

```
In [8]: 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 [9]: a=pd.read_csv(r"C:\Users\user\Downloads\FP2_RainFall\rainfall in india 1901-2010.csv")
a
```

Out[9]:

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	0		ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6
1	1		ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2
2	2		ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0
3	3		ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4
4	4		ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0
...
4111	4111	LAKSHADWEEP	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2
4112	4112	LAKSHADWEEP	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8
4113	4113	LAKSHADWEEP	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0
4114	4114	LAKSHADWEEP	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2
4115	4115	LAKSHADWEEP	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4

4116 rows × 20 columns



```
In [10]: a.columns
```

```
Out[10]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY', 'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb', 'Mar-May', 'Jun-Sep', 'Oct-Dec'],
dtype='object')
```

19. WEST MADHYA PRADESH

In [194]:

```
b=a.head(2162)
b=b.tail(115)
b
```

Out[194]:

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2047	2047		WEST MADHYA PRADESH	1901	25.8	5.8	5.8	2.8	2.1	41.2	228.9	349.9	47.9	5.6
2048	2048		WEST MADHYA PRADESH	1902	22.1	8.4	0.0	2.0	5.9	35.9	401.9	179.4	194.1	37.9
2049	2049		WEST MADHYA PRADESH	1903	5.3	0.0	0.0	0.0	22.3	50.6	304.9	261.1	250.2	55.1
2050	2050		WEST MADHYA PRADESH	1904	3.2	15.5	14.8	0.0	12.0	96.6	273.0	218.6	125.9	3.3
2051	2051		WEST MADHYA PRADESH	1905	3.5	4.4	1.1	0.8	3.0	36.1	326.3	137.6	183.5	0.3
...
2157	2157		WEST MADHYA PRADESH	2011	0.0	1.7	0.1	1.8	3.6	241.5	306.7	343.3	165.0	0.2
2158	2158		WEST MADHYA PRADESH	2012	6.2	0.0	0.0	0.9	3.1	48.2	439.2	341.2	194.3	2.1
2159	2159		WEST MADHYA PRADESH	2013	1.7	31.1	8.5	2.8	0.4	263.7	485.1	432.6	98.9	68.7
2160	2160		WEST MADHYA PRADESH	2014	25.6	34.4	4.6	1.4	1.4	30.6	337.4	211.0	192.6	7.0
2161	2161		WEST MADHYA PRADESH	2015	40.2	6.4	53.5	13.3	2.0	154.1	428.2	276.6	55.6	11.0

115 rows × 20 columns



In [195]:

```
c=b[['YEAR','JAN','FEB','MAR','APR']]  
c
```

Out[195]:

	YEAR	JAN	FEB	MAR	APR
2047	1901	25.8	5.8	5.8	2.8
2048	1902	22.1	8.4	0.0	2.0
2049	1903	5.3	0.0	0.0	0.0
2050	1904	3.2	15.5	14.8	0.0
2051	1905	3.5	4.4	1.1	0.8
...
2157	2011	0.0	1.7	0.1	1.8
2158	2012	6.2	0.0	0.0	0.9
2159	2013	1.7	31.1	8.5	2.8
2160	2014	25.6	34.4	4.6	1.4
2161	2015	40.2	6.4	53.5	13.3

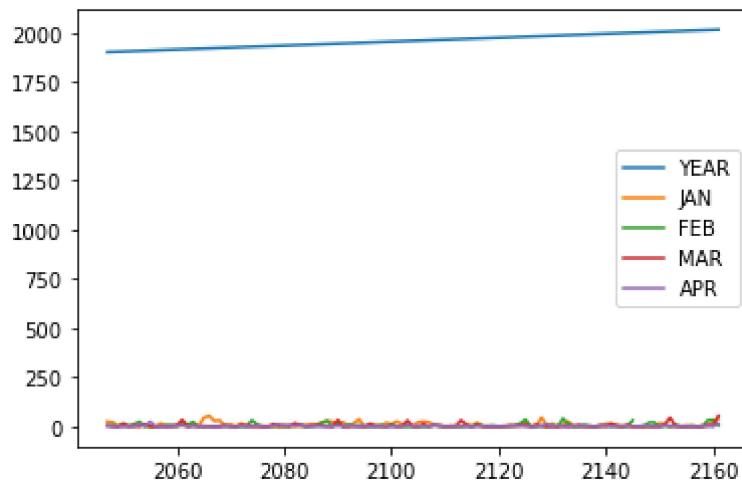
115 rows × 5 columns

In [196]:

```
c.plot.line()
```

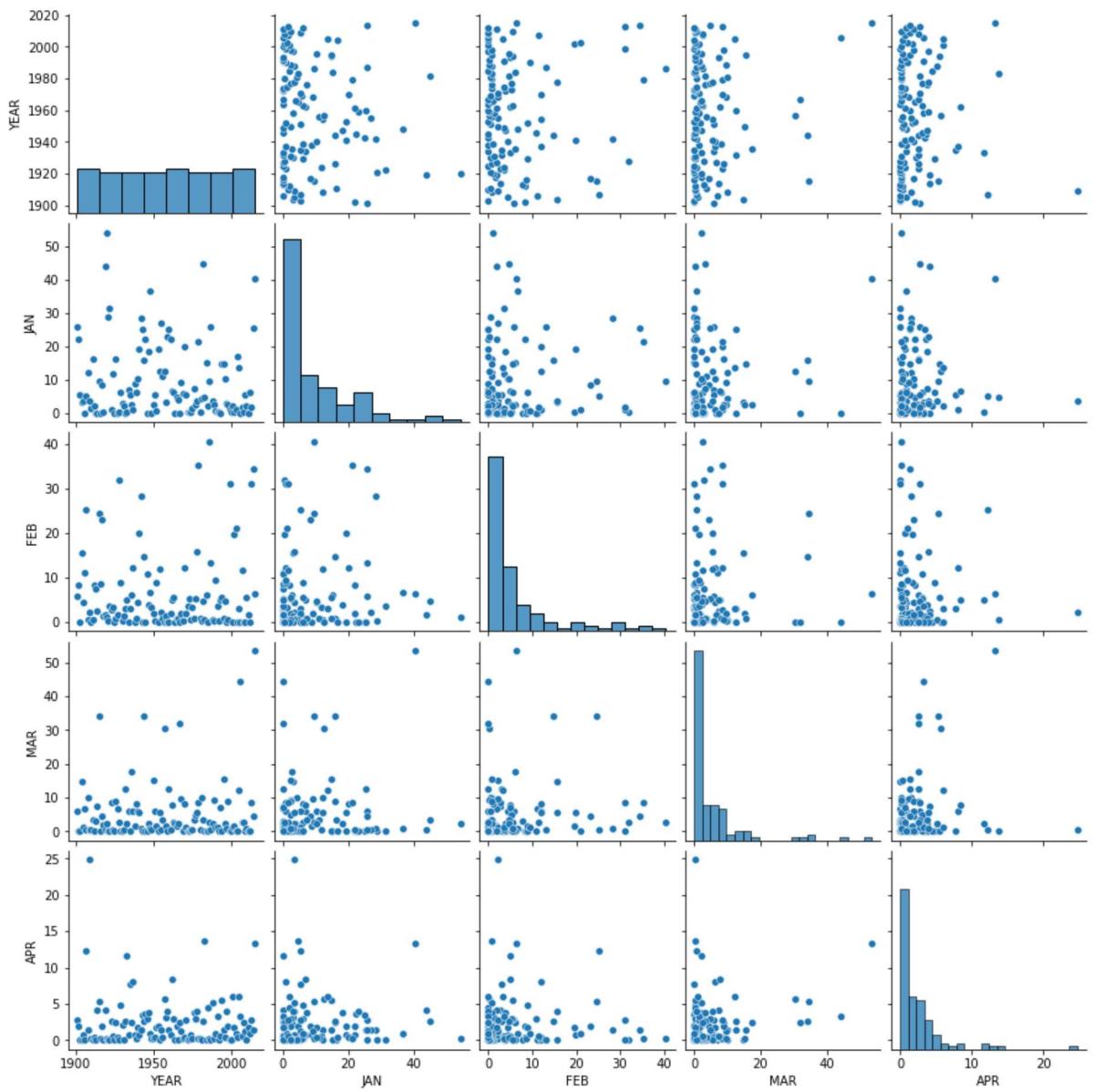
Out[196]:

```
<AxesSubplot:>
```



```
In [197]: sns.pairplot(c)
```

```
Out[197]: <seaborn.axisgrid.PairGrid at 0x24b0cf838b0>
```

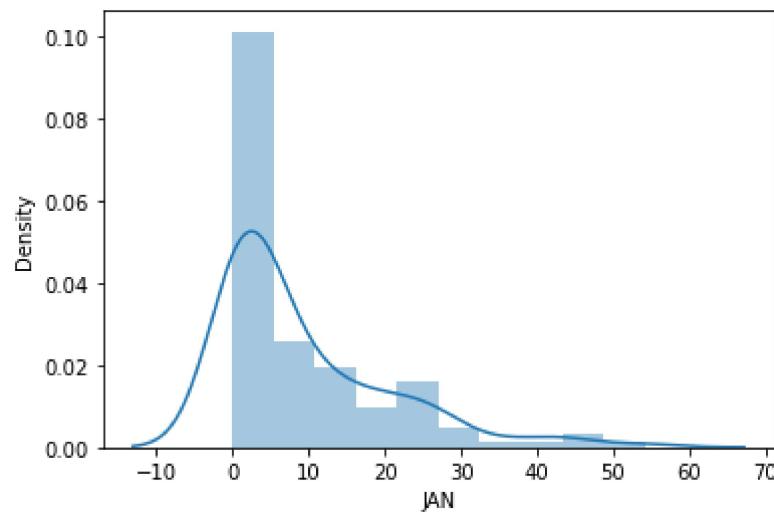


In [198]: `sns.distplot(c['JAN'])`

C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).

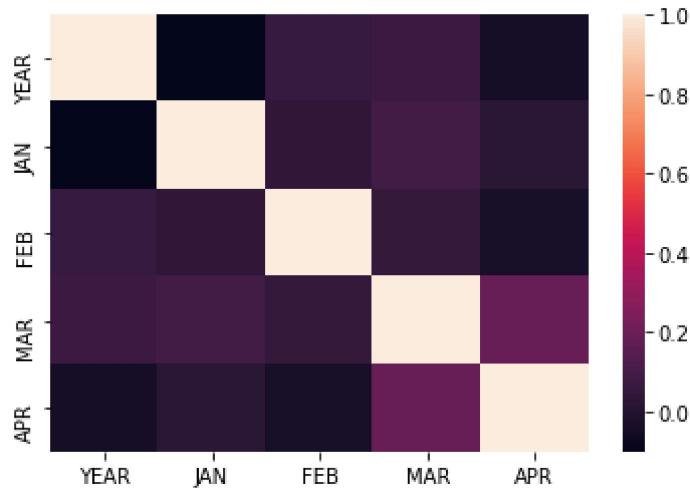
```
warnings.warn(msg, FutureWarning)
```

Out[198]: <AxesSubplot:xlabel='JAN', ylabel='Density'>



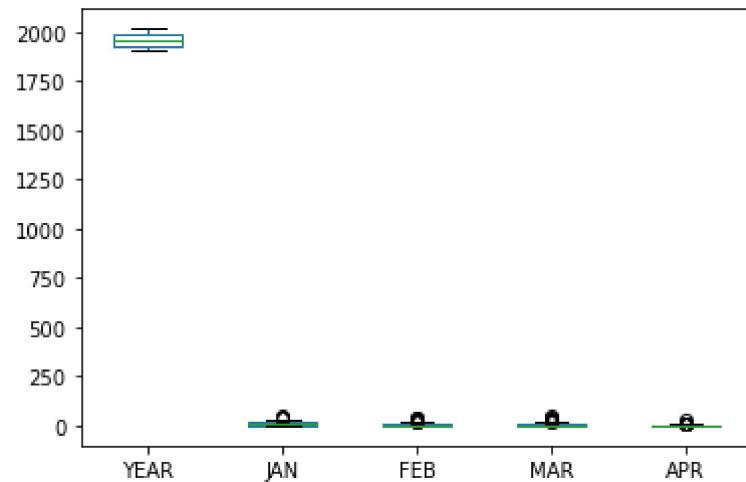
In [199]: `sns.heatmap(c.corr())`

Out[199]: <AxesSubplot:>



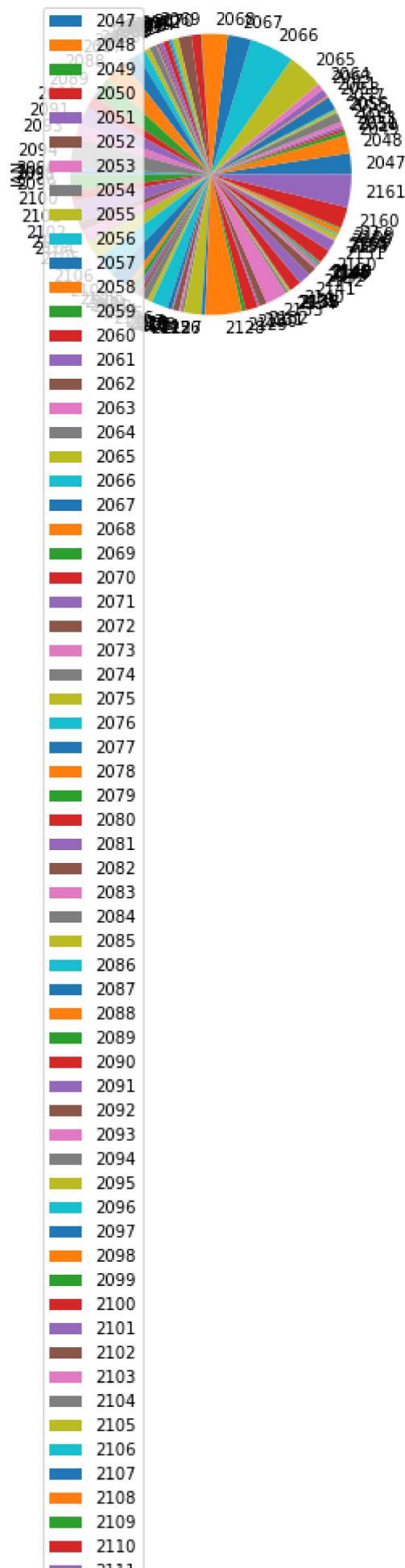
In [200]: `c.plot.box()`

Out[200]: <AxesSubplot:>



```
In [201]: c.plot.pie(y='JAN')
```

```
Out[201]: <AxesSubplot:ylabel='JAN'>
```

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20. EAST MADHYA PRADESH

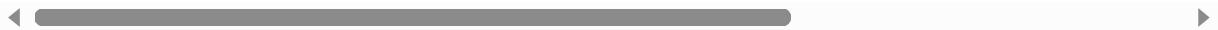
In [202]:

```
b=a.head(2277)
b=b.tail(115)
b
```

Out[202]:

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2162	2162		EAST MADHYA PRADESH	1901	48.5	38.1	15.7	10.7	6.2	61.0	367.5	589.2	189.9	5.9
2163	2163		EAST MADHYA PRADESH	1902	14.9	8.9	0.0	3.6	2.7	28.0	411.9	227.0	236.6	17.0
2164	2164		EAST MADHYA PRADESH	1903	5.6	2.9	0.3	0.9	37.5	67.5	261.4	366.7	257.4	177.9
2165	2165		EAST MADHYA PRADESH	1904	2.0	15.3	48.2	0.0	8.6	109.9	443.2	316.6	135.6	44.8
2166	2166		EAST MADHYA PRADESH	1905	15.9	8.0	14.3	12.3	10.2	34.4	292.4	243.3	250.9	2.9
...
2272	2272		EAST MADHYA PRADESH	2011	0.6	1.9	0.3	7.1	4.7	332.5	323.6	326.9	276.5	1.1
2273	2273		EAST MADHYA PRADESH	2012	39.4	0.7	0.6	1.1	1.2	67.8	398.9	351.7	172.6	12.7
2274	2274		EAST MADHYA PRADESH	2013	2.0	43.4	14.1	9.5	0.3	311.9	456.2	480.8	78.0	124.2
2275	2275		EAST MADHYA PRADESH	2014	32.1	49.7	17.8	5.1	2.5	91.8	283.4	231.8	139.6	56.4
2276	2276		EAST MADHYA PRADESH	2015	37.3	11.0	73.4	25.8	6.3	139.2	262.2	272.1	71.6	38.2

115 rows × 20 columns



In [203]: `c=b[['YEAR','JAN','FEB','MAR','APR']]`

`c`

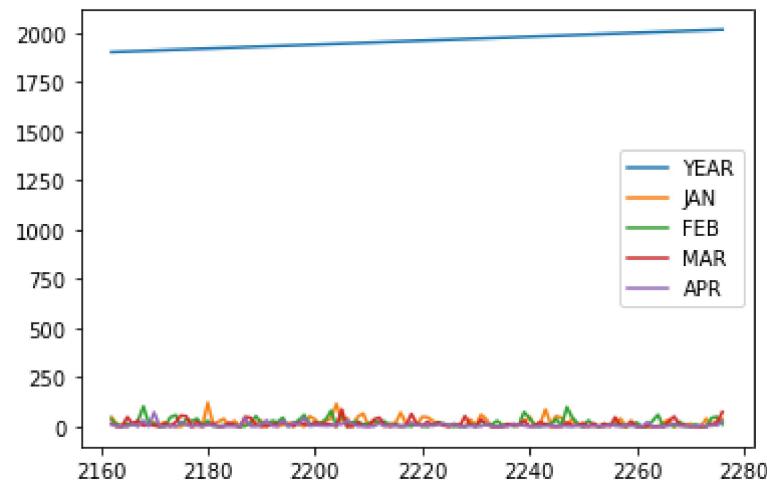
Out[203]:

	YEAR	JAN	FEB	MAR	APR
2162	1901	48.5	38.1	15.7	10.7
2163	1902	14.9	8.9	0.0	3.6
2164	1903	5.6	2.9	0.3	0.9
2165	1904	2.0	15.3	48.2	0.0
2166	1905	15.9	8.0	14.3	12.3
...
2272	2011	0.6	1.9	0.3	7.1
2273	2012	39.4	0.7	0.6	1.1
2274	2013	2.0	43.4	14.1	9.5
2275	2014	32.1	49.7	17.8	5.1
2276	2015	37.3	11.0	73.4	25.8

115 rows × 5 columns

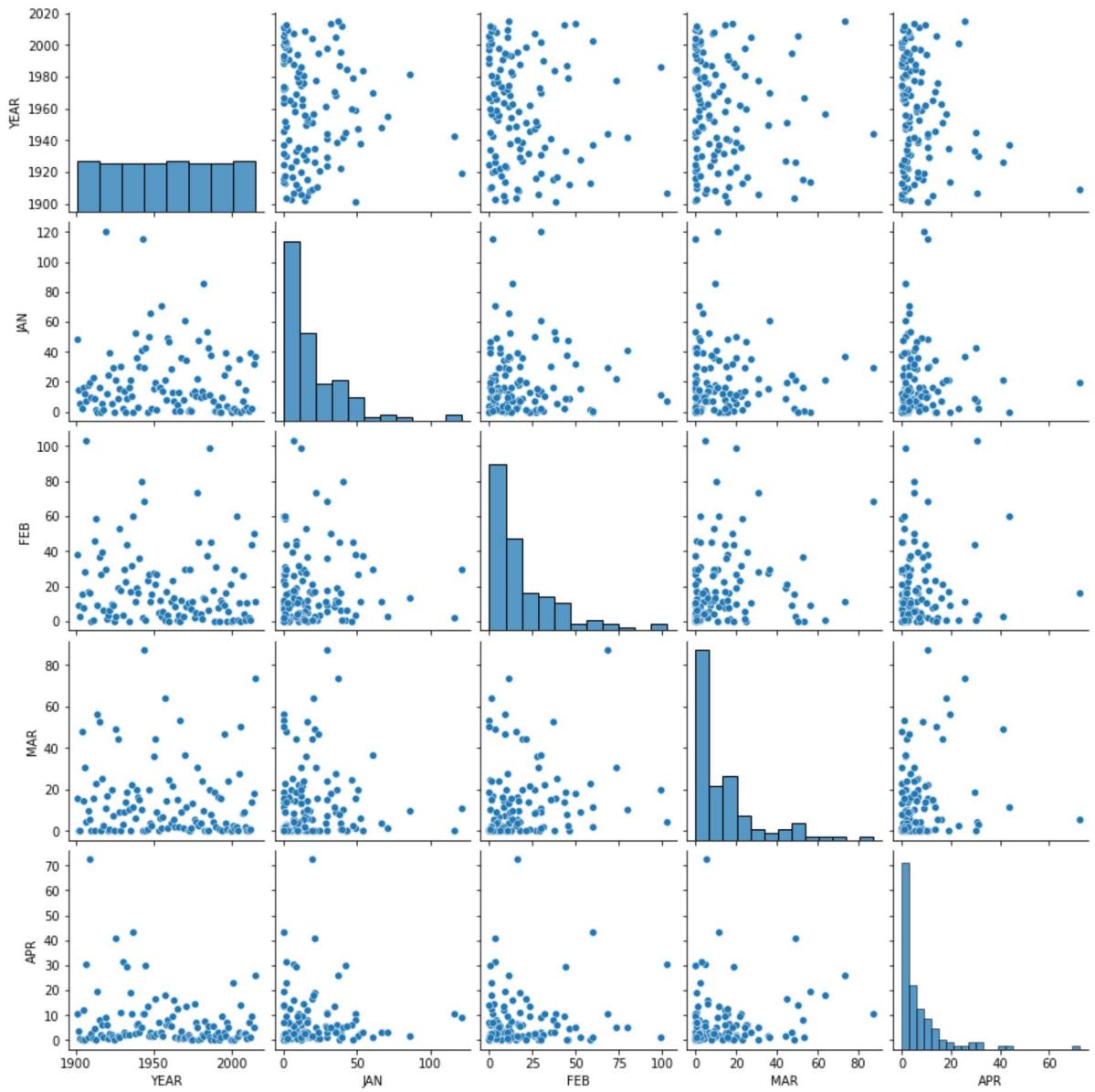
In [204]: `c.plot.line()`

Out[204]: <AxesSubplot:>



```
In [205]: sns.pairplot(c)
```

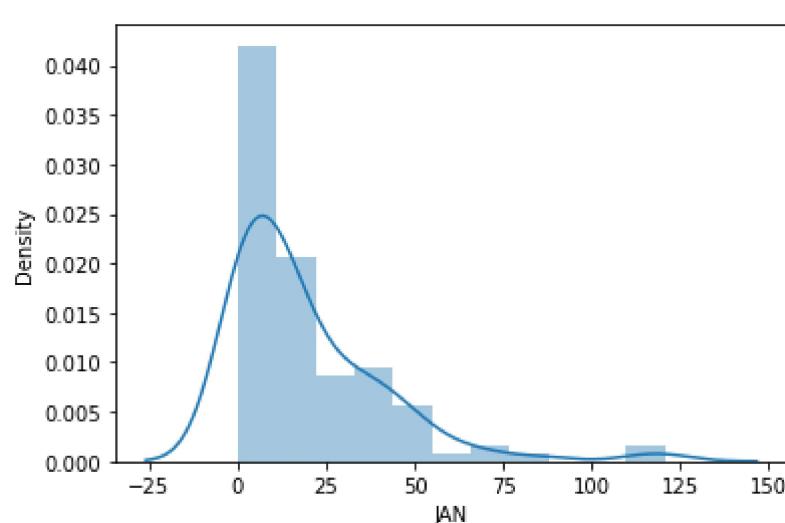
```
Out[205]: <seaborn.axisgrid.PairGrid at 0x24b0deaad60>
```



In [206]: `sns.distplot(c['JAN'])`

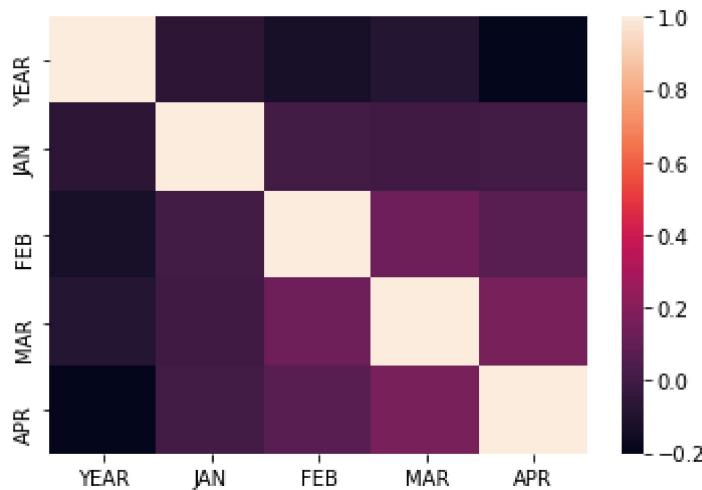
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
warnings.warn(msg, FutureWarning)

Out[206]: <AxesSubplot:xlabel='JAN', ylabel='Density'>



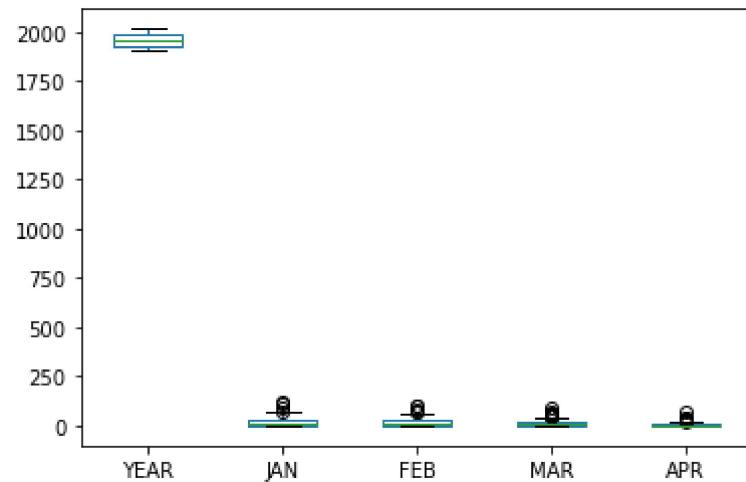
In [207]: `sns.heatmap(c.corr())`

Out[207]: <AxesSubplot:>



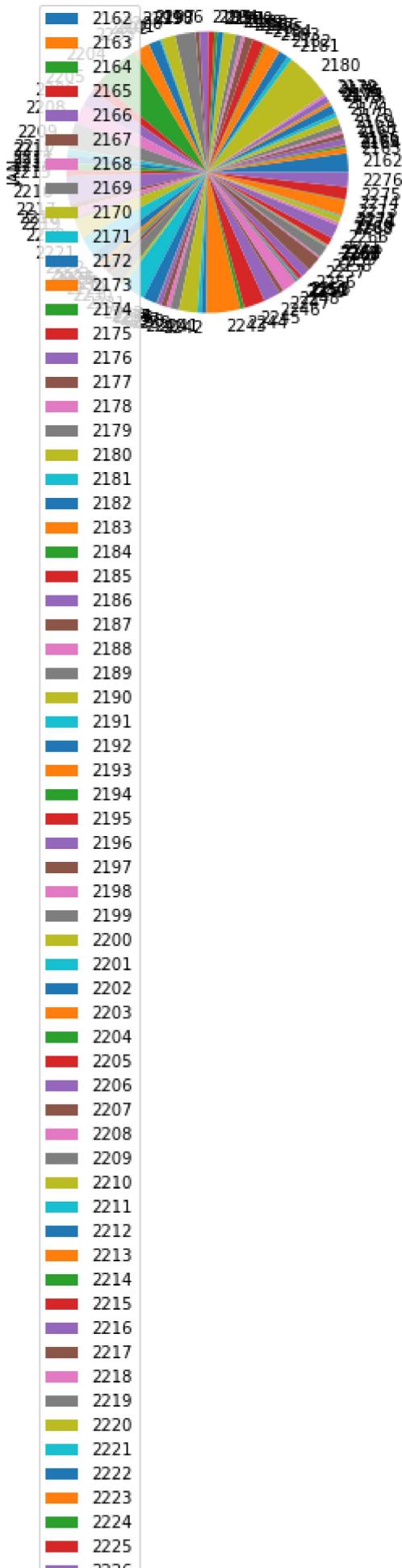
In [208]: `c.plot.box()`

Out[208]: <AxesSubplot:>



```
In [209]: c.plot.pie(y='JAN')
```

```
Out[209]: <AxesSubplot:ylabel='JAN'>
```

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21. GUJARAT REGION

In [210]: `b=a.head(2392)`
`b`

Out[210]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	38
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	19
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	18
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	22
4	4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	26
...
2387	2387	GUJARAT REGION	2011	0.0	0.2	0.0	0.0	0.0	16.3	259.2	451.7	162.5	
2388	2388	GUJARAT REGION	2012	0.1	0.0	0.0	0.0	0.0	34.4	178.2	230.3	263.8	
2389	2389	GUJARAT REGION	2013	0.0	0.9	0.1	4.6	0.0	155.7	405.4	211.1	287.3	5
2390	2390	GUJARAT REGION	2014	5.7	0.1	0.2	1.0	1.3	11.6	307.5	138.6	235.1	
2391	2391	GUJARAT REGION	2015	1.8	0.0	6.1	5.5	0.9	120.7	354.7	37.4	93.4	

2392 rows × 20 columns



In [211]: `b=b.tail(114)`
`b`

Out[211]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2278	2278	GUJARAT REGION	1902	3.9	0.0	0.0	0.6	1.0	32.8	229.8	299.0	281.2	2.3
2279	2279	GUJARAT REGION	1903	0.3	0.1	1.4	0.0	12.3	30.1	452.9	202.0	183.2	5.4
2280	2280	GUJARAT REGION	1904	0.8	10.6	16.8	0.2	3.9	48.3	194.8	71.8	138.0	6.1
2281	2281	GUJARAT REGION	1905	0.1	0.7	1.1	0.3	0.0	20.1	668.3	37.9	81.3	1.4
2282	2282	GUJARAT REGION	1906	0.0	12.7	0.0	0.0	0.1	177.5	311.5	247.1	134.8	5.9
...
2387	2387	GUJARAT REGION	2011	0.0	0.2	0.0	0.0	0.0	16.3	259.2	451.7	162.5	0.4
2388	2388	GUJARAT REGION	2012	0.1	0.0	0.0	0.0	0.0	34.4	178.2	230.3	263.8	7.1
2389	2389	GUJARAT REGION	2013	0.0	0.9	0.1	4.6	0.0	155.7	405.4	211.1	287.3	53.2
2390	2390	GUJARAT REGION	2014	5.7	0.1	0.2	1.0	1.3	11.6	307.5	138.6	235.1	3.3
2391	2391	GUJARAT REGION	2015	1.8	0.0	6.1	5.5	0.9	120.7	354.7	37.4	93.4	2.2

114 rows × 20 columns



In [212]:

```
c=b[['YEAR','JAN','FEB','MAR','APR']]  
c
```

Out[212]:

	YEAR	JAN	FEB	MAR	APR
2278	1902	3.9	0.0	0.0	0.6
2279	1903	0.3	0.1	1.4	0.0
2280	1904	0.8	10.6	16.8	0.2
2281	1905	0.1	0.7	1.1	0.3
2282	1906	0.0	12.7	0.0	0.0
...
2387	2011	0.0	0.2	0.0	0.0
2388	2012	0.1	0.0	0.0	0.0
2389	2013	0.0	0.9	0.1	4.6
2390	2014	5.7	0.1	0.2	1.0
2391	2015	1.8	0.0	6.1	5.5

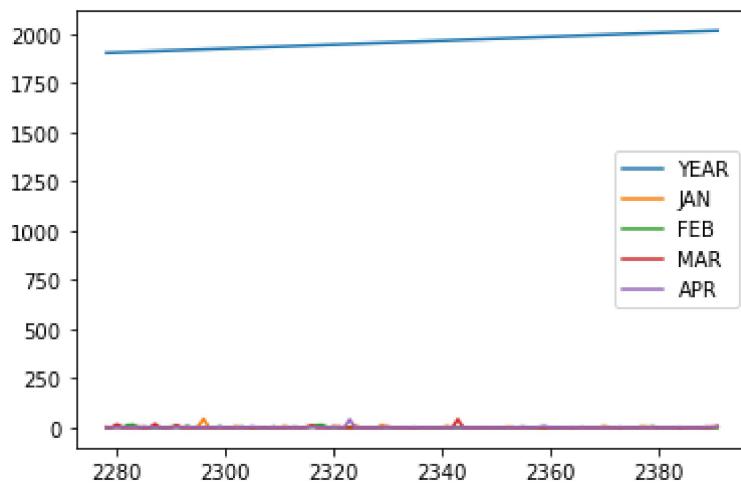
114 rows × 5 columns

In [213]:

```
c.plot.line()
```

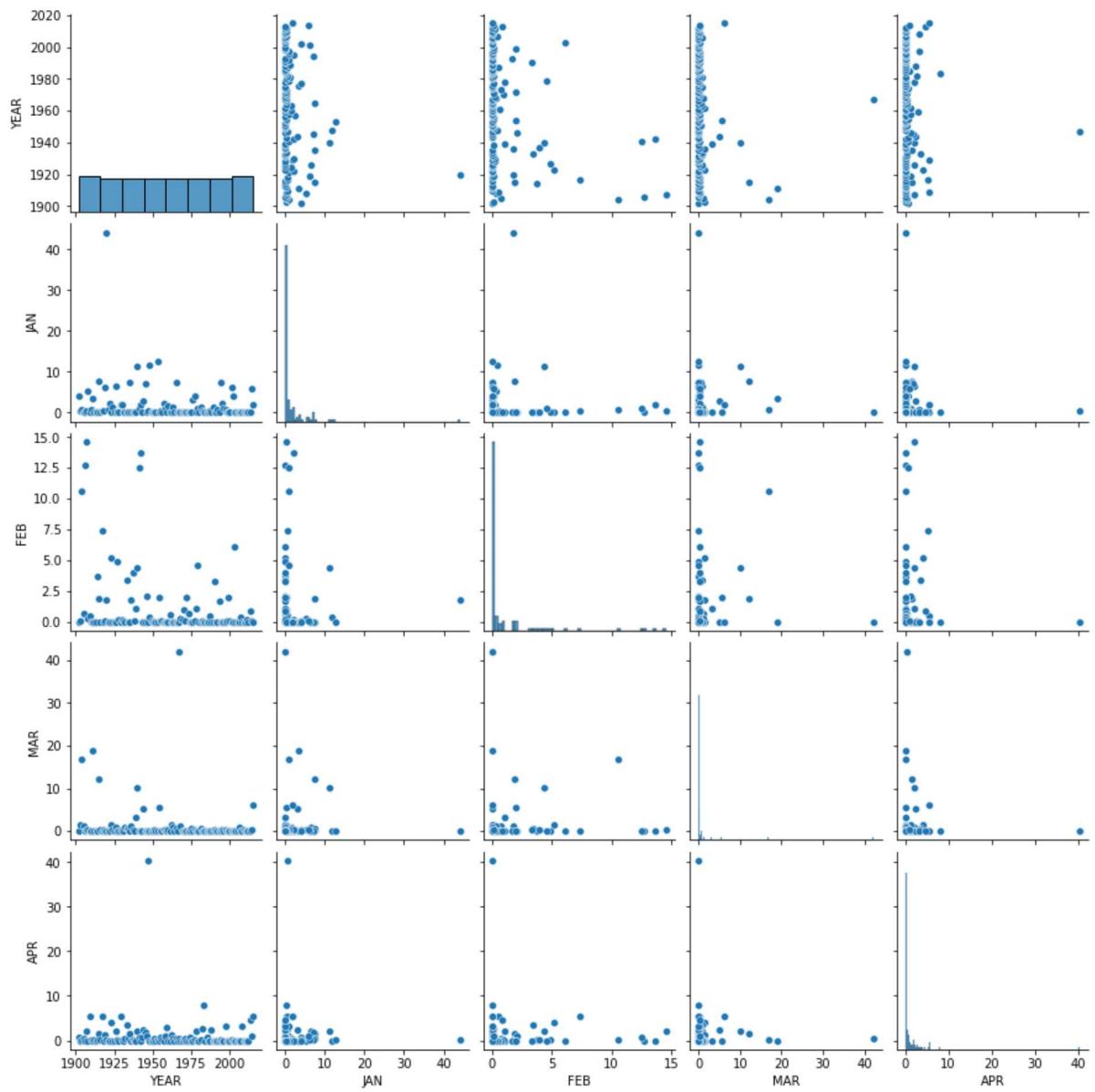
Out[213]:

```
<AxesSubplot:>
```



```
In [214]: sns.pairplot(c)
```

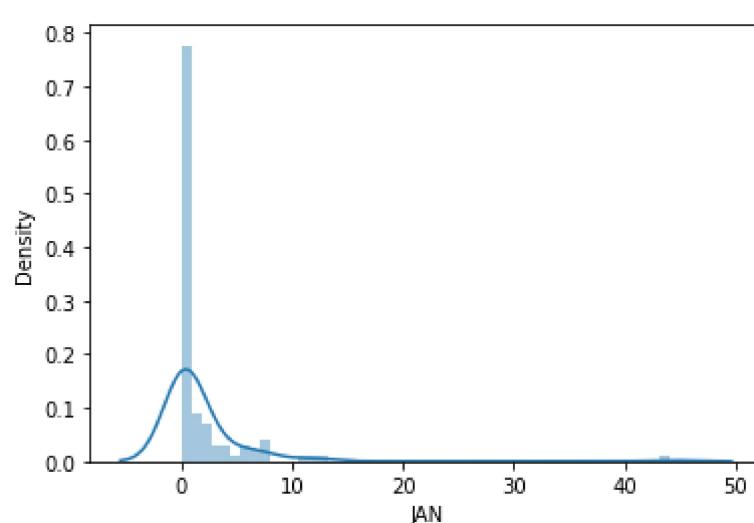
```
Out[214]: <seaborn.axisgrid.PairGrid at 0x24b10fc2bb0>
```



In [215]: `sns.distplot(c['JAN'])`

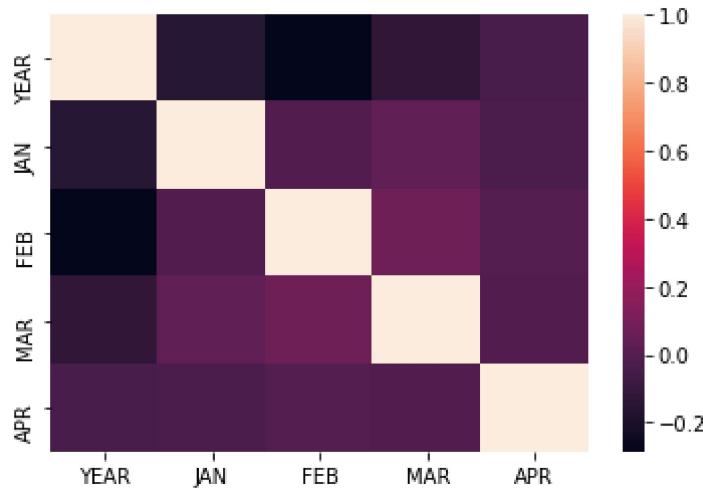
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
warnings.warn(msg, FutureWarning)

Out[215]: <AxesSubplot:xlabel='JAN', ylabel='Density'>



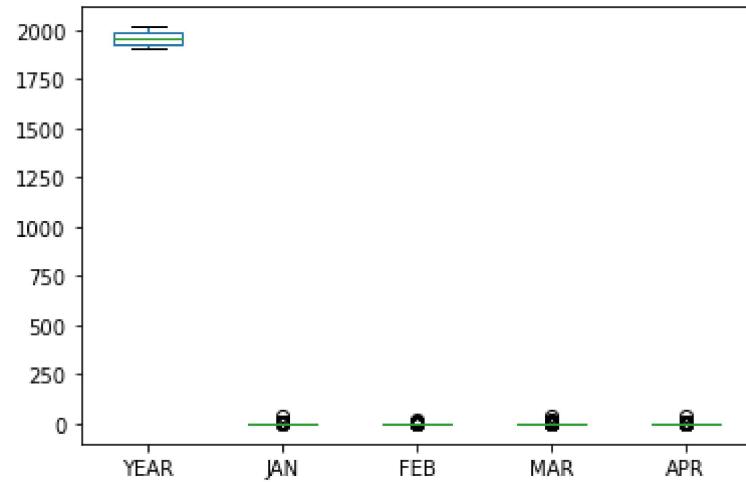
In [216]: `sns.heatmap(c.corr())`

Out[216]: <AxesSubplot:>



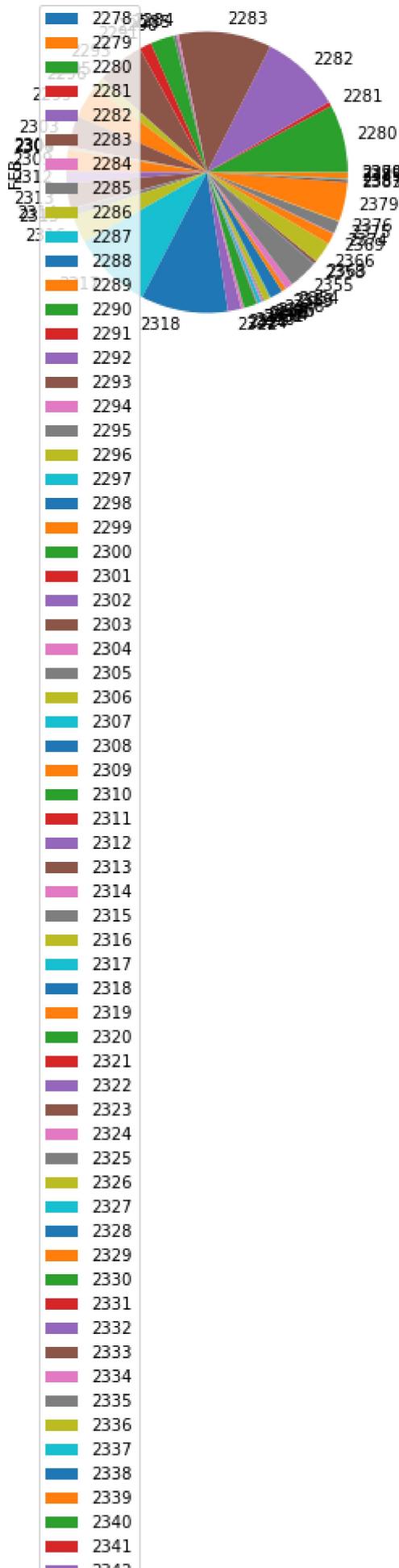
In [217]: `c.plot.box()`

Out[217]: <AxesSubplot:>



```
In [218]: c.plot.pie(y='FEB')
```

```
Out[218]: <AxesSubplot:ylabel='FEB'>
```

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22. SAURASHTRA & KUTCH

In [219]: `b=a.head(2507)`
`b`

Out[219]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	38.1	1.1	1.1
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	19.1	1.1	1.1
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	11.1	1.1	1.1
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	2.1	1.1	1.1
4	4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	21.1	1.1	1.1
...
2502	2502	SAURASHTRA & KUTCH	2011	0.0	1.4	0.0	0.0	0.0	26.0	212.7	290.9	210.1	1.1	1.1	1.1
2503	2503	SAURASHTRA & KUTCH	2012	0.0	0.0	0.0	0.2	0.1	22.4	34.7	34.5	228.5	1.1	1.1	1.1
2504	2504	SAURASHTRA & KUTCH	2013	1.7	0.2	0.1	8.5	0.1	127.7	171.2	83.3	260.2	1.1	1.1	1.1
2505	2505	SAURASHTRA & KUTCH	2014	0.3	0.0	0.1	0.5	2.1	17.3	137.7	118.8	99.2	1.1	1.1	1.1
2506	2506	SAURASHTRA & KUTCH	2015	0.9	0.0	4.4	2.1	0.8	112.6	226.7	10.6	79.9	1.1	1.1	1.1

2507 rows × 20 columns



In [220]: `b=b.tail(114)`
`b`

Out[220]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2393	2393	SAURASHTRA & KUTCH	1902	0.1	0.0	0.0	0.5	1.1	14.4	92.9	160.0	123.9	1.5
2394	2394	SAURASHTRA & KUTCH	1903	0.5	0.0	1.7	0.0	3.1	10.5	337.9	96.1	61.9	11.1
2395	2395	SAURASHTRA & KUTCH	1904	1.4	5.8	17.5	0.0	0.0	9.5	111.2	9.4	28.9	0.3
2396	2396	SAURASHTRA & KUTCH	1905	1.5	1.0	0.6	0.4	0.0	6.4	254.5	12.3	12.8	0.4
2397	2397	SAURASHTRA & KUTCH	1906	0.9	28.2	0.0	0.0	0.0	126.0	161.0	152.2	56.6	14.9
...
2502	2502	SAURASHTRA & KUTCH	2011	0.0	1.4	0.0	0.0	0.0	26.0	212.7	290.9	210.1	1.2
2503	2503	SAURASHTRA & KUTCH	2012	0.0	0.0	0.0	0.2	0.1	22.4	34.7	34.5	228.5	2.4
2504	2504	SAURASHTRA & KUTCH	2013	1.7	0.2	0.1	8.5	0.1	127.7	171.2	83.3	260.2	28.6
2505	2505	SAURASHTRA & KUTCH	2014	0.3	0.0	0.1	0.5	2.1	17.3	137.7	118.8	99.2	5.2
2506	2506	SAURASHTRA & KUTCH	2015	0.9	0.0	4.4	2.1	0.8	112.6	226.7	10.6	79.9	3.3

114 rows × 20 columns



```
In [221]: c=b[['YEAR','JAN','FEB','MAR','APR','MAY','JUN']]  
c
```

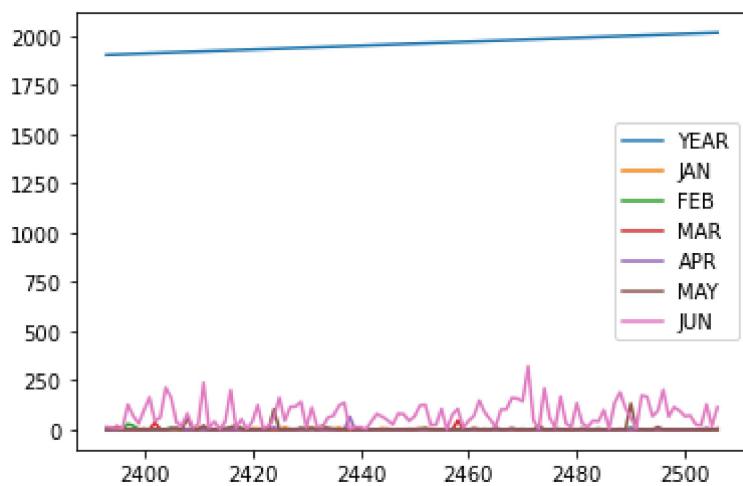
Out[221]:

	YEAR	JAN	FEB	MAR	APR	MAY	JUN
2393	1902	0.1	0.0	0.0	0.5	1.1	14.4
2394	1903	0.5	0.0	1.7	0.0	3.1	10.5
2395	1904	1.4	5.8	17.5	0.0	0.0	9.5
2396	1905	1.5	1.0	0.6	0.4	0.0	6.4
2397	1906	0.9	28.2	0.0	0.0	0.0	126.0
...
2502	2011	0.0	1.4	0.0	0.0	0.0	26.0
2503	2012	0.0	0.0	0.0	0.2	0.1	22.4
2504	2013	1.7	0.2	0.1	8.5	0.1	127.7
2505	2014	0.3	0.0	0.1	0.5	2.1	17.3
2506	2015	0.9	0.0	4.4	2.1	0.8	112.6

114 rows × 7 columns

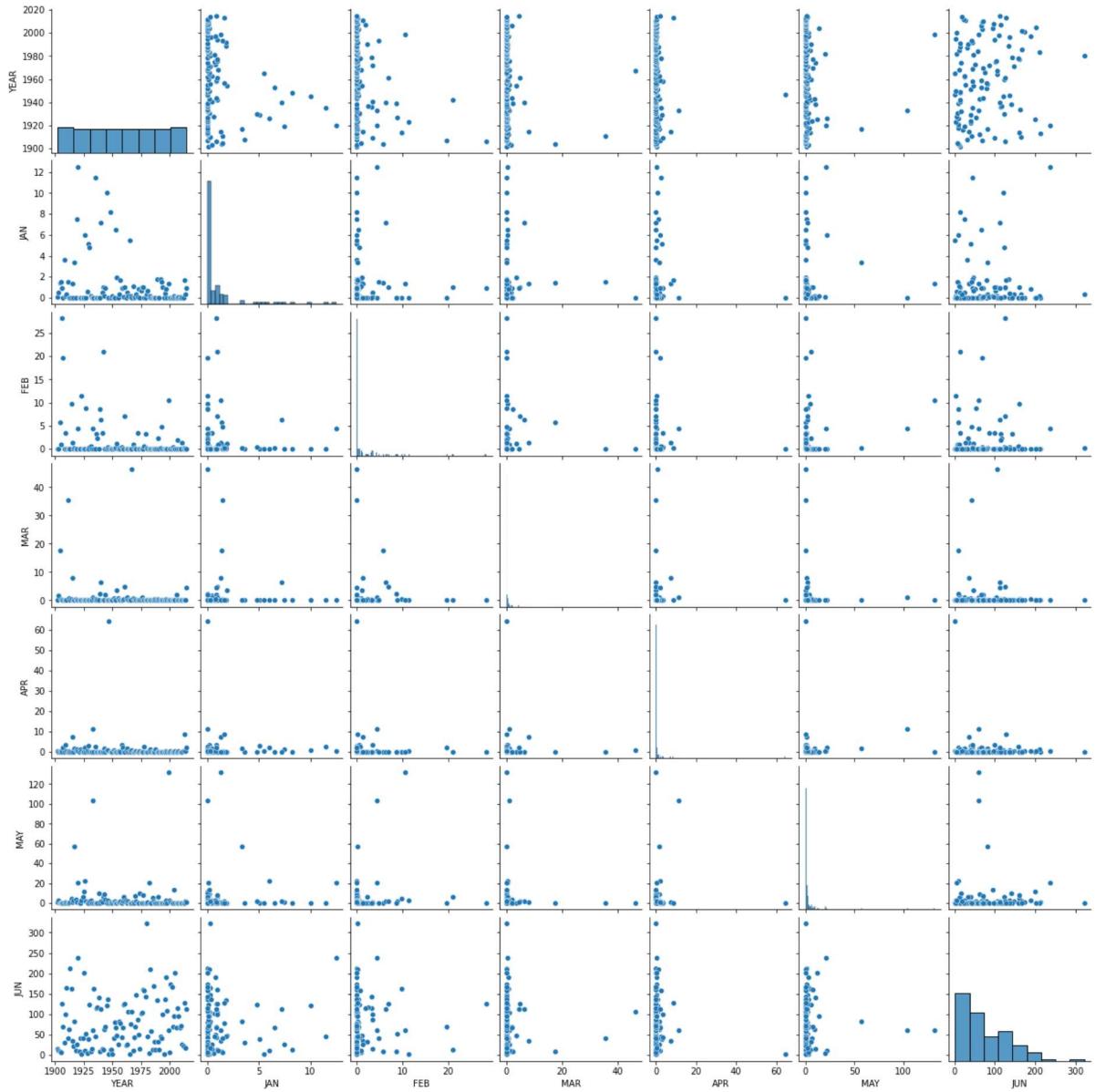
```
In [222]: c.plot.line()
```

Out[222]: <AxesSubplot:>



```
In [223]: sns.pairplot(c)
```

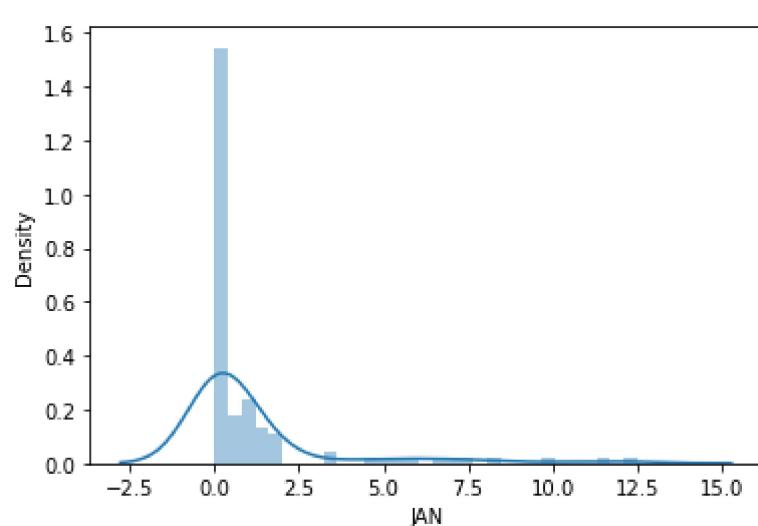
```
Out[223]: <seaborn.axisgrid.PairGrid at 0x24b13f0af0d0>
```



In [224]: `sns.distplot(c['JAN'])`

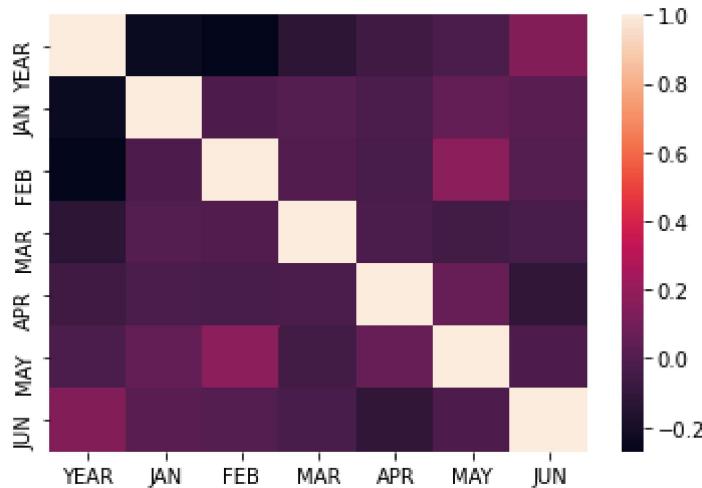
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
warnings.warn(msg, FutureWarning)

Out[224]: <AxesSubplot:xlabel='JAN', ylabel='Density'>



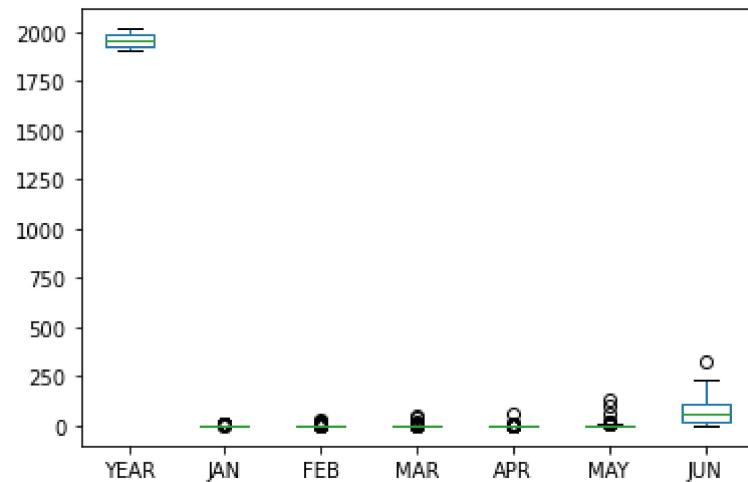
In [225]: `sns.heatmap(c.corr())`

Out[225]: <AxesSubplot:>



In [226]: `c.plot.box()`

Out[226]: <AxesSubplot:>



23. KONKAN & GOA

In [227]:

```
b=a.head(2622)
b=b.tail(115)
b
```

Out[227]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2507	2507	KONKAN & GOA	1901	5.6	0.1	0.4	35.7	19.9	746.1	1075.5	748.0	117.4	1
2508	2508	KONKAN & GOA	1902	0.3	0.0	0.0	0.4	7.6	428.2	943.6	515.1	613.8	1
2509	2509	KONKAN & GOA	1903	0.0	0.0	0.1	0.0	201.1	470.5	1298.6	673.9	285.1	14
2510	2510	KONKAN & GOA	1904	0.0	0.1	6.6	6.3	4.6	975.8	771.7	321.3	217.0	9
2511	2511	KONKAN & GOA	1905	0.1	0.1	0.0	0.4	8.6	293.7	770.6	305.5	208.3	8
...
2617	2617	KONKAN & GOA	2011	0.0	0.0	0.0	3.4	1.1	857.0	1384.1	987.9	468.3	12
2618	2618	KONKAN & GOA	2012	0.0	0.0	0.0	0.6	1.1	633.0	928.5	762.5	515.3	11
2619	2619	KONKAN & GOA	2013	1.8	5.4	0.1	0.1	18.5	1028.3	1478.5	497.6	340.7	14
2620	2620	KONKAN & GOA	2014	1.3	5.3	1.8	0.7	21.3	238.2	1293.2	658.0	419.5	9
2621	2621	KONKAN & GOA	2015	2.7	0.0	36.8	3.6	11.3	764.0	526.5	377.3	240.9	9

115 rows × 20 columns



In [228]: `c=b[['YEAR','JAN','FEB','MAR','APR','MAY','JUN']]
c`

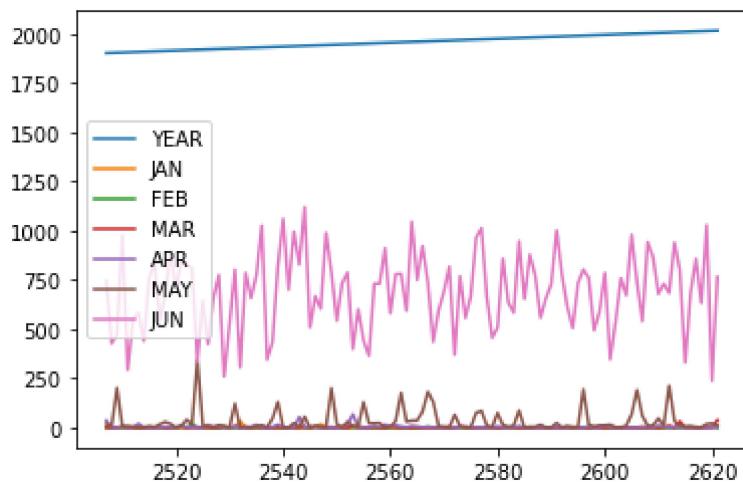
Out[228]:

	YEAR	JAN	FEB	MAR	APR	MAY	JUN
2507	1901	5.6	0.1	0.4	35.7	19.9	746.1
2508	1902	0.3	0.0	0.0	0.4	7.6	428.2
2509	1903	0.0	0.0	0.1	0.0	201.1	470.5
2510	1904	0.0	0.1	6.6	6.3	4.6	975.8
2511	1905	0.1	0.1	0.0	0.4	8.6	293.7
...
2617	2011	0.0	0.0	0.0	3.4	1.1	857.0
2618	2012	0.0	0.0	0.0	0.6	1.1	633.0
2619	2013	1.8	5.4	0.1	0.1	18.5	1028.3
2620	2014	1.3	5.3	1.8	0.7	21.3	238.2
2621	2015	2.7	0.0	36.8	3.6	11.3	764.0

115 rows × 7 columns

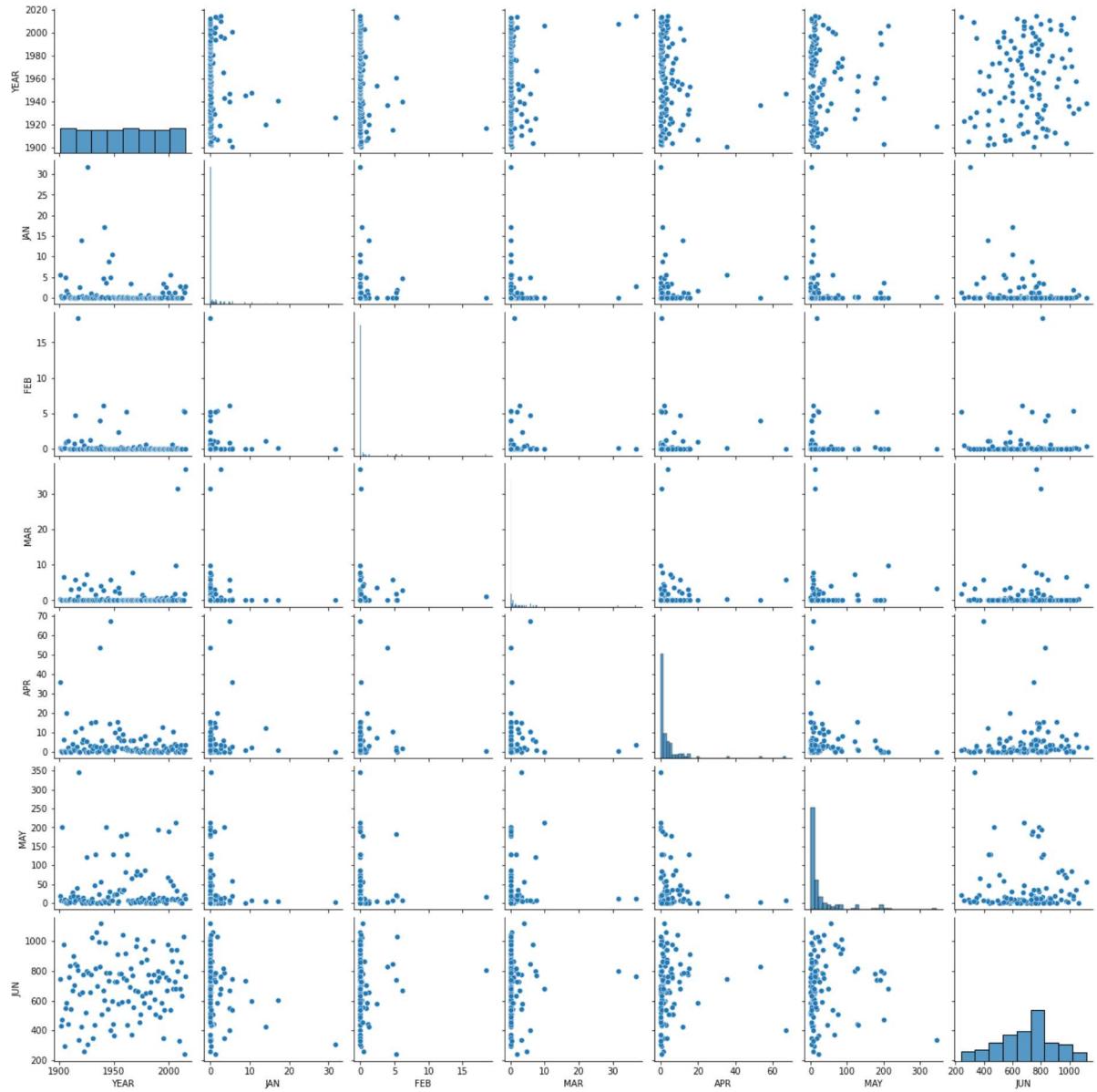
In [229]: `c.plot.line()`

Out[229]: <AxesSubplot:>



```
In [230]: sns.pairplot(c)
```

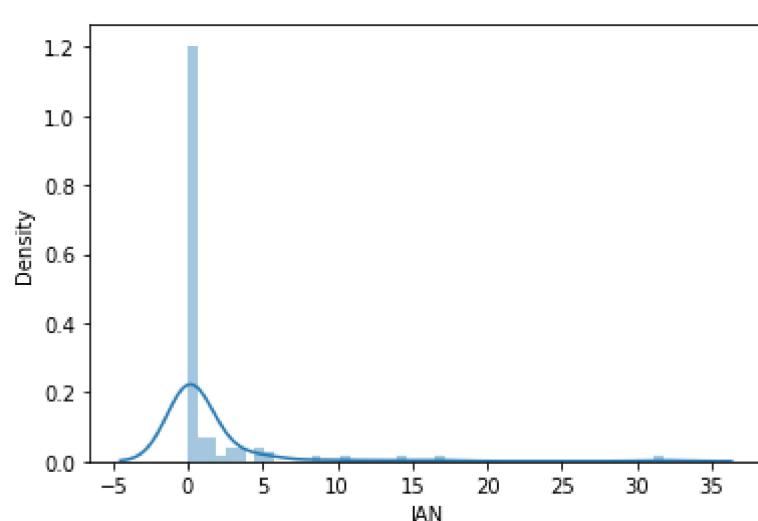
```
Out[230]: <seaborn.axisgrid.PairGrid at 0x24b17765ee0>
```



In [231]: `sns.distplot(c['JAN'])`

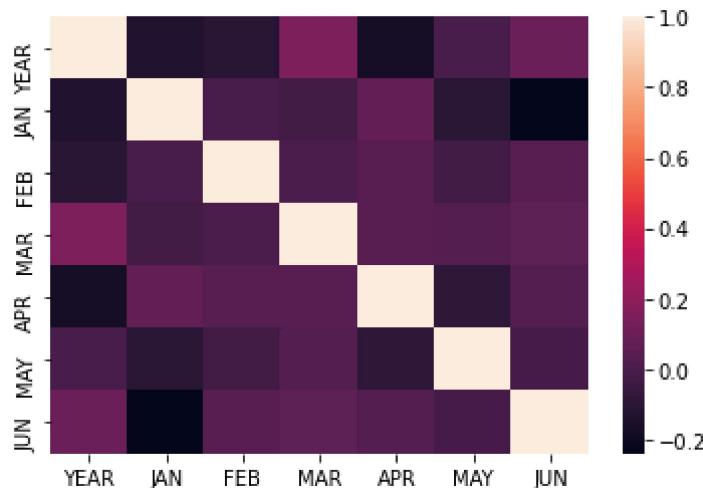
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
warnings.warn(msg, FutureWarning)

Out[231]: <AxesSubplot:xlabel='JAN', ylabel='Density'>



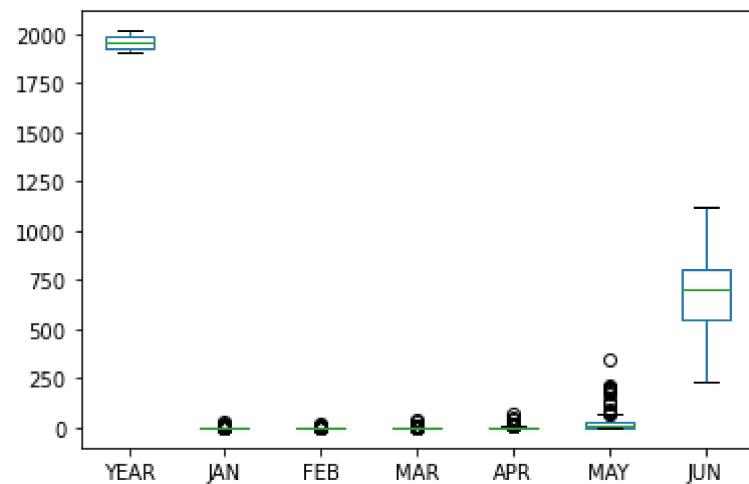
In [232]: `sns.heatmap(c.corr())`

Out[232]: <AxesSubplot:>



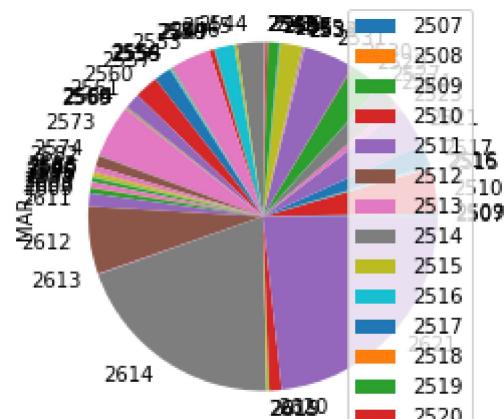
In [233]: `c.plot.box()`

Out[233]: <AxesSubplot:>



```
In [234]: c.plot.pie(y='MAR')
```

```
Out[234]: <AxesSubplot:ylabel='MAR'>
```

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24. MADHYA MAHARASHTRA

```
In [235]: b=a.head(2737)
b=b.tail(115)
b
```

Out[235]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2622	2622	MADHYA MAHARASHTRA	1901	18.8	0.6	7.7	36.6	30.4	107.7	215.9	194.1	83.7	68	50	40
2623	2623	MADHYA MAHARASHTRA	1902	7.8	0.0	0.1	5.0	9.8	102.6	210.9	114.5	169.5	60	50	40
2624	2624	MADHYA MAHARASHTRA	1903	7.6	0.0	0.0	3.2	77.2	86.3	281.8	155.5	142.3	74	50	40
2625	2625	MADHYA MAHARASHTRA	1904	0.4	4.7	1.7	3.0	18.7	114.6	126.5	59.5	183.0	91	50	40
2626	2626	MADHYA MAHARASHTRA	1905	0.0	1.2	0.0	2.3	23.6	65.0	252.8	79.0	52.6	52	50	40
...
2732	2732	MADHYA MAHARASHTRA	2011	0.0	0.3	0.3	5.0	2.9	133.3	261.4	238.1	148.4	62	50	40
2733	2733	MADHYA MAHARASHTRA	2012	0.0	0.0	0.0	3.0	1.4	67.9	203.0	187.8	129.5	95	50	40
2734	2734	MADHYA MAHARASHTRA	2013	0.1	5.3	0.8	5.7	6.0	212.4	311.8	147.0	210.3	57	50	40
2735	2735	MADHYA MAHARASHTRA	2014	3.1	6.2	24.4	7.5	29.8	44.0	277.9	240.3	120.4	38	50	40
2736	2736	MADHYA MAHARASHTRA	2015	1.4	0.8	41.2	9.6	24.4	177.0	111.7	67.2	146.6	48	50	40

115 rows × 20 columns



```
In [236]: c=b[['YEAR','JAN','FEB','MAR','APR','MAY','JUN']]  
c
```

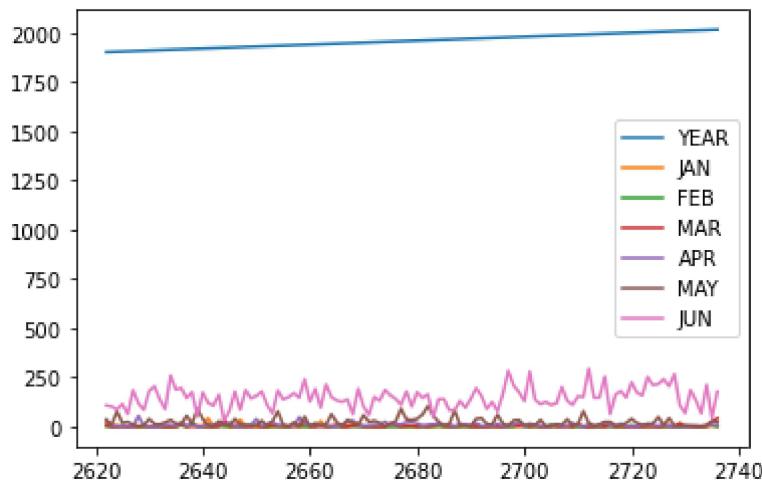
Out[236]:

	YEAR	JAN	FEB	MAR	APR	MAY	JUN
2622	1901	18.8	0.6	7.7	36.6	30.4	107.7
2623	1902	7.8	0.0	0.1	5.0	9.8	102.6
2624	1903	7.6	0.0	0.0	3.2	77.2	86.3
2625	1904	0.4	4.7	1.7	3.0	18.7	114.6
2626	1905	0.0	1.2	0.0	2.3	23.6	65.0
...
2732	2011	0.0	0.3	0.3	5.0	2.9	133.3
2733	2012	0.0	0.0	0.0	3.0	1.4	67.9
2734	2013	0.1	5.3	0.8	5.7	6.0	212.4
2735	2014	3.1	6.2	24.4	7.5	29.8	44.0
2736	2015	1.4	0.8	41.2	9.6	24.4	177.0

115 rows × 7 columns

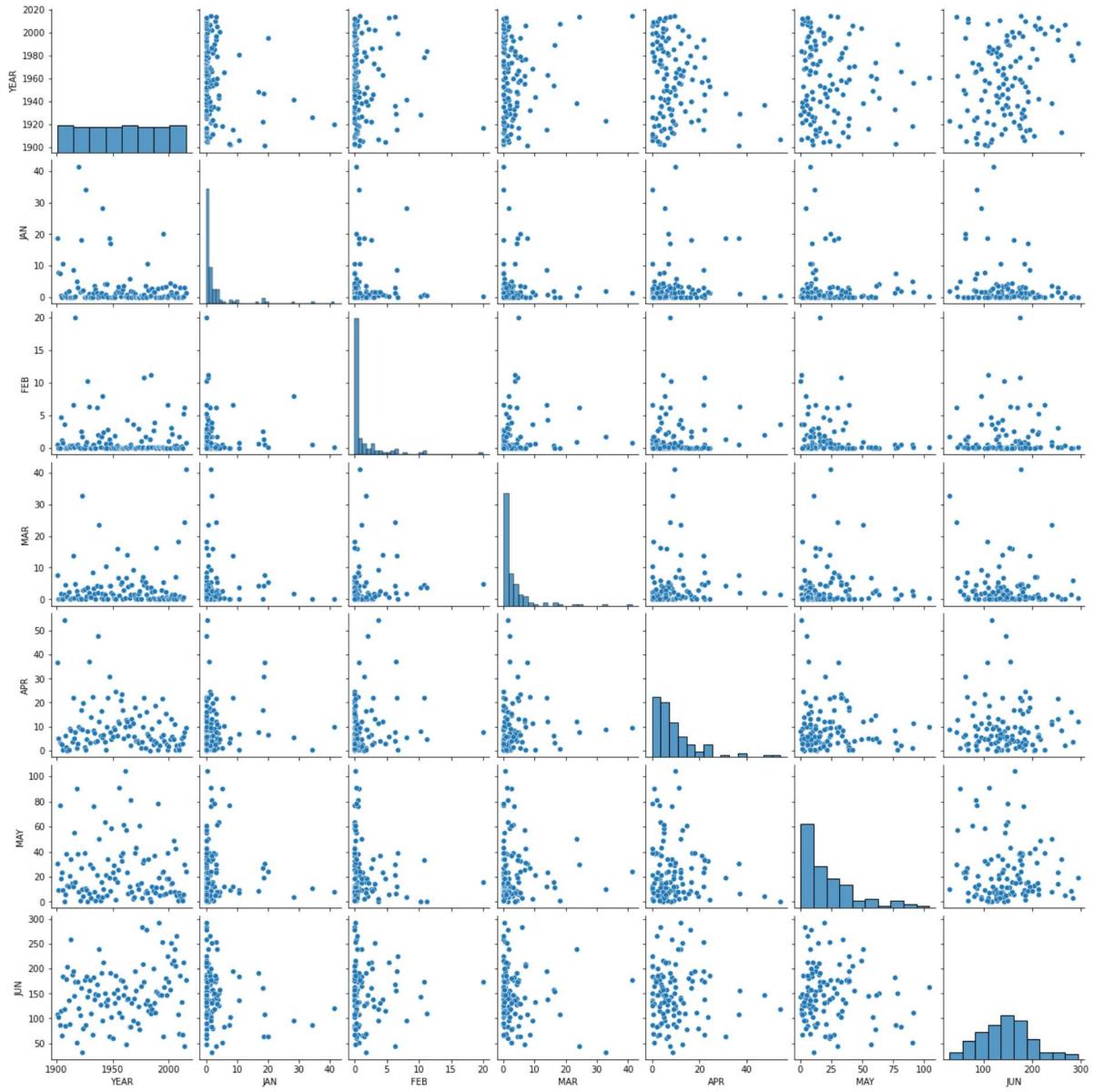
```
In [237]: c.plot.line()
```

Out[237]: <AxesSubplot:>



```
In [238]: sns.pairplot(c)
```

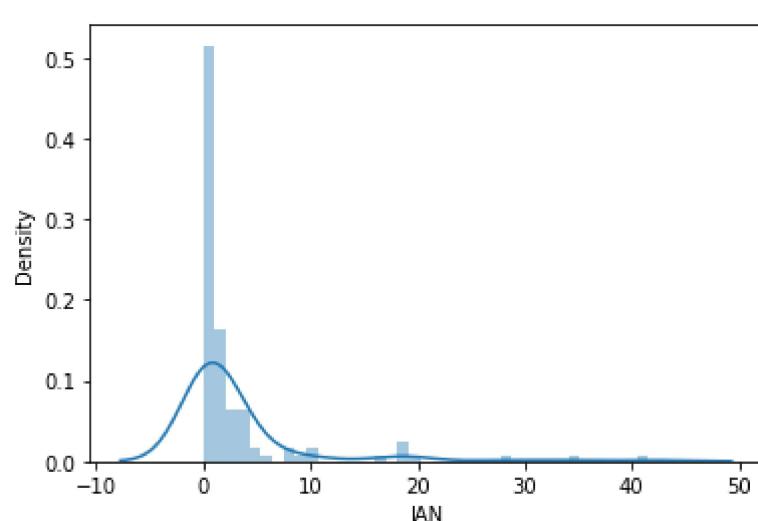
```
Out[238]: <seaborn.axisgrid.PairGrid at 0x24b1b3c6cd0>
```



In [239]: `sns.distplot(c['JAN'])`

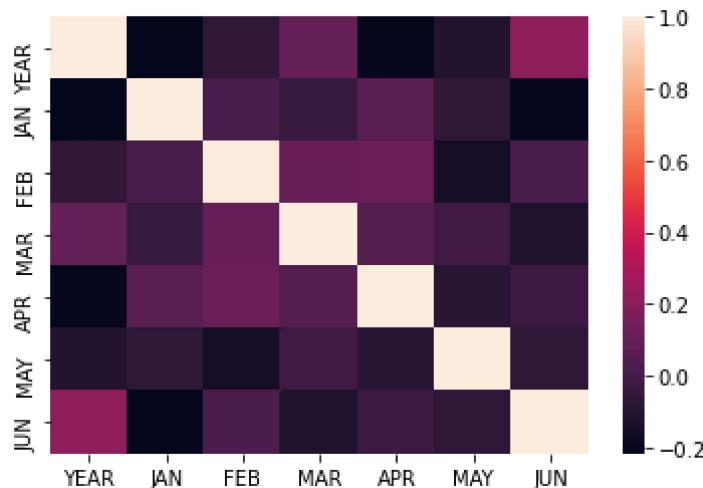
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
warnings.warn(msg, FutureWarning)

Out[239]: <AxesSubplot:xlabel='JAN', ylabel='Density'>



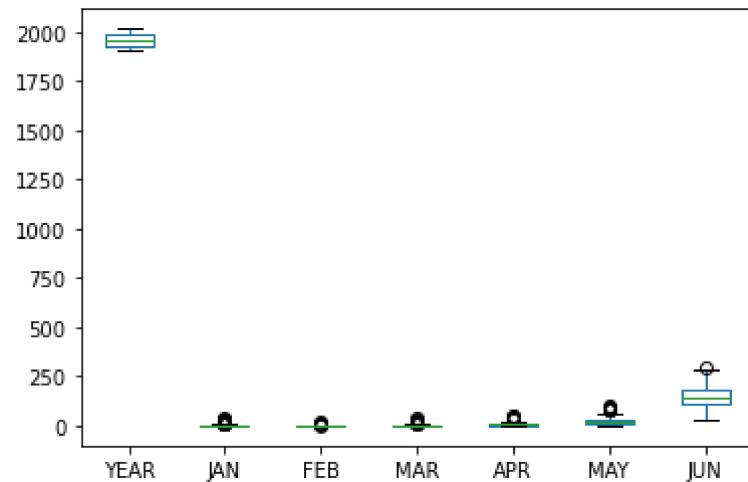
In [240]: `sns.heatmap(c.corr())`

Out[240]: <AxesSubplot:>



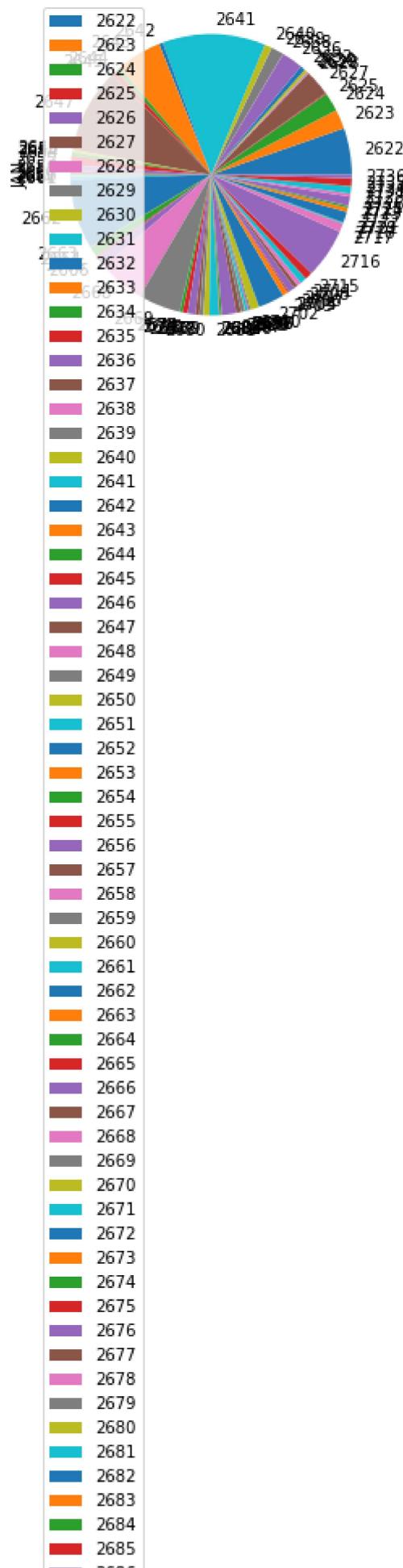
In [241]: `c.plot.box()`

Out[241]: <AxesSubplot:>



```
In [242]: c.plot.pie(y='JAN')
```

```
Out[242]: <AxesSubplot:ylabel='JAN'>
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In []: