2016	05
34494	1462806000	09	ETHUSD	10.00	10.00	9.99	9.99	10.973567	2016	05
34495	1462802400	09	ETHUSD	9.55	10.00	9.55	10.00	235.774075	2016	05
34496	1462798800	09	ETHUSD	0.00	12.00	0.00	9.55	432.562115	2016	05

34497 rows × 12 columns

Drop the unnecessary column 'Day' by drop function

In [86]:
```
#DataFrame.drop(labels=None, axis=0, index=None, columns=None, level=None, inplac
df1.drop(labels=None,axis=1,index=None,columns='Day',inplace=True)
df1
```

Out[86]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume	Year	Month
0	1586995200000	16	ETHUSD	152.94	152.94	150.39	150.39	650.188125	2020	04
1	1586991600000	15	ETHUSD	155.81	155.81	151.39	152.94	4277.567299	2020	04
2	1586988000000	15	ETHUSD	157.18	157.30	155.32	155.81	106.337279	2020	04
3	1586984400000	15	ETHUSD	158.04	158.31	157.16	157.18	55.244131	2020	04
4	1586980800000	15	ETHUSD	157.10	158.10	156.87	158.04	144.262622	2020	04
...	...	...	...	...	...	...	...	...	...	..
34492	1462813200	09	ETHUSD	9.83	9.83	9.48	9.49	329.553213	2016	05
34493	1462809600	09	ETHUSD	9.99	9.99	9.79	9.83	62.379450	2016	05
34494	1462806000	09	ETHUSD	10.00	10.00	9.99	9.99	10.973567	2016	05
34495	1462802400	09	ETHUSD	9.55	10.00	9.55	10.00	235.774075	2016	05

In [61]:
```
df2[['Year','Month','Day']] = df2['Date'].str.split('-',expand=True)
df2
```

Out[61]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume	Year	Mon
0	1586995200000	2020-04-16 00:00:00	ETHUSD	152.94	152.94	151.33	151.33	112.724931	2020	
1	1586995140000	2020-04-15 23:59:00	ETHUSD	152.94	152.94	152.94	152.94	0.000000	2020	
2	1586995080000	2020-04-15 23:58:00	ETHUSD	153.17	153.17	152.94	152.94	0.013011	2020	
3	1586995020000	2020-04-15 23:57:00	ETHUSD	152.96	153.20	152.96	153.17	466.782278	2020	
4	1586994960000	2020-04-15 23:56:00	ETHUSD	153.14	153.14	152.96	152.96	167.930714	2020	
...	...	...	...	...	...	...	...	...	...	
1984007	1462800960	2016-05-09 13:36:00	ETHUSD	10.00	10.00	10.00	10.00	0.375000	2016	
1984008	1462800900	2016-05-09 13:35:00	ETHUSD	10.00	10.00	10.00	10.00	60.000000	2016	
1984009	1462800840	2016-05-09 13:34:00	ETHUSD	10.00	10.00	10.00	10.00	8.000000	2016	
1984010	1462800780	2016-05-09 13:33:00	ETHUSD	12.00	12.00	10.00	10.00	43.497506	2016	
1984011	1462800720	2016-05-09 13:32:00	ETHUSD	0.00	12.00	0.00	12.00	4.156276	2016	

1984012 rows × 11 columns

In [62]:
```
df2[['Date','Time']] = df2['Day'].str.split(' ',expand=True)
df2
```

Out[62]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume	Year	Month
0	1586995200000	16	ETHUSD	152.94	152.94	151.33	151.33	112.724931	2020	04
1	1586995140000	15	ETHUSD	152.94	152.94	152.94	152.94	0.000000	2020	04
2	1586995080000	15	ETHUSD	153.17	153.17	152.94	152.94	0.013011	2020	04
3	1586995020000	15	ETHUSD	152.96	153.20	152.96	153.17	466.782278	2020	04
4	1586994960000	15	ETHUSD	153.14	153.14	152.96	152.96	167.930714	2020	04
...	...	...	...	...	...	...	...	...	...	...
1984007	1462800960	09	ETHUSD	10.00	10.00	10.00	10.00	0.375000	2016	05
1984008	1462800900	09	ETHUSD	10.00	10.00	10.00	10.00	60.000000	2016	05
1984009	1462800840	09	ETHUSD	10.00	10.00	10.00	10.00	8.000000	2016	05
1984010	1462800780	09	ETHUSD	12.00	12.00	10.00	10.00	43.497506	2016	05
1984011	1462800720	09	ETHUSD	0.00	12.00	0.00	12.00	4.156276	2016	05

1984012 rows × 12 columns

In [78]:
```
df2.drop(labels=None,axis=1,index=None,columns='Day',inplace=True)
df2
```

Out[78]:

	Unix Timestamp	Date	Symbol	Open	High	Low	Close	Volume	Year	Month
0	1586995200000	16	ETHUSD	152.94	152.94	151.33	151.33	112.724931	2020	04
1	1586995140000	15	ETHUSD	152.94	152.94	152.94	152.94	0.000000	2020	04
2	1586995080000	15	ETHUSD	153.17	153.17	152.94	152.94	0.013011	2020	04
3	1586995020000	15	ETHUSD	152.96	153.20	152.96	153.17	466.782278	2020	04
4	1586994960000	15	ETHUSD	153.14	153.14	152.96	152.96	167.930714	2020	04
...	...	...	...	...	...	...	...	...	...	...
1984007	1462800960	09	ETHUSD	10.00	10.00	10.00	10.00	0.375000	2016	05
1984008	1462800900	09	ETHUSD	10.00	10.00	10.00	10.00	60.000000	2016	05
1984009	1462800840	09	ETHUSD	10.00	10.00	10.00	10.00	8.000000	2016	05
1984010	1462800780	09	ETHUSD	12.00	12.00	10.00	10.00	43.497506	2016	05
1984011	1462800720	09	ETHUSD	0.00	12.00	0.00	12.00	4.156276	2016	05

1984012 rows × 11 columns

In [70]:
```
df3[['Year','Month','Day']] = df3['Date'].str.split('-',expand=True)
df3
```

Out[70]:

	Date	Symbol	Open	High	Low	Close	Volume ETH	Volume USD	Year	Month	Day
0	2020-04-15	ETHUSD	158.61	158.61	158.61	158.61	0.00	0.00	2020	04	15
1	2020-04-14	ETHUSD	156.97	162.15	155.74	158.61	18061.58	2872210.44	2020	04	14
2	2020-04-13	ETHUSD	158.56	159.51	150.12	156.97	15698.32	2416728.28	2020	04	13
3	2020-04-12	ETHUSD	158.66	165.37	155.21	158.56	12877.33	2082804.05	2020	04	12
4	2020-04-11	ETHUSD	158.26	161.49	154.25	158.66	13761.72	2172914.57	2020	04	11
...	...	...	...	...	...	...	...	...	...	...	...
1433	2016-05-13	ETHUSD	10.20	11.59	10.20	10.69	1769.71	18923.55	2016	05	13
1434	2016-05-12	ETHUSD	10.43	12.00	9.92	10.20	2072.56	22183.39	2016	05	12
1435	2016-05-11	ETHUSD	9.68	10.47	9.68	10.43	3052.51	30978.11	2016	05	11
1436	2016-05-10	ETHUSD	9.98	9.98	9.36	9.68	672.06	6578.20	2016	05	10
1437	2016-05-09	ETHUSD	12.00	12.00	9.36	9.98	1317.90	12885.06	2016	05	09

1438 rows × 11 columns

In [79]:
```
df3.drop(labels=None,axis=1,index=None,columns='Date',inplace=True)
df3
```

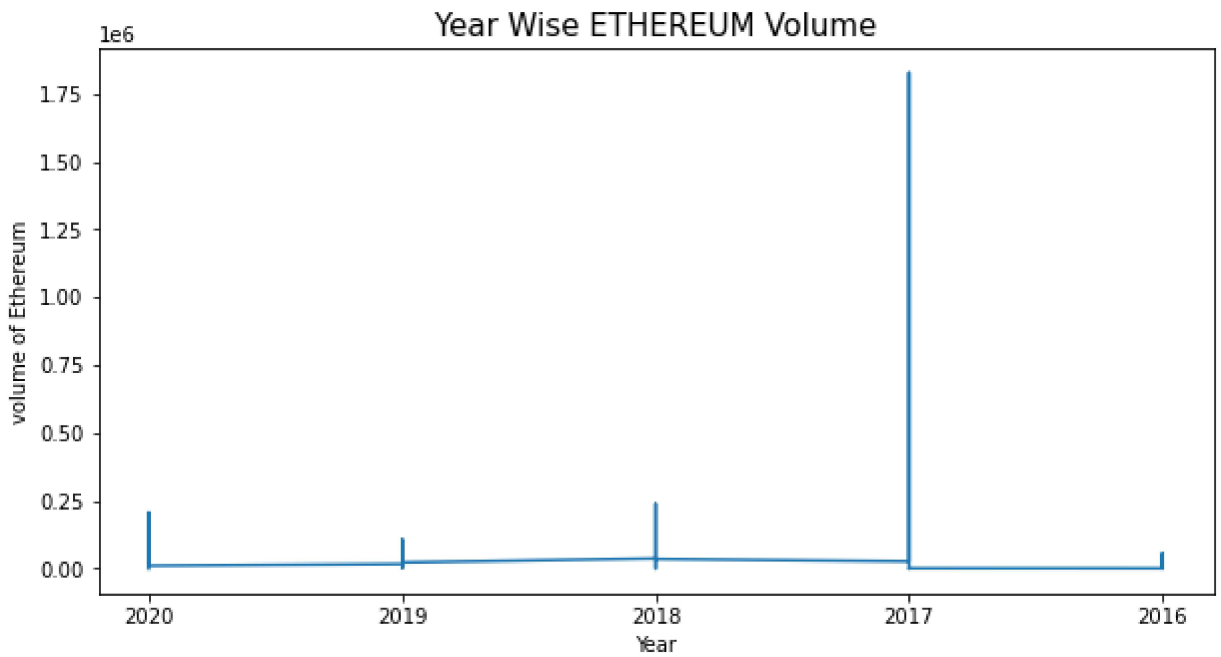
Out[79]:

	Symbol	Open	High	Low	Close	Volume ETH	Volume USD	Year	Month	Day
0	ETHUSD	158.61	158.61	158.61	158.61	0.00	0.00	2020	04	15
1	ETHUSD	156.97	162.15	155.74	158.61	18061.58	2872210.44	2020	04	14
2	ETHUSD	158.56	159.51	150.12	156.97	15698.32	2416728.28	2020	04	13
3	ETHUSD	158.66	165.37	155.21	158.56	12877.33	2082804.05	2020	04	12
4	ETHUSD	158.26	161.49	154.25	158.66	13761.72	2172914.57	2020	04	11
...	...	...	...	...	...	...	...	...	...	...
1433	ETHUSD	10.20	11.59	10.20	10.69	1769.71	18923.55	2016	05	13
1434	ETHUSD	10.43	12.00	9.92	10.20	2072.56	22183.39	2016	05	12
1435	ETHUSD	9.68	10.47	9.68	10.43	3052.51	30978.11	2016	05	11
1436	ETHUSD	9.98	9.98	9.36	9.68	672.06	6578.20	2016	05	10
1437	ETHUSD	12.00	12.00	9.36	9.98	1317.90	12885.06	2016	05	09

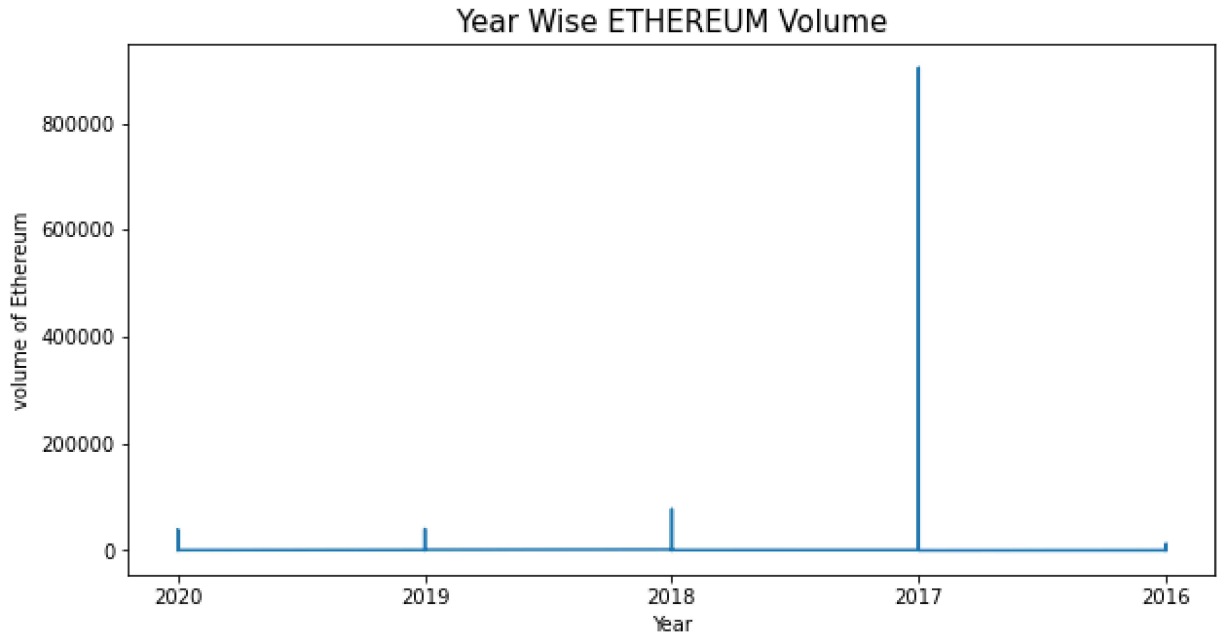
1438 rows × 10 columns

In [90]:
```
fig=plt.figure(figsize=(10,5))
plt.plot(df3['Year'],df3['Volume ETH'])
plt.title('Year Wise ETHEREUM Volume',size=15)
plt.ylabel('volume of Ethereum')
plt.xlabel('Year')
```

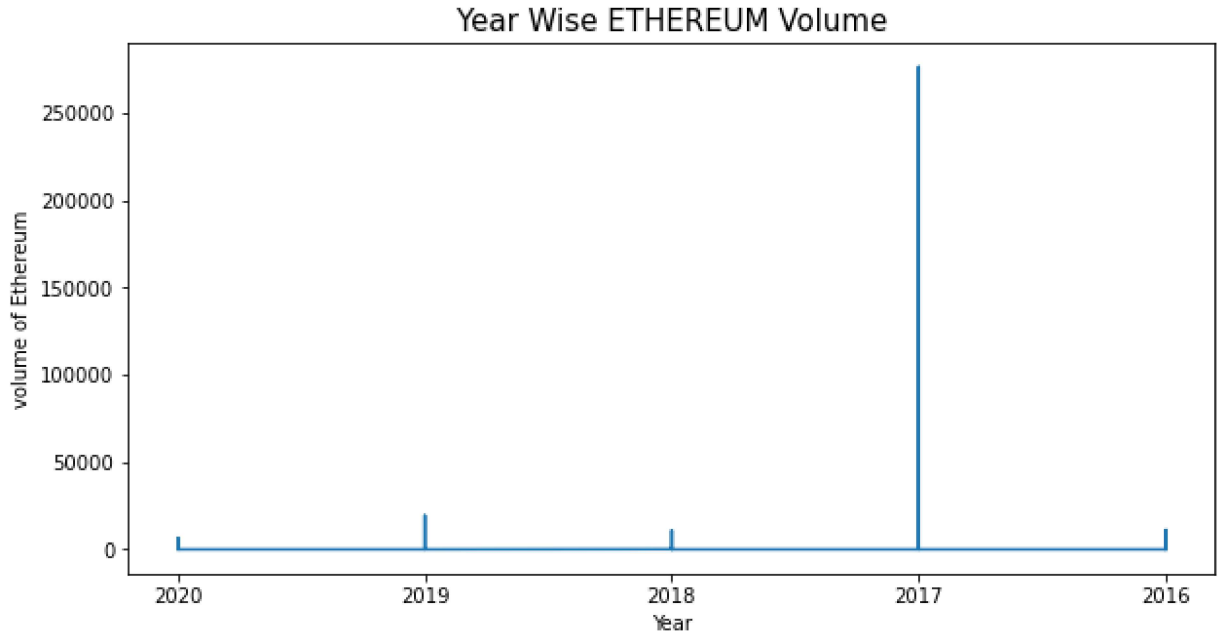
Out[90]: Text(0.5, 0, 'Year')



In [94]:
```
fig=plt.figure(figsize=(10,5))
plt.plot(df1['Year'],df1['Volume'])
plt.title('Year Wise ETHEREUM Volume',size=15)
plt.ylabel('volume of Ethereum')
plt.xlabel('Year')
plt.show()
```

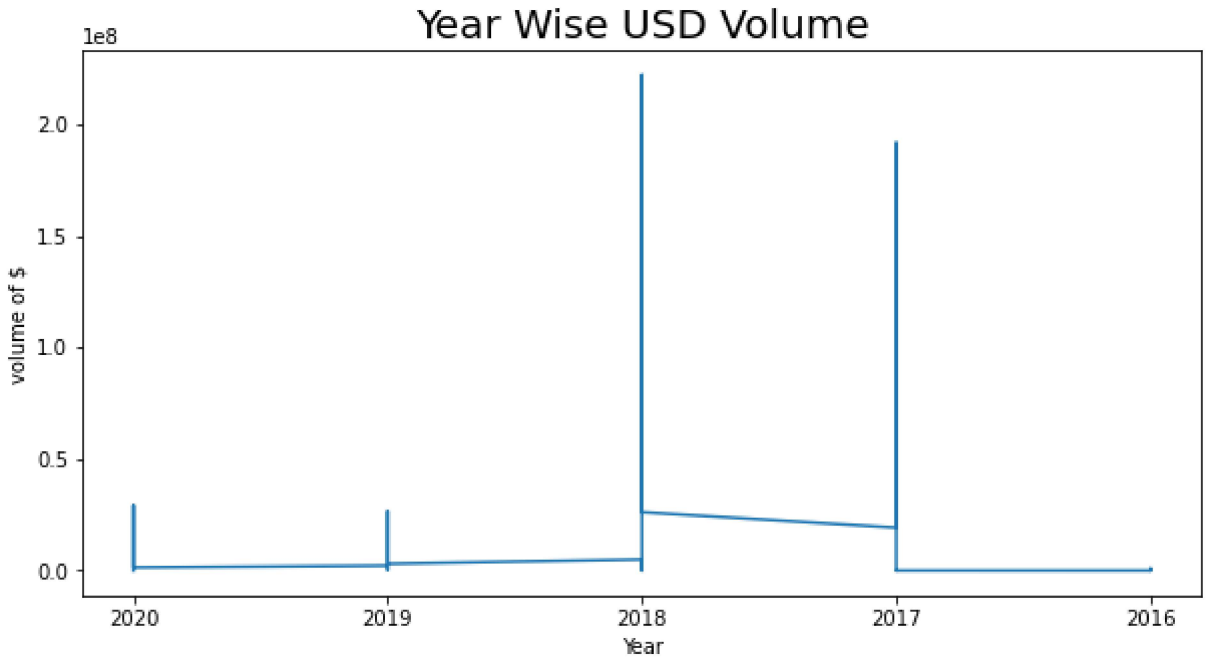


In [95]:
```
fig=plt.figure(figsize=(10,5))
plt.plot(df2['Year'],df2['Volume'])
plt.title('Year Wise ETHEREUM Volume',size=15)
plt.ylabel('volume of Ethereum')
plt.xlabel('Year')
plt.show()
```



As we can derived from the above graphs where we plot the volume of Ethereum to Year we can clearly see Year 2017 is the year where the most no volume of Ethereum held.

In [106]:
```
fig=plt.figure(figsize=(10,5))
plt.plot(df3['Year'],df3['Volume USD'])
plt.title('Year Wise USD Volume',size=20)
plt.ylabel('volume of $')
plt.xlabel('Year')
plt.show()
```



As we can derived from the above graph where we plot the volume of USD to Year we can clearly see Year 2018 is the year where the most no volume of USD held.

In [113]:
```
df1[df1['Year']=='2020']['Volume'].max()
```

Out[113]: 38159.43166339

In [115]:
```
df1[df1['Year']=='2020']['Volume'].min()
```

Out[115]: 0.0

In [116]:
```
df1[df1['Year']=='2016']['Volume'].max()
```

Out[116]: 11530.31155

In [117]:
```
df1[df1['Year']=='2016']['Volume'].min()
```

Out[117]: 0.0

In [118]:
```
df1[df1['Year']=='2017']['Volume'].max()
```

Out[118]: 903102.6857

In [119]:
```
df1[df1['Year']=='2017']['Volume'].min()
```

Out[119]: 0.0

In [120]:
```
df1[df1['Year']=='2018']['Volume'].max()
```

Out[120]: 76871.4727841

In [121]:
```
df1[df1['Year']=='2018']['Volume'].min()
```

Out[121]: 0.0

In [122]:
```
df1[df1['Year']=='2019']['Volume'].max()
```

Out[122]: 39822.748276

In [123]:
```
df1[df1['Year']=='2019']['Volume'].min()
```

Out[123]: 0.0

In dataframe1 on the basis of Volume Year wise max volume is the Highest in 2017 as we see in the dataframe value

In [124]:
```
df2[df2['Year']=='2019']['Volume'].max()
```

Out[124]: 19261.261188

In [125]:
```
df2[df2['Year']=='2020']['Volume'].max()
```

Out[125]: 6505.774141

In [126]:
```
df2[df2['Year']=='2018']['Volume'].max()
```

Out[126]: 10834.477541

In [127]:
```
df2[df2['Year']=='2017']['Volume'].max()
```

Out[127]: 276423.537308

In [128]:
```
df2[df2['Year']=='2016']['Volume'].max()
```

Out[128]: 11108.057755

In dataframe2 on the basis of Volume Year wise max volume is the Highest in 2017 as we see in the dataframe value

In [129]:
```
df3[df3['Year']=='2016']['Volume ETH'].max()
```

Out[129]: 56219.2

In [130]:
```
df3[df3['Year']=='2017']['Volume ETH'].max()
```

Out[130]: 1827755.14

In [131]:
```
df3[df3['Year']=='2018']['Volume ETH'].max()
```

Out[131]: 238715.97

In [132]:
```
df3[df3['Year']=='2019']['Volume ETH'].max()
```

Out[132]: 108006.29

In [133]:
```
df3[df3['Year']=='2020']['Volume ETH'].max()
```

Out[133]: 206706.03

In dataframe3 on the basis of Volume OF Ethereum Year wise max volume Ethereum is the Highest in 2017 as we see in the dataframe value

In [134]:
```
df3[df3['Year']=='2020']['Volume USD'].max()
```

Out[134]: 29236156.49

In [135]:
```
df3[df3['Year']=='2019']['Volume USD'].max()
```

Out[135]: 26728002.47

In [136]:
```
df3[df3['Year']=='2018']['Volume USD'].max()
```

Out[136]: 222119304.91

In [137]:
```
df3[df3['Year']=='2017']['Volume USD'].max()
```

Out[137]: 191739093.28

In [138]:
```
df3[df3['Year']=='2016']['Volume USD'].max()
```

Out[138]: 936997.53

In dataframe3 on the basis of Volume OF USD Year wise max volume USD is the Highest in 2018 as we see in the dataframe value

In [147]:
```
df2[(df2['Month']=='04') & (df2['Year']=='2020')]['Volume'].max()
```

Out[147]: 4215.162585

In [148]:
```
df2[(df2['Month']=='04') & (df2['Year']=='2019')]['Volume'].max()
```

Out[148]: 8163.920965

In [149]:
```
df2[(df2['Month']=='04') & (df2['Year']=='2018')]['Volume'].max()
```

Out[149]: 4393.72940315

In [150]:
```
df2[(df2['Month']=='04') & (df2['Year']=='2017')]['Volume'].max()
```

Out[150]: 5346.665874

In [151]:
```
df2[(df2['Month']=='04') & (df2['Year']=='2016')]['Volume'].max()
```

Out[151]: nan

INSIGHTS:-

April Month Volume of Ethereum based on each year based Analysis and april 2019 has the highest volume rate of Ethereum

Creating a Pivot for month wise per Year Volume check of Ethereum of DATAFRAME1

In [160]:
```
#Syntax : dataframe.pivot(self, index=None, columns=None, values=None, aggfunc)
month_wise_volume_per_year_df1=df1.pivot_table(index=['Month'],values=['Volume'],
```

In [162]:
```
month_wise_volume_per_year_df1.style.background_gradient(cmap='summer')
```

Out[162]:

	Volume				
Year	2016	2017	2018	2019	2020
Month					
01	nan	32022.478280	25623.444100	39822.748276	13866.464128
02	nan	903102.685700	33990.349970	37258.745021	14699.656142
03	nan	277683.933500	33545.016670	20825.669694	38159.431663
04	nan	8469.516477	17497.736360	25422.253679	8511.863059
05	7971.003922	69496.994410	9350.476984	22320.427176	nan
06	11530.311550	36572.956890	18270.386220	22548.832471	nan
07	5234.470963	43687.222350	7195.250151	28925.689486	nan
08	5685.587800	30979.692570	17125.109786	17290.641249	nan
09	2477.710473	27744.776170	33919.171488	20513.388121	nan
10	3492.238443	23043.071630	17079.870429	10118.507667	nan
11	3554.141841	25444.651600	37134.484117	9571.951909	nan
12	9805.114697	37079.552090	76871.472784	8261.866575	nan

INSIGHTS:- VOLUME OF ETHEREUM ON DATAFRAME_1 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - DECEMBER,     LOWEST ON 2016 - SEPTEMBER
HIGHEST ON 2017 - FEBRUARY,     LOWEST ON 2017 - APRIL
HIGHEST ON 2018 - DECEMBER,     LOWEST ON 2018 - JULY
HIGHEST ON 2019 - JANUARY,      LOWEST ON 2019 - DECEMBER
HIGHEST ON 2020 - MARCH,        LOWEST ON 2020 - APRIL
```

Creating a Pivot for month wise per Year Volume check of Ethereum of DATAFRAME 2

In [158]:
```
month_wise_volume_per_year_df2=df2.pivot_table(index=['Month'],values=['Volume'],
```

In [163]:
```
month_wise_volume_per_year_df2.style.background_gradient(cmap='summer')
```

Out[163]:

	Volume				
Year	2016	2017	2018	2019	2020
Month					
01	nan	32000.000000	8124.398905	7824.416859	4516.524782
02	nan	129746.835443	6075.705835	9854.630000	6505.774141
03	nan	276423.537308	4207.044225	6786.388821	4666.669297
04	nan	5346.665874	4393.729403	8163.920965	4215.162585
05	6824.449413	65187.635803	4230.326727	4237.396339	nan
06	11108.057755	23409.692954	6007.525781	19261.261188	nan
07	4254.824200	30191.012314	2757.060000	2278.372717	nan
08	2259.777527	6132.575459	5095.143664	4914.791216	nan
09	2090.000000	10701.577333	10834.477541	3916.951842	nan
10	3449.429800	5182.882170	3911.700000	6779.184950	nan
11	1500.000000	7709.606398	4004.690000	4276.084806	nan
12	6599.478469	2443.509204	5771.427044	4212.883882	nan

INSIGHTS:- VOLUME OF ETHEREUM ON DATAFRAME_2 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - NOVEMBER,    LOWEST ON 2016 - JUNE
HIGHEST ON 2017 - MARCH,       LOWEST ON 2017 - DECEMBER
HIGHEST ON 2018 - SEPTEMBER,   LOWEST ON 2018 - JULY
HIGHEST ON 2019 - JUNE,        LOWEST ON 2019 - JULY
HIGHEST ON 2020 - FEBRUARY,    LOWEST ON 2020 - APRIL
```

Creating a Pivot for month wise per Year Volume check of Ethereum of DATAFRAME 3

In [165]:
```
month_wise_per_year_volume_df3=df3.pivot_table(index=['Month'],values=['Volume Et
```

In [166]:
```
month_wise_per_year_volume_df3.style.background_gradient(cmap='summer')
```

Out[166]:

	Volume ETH				
Year	**2016**	**2017**	**2018**	**2019**	**2020**
Month					
01	nan	33762.770000	238715.970000	69582.930000	43694.860000
02	nan	1827755.140000	223470.920000	92159.900000	48299.440000
03	nan	332830.870000	104554.770000	38713.380000	206706.030000
04	nan	47001.530000	99897.390000	108006.290000	59235.580000
05	15674.970000	195736.590000	61983.590000	102235.070000	nan
06	56219.200000	254739.050000	68470.380000	68027.020000	nan
07	15645.050000	401689.430000	33954.570000	74532.070000	nan
08	15825.290000	255087.640000	93169.130000	50045.750000	nan
09	7111.350000	294160.020000	83379.910000	57331.200000	nan
10	8362.900000	82601.810000	81720.950000	35005.880000	nan
11	4791.530000	145126.010000	190636.950000	44638.350000	nan
12	14100.390000	293412.720000	158728.470000	17516.790000	nan

INSIGHTS:- VOLUME OF ETHEREUM ON DATAFRAME_3 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,       LOWEST ON 2016 - NOVEMBER
HIGHEST ON 2017 - FEBRUARY,   LOWEST ON 2017 - APRIL
HIGHEST ON 2018 - JANUARY,    LOWEST ON 2018 - JULY
HIGHEST ON 2019 - APRIL,      LOWEST ON 2019 - DECEMBER
HIGHEST ON 2020 - MARCH,      LOWEST ON 2020 - JANUARY
```

In [167]:
```
month_wise_per_year_volumeUSD_df3=df3.pivot_table(index=['Month'],values=['Volume
```

In [168]:
```
month_wise_per_year_volumeUSD_df3.style.background_gradient(cmap='summer')
```

Out[168]:

	Volume USD				
Year	**2016**	**2017**	**2018**	**2019**	**2020**
Month					
01	nan	367332.220000	222119304.910000	7556046.750000	6873788.570000
02	nan	23524580.330000	175951842.670000	13095889.800000	12491142.100000
03	nan	7185229.690000	49705442.020000	5510601.850000	29236156.490000
04	nan	2187869.280000	51637886.090000	18328610.720000	9387070.160000
05	212221.490000	31344975.080000	45370943.770000	26728002.470000	nan
06	936997.530000	77957832.610000	30458680.420000	23177869.650000	nan
07	202039.140000	84777351.790000	16477578.340000	16544190.210000	nan
08	148104.140000	75840226.250000	24446963.500000	9728853.780000	nan
09	97179.150000	74673890.630000	18712356.760000	9978628.610000	nan
10	100271.770000	26943789.040000	16762958.300000	5649762.070000	nan
11	44070.500000	62610758.960000	25156651.910000	6669258.270000	nan
12	106238.920000	191739093.280000	14984295.410000	2275811.110000	nan

INSIGHTS:- VOLUME OF ETHEREUM ON DATAFRAME_3 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,        LOWEST ON 2016 - NOVEMBER
HIGHEST ON 2017 - DECEMBER,    LOWEST ON 2017 - APRIL
HIGHEST ON 2018 - JANUARY,     LOWEST ON 2018 - DECEMBER
HIGHEST ON 2019 - MAY,         LOWEST ON 2019 - DECEMBER
HIGHEST ON 2020 - MARCH,       LOWEST ON 2020 - JANUARY
```

Creating Pivot Month Wise Per Year Highest for Open Area for ETHEREUM

In [176]:
```
month_wise_OPEN_per_year_df1=df1.pivot_table(index=['Month'],values=['Open'],colu
```

In [177]:
```
month_wise_OPEN_per_year_df1.style.background_gradient(cmap='summer')
```

Out[177]:

					Open
Year	**2016**	**2017**	**2018**	**2019**	**2020**
Month					
01	nan	11.840000	1417.540000	159.520000	186.380000
02	nan	16.290000	1144.780000	164.070000	286.480000
03	nan	53.880000	876.980000	144.980000	247.500000
04	nan	78.660000	708.750000	185.350000	174.870000
05	14.750000	233.010000	827.000000	286.870000	nan
06	21.090000	394.900000	623.780000	355.500000	nan
07	15.500000	291.980000	509.000000	317.460000	nan
08	12.680000	388.580000	431.630000	236.320000	nan
09	14.380000	394.630000	301.590000	222.310000	nan
10	13.700000	348.900000	233.150000	196.330000	nan
11	11.950000	503.820000	220.550000	193.840000	nan
12	8.750000	860.990000	156.010000	151.800000	nan

INSIGHTS:- OPEN SECTION OF ETHEREUM ON DATAFRAME_1 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,        LOWEST ON 2016 - DECEMBER
HIGHEST ON 2017 - DECEMBER,    LOWEST ON 2017 - JANUARY
HIGHEST ON 2018 - JANUARY,     LOWEST ON 2018 - DECEMBER
HIGHEST ON 2019 - JUNE,        LOWEST ON 2019 - MARCH
HIGHEST ON 2020 - FEBRUARY,    LOWEST ON 2020 - APRIL
```

In [178]:
```
month_wise_OPEN_per_year_df2=df2.pivot_table(index=['Month'],values=['Open'],colu
```

In [179]:
```
month_wise_OPEN_per_year_df2.style.background_gradient(cmap='summer')
```

Out[179]:

	Open				
Year	**2016**	**2017**	**2018**	**2019**	**2020**
Month					
01	nan	11.940000	1420.000000	160.700000	186.860000
02	nan	16.970000	1148.660000	165.470000	289.570000
03	nan	54.540000	878.990000	145.740000	252.160000
04	nan	79.800000	710.000000	187.340000	176.660000
05	14.770000	234.000000	830.550000	288.090000	nan
06	25.000000	418.400000	628.000000	363.180000	nan
07	15.720000	293.580000	515.440000	310.690000	nan
08	13.500000	390.840000	434.390000	239.140000	nan
09	14.450000	395.420000	302.000000	221.400000	nan
10	13.700000	350.000000	234.710000	199.380000	nan
11	11.950000	514.870000	222.780000	194.490000	nan
12	8.750000	871.890000	159.010000	152.280000	nan

INSIGHTS:- OPEN SECTION OF ETHEREUM ON DATAFRAME_2 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,        LOWEST ON 2016 - DECEMBER
HIGHEST ON 2017 - DECEMBER,    LOWEST ON 2017 - JANUARY
HIGHEST ON 2018 - JANUARY,     LOWEST ON 2018 - DECEMBER
HIGHEST ON 2019 - JUNE,        LOWEST ON 2019 - MARCH
HIGHEST ON 2020 - FEBRUARY,    LOWEST ON 2020 - APRIL
```

In [180]:
```
month_wise_OPEN_per_year_df3=df3.pivot_table(index=['Month'],values=['Open'],colu
```

In [181]:
```
month_wise_OPEN_per_year_df3.style.background_gradient(cmap='summer')
```

Out[181]:

					Open
Year	2016	2017	2018	2019	2020
Month					
01	nan	11.000000	1381.850000	155.830000	184.460000
02	nan	15.500000	1101.690000	157.670000	286.480000
03	nan	53.320000	868.750000	142.060000	245.830000
04	nan	72.650000	703.720000	181.150000	173.480000
05	14.500000	228.710000	815.150000	271.630000	nan
06	20.950000	394.900000	618.490000	334.210000	nan
07	14.740000	283.990000	499.110000	313.630000	nan
08	12.380000	384.000000	431.630000	232.900000	nan
09	14.450000	392.130000	295.190000	220.290000	nan
10	13.400000	337.330000	232.210000	193.230000	nan
11	11.110000	477.260000	218.540000	191.380000	nan
12	8.640000	820.830000	139.020000	151.800000	nan

INSIGHTS:- OPEN SECTION OF ETHEREUM ON DATAFRAME_3 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,        LOWEST ON 2016 - NOVEMBER
HIGHEST ON 2017 - DECEMBER,    LOWEST ON 2017 - APRIL
HIGHEST ON 2018 - JANUARY,     LOWEST ON 2018 - DECEMBER
HIGHEST ON 2019 - JUNE,        LOWEST ON 2019 - DECEMBER
HIGHEST ON 2020 - FEBRUARY,    LOWEST ON 2020 - APRIL
```

Creating Pivot Month Wise Per Year Highest for High Area for ETHEREUM

In [182]:
```
high_df1=df1.pivot_table(index=['Month'],values=['High'],columns=['Year'],aggfunc
```

In [183]:
```
high_df1.style.background_gradient(cmap='summer')
```

Out[183]:

					High
Year	2016	2017	2018	2019	2020
Month					
01	nan	11.940000	1420.010000	160.700000	186.880000
02	nan	16.970000	1148.660000	165.500000	289.580000
03	nan	54.540000	879.000000	145.740000	252.160000
04	nan	79.800000	710.000000	188.000000	176.740000
05	14.770000	234.000000	833.000000	288.930000	nan
06	25.050000	418.500000	628.000000	363.850000	nan
07	15.720000	293.650000	515.880000	318.400000	nan
08	13.500000	390.850000	434.390000	239.140000	nan
09	14.450000	398.070000	302.000000	224.710000	nan
10	13.700000	350.000000	234.870000	199.380000	nan
11	11.950000	515.610000	222.780000	194.790000	nan
12	8.750000	872.000000	159.260000	152.360000	nan

INSIGHTS:- OPEN SECTION OF ETHEREUM ON DATAFRAME_1 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,        LOWEST ON 2016 - DECEMBER
HIGHEST ON 2017 - DECEMBER,    LOWEST ON 2017 - JANUARY
HIGHEST ON 2018 - JANUARY,     LOWEST ON 2018 - DECEMBER
HIGHEST ON 2019 - JUNE,        LOWEST ON 2019 - MARCH
HIGHEST ON 2020 - FEBRUARY,    LOWEST ON 2020 - APRIL
```

In [184]:
```
high_df2=df2.pivot_table(index=['Month'],values=['High'],columns=['Year'],aggfunc
```

In [185]:
```
high_df2.style.background_gradient(cmap='summer')
```

Out[185]:

					High
Year	2016	2017	2018	2019	2020
Month					
01	nan	11.940000	1420.010000	160.700000	186.880000
02	nan	16.970000	1148.660000	165.500000	289.580000
03	nan	54.540000	879.000000	145.740000	252.160000
04	nan	79.800000	710.000000	188.000000	176.740000
05	14.770000	234.000000	833.000000	288.930000	nan
06	25.050000	418.500000	628.000000	363.850000	nan
07	15.720000	293.650000	515.880000	310.980000	nan
08	13.500000	390.850000	434.390000	239.140000	nan
09	14.450000	398.070000	302.000000	221.400000	nan
10	13.700000	350.000000	234.870000	199.380000	nan
11	11.950000	515.610000	222.780000	194.790000	nan
12	8.750000	872.000000	159.260000	152.360000	nan

INSIGHTS:- OPEN SECTION OF ETHEREUM ON DATAFRAME_2 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,        LOWEST ON 2016 - DECEMBER
HIGHEST ON 2017 - DECEMBER,    LOWEST ON 2017 - JANUARY
HIGHEST ON 2018 - JANUARY,     LOWEST ON 2018 - DECEMBER
HIGHEST ON 2019 - JUNE,        LOWEST ON 2019 - MARCH
HIGHEST ON 2020 - FEBRUARY,    LOWEST ON 2020 - APRIL
```

In [186]:
```
high_df3=df3.pivot_table(index=['Month'],values=['High'],columns=['Year'],aggfunc
```

In [187]:
```
high_df3.style.background_gradient(cmap='summer')
```

Out[187]:

					High
Year	2016	2017	2018	2019	2020
Month					
01	nan	11.940000	1420.010000	160.700000	186.880000
02	nan	16.970000	1148.660000	165.500000	289.580000
03	nan	54.540000	879.000000	145.740000	252.160000
04	nan	79.800000	710.000000	188.000000	176.740000
05	14.770000	234.000000	833.000000	288.930000	nan
06	25.050000	418.500000	628.000000	363.850000	nan
07	15.720000	293.650000	515.880000	318.400000	nan
08	13.500000	390.850000	434.390000	239.140000	nan
09	14.450000	398.070000	302.000000	224.710000	nan
10	13.700000	350.000000	234.870000	199.380000	nan
11	11.950000	515.610000	222.780000	194.790000	nan
12	8.750000	872.000000	159.260000	152.360000	nan

INSIGHTS:- OPEN SECTION OF ETHEREUM ON DATAFRAME_3 (HIGHEST MARKED BY YELLOW)

```
HIGHEST ON 2016 - JUNE,        LOWEST ON 2016 - DECEMBER
HIGHEST ON 2017 - DECEMBER,    LOWEST ON 2017 - JANUARY
HIGHEST ON 2018 - JANUARY,     LOWEST ON 2018 - DECEMBER
HIGHEST ON 2019 - JUNE,        LOWEST ON 2019 - MARCH
HIGHEST ON 2020 - FEBRUARY,    LOWEST ON 2020 - APRIL
```

In [ ]:

In [ ]:

In [ ]: