#### 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
```

# set1:

#### In [11]:

```
a=pd.read_csv(r"C:\Users\user\Downloads\Book1.csv")
a
```

#### Out[11]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	4002	LAKSHADWEEP	1901	22.6	86.4	114.8	263.8	37.3	459.0	0.0	0.0	46.7
1	4003	LAKSHADWEEP	1902	99.3	9.6	32.6	40.4	179.1	374.2	413.3	170.0	214.3
2	4004	LAKSHADWEEP	1903	63.5	95.0	0.0	29.5	144.1	212.4	261.8	202.0	292.1
3	4005	LAKSHADWEEP	1904	0.0	0.0	13.5	13.2	143.3	261.3	256.0	38.9	219.9
4	4006	LAKSHADWEEP	1905	62.4	0.0	0.0	0.0	166.7	400.7	68.7	377.5	107.5
109	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2
110	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8
111	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0
112	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2
113	4115	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4

114 rows × 20 columns

#### In [12]:

#### a.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 0 to 113
Data columns (total 20 columns):
```

#	Column	Non-Null Count	Dtype
0	index	114 non-null	int64
1	SUBDIVISION	114 non-null	object
2	YEAR	114 non-null	int64
3	JAN	112 non-null	float64
4	FEB	113 non-null	float64
5	MAR	112 non-null	float64
6	APR	112 non-null	float64
7	MAY	112 non-null	float64
8	JUN	112 non-null	float64
9	JUL	111 non-null	float64
10	AUG	112 non-null	float64
11	SEP	111 non-null	float64
12	OCT	111 non-null	float64
13	NOV	108 non-null	float64
14	DEC	110 non-null	float64
15	ANNUAL	103 non-null	float64
16	Jan-Feb	111 non-null	float64
17	Mar-May	110 non-null	float64
18	Jun-Sep	110 non-null	float64
19	Oct-Dec	108 non-null	float64
	C7 1 C 4 / 4	-> • • • • • • • •	/ . \

dtypes: float64(17), int64(2), object(1)

memory usage: 17.9+ KB

# In [13]:

```
b=a.fillna(method='ffill')
b
```

#### Out[13]:

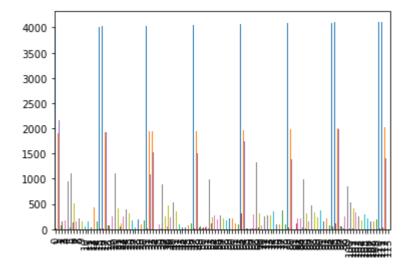
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	4002	LAKSHADWEEP	1901	22.6	86.4	114.8	263.8	37.3	459.0	0.0	0.0	46.7
1	4003	LAKSHADWEEP	1902	99.3	9.6	32.6	40.4	179.1	374.2	413.3	170.0	214.3
2	4004	LAKSHADWEEP	1903	63.5	95.0	0.0	29.5	144.1	212.4	261.8	202.0	292.1
3	4005	LAKSHADWEEP	1904	0.0	0.0	13.5	13.2	143.3	261.3	256.0	38.9	219.9
4	4006	LAKSHADWEEP	1905	62.4	0.0	0.0	0.0	166.7	400.7	68.7	377.5	107.5
109	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2
110	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8
111	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0
112	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2
113	4115	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4

114 rows × 20 columns

### In [14]:

```
b.plot.bar(legend=None)
```

#### Out[14]:

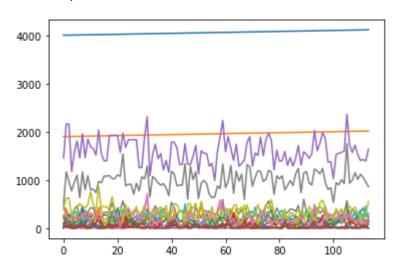


# In [15]:

# b.plot.line(legend=None)

# Out[15]:

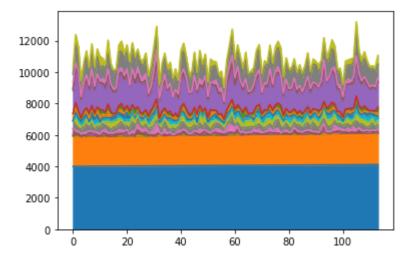
# <AxesSubplot:>



# In [16]:

# b.plot.area(legend=None)

# Out[16]:

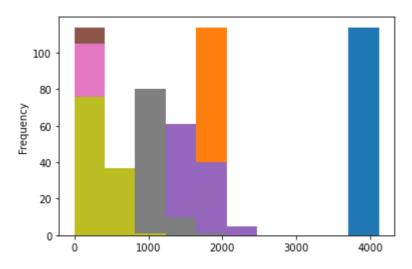


# In [17]:

b.plot.hist(legend=None)

# Out[17]:

<AxesSubplot:ylabel='Frequency'>

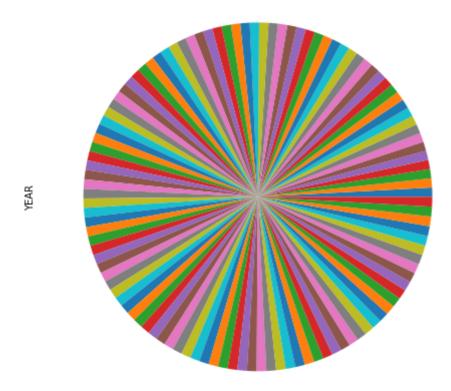


# In [18]:

b.plot.pie(y='YEAR',figsize=(8,8),labels=None,legend=None)

# Out[18]:

<AxesSubplot:ylabel='YEAR'>



# set2:

# In [20]:

```
a=pd.read_csv(r"C:\Users\user\Downloads\Book2.csv")
a
```

# Out[20]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	3887	KERALA	1901	28.7	44.7	51.6	160.0	174.7	824.6	743.0	357.5	197.7
1	3888	KERALA	1902	6.7	2.6	57.3	83.9	134.5	390.9	1205.0	315.8	491.6
2	3889	KERALA	1903	3.2	18.6	3.1	83.6	249.7	558.6	1022.5	420.2	341.8
3	3890	KERALA	1904	23.7	3.0	32.2	71.5	235.7	1098.2	725.5	351.8	222.7
4	3891	KERALA	1905	1.2	22.3	9.4	105.9	263.3	850.2	520.5	293.6	217.2
110	3997	KERALA	2011	20.5	45.7	24.1	165.2	124.2	788.5	536.8	492.7	391.2
111	3998	KERALA	2012	7.4	11.0	21.0	171.1	95.3	430.3	362.6	501.6	241.1
112	3999	KERALA	2013	3.9	40.1	49.9	49.3	119.3	1042.7	830.2	369.7	318.6
113	4000	KERALA	2014	4.6	10.3	17.9	95.7	251.0	454.4	677.8	733.9	298.8
114	4001	KERALA	2015	3.1	5.8	50.1	214.1	201.8	563.6	406.0	252.2	292.9

115 rows × 20 columns

4 (

#### In [21]:

#### a.info()

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

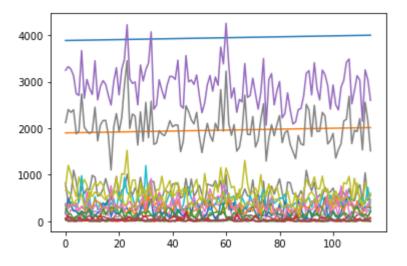
#	Column	Non-Null Count	Dtype
0	index	115 non-null	int64
1	SUBDIVISION	115 non-null	object
2	YEAR	115 non-null	int64
3	JAN	115 non-null	float64
4	FEB	115 non-null	float64
5	MAR	115 non-null	float64
6	APR	115 non-null	float64
7	MAY	115 non-null	float64
8	JUN	115 non-null	float64
9	JUL	115 non-null	float64
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
dtyp	es: float64(1	7), int64(2), c	bject(1)

memory usage: 18.1+ KB

#### In [22]:

```
a.plot.line(legend=None)
```

#### Out[22]:

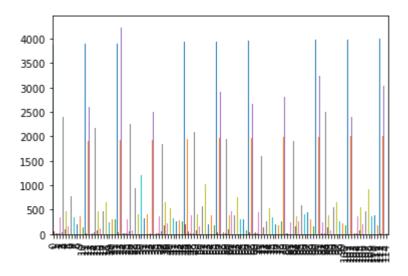


# In [23]:

# a.plot.bar(legend=None)

# Out[23]:

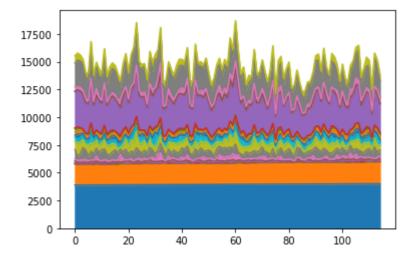
# <AxesSubplot:>



#### In [24]:

#### a.plot.area(legend=None)

#### Out[24]:

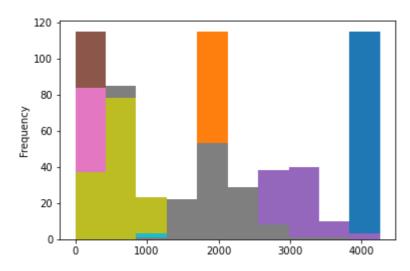


# In [25]:

a.plot.hist(legend=None)

# Out[25]:

<AxesSubplot:ylabel='Frequency'>

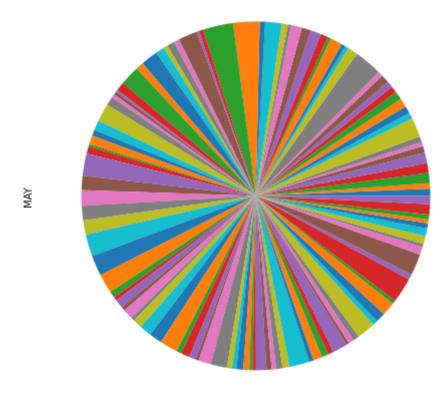


# In [26]:

a.plot.pie(y='MAY',figsize=(8,8),labels=None,legend=None)

# Out[26]:

<AxesSubplot:ylabel='MAY'>



# set3:

# In [28]:

a=pd.read\_csv(r"C:\Users\user\Downloads\Book3.csv")
a

# Out[28]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	О
0	3657	NORTH INTERIOR KARNATAKA	1901	3.5	18.8	7.1	67.2	65.5	120.5	151.9	115.1	128.8	8
1	3658	NORTH INTERIOR KARNATAKA	1902	0.0	0.0	0.3	22.5	34.4	111.3	83.2	78.1	146.7	11
2	3659	NORTH INTERIOR KARNATAKA	1903	3.5	0.0	0.1	6.9	53.4	102.8	209.4	146.4	189.3	16
3	3660	NORTH INTERIOR KARNATAKA	1904	0.2	0.3	8.5	11.0	46.3	120.6	91.6	48.5	165.1	8
4	3661	NORTH INTERIOR KARNATAKA	1905	0.0	6.0	2.6	16.0	51.2	99.6	60.1	139.2	42.2	8
110	3767	NORTH INTERIOR KARNATAKA	2011	0.5	7.2	7.2	41.2	46.8	101.3	150.8	152.0	69.0	7
111	3768	NORTH INTERIOR KARNATAKA	2012	28.5	6.2	0.4	35.4	19.5	60.0	114.5	105.5	79.2	8
112	3769	NORTH INTERIOR KARNATAKA	2013	1.2	6.1	3.0	25.4	47.4	99.4	160.7	73.9	201.0	10
113	3770	NORTH INTERIOR KARNATAKA	2014	0.0	6.1	29.2	26.4	93.0	50.4	136.8	205.2	90.2	8
114	3771	NORTH INTERIOR KARNATAKA	2015	2.4	0.0	27.5	50.8	45.3	89.6	38.5	78.4	150.8	6

115 rows × 20 columns

#### In [29]:

# a.info()

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

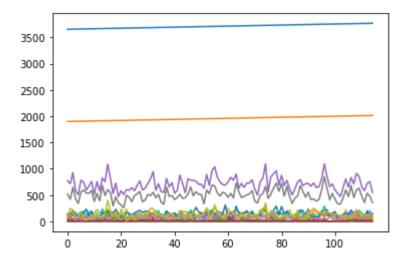
Ducu	COTAMM13 (COC	ar 20 coramiis).	
#	Column	Non-Null Count	Dtype
0	index	115 non-null	int64
1	SUBDIVISION	115 non-null	object
2	YEAR	115 non-null	int64
3	JAN	115 non-null	float64
4	FEB	115 non-null	float64
5	MAR	115 non-null	float64
6	APR	115 non-null	float64
7	MAY	115 non-null	float64
8	JUN	115 non-null	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
dtype	es: float64(1	7), int64(2), ob	ject(1)

memory usage: 18.1+ KB

#### In [30]:

```
a.plot.line(legend=None)
```

#### Out[30]:

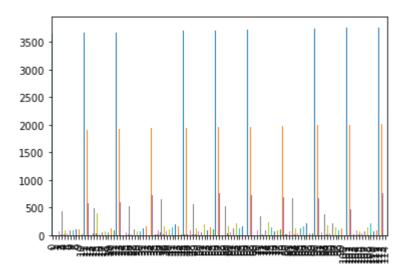


# In [31]:

a.plot.bar(legend=None)

# Out[31]:

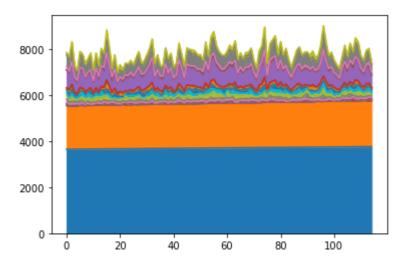
# <AxesSubplot:>



#### In [32]:

a.plot.area(legend=None)

### Out[32]:

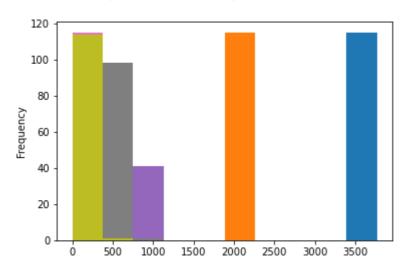


# In [33]:

a.plot.hist(legend=None)

# Out[33]:

<AxesSubplot:ylabel='Frequency'>

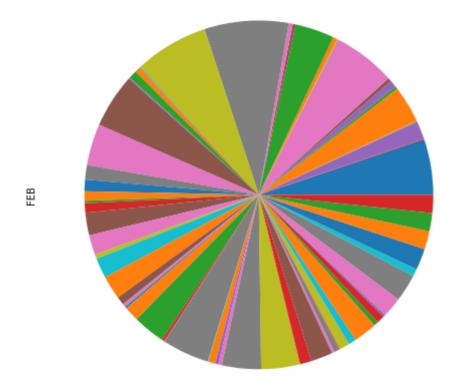


# In [34]:

a.plot.pie(y='FEB',figsize=(8,8),labels=None,legend=None)

# Out[34]:

<AxesSubplot:ylabel='FEB'>



# set4:

# In [36]:

a=pd.read\_csv(r"C:\Users\user\Downloads\Book4.csv")
a

# Out[36]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	3542	COASTAL KARNATAKA	1901	1.8	0.6	10.7	52.4	81.6	960.9	991.2	606.4	108.0
1	3543	COASTAL KARNATAKA	1902	3.2	0.3	4.9	10.2	54.6	698.4	1401.6	454.2	708.4
2	3544	COASTAL KARNATAKA	1903	0.7	0.0	0.0	4.1	202.8	536.5	1405.5	593.8	304.4
3	3545	COASTAL KARNATAKA	1904	2.4	0.0	4.8	23.7	93.2	1108.2	1070.0	465.6	245.3
4	3546	COASTAL KARNATAKA	1905	0.0	0.2	0.0	6.4	83.1	767.3	777.3	586.9	172.9
110	3652	COASTAL KARNATAKA	2011	4.8	3.8	8.7	66.1	49.3	1018.4	1080.5	861.3	545.2
111	3653	COASTAL KARNATAKA	2012	NaN	11.4	5.1	77.0	22.9	650.9	754.6	1027.6	382.0
112	3654	COASTAL KARNATAKA	2013	2.4	19.6	19.0	28.5	100.4	1153.0	1515.3	680.2	379.1
113	3655	COASTAL KARNATAKA	2014	0.0	0.3	1.9	40.5	181.9	507.0	1155.4	1121.0	379.3
114	3656	COASTAL KARNATAKA	2015	1.4	1.0	32.3	72.2	150.3	735.3	930.9	575.2	260.3

115 rows × 20 columns

4

#### In [37]:

#### 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	114 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	114 non-null	float64
16	Jan-Feb	114 non-null	float64
17	Mar-May	115 non-null	float64
18	Jun-Sep	115 non-null	float64
19	Oct-Dec	115 non-null	float64
dtvn	es: float64(1	7), int64(2), oh	piect(1)

dtypes: float64(17), int64(2), object(1)

memory usage: 18.1+ KB

# In [38]:

```
b=a.fillna(method='ffill')
b
```

# Out[38]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	3542	COASTAL KARNATAKA	1901	1.8	0.6	10.7	52.4	81.6	960.9	991.2	606.4	108.0
1	3543	COASTAL KARNATAKA	1902	3.2	0.3	4.9	10.2	54.6	698.4	1401.6	454.2	708.4
2	3544	COASTAL KARNATAKA	1903	0.7	0.0	0.0	4.1	202.8	536.5	1405.5	593.8	304.4
3	3545	COASTAL KARNATAKA	1904	2.4	0.0	4.8	23.7	93.2	1108.2	1070.0	465.6	245.3
4	3546	COASTAL KARNATAKA	1905	0.0	0.2	0.0	6.4	83.1	767.3	777.3	586.9	172.9
110	3652	COASTAL KARNATAKA	2011	4.8	3.8	8.7	66.1	49.3	1018.4	1080.5	861.3	545.2
111	3653	COASTAL KARNATAKA	2012	4.8	11.4	5.1	77.0	22.9	650.9	754.6	1027.6	382.0
112	3654	COASTAL KARNATAKA	2013	2.4	19.6	19.0	28.5	100.4	1153.0	1515.3	680.2	379.1
113	3655	COASTAL KARNATAKA	2014	0.0	0.3	1.9	40.5	181.9	507.0	1155.4	1121.0	379.3
114	3656	COASTAL KARNATAKA	2015	1.4	1.0	32.3	72.2	150.3	735.3	930.9	575.2	260.3
115 r	ows × 2	20 columns										

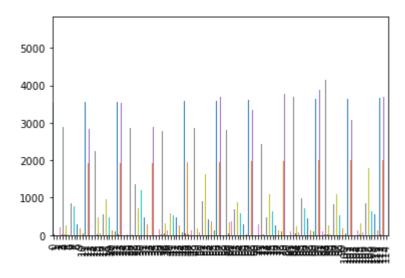
115 rows × 20 columns

# In [39]:

b.plot.bar(legend=None)

# Out[39]:

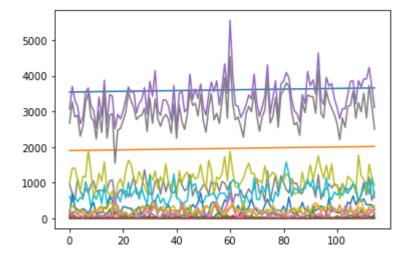
# <AxesSubplot:>



### In [40]:

b.plot.line(legend=None)

# Out[40]:

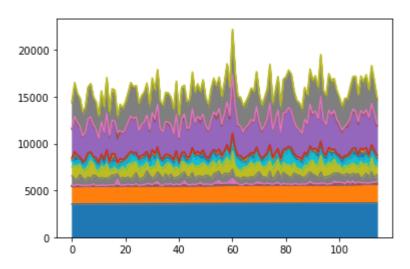


# In [41]:

b.plot.area(legend=None)

# Out[41]:

# <AxesSubplot:>

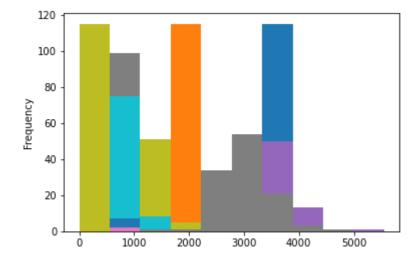


In [42]:

b.plot.hist(legend=None)

# Out[42]:

<AxesSubplot:ylabel='Frequency'>



# In [43]:

```
b.plot.pie(y='JUL',figsize=(8,8),labels=None,legend=None)
```

# Out[43]:

<AxesSubplot:ylabel='JUL'>



# set5:

# In [45]:

```
a=pd.read_csv(r"C:\Users\user\Downloads\Book5.csv")
a
```

# Out[45]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	01
0	3427	TAMIL NADU	1901	24.5	39.1	21.7	36.0	74.0	41.8	49.3	67.9	191.1	122
1	3428	TAMIL NADU	1902	67.2	9.8	25.1	21.9	84.7	39.3	55.1	113.8	98.6	282
2	3429	TAMIL NADU	1903	19.3	7.8	1.7	18.2	128.5	58.5	72.6	115.0	210.4	128
3	3430	TAMIL NADU	1904	35.2	0.1	0.7	19.5	121.9	34.9	89.0	40.4	85.7	160
4	3431	TAMIL NADU	1905	6.5	7.5	17.2	64.8	83.7	49.8	39.0	101.8	73.5	25(
110	3537	TAMIL NADU	2011	4.3	11.2	8.0	91.5	33.4	56.0	45.5	128.9	76.0	200
111	3538	TAMIL NADU	2012	3.0	0.1	2.5	35.5	41.9	30.1	46.5	98.0	84.9	23
112	3539	TAMIL NADU	2013	3.9	30.9	30.0	20.3	42.0	54.6	42.7	110.7	113.5	127
113	3540	TAMIL NADU	2014	7.4	6.1	8.1	8.3	139.1	47.8	50.6	117.7	98.9	252
114	3541	TAMIL NADU	2015	8.3	2.3	21.7	108.8	112.4	62.4	43.5	81.6	98.4	132

115 rows × 20 columns

4 (

#### In [46]:

#### a.info()

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

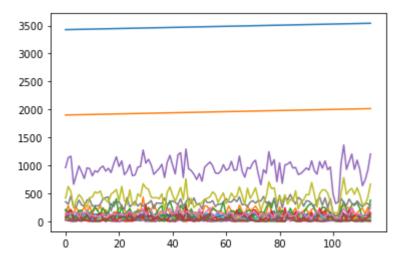
#	Column	Non-Null Count	Dtype
0	index	115 non-null	int64
1	SUBDIVISION	115 non-null	object
2	YEAR	115 non-null	int64
3	JAN	115 non-null	float64
4	FEB	115 non-null	float64
5	MAR	115 non-null	float64
6	APR	115 non-null	float64
7	MAY	115 non-null	float64
8	JUN	115 non-null	float64
9	JUL	115 non-null	float64
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
dtyp	es: float64(1	7), int64(2), ob	oject(1)

memory usage: 18.1+ KB

#### In [47]:

```
a.plot.line(legend=None)
```

#### Out[47]:

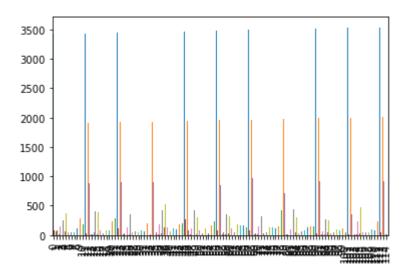


# In [48]:

a.plot.bar(legend=None)

# Out[48]:

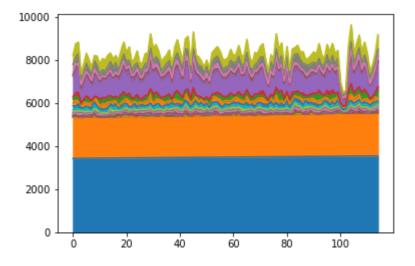
# <AxesSubplot:>



#### In [49]:

a.plot.area(legend=None)

# Out[49]:

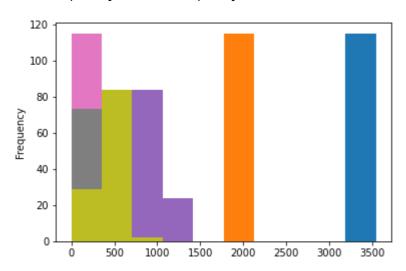


# In [50]:

a.plot.hist(legend=None)

# Out[50]:

<AxesSubplot:ylabel='Frequency'>

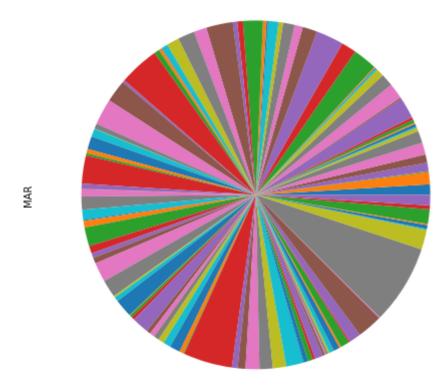


# In [51]:

a.plot.pie(y='MAR',figsize=(8,8),labels=None,legend=None)

# Out[51]:

<AxesSubplot:ylabel='MAR'>



# set6:

# In [52]:

a=pd.read\_csv(r"C:\Users\user\Downloads\Book6.csv")
a

# Out[52]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	(
0	3772	SOUTH INTERIOR KARNATAKA	1901	4.9	31.8	3.0	32.7	109.6	106.0	210.0	109.2	140.8	1
1	3773	SOUTH INTERIOR KARNATAKA	1902	1.9	0.5	6.7	42.6	97.7	91.7	210.0	82.1	138.4	2
2	3774	SOUTH INTERIOR KARNATAKA	1903	0.3	0.0	1.1	11.6	125.1	129.7	284.4	155.7	197.1	1
3	3775	SOUTH INTERIOR KARNATAKA	1904	1.0	0.5	5.2	43.5	144.7	167.9	197.1	73.2	89.6	1:
4	3776	SOUTH INTERIOR KARNATAKA	1905	1.7	7.9	14.2	23.6	118.6	95.9	148.4	140.6	43.1	1,
110	3882	SOUTH INTERIOR KARNATAKA	2011	2.1	12.4	12.4	80.2	83.5	177.1	202.4	199.5	111.2	1.
111	3883	SOUTH INTERIOR KARNATAKA	2012	4.6	5.5	8.1	99.0	45.6	81.8	144.7	236.5	100.6	1
112	3884	SOUTH INTERIOR KARNATAKA	2013	0.5	10.1	11.7	34.6	95.6	176.2	307.4	151.7	191.8	11
113	3885	SOUTH INTERIOR KARNATAKA	2014	0.4	2.4	17.7	46.7	130.5	106.8	271.6	254.6	161.6	1
114	3886	SOUTH INTERIOR KARNATAKA	2015	1.7	0.2	24.4	80.5	125.3	218.7	112.0	136.6	164.5	11

115 rows × 20 columns

#### In [53]:

#### a.info()

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

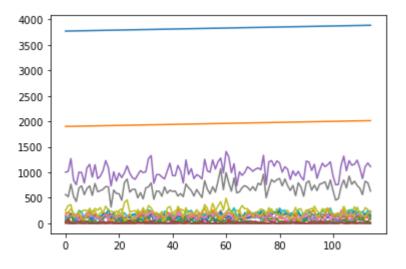
Data	cordinits (cocar 20 cordinits):							
#	Column	Non-Null Count	Dtype					
0	index	115 non-null	int64					
1	SUBDIVISION	115 non-null	object					
2	YEAR	115 non-null	int64					
3	JAN	115 non-null	float64					
4	FEB	115 non-null	float64					
5	MAR	115 non-null	float64					
6	APR	115 non-null	float64					
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					
dtype	es: float64(1	7), int64(2), ob	ject(1)					

memory usage: 18.1+ KB

#### In [54]:

```
a.plot.line(legend=None)
```

#### Out[54]:

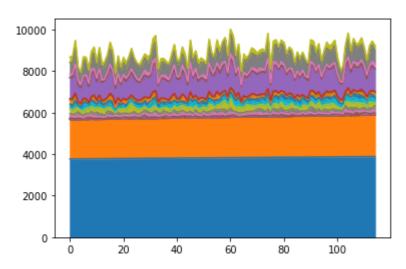


# In [55]:

# a.plot.area(legend=None)

# Out[55]:

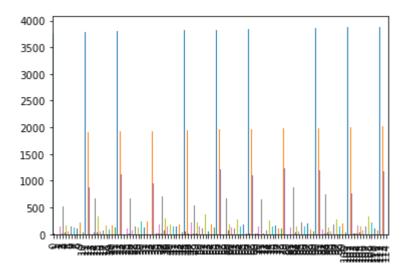
# <AxesSubplot:>



# In [56]:

# a.plot.bar(legend=None)

# Out[56]:

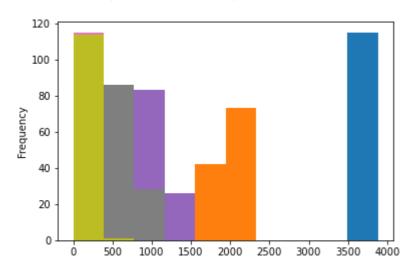


# In [57]:

a.plot.hist(legend=None)

# Out[57]:

<AxesSubplot:ylabel='Frequency'>

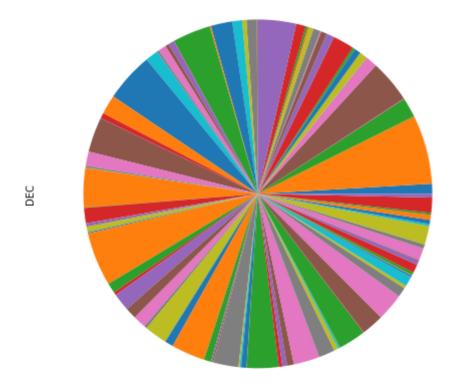


# In [58]:

a.plot.pie(y='DEC',figsize=(8,8),labels=None,legend=None)

# Out[58]:

<AxesSubplot:ylabel='DEC'>



In [ ]:			