# Vijay(Book33) 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\Book33.csv")
a
```

Out[2]:

| | index | SUBDIVISION | YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 |
| **2** | 784 | JHARKHAND | 1903 | 25.1 | 19.5 | 10.7 | 32.8 | 56.4 | 142.1 | 206.1 | 280.8 | 190.2 | 210.1 |
| **3** | 785 | JHARKHAND | 1904 | 2.5 | 17.0 | 38.1 | 9.1 | 116.1 | 308.9 | 494.1 | 336.1 | 125.6 | 30.6 |
| **4** | 786 | JHARKHAND | 1905 | 38.4 | 53.3 | 61.6 | 32.9 | 66.2 | 41.5 | 420.3 | 293.7 | 322.8 | 21.3 |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **110** | 892 | JHARKHAND | 2011 | 3.3 | 2.5 | 6.4 | 25.4 | 55.0 | 349.0 | 181.8 | 403.2 | 324.6 | 23.3 |
| **111** | 893 | JHARKHAND | 2012 | 34.6 | 10.3 | 1.5 | 9.6 | 6.6 | 121.1 | 287.2 | 282.4 | 217.6 | 37.8 |
| **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 |
| **114** | 896 | JHARKHAND | 2015 | 12.2 | 2.6 | 21.6 | 55.5 | 25.5 | 183.3 | 429.7 | 240.7 | 85.1 | 22.7 |

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

Out[4]:

| | index | SUBDIVISION | YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **110** | 892 | JHARKHAND | 2011 | 3.3 | 2.5 | 6.4 | 25.4 | 55.0 | 349.0 | 181.8 | 403.2 | 324.6 | 23.3 |
| **111** | 893 | JHARKHAND | 2012 | 34.6 | 10.3 | 1.5 | 9.6 | 6.6 | 121.1 | 287.2 | 282.4 | 217.6 | 37.8 |
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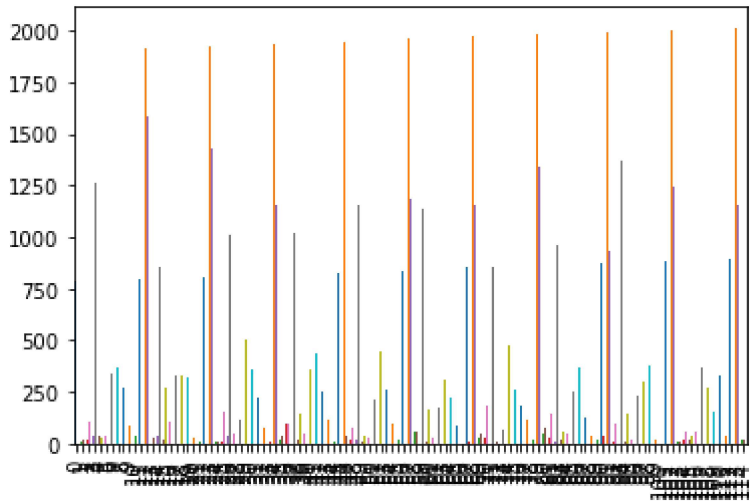
| **113** | 895 | JHARKHAND | 2014 | 9.9 | 47.5 | 22.9 | 1.9 | 98.2 | 139.7 | 321.3 | 290.9 | 178.2 | 44.9 |
| **114** | 896 | JHARKHAND | 2015 | 12.2 | 2.6 | 21.6 | 55.5 | 25.5 | 183.3 | 429.7 | 240.7 | 85.1 | 22.7 |

115 rows × 20 columns

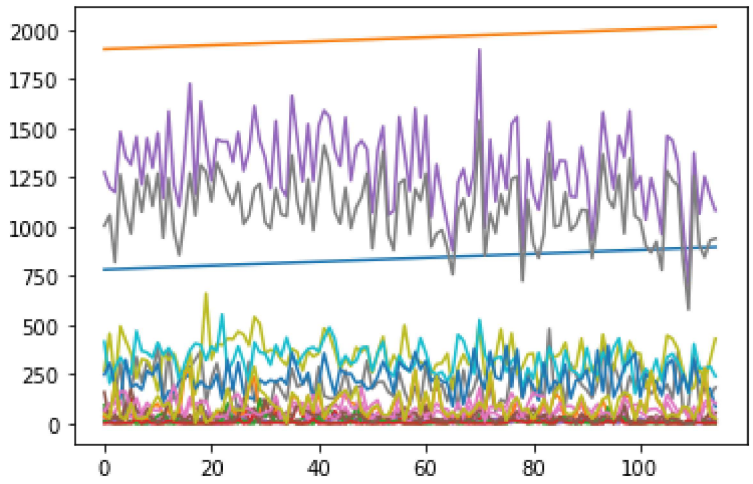
In [5]:
```
1 b.plot.bar(legend=None)
```

Out[5]: <AxesSubplot:>



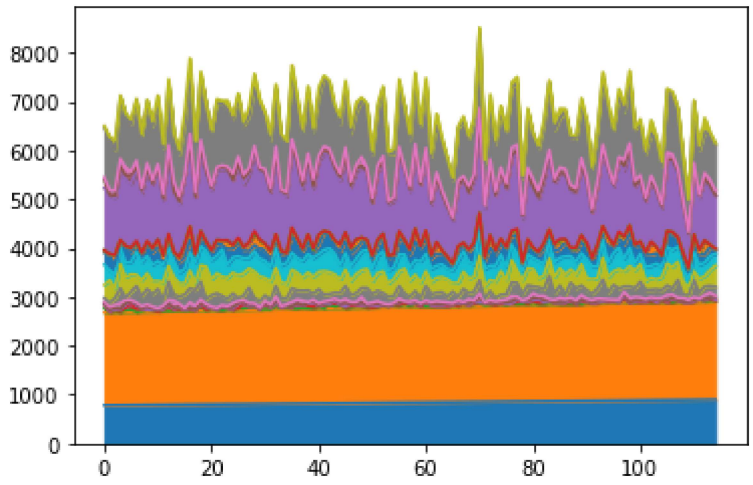

In [6]:
```
1 b.plot.line(legend=None)
```

Out[6]: <AxesSubplot:>



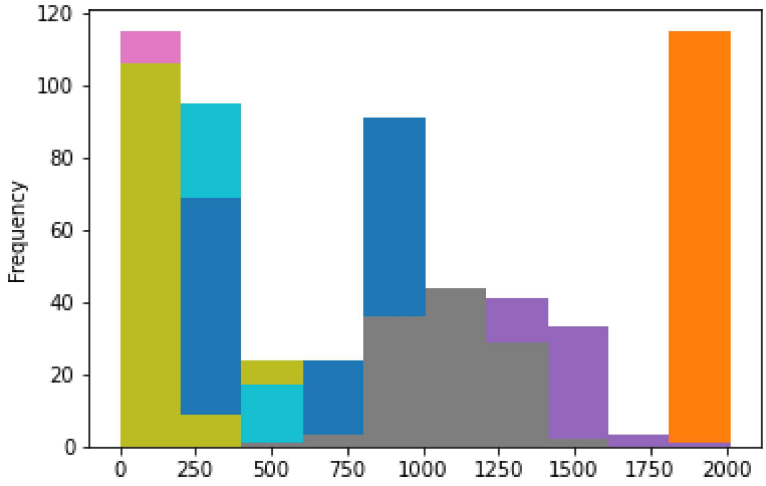
In [7]:
```
1 b.plot.area(legend=None)
```

Out[7]: <AxesSubplot:>



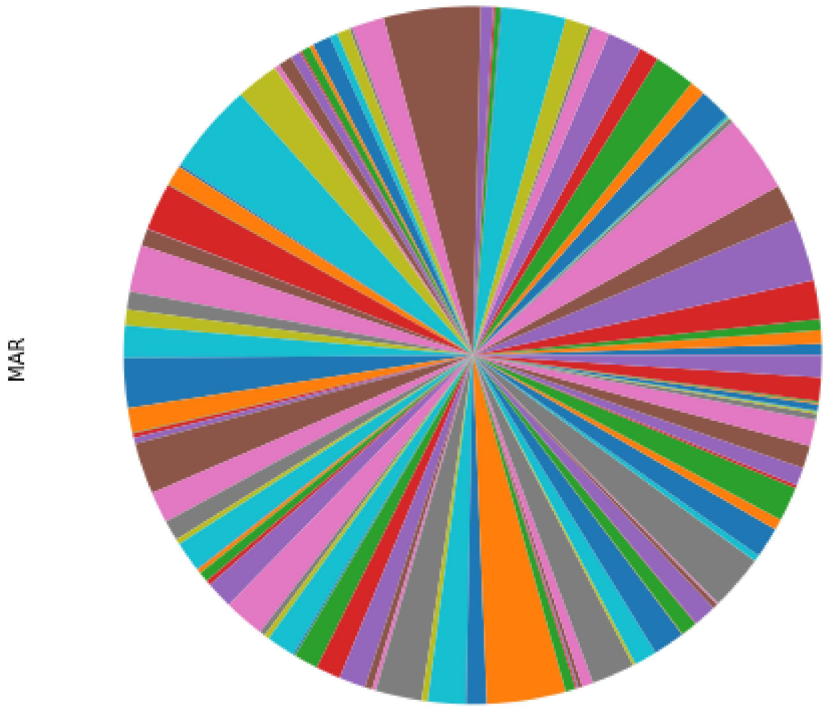

In [8]:
```
1 b.plot.hist(legend=None)
```

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
```