

## 04/08/2023 (BOOK-15)

```
In [128]: 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 [129]: a=pd.read_csv(r"C:\Users\user\Downloads\Book15.csv")
a
```

Out[129]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	2392	SAURASHTRA & KUTCH	1901	1.9	0.0	0.1	0.2	3.2	9.1	87.8	62.5	12.0	3.8
1	2393	SAURASHTRA & KUTCH	1902	0.1	0.0	0.0	0.5	1.1	14.4	92.9	160.0	123.9	1.5
2	2394	SAURASHTRA & KUTCH	1903	0.5	0.0	1.7	0.0	3.1	10.5	337.9	96.1	61.9	11.1
3	2395	SAURASHTRA & KUTCH	1904	1.4	5.8	17.5	0.0	0.0	9.5	111.2	9.4	28.9	0.3
4	2396	SAURASHTRA & KUTCH	1905	1.5	1.0	0.6	0.4	0.0	6.4	254.5	12.3	12.8	0.4
...	...	...	...	...	...	...	...	...	...	...	...	...	...
110	2502	SAURASHTRA & KUTCH	2011	0.0	1.4	0.0	0.0	0.0	26.0	212.7	290.9	210.1	1.2
111	2503	SAURASHTRA & KUTCH	2012	0.0	0.0	0.0	0.2	0.1	22.4	34.7	34.5	228.5	2.4
112	2504	SAURASHTRA & KUTCH	2013	1.7	0.2	0.1	8.5	0.1	127.7	171.2	83.3	260.2	28.6
113	2505	SAURASHTRA & KUTCH	2014	0.3	0.0	0.1	0.5	2.1	17.3	137.7	118.8	99.2	5.2
114	2506	SAURASHTRA & KUTCH	2015	0.9	0.0	4.4	2.1	0.8	112.6	226.7	10.6	79.9	3.3

115 rows × 20 columns



```
In [130]: 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 [131]: b=a.fillna(method='ffill')
b
```

Out[131]:

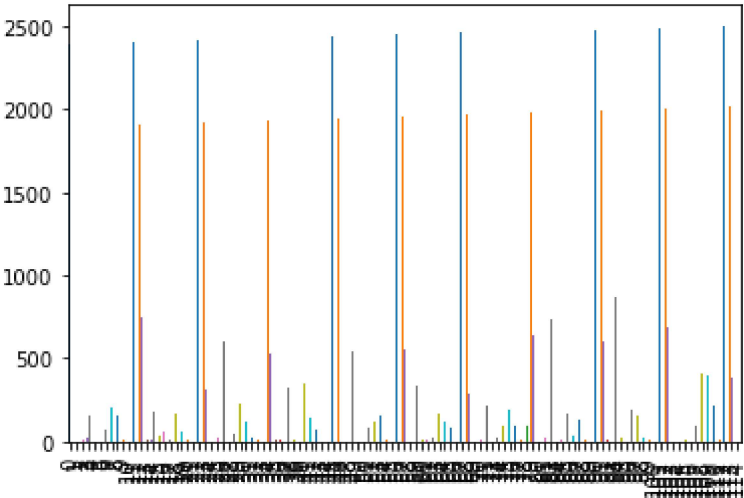
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	2392	SAURASHTRA & KUTCH	1901	1.9	0.0	0.1	0.2	3.2	9.1	87.8	62.5	12.0	3.8
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...	...	...	...	...	...	...	...	...	...	...	...	...	...
110	2502	SAURASHTRA & KUTCH	2011	0.0	1.4	0.0	0.0	0.0	26.0	212.7	290.9	210.1	1.2
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115 rows × 20 columns



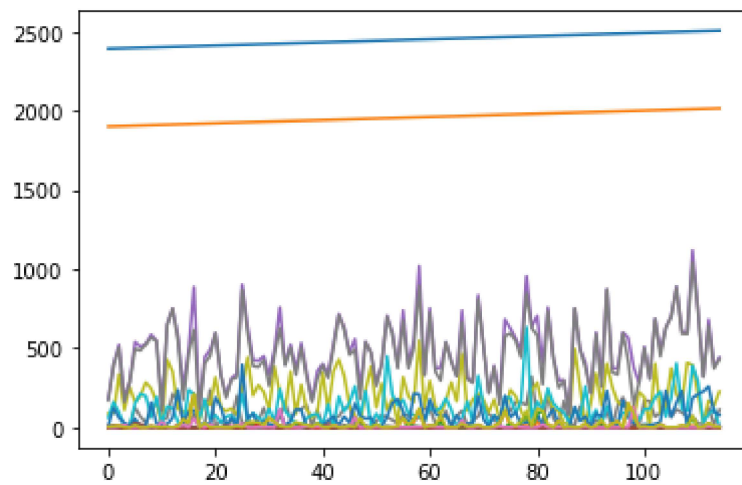
```
In [132]: b.plot.bar(legend=None)
```

Out[132]: <AxesSubplot:>



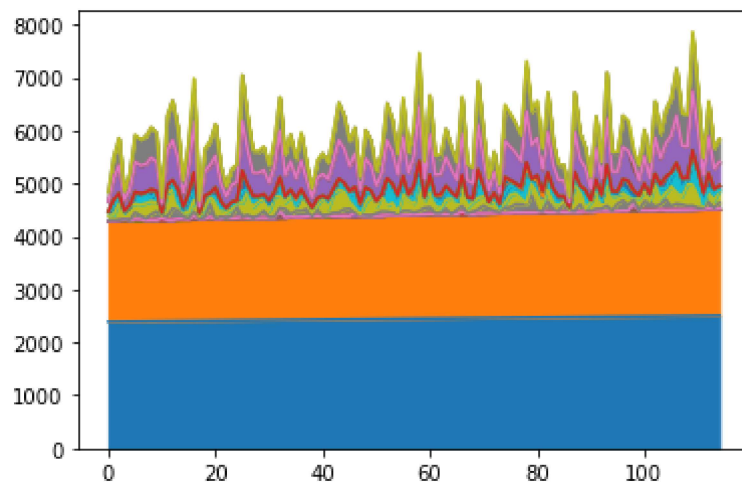
```
In [133]: b.plot.line(legend=None)
```

```
Out[133]: <AxesSubplot:>
```



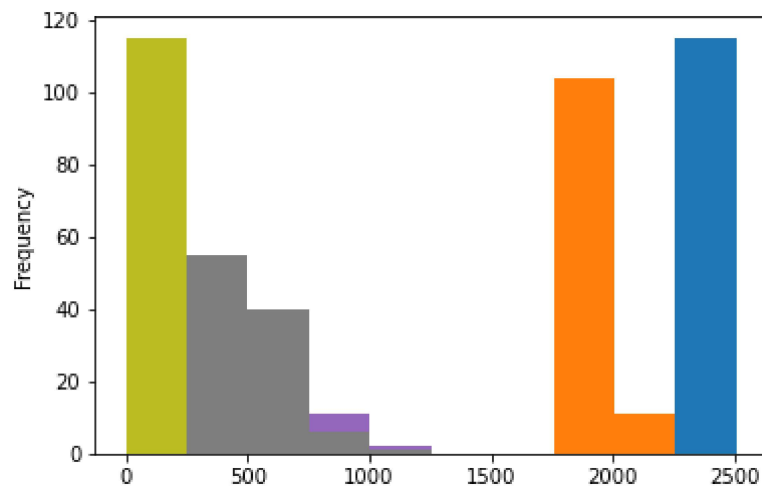
```
In [134]: b.plot.area(legend=None)
```

```
Out[134]: <AxesSubplot:>
```



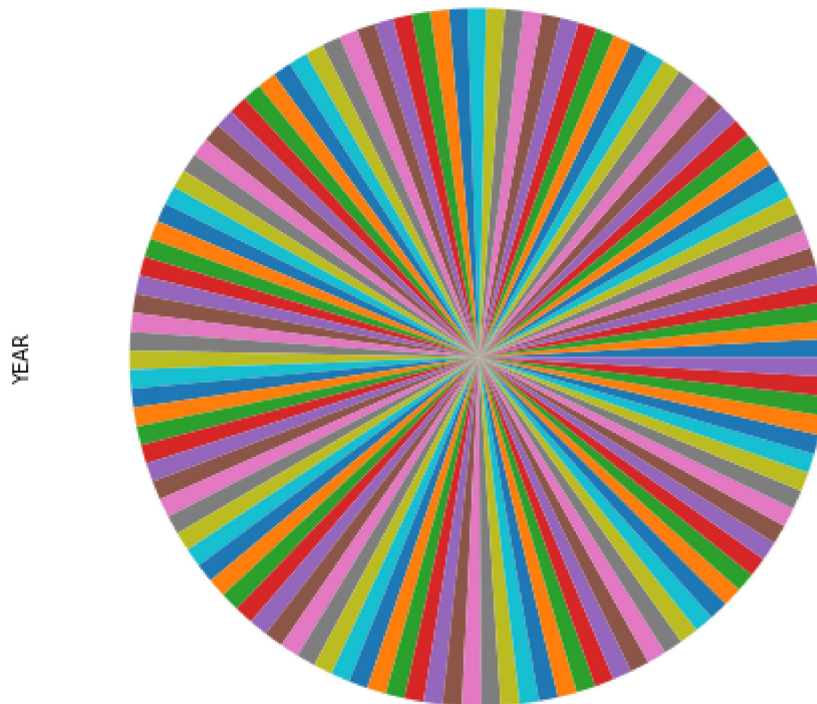
```
In [135]: b.plot.hist(legend=None)
```

```
Out[135]: <AxesSubplot:ylabel='Frequency'>
```



```
In [136]: b.plot.pie(y='YEAR',figsize=(8,8),labels=None,legend=None)
```

```
Out[136]: <AxesSubplot:ylabel='YEAR'>
```



```
In [ ]:
```

