Vijay(Book33) 04/08/2023

```
In [1]:
            import numpy as np
          2 import pandas as pd
          3 import matplotlib.pyplot as plt
          4 import seaborn as sns
          5 from sklearn.linear_model import LogisticRegression
          6 from sklearn.preprocessing import StandardScaler
          7 import re
          8 from sklearn.datasets import load_digits
          9 from sklearn.model_selection import train_test_split
In [2]:
```

Out[2]:

2 a	:	1	<pre>a=pd.read_csv(r"C:\Users\user\Downloads\Book33.csv")</pre>	
		2	a	

index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ост
782	JHARKHAND	1901	92.7	66.6	11.1	18.4	33.5	70.9	269.4	415.1	248.0	37.3
783	JHARKHAND	1902	4.2	7.7	13.2	28.5	59.8	89.9	456.1	204.9	306.6	17.6
784	JHARKHAND	1903	25.1	19.5	10.7	32.8	56.4	142.1	206.1	280.8	190.2	210.1
785	JHARKHAND	1904	2.5	17.0	38.1	9.1	116.1	308.9	494.1	336.1	125.6	30.6
786	JHARKHAND	1905	38.4	53.3	61.6	32.9	66.2	41.5	420.3	293.7	322.8	21.3
892	JHARKHAND	2011	3.3	2.5	6.4	25.4	55.0	349.0	181.8	403.2	324.6	23.3
893	JHARKHAND	2012	34.6	10.3	1.5	9.6	6.6	121.1	287.2	282.4	217.6	37.8
894	JHARKHAND	2013	1.1	17.9	1.6	22.3	85.0	181.5	211.1	278.1	173.8	281.1
895	JHARKHAND	2014	9.9	47.5	22.9	1.9	98.2	139.7	321.3	290.9	178.2	44.9
896	JHARKHAND	2015	12.2	2.6	21.6	55.5	25.5	183.3	429.7	240.7	85.1	22.7
	782 783 784 785 786 892 893 894 895	782 JHARKHAND 783 JHARKHAND 784 JHARKHAND 785 JHARKHAND 786 JHARKHAND 892 JHARKHAND 893 JHARKHAND 894 JHARKHAND 895 JHARKHAND	782 JHARKHAND 1901 783 JHARKHAND 1902 784 JHARKHAND 1903 785 JHARKHAND 1904 786 JHARKHAND 1905 892 JHARKHAND 2011 893 JHARKHAND 2012 894 JHARKHAND 2013 895 JHARKHAND 2014	782 JHARKHAND 1901 92.7 783 JHARKHAND 1902 4.2 784 JHARKHAND 1903 25.1 785 JHARKHAND 1904 2.5 786 JHARKHAND 1905 38.4 892 JHARKHAND 2011 3.3 893 JHARKHAND 2012 34.6 894 JHARKHAND 2013 1.1 895 JHARKHAND 2014 9.9	782 JHARKHAND 1901 92.7 66.6 783 JHARKHAND 1902 4.2 7.7 784 JHARKHAND 1903 25.1 19.5 785 JHARKHAND 1904 2.5 17.0 786 JHARKHAND 1905 38.4 53.3 892 JHARKHAND 2011 3.3 2.5 893 JHARKHAND 2012 34.6 10.3 894 JHARKHAND 2013 1.1 17.9 895 JHARKHAND 2014 9.9 47.5	782 JHARKHAND 1901 92.7 66.6 11.1 783 JHARKHAND 1902 4.2 7.7 13.2 784 JHARKHAND 1903 25.1 19.5 10.7 785 JHARKHAND 1904 2.5 17.0 38.1 786 JHARKHAND 1905 38.4 53.3 61.6 892 JHARKHAND 2011 3.3 2.5 6.4 893 JHARKHAND 2012 34.6 10.3 1.5 894 JHARKHAND 2013 1.1 17.9 1.6 895 JHARKHAND 2014 9.9 47.5 22.9	782 JHARKHAND 1901 92.7 66.6 11.1 18.4 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 786 JHARKHAND 1905 38.4 53.3 61.6 32.9	782 JHARKHAND 1901 92.7 66.6 11.1 18.4 33.5 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 59.8 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 56.4 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 116.1 786 JHARKHAND 1905 38.4 53.3 61.6 32.9 66.2 892 JHARKHAND 2011 3.3 2.5 6.4 25.4 55.0 893 JHARKHAND 2012 34.6 10.3 1.5 9.6 6.6 894 JHARKHAND 2013 1.1 17.9 1.6 22.3 85.0 895 JHARKHAND 2014 9.9 47.5 22.9 1.9 98.2	782 JHARKHAND 1901 92.7 66.6 11.1 18.4 33.5 70.9 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 59.8 89.9 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 56.4 142.1 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 116.1 308.9 786 JHARKHAND 1905 38.4 53.3 61.6 32.9 66.2 41.5	782 JHARKHAND 1901 92.7 66.6 11.1 18.4 33.5 70.9 269.4 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 59.8 89.9 456.1 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 56.4 142.1 206.1 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 116.1 308.9 494.1 786 JHARKHAND 1905 38.4 53.3 61.6 32.9 66.2 41.5 420.3 <th>782 JHARKHAND 1901 92.7 66.6 11.1 18.4 33.5 70.9 269.4 415.1 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 59.8 89.9 456.1 204.9 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 56.4 142.1 206.1 280.8 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 116.1 308.9 494.1 336.1 786 JHARKHAND 1905 38.4 53.3 61.6 32.9 66.2 41.5 420.3 293.7 </th> <th>782 JHARKHAND 1901 92.7 66.6 11.1 18.4 33.5 70.9 269.4 415.1 248.0 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 59.8 89.9 456.1 204.9 306.6 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 56.4 142.1 206.1 280.8 190.2 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 116.1 308.9 494.1 336.1 125.6 786 JHARKHAND 1905 38.4 53.3 61.6 32.9 66.2 41.5 420.3 293.7 322.8 </th>	782 JHARKHAND 1901 92.7 66.6 11.1 18.4 33.5 70.9 269.4 415.1 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 59.8 89.9 456.1 204.9 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 56.4 142.1 206.1 280.8 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 116.1 308.9 494.1 336.1 786 JHARKHAND 1905 38.4 53.3 61.6 32.9 66.2 41.5 420.3 293.7	782 JHARKHAND 1901 92.7 66.6 11.1 18.4 33.5 70.9 269.4 415.1 248.0 783 JHARKHAND 1902 4.2 7.7 13.2 28.5 59.8 89.9 456.1 204.9 306.6 784 JHARKHAND 1903 25.1 19.5 10.7 32.8 56.4 142.1 206.1 280.8 190.2 785 JHARKHAND 1904 2.5 17.0 38.1 9.1 116.1 308.9 494.1 336.1 125.6 786 JHARKHAND 1905 38.4 53.3 61.6 32.9 66.2 41.5 420.3 293.7 322.8

115 rows × 20 columns

```
In [3]: 1 a.info()
```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 0 to 114
Data columns (total 20 columns):

#	Column	Non-Null Count	t 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						
dtyp	es: float64(1	7), int64(2), d	object(1)						
momony usage: 18 1+ KB									

memory usage: 18.1+ KB

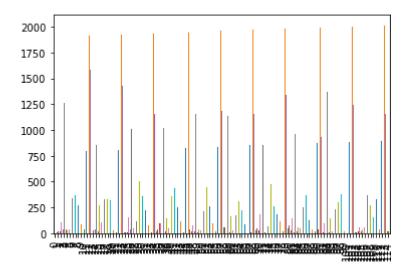
Out[4]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ
0	782	JHARKHAND	1901	92.7	66.6	11.1	18.4	33.5	70.9	269.4	415.1	248.0	37.3
1	783	JHARKHAND	1902	4.2	7.7	13.2	28.5	59.8	89.9	456.1	204.9	306.6	17.6
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4	786	JHARKHAND	1905	38.4	53.3	61.6	32.9	66.2	41.5	420.3	293.7	322.8	21.3
•••													
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112	894	JHARKHAND	2013	1.1	17.9	1.6	22.3	85.0	181.5	211.1	278.1	173.8	281.1
113	895	JHARKHAND	2014	9.9	47.5	22.9	1.9	98.2	139.7	321.3	290.9	178.2	44.9
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115 rows × 20 columns

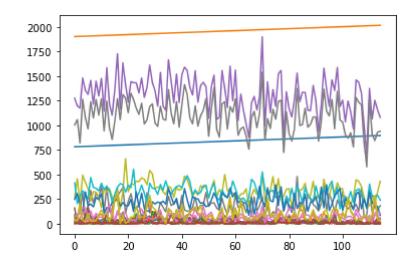
In [5]: 1 b.plot.bar(legend=None)

Out[5]: <AxesSubplot:>



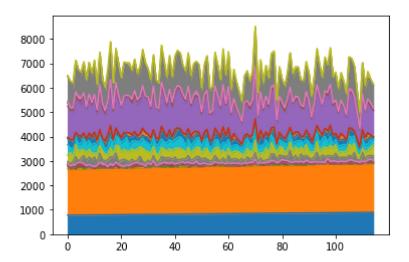
In [6]: 1 b.plot.line(legend=None)

Out[6]: <AxesSubplot:>



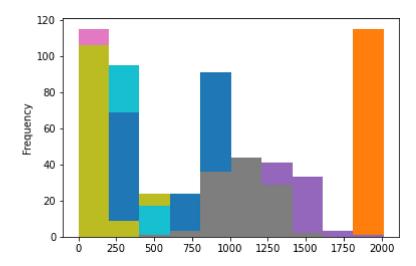
In [7]: 1 b.plot.area(legend=None)

Out[7]: <AxesSubplot:>



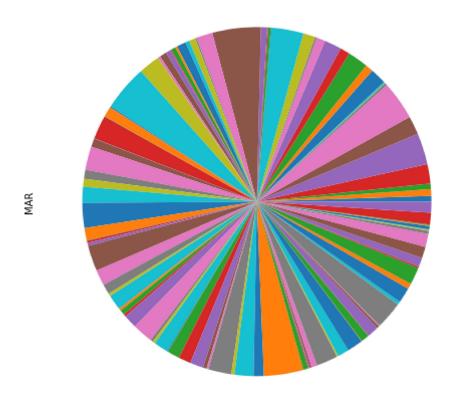
In [8]: 1 b.plot.hist(legend=None)

Out[8]: <AxesSubplot:ylabel='Frequency'>



```
In [10]: 1 b.plot.pie(y='MAR',figsize=(8,8),labels=None,legend=None)
```

Out[10]: <AxesSubplot:ylabel='MAR'>



In []: 1