

04/08/2023 (BOOK-36)

```
In [317]: 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 [318]: a=pd.read_csv(r"C:\Users\user\Downloads\Book36.csv")
a
```

Out[318]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	O
0	1242	UTTARAKHAND	1901	134.5	81.4	44.5	5.9	60.8	33.6	381.1	612.3	167.1	1
1	1243	UTTARAKHAND	1902	0.0	17.0	52.2	63.7	52.1	113.1	444.1	327.5	220.4	3
2	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3	5
3	1245	UTTARAKHAND	1904	40.0	5.2	78.3	13.6	61.1	180.1	449.6	417.2	174.1	
4	1246	UTTARAKHAND	1905	115.4	80.7	99.8	26.1	70.3	111.5	299.9	349.5	129.5	
...	
110	1352	UTTARAKHAND	2011	30.9	65.2	18.0	30.9	84.2	223.1	433.3	523.7	148.4	
111	1353	UTTARAKHAND	2012	38.8	11.9	28.1	39.2	9.1	46.0	387.1	419.5	220.6	
112	1354	UTTARAKHAND	2013	73.0	188.3	22.0	24.7	18.2	488.9	413.4	359.4	111.3	2
113	1355	UTTARAKHAND	2014	45.9	99.9	68.4	37.6	52.9	62.9	462.7	264.2	107.9	4
114	1356	UTTARAKHAND	2015	54.5	62.6	127.3	57.3	38.0	186.6	337.0	305.3	52.6	1

115 rows × 20 columns



```
In [319]: a.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 0 to 114
Data columns (total 20 columns):
#   Column                Non-Null Count  Dtype
---  -
0   index                 115 non-null   int64
1   SUBDIVISION           115 non-null   object
2   YEAR                  115 non-null   int64
3   JAN                   115 non-null   float64
4   FEB                   115 non-null   float64
5   MAR                   115 non-null   float64
6   APR                   115 non-null   float64
7   MAY                   115 non-null   float64
8   JUN                   115 non-null   float64
9   JUL                   115 non-null   float64
10  AUG                   115 non-null   float64
11  SEP                   115 non-null   float64
12  OCT                   115 non-null   float64
13  NOV                   115 non-null   float64
14  DEC                   115 non-null   float64
15  ANNUAL                115 non-null   float64
16  Jan-Feb               115 non-null   float64
17  Mar-May               115 non-null   float64
18  Jun-Sep               115 non-null   float64
19  Oct-Dec               115 non-null   float64
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

```
In [320]: b=a.fillna(method='ffill')
b
```

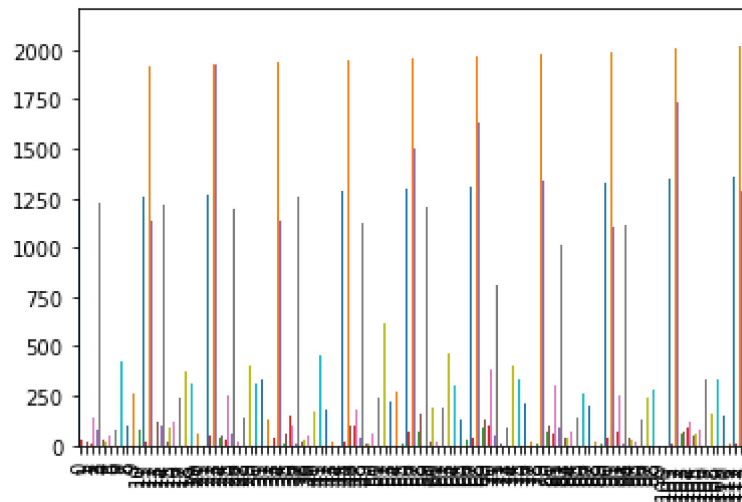
Out[320]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	O
0	1242	UTTARAKHAND	1901	134.5	81.4	44.5	5.9	60.8	33.6	381.1	612.3	167.1	1
1	1243	UTTARAKHAND	1902	0.0	17.0	52.2	63.7	52.1	113.1	444.1	327.5	220.4	3
2	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3	5
3	1245	UTTARAKHAND	1904	40.0	5.2	78.3	13.6	61.1	180.1	449.6	417.2	174.1	
4	1246	UTTARAKHAND	1905	115.4	80.7	99.8	26.1	70.3	111.5	299.9	349.5	129.5	
...	
110	1352	UTTARAKHAND	2011	30.9	65.2	18.0	30.9	84.2	223.1	433.3	523.7	148.4	
111	1353	UTTARAKHAND	2012	38.8	11.9	28.1	39.2	9.1	46.0	387.1	419.5	220.6	
112	1354	UTTARAKHAND	2013	73.0	188.3	22.0	24.7	18.2	488.9	413.4	359.4	111.3	2
113	1355	UTTARAKHAND	2014	45.9	99.9	68.4	37.6	52.9	62.9	462.7	264.2	107.9	4
114	1356	UTTARAKHAND	2015	54.5	62.6	127.3	57.3	38.0	186.6	337.0	305.3	52.6	1

115 rows × 20 columns

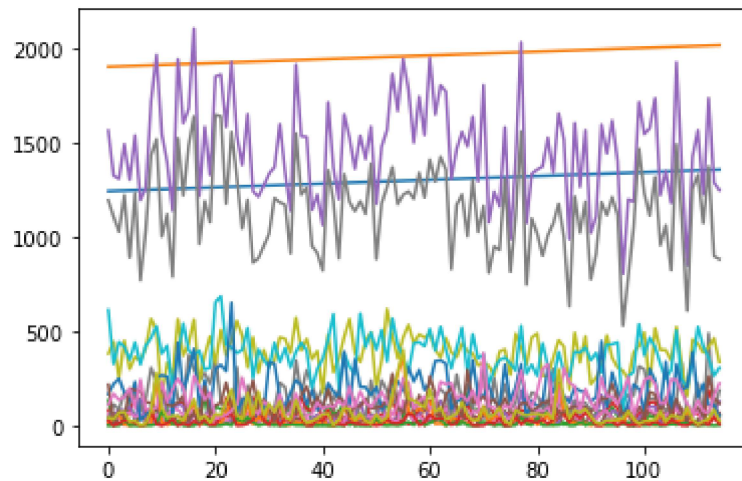
```
In [321]: b.plot.bar(legend=None)
```

```
Out[321]: <AxesSubplot:>
```



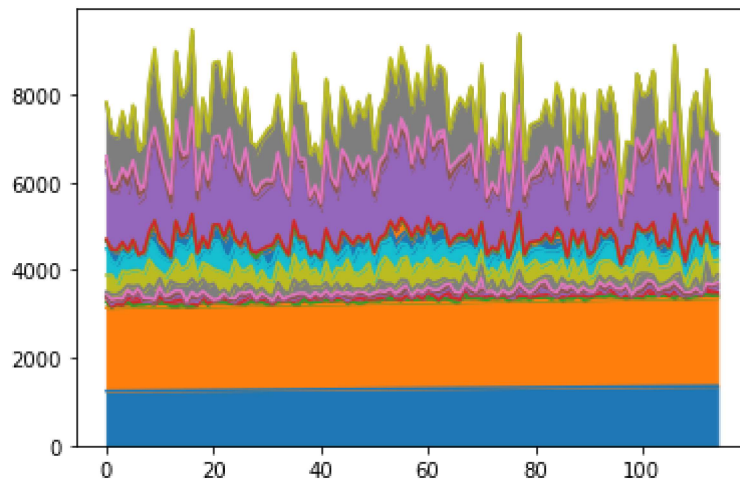
```
In [322]: b.plot.line(legend=None)
```

```
Out[322]: <AxesSubplot:>
```



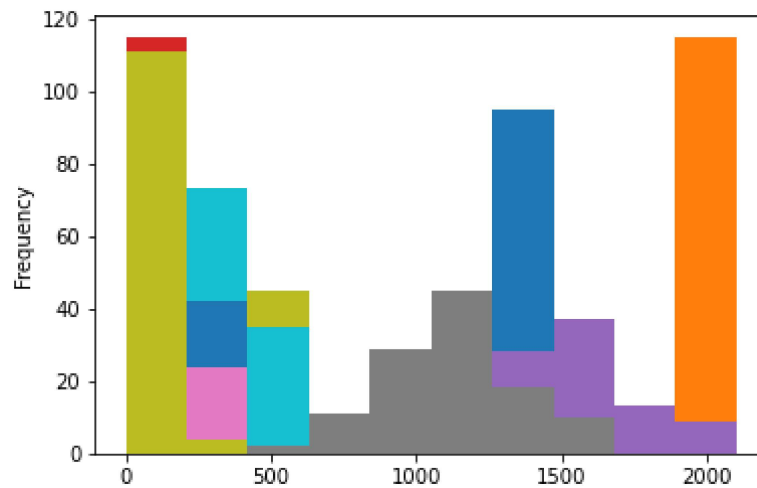
```
In [323]: b.plot.area(legend=None)
```

```
Out[323]: <AxesSubplot:>
```



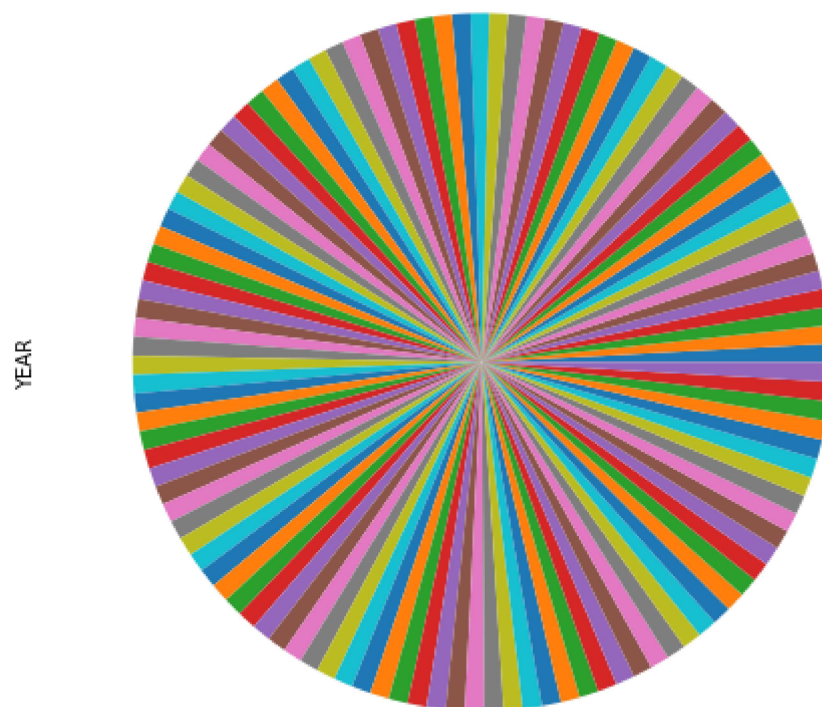
```
In [324]: b.plot.hist(legend=None)
```

```
Out[324]: <AxesSubplot:ylabel='Frequency'>
```



```
In [325]: b.plot.pie(y='YEAR',figsize=(8,8),labels=None,legend=None)
```

```
Out[325]: <AxesSubplot:ylabel='YEAR'>
```



```
In [ ]:
```