04/08/2023 (BOOK-35)

In [308]: 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 [309]: | a=pd.read_csv(r"C:\Users\user\Downloads\Book35.csv")
a

Out[309]:

index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ
1012	EAST UTTAR PRADESH	1901	62.6	31.3	8.2	1.1	13.6	21.8	226.5	285.6	215.4	4.9
1013	EAST UTTAR PRADESH	1902	6.1	2.3	2.4	2.0	21.4	32.5	411.5	155.4	257.2	13.2
1014	EAST UTTAR PRADESH	1903	8.2	0.4	1.3	0.7	15.3	71.6	115.3	420.2	258.7	324.7
1015	EAST UTTAR PRADESH	1904	7.3	1.5	8.3	0.4	28.7	148.0	359.4	328.8	95.0	50.6
1016	EAST UTTAR PRADESH	1905	16.8	23.6	20.0	5.4	15.4	17.3	302.4	316.2	169.5	3.3
1122	EAST UTTAR PRADESH	2011	1.0	2.7	1.6	2.9	32.2	163.8	197.9	232.1	146.4	0.6
1123	EAST UTTAR PRADESH	2012	20.3	1.2	3.4	2.8	0.2	18.5	234.2	156.0	164.4	0.7
1124	EAST UTTAR PRADESH	2013	6.1	59.6	2.7	8.7	1.1	309.7	230.0	246.1	78.2	97.4
1125	EAST UTTAR PRADESH	2014	47.4	25.8	15.4	1.7	10.7	47.8	224.5	138.1	106.7	74.7
1126	EAST UTTAR PRADESH	2015	30.0	4.1	48.2	23.2	8.6	95.3	179.0	175.8	21.9	11.8
	1012 1013 1014 1015 1016 1122 1123 1124 1125	1012 EAST UTTAR PRADESH 1013 EAST UTTAR PRADESH 1014 EAST UTTAR PRADESH 1015 EAST UTTAR PRADESH 1016 EAST UTTAR PRADESH 1122 EAST UTTAR PRADESH 1123 EAST UTTAR PRADESH 1124 EAST UTTAR PRADESH 1125 EAST UTTAR PRADESH 1126 EAST UTTAR PRADESH 1127 EAST UTTAR PRADESH 1128 EAST UTTAR PRADESH 1129 EAST UTTAR PRADESH	1012 EAST UTTAR PRADESH 1901 1013 EAST UTTAR PRADESH 1902 1014 EAST UTTAR PRADESH 1903 1015 EAST UTTAR PRADESH 1904 1016 EAST UTTAR PRADESH 1905 1122 EAST UTTAR PRADESH 2011 1123 EAST UTTAR PRADESH 2012 1124 EAST UTTAR PRADESH 2013 1125 EAST UTTAR PRADESH 2013 1126 EAST UTTAR PRADESH 2014	1012 EAST UTTAR PRADESH 1901 62.6 1013 EAST UTTAR 1902 6.1 1014 EAST UTTAR 1903 8.2 1015 EAST UTTAR 1904 7.3 1016 EAST UTTAR 1905 16.8 1122 EAST UTTAR 2011 1.0 1123 EAST UTTAR 2012 20.3 1124 EAST UTTAR 2013 6.1 1125 EAST UTTAR 2014 47.4 1126 EAST UTTAR 2015 30.0	1012 EAST UTTAR PRADESH 1901 62.6 31.3 1013 EAST UTTAR PRADESH 1902 6.1 2.3 1014 EAST 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UTTAR PRADESH PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 1013 EAST UTTAR PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 1014 EAST UTTAR PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 1015 EAST UTTAR PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 1016 EAST UTTAR PRADESH 1905 16.8 23.6 20.0 5.4 15.4 17.3 302.4 <td< th=""><th>1012 EAST UTTAR PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 285.6 1013 EAST UTTAR PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 155.4 1014 EAST UTTAR PRADESH PRADESH PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 420.2 1015 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 328.8 1016 EAST UTTAR PRADESH PRADESH</th><th>1012 EAST UTTAR PRADESH PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 285.6 215.4 1013 EAST UTTAR PRADESH PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 155.4 257.2 1014 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 420.2 258.7 1015 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 328.8 95.0 1122 EAST UTTAR PRADESH PRAD</th></td<></th></t<>	1012 EAST UTTAR PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 1013 EAST UTTAR PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 1014 EAST UTTAR PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 1015 EAST UTTAR PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 1016 EAST UTTAR PRADESH 1905 16.8 23.6 20.0 5.4 15.4 17.3	1012 EAST UTTAR PRADESH PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 1013 EAST UTTAR PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 1014 EAST UTTAR PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 1015 EAST UTTAR PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 1016 EAST UTTAR PRADESH 1905 16.8 23.6 20.0 5.4 15.4 17.3 302.4 <td< th=""><th>1012 EAST UTTAR PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 285.6 1013 EAST UTTAR PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 155.4 1014 EAST UTTAR PRADESH PRADESH PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 420.2 1015 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 328.8 1016 EAST UTTAR PRADESH PRADESH</th><th>1012 EAST UTTAR PRADESH PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 285.6 215.4 1013 EAST UTTAR PRADESH PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 155.4 257.2 1014 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 420.2 258.7 1015 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 328.8 95.0 1122 EAST UTTAR PRADESH PRAD</th></td<>	1012 EAST UTTAR PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 285.6 1013 EAST UTTAR PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 155.4 1014 EAST UTTAR PRADESH PRADESH PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 420.2 1015 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 328.8 1016 EAST UTTAR PRADESH	1012 EAST UTTAR PRADESH PRADESH PRADESH 1901 62.6 31.3 8.2 1.1 13.6 21.8 226.5 285.6 215.4 1013 EAST UTTAR PRADESH PRADESH PRADESH 1902 6.1 2.3 2.4 2.0 21.4 32.5 411.5 155.4 257.2 1014 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1903 8.2 0.4 1.3 0.7 15.3 71.6 115.3 420.2 258.7 1015 EAST UTTAR PRADESH PRADESH PRADESH PRADESH 1904 7.3 1.5 8.3 0.4 28.7 148.0 359.4 328.8 95.0 1122 EAST UTTAR PRADESH PRAD

115 rows × 20 columns

In [310]: 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		7), int64(2), o	bject(1)

memory usage: 18.1+ KB

```
In [311]: b=a.fillna(method='ffill')
b
```

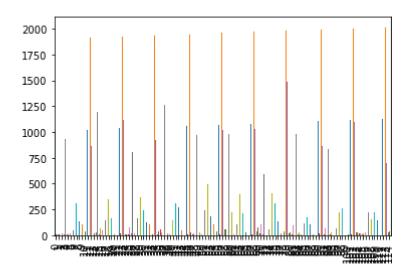
Out[311]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ
0	1012	EAST UTTAR PRADESH	1901	62.6	31.3	8.2	1.1	13.6	21.8	226.5	285.6	215.4	4.9
1	1013	EAST UTTAR PRADESH	1902	6.1	2.3	2.4	2.0	21.4	32.5	411.5	155.4	257.2	13.2
2	1014	EAST UTTAR PRADESH	1903	8.2	0.4	1.3	0.7	15.3	71.6	115.3	420.2	258.7	324.7
3	1015	EAST UTTAR PRADESH	1904	7.3	1.5	8.3	0.4	28.7	148.0	359.4	328.8	95.0	50.6
4	1016	EAST UTTAR PRADESH	1905	16.8	23.6	20.0	5.4	15.4	17.3	302.4	316.2	169.5	3.3
110	1122	EAST UTTAR PRADESH	2011	1.0	2.7	1.6	2.9	32.2	163.8	197.9	232.1	146.4	0.6
111	1123	EAST UTTAR PRADESH	2012	20.3	1.2	3.4	2.8	0.2	18.5	234.2	156.0	164.4	0.7
112	1124	EAST UTTAR PRADESH	2013	6.1	59.6	2.7	8.7	1.1	309.7	230.0	246.1	78.2	97.4
113	1125	EAST UTTAR PRADESH	2014	47.4	25.8	15.4	1.7	10.7	47.8	224.5	138.1	106.7	74.7
114	1126	EAST UTTAR PRADESH	2015	30.0	4.1	48.2	23.2	8.6	95.3	179.0	175.8	21.9	11.8

115 rows × 20 columns

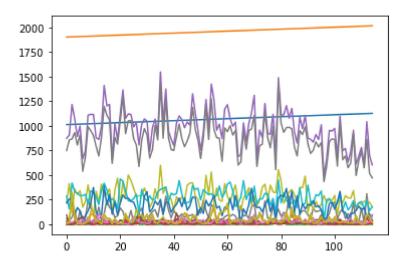
In [312]: b.plot.bar(legend=None)

Out[312]: <AxesSubplot:>



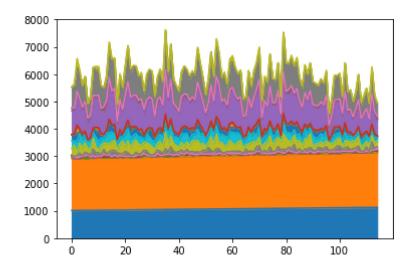
```
In [313]: b.plot.line(legend=None)
```

Out[313]: <AxesSubplot:>



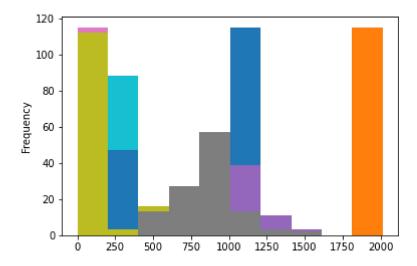
In [314]: b.plot.area(legend=None)

Out[314]: <AxesSubplot:>



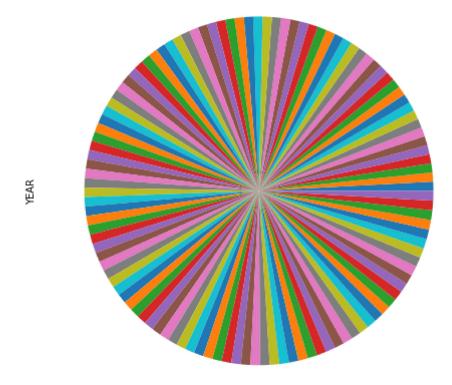
```
In [315]: b.plot.hist(legend=None)
```

Out[315]: <AxesSubplot:ylabel='Frequency'>



In [316]: | b.plot.pie(y='YEAR',figsize=(8,8),labels=None,legend=None)

Out[316]: <AxesSubplot:ylabel='YEAR'>



```
In [ ]:
```