mk 04/08/2023

In [1]:
```python
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\Book3.csv")
a
```

Out[2]:

| | index | SUBDIVISION | YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 3657 | NORTH INTERIOR KARNATAKA | 1901 | 3.5 | 18.8 | 7.1 | 67.2 | 65.5 | 120.5 | 151.9 | 115.1 | 128.8 | 80.0 |
| 1 | 3658 | NORTH INTERIOR KARNATAKA | 1902 | 0.0 | 0.0 | 0.3 | 22.5 | 34.4 | 111.3 | 83.2 | 78.1 | 146.7 | 118.8 |
| 2 | 3659 | NORTH INTERIOR KARNATAKA | 1903 | 3.5 | 0.0 | 0.1 | 6.9 | 53.4 | 102.8 | 209.4 | 146.4 | 189.3 | 166.4 |
| 3 | 3660 | NORTH INTERIOR KARNATAKA | 1904 | 0.2 | 0.3 | 8.5 | 11.0 | 46.3 | 120.6 | 91.6 | 48.5 | 165.1 | 86.5 |
| 4 | 3661 | NORTH INTERIOR KARNATAKA | 1905 | 0.0 | 6.0 | 2.6 | 16.0 | 51.2 | 99.6 | 60.1 | 139.2 | 42.2 | 85.0 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 110 | 3767 | NORTH INTERIOR KARNATAKA | 2011 | 0.5 | 7.2 | 7.2 | 41.2 | 46.8 | 101.3 | 150.8 | 152.0 | 69.0 | 73.4 |
| 111 | 3768 | NORTH INTERIOR KARNATAKA | 2012 | 28.5 | 6.2 | 0.4 | 35.4 | 19.5 | 60.0 | 114.5 | 105.5 | 79.2 | 85.2 |
| 112 | 3769 | NORTH INTERIOR KARNATAKA | 2013 | 1.2 | 6.1 | 3.0 | 25.4 | 47.4 | 99.4 | 160.7 | 73.9 | 201.0 | 101.0 |
| 113 | 3770 | NORTH INTERIOR KARNATAKA | 2014 | 0.0 | 6.1 | 29.2 | 26.4 | 93.0 | 50.4 | 136.8 | 205.2 | 90.2 | 80.3 |
| 114 | 3771 | NORTH INTERIOR KARNATAKA | 2015 | 2.4 | 0.0 | 27.5 | 50.8 | 45.3 | 89.6 | 38.5 | 78.4 | 150.8 | 61.2 |

115 rows × 20 columns

In [3]: `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]: 
```
b=a.fillna(method='ffill')
b
```

Out[4]:

| | index | SUBDIVISION | YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 3657 | NORTH INTERIOR KARNATAKA | 1901 | 3.5 | 18.8 | 7.1 | 67.2 | 65.5 | 120.5 | 151.9 | 115.1 | 128.8 | 80.0 |
| **1** | 3658 | NORTH INTERIOR KARNATAKA | 1902 | 0.0 | 0.0 | 0.3 | 22.5 | 34.4 | 111.3 | 83.2 | 78.1 | 146.7 | 118.8 |
| **2** | 3659 | NORTH INTERIOR KARNATAKA | 1903 | 3.5 | 0.0 | 0.1 | 6.9 | 53.4 | 102.8 | 209.4 | 146.4 | 189.3 | 166.4 |
| **3** | 3660 | NORTH INTERIOR KARNATAKA | 1904 | 0.2 | 0.3 | 8.5 | 11.0 | 46.3 | 120.6 | 91.6 | 48.5 | 165.1 | 86.5 |
| **4** | 3661 | NORTH INTERIOR KARNATAKA | 1905 | 0.0 | 6.0 | 2.6 | 16.0 | 51.2 | 99.6 | 60.1 | 139.2 | 42.2 | 85.0 |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **110** | 3767 | NORTH INTERIOR KARNATAKA | 2011 | 0.5 | 7.2 | 7.2 | 41.2 | 46.8 | 101.3 | 150.8 | 152.0 | 69.0 | 73.4 |
| **111** | 3768 | NORTH INTERIOR KARNATAKA | 2012 | 28.5 | 6.2 | 0.4 | 35.4 | 19.5 | 60.0 | 114.5 | 105.5 | 79.2 | 85.2 |
| **112** | 3769 | NORTH INTERIOR KARNATAKA | 2013 | 1.2 | 6.1 | 3.0 | 25.4 | 47.4 | 99.4 | 160.7 | 73.9 | 201.0 | 101.0 |
| **113** | 3770 | NORTH INTERIOR KARNATAKA | 2014 | 0.0 | 6.1 | 29.2 | 26.4 | 93.0 | 50.4 | 136.8 | 205.2 | 90.2 | 80.3 |
| **114** | 3771 | NORTH INTERIOR KARNATAKA | 2015 | 2.4 | 0.0 | 27.5 | 50.8 | 45.3 | 89.6 | 38.5 | 78.4 | 150.8 | 61.2 |

115 rows × 20 columns

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

Out[5]: `<AxesSubplot:>`
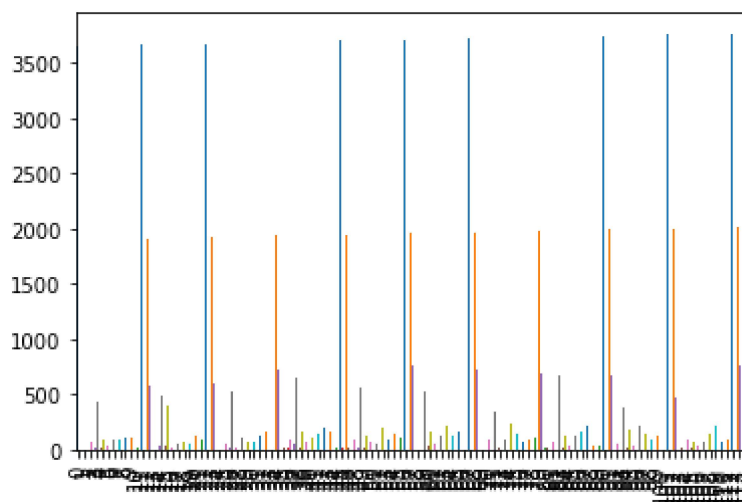


In [6]: `b.plot.line(legend=None)`

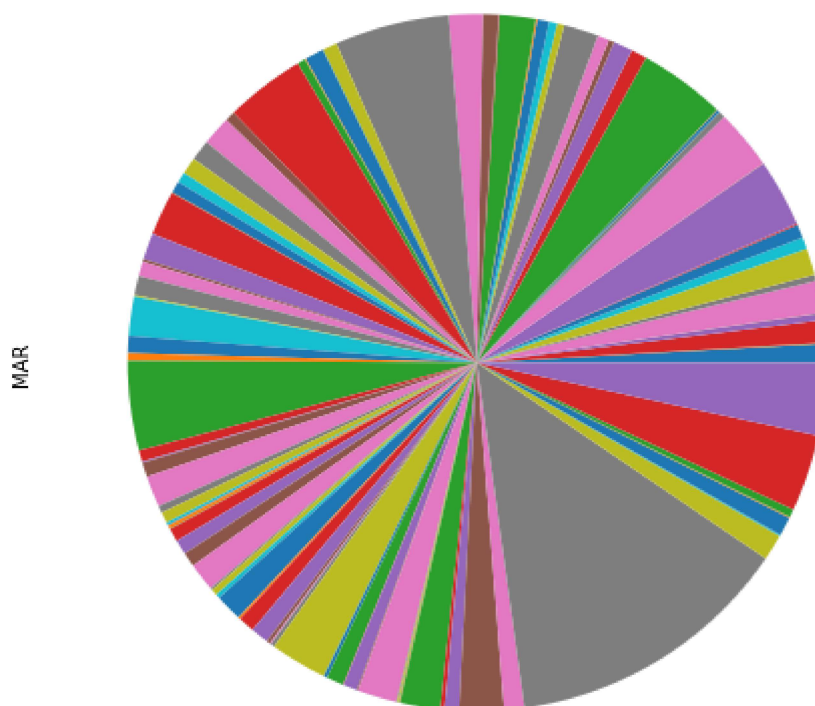Out[6]: `<AxesSubplot:>`
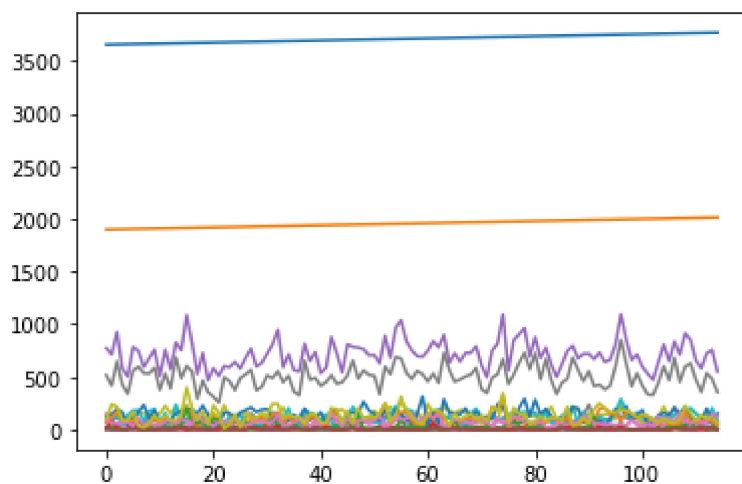
In [7]: 
```python
b.plot.hist(legend=None)
```

Out[7]: <AxesSubplot:ylabel='Frequency'>
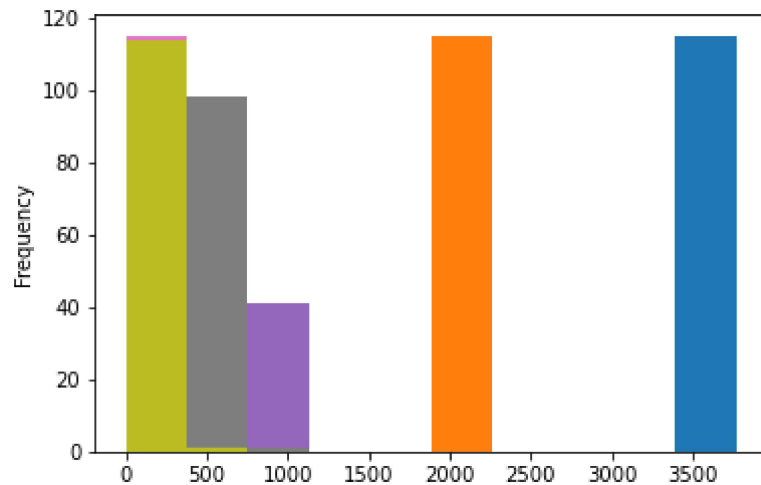


In [8]: 
```python
a.plot.pie(y='MAR',figsize=(8,8),labels=None,legend=None)
```

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



In [ ]: