

mk 04/08/2023

```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.linear_model import LogisticRegression
from sklearn.preprocessing import StandardScaler
import re
from sklearn.datasets import load_digits
from sklearn.model_selection import train_test_split
```

```
In [2]: a=pd.read_csv(r"C:\Users\user\Downloads\Book27.csv")
a
```

Out[2]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	110	ARUNACHAL PRADESH	1916	48.1	69.8	71.1	316.1	424.6	1124.9	NaN	629.7	333.9	1124.9
1	111	ARUNACHAL PRADESH	1917	21.4	164.5	NaN	269.6	107.9	823.8	909.1	628.4	411.5	1124.9
2	112	ARUNACHAL PRADESH	1918	10.4	11.0	191.2	144.6	861.1	1609.9	1303.0	692.6	515.8	1124.9
3	113	ARUNACHAL PRADESH	1919	34.5	67.8	28.5	256.9	420.6	973.6	999.0	286.7	628.7	973.6
4	114	ARUNACHAL PRADESH	1920	14.0	196.3	605.6	364.7	173.6	840.6	535.4	896.5	376.7	1124.9
...
92	202	ARUNACHAL PRADESH	2011	40.0	51.3	174.5	240.8	219.6	288.4	531.4	277.6	286.7	1124.9
93	203	ARUNACHAL PRADESH	2012	57.8	35.8	134.2	403.4	187.4	645.8	638.9	316.0	724.9	286.7
94	204	ARUNACHAL PRADESH	2013	18.5	40.5	115.1	175.1	335.8	290.0	329.6	230.2	316.1	1124.9
95	205	ARUNACHAL PRADESH	2014	19.0	101.9	80.3	86.7	299.0	415.8	392.4	599.6	343.0	1124.9
96	206	ARUNACHAL PRADESH	2015	30.8	47.5	97.5	287.1	238.9	637.9	329.3	595.5	374.2	1124.9

97 rows × 20 columns



```
In [3]: a.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 97 entries, 0 to 96
Data columns (total 20 columns):
#   Column          Non-Null Count  Dtype
---  -
0   index           97 non-null    int64
1   SUBDIVISION     97 non-null    object
2   YEAR            97 non-null    int64
3   JAN             96 non-null    float64
4   FEB             96 non-null    float64
5   MAR             95 non-null    float64
6   APR             97 non-null    float64
7   MAY             97 non-null    float64
8   JUN             96 non-null    float64
9   JUL             96 non-null    float64
10  AUG             97 non-null    float64
11  SEP             97 non-null    float64
12  OCT             95 non-null    float64
13  NOV             95 non-null    float64
14  DEC             95 non-null    float64
15  ANNUAL          91 non-null    float64
16  Jan-Feb         96 non-null    float64
17  Mar-May         95 non-null    float64
18  Jun-Sep         95 non-null    float64
19  Oct-Dec         94 non-null    float64
dtypes: float64(17), int64(2), object(1)
memory usage: 15.3+ KB
```

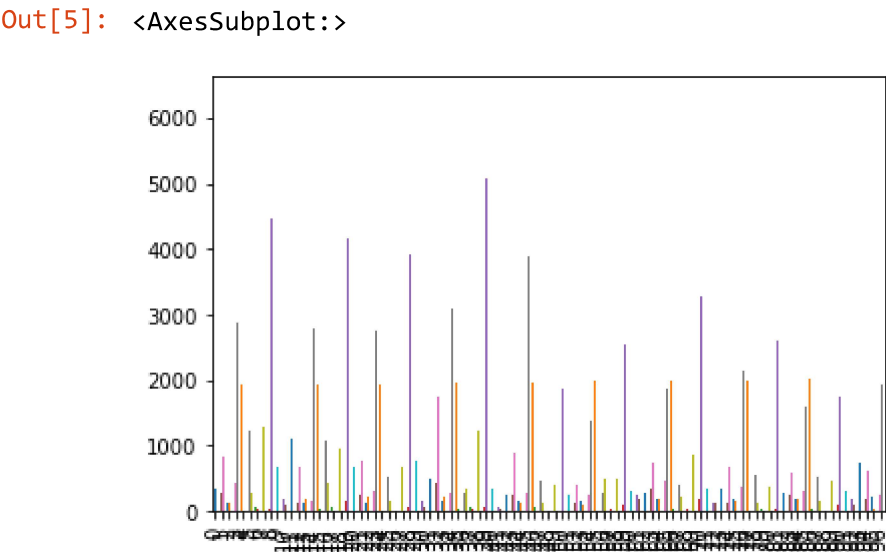
```
In [4]: b=a.fillna(method='ffill')
b
```

Out[4]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	110	ARUNACHAL PRADESH	1916	48.1	69.8	71.1	316.1	424.6	1124.9	NaN	629.7	333.9	1124.9
1	111	ARUNACHAL PRADESH	1917	21.4	164.5	71.1	269.6	107.9	823.8	909.1	628.4	411.5	1917.0
2	112	ARUNACHAL PRADESH	1918	10.4	11.0	191.2	144.6	861.1	1609.9	1303.0	692.6	515.8	1210.0
3	113	ARUNACHAL PRADESH	1919	34.5	67.8	28.5	256.9	420.6	973.6	999.0	286.7	628.7	941.0
4	114	ARUNACHAL PRADESH	1920	14.0	196.3	605.6	364.7	173.6	840.6	535.4	896.5	376.7	1041.0
...
92	202	ARUNACHAL PRADESH	2011	40.0	51.3	174.5	240.8	219.6	288.4	531.4	277.6	286.7	411.5
93	203	ARUNACHAL PRADESH	2012	57.8	35.8	134.2	403.4	187.4	645.8	638.9	316.0	724.9	240.0
94	204	ARUNACHAL PRADESH	2013	18.5	40.5	115.1	175.1	335.8	290.0	329.6	230.2	316.1	160.0
95	205	ARUNACHAL PRADESH	2014	19.0	101.9	80.3	86.7	299.0	415.8	392.4	599.6	343.0	316.1
96	206	ARUNACHAL PRADESH	2015	30.8	47.5	97.5	287.1	238.9	637.9	329.3	595.5	374.2	628.4

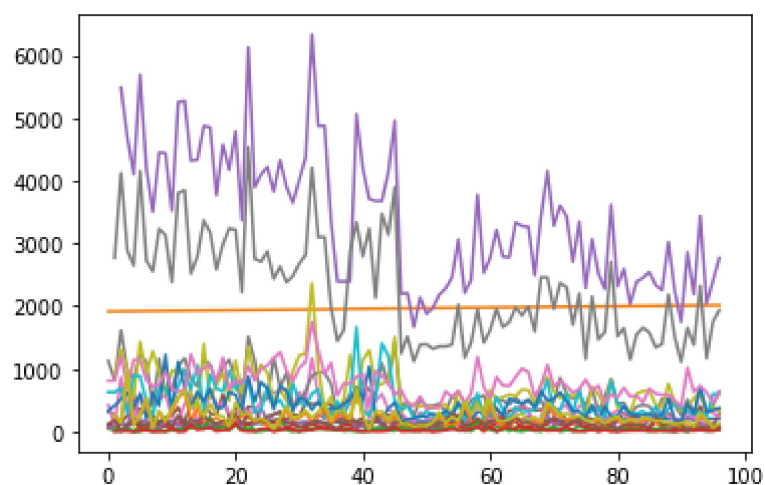
97 rows × 20 columns

```
In [5]: b.plot.bar(legend=None)
```



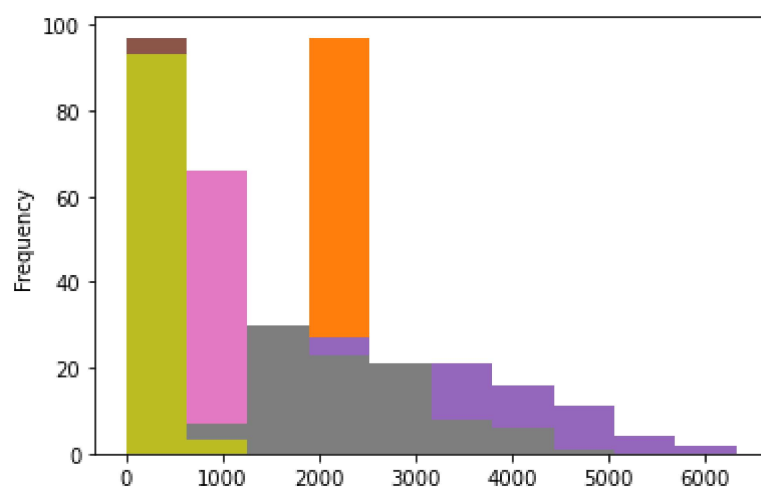
```
In [6]: b.plot.line(legend=None)
```

```
Out[6]: <AxesSubplot:>
```



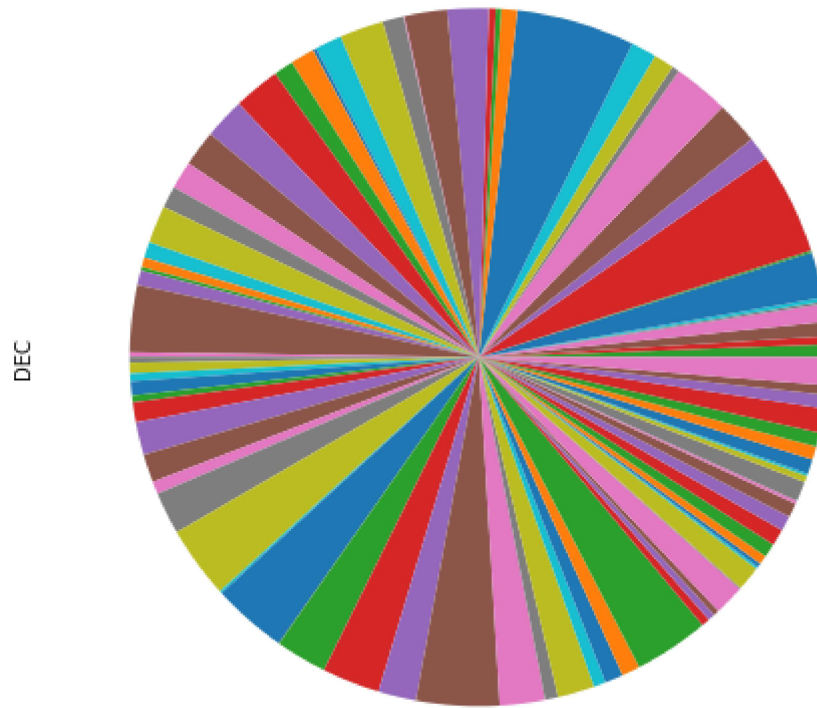
```
In [7]: b.plot.hist(legend=None)
```

```
Out[7]: <AxesSubplot:ylabel='Frequency'>
```



```
In [8]: a.plot.pie(y='DEC',figsize=(8,8),labels=None,legend=None)
```

```
Out[8]: <AxesSubplot:ylabel='DEC'>
```



```
In [ ]:
```