

```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [2]: df=pd.read_csv(r'C:\Users\user\Desktop\rainfall\CHHATTISGARH.csv')
df
```

Out[2]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	2968	CHHATTISGARH	1902	0.6	6.5	0.4	13.9	10.3	37.2	403.8	236.6	198.1	4
1	2969	CHHATTISGARH	1903	6.2	13.9	0.4	6.8	51.1	110.7	365.9	396.0	212.0	168
2	2970	CHHATTISGARH	1904	0.0	8.6	32.3	0.2	77.5	369.5	303.6	483.6	86.8	129
3	2971	CHHATTISGARH	1905	50.3	22.6	19.0	24.6	31.8	40.4	443.7	270.8	338.8	8
4	2972	CHHATTISGARH	1906	25.0	91.0	52.5	0.0	4.1	210.1	445.2	258.3	242.3	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...
109	3077	CHHATTISGARH	2011	0.3	11.5	2.6	35.0	16.8	183.5	272.6	379.8	382.2	15
110	3078	CHHATTISGARH	2012	36.6	4.8	1.1	14.9	9.4	147.3	430.6	442.2	245.3	19
111	3079	CHHATTISGARH	2013	2.8	19.7	4.9	45.8	5.7	263.6	418.8	336.6	140.9	180
112	3080	CHHATTISGARH	2014	2.3	29.0	21.4	17.3	25.0	104.9	416.7	327.7	252.7	70
113	3081	CHHATTISGARH	2015	15.8	1.2	21.2	37.0	13.0	257.6	248.6	286.6	216.9	10

114 rows × 20 columns

```
In [3]: df=df.dropna()
df
```

Out[3]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	2968	CHHATTISGARH	1902	0.6	6.5	0.4	13.9	10.3	37.2	403.8	236.6	198.1	4
1	2969	CHHATTISGARH	1903	6.2	13.9	0.4	6.8	51.1	110.7	365.9	396.0	212.0	16
2	2970	CHHATTISGARH	1904	0.0	8.6	32.3	0.2	77.5	369.5	303.6	483.6	86.8	12
3	2971	CHHATTISGARH	1905	50.3	22.6	19.0	24.6	31.8	40.4	443.7	270.8	338.8	8
4	2972	CHHATTISGARH	1906	25.0	91.0	52.5	0.0	4.1	210.1	445.2	258.3	242.3	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...
109	3077	CHHATTISGARH	2011	0.3	11.5	2.6	35.0	16.8	183.5	272.6	379.8	382.2	1
110	3078	CHHATTISGARH	2012	36.6	4.8	1.1	14.9	9.4	147.3	430.6	442.2	245.3	1
111	3079	CHHATTISGARH	2013	2.8	19.7	4.9	45.8	5.7	263.6	418.8	336.6	140.9	18
112	3080	CHHATTISGARH	2014	2.3	29.0	21.4	17.3	25.0	104.9	416.7	327.7	252.7	7
113	3081	CHHATTISGARH	2015	15.8	1.2	21.2	37.0	13.0	257.6	248.6	286.6	216.9	1

114 rows × 20 columns



```
In [4]: df.columns
```

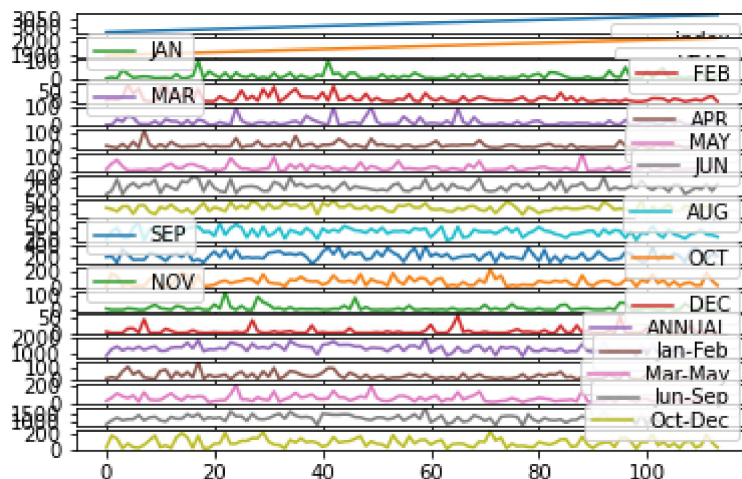
Out[4]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY', 'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb', 'Mar-May', 'Jun-Sep', 'Oct-Dec'], dtype='object')

In [5]: `df.info()`

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 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                    114 non-null   float64
4   FEB                    114 non-null   float64
5   MAR                    114 non-null   float64
6   APR                    114 non-null   float64
7   MAY                    114 non-null   float64
8   JUN                    114 non-null   float64
9   JUL                    114 non-null   float64
10  AUG                    114 non-null   float64
11  SEP                    114 non-null   float64
12  OCT                    114 non-null   float64
13  NOV                    114 non-null   float64
14  DEC                    114 non-null   float64
15  ANNUAL                 114 non-null   float64
16  Jan-Feb               114 non-null   float64
17  Mar-May               114 non-null   float64
18  Jun-Sep               114 non-null   float64
19  Oct-Dec               114 non-null   float64
dtypes: float64(17), int64(2), object(1)
memory usage: 18.7+ KB
```

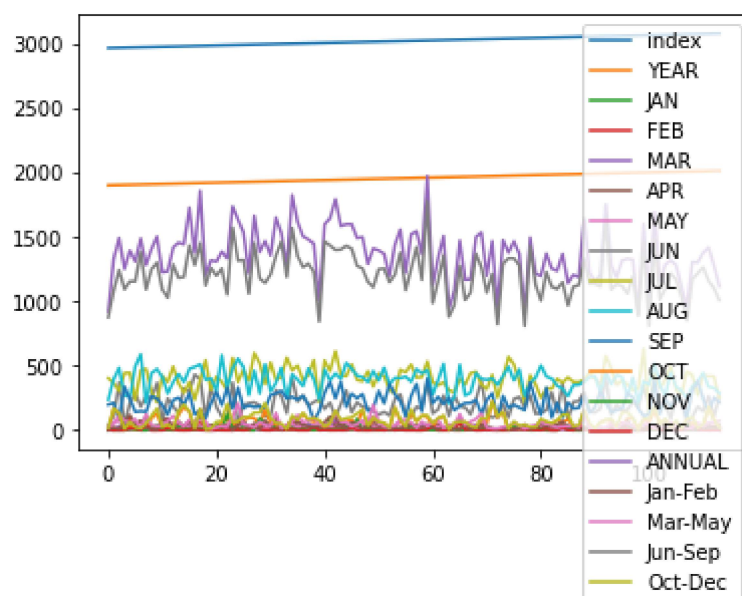
In [6]: `df.plot.line(subplots=True)`

Out[6]: array([<AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>], dtype=object)



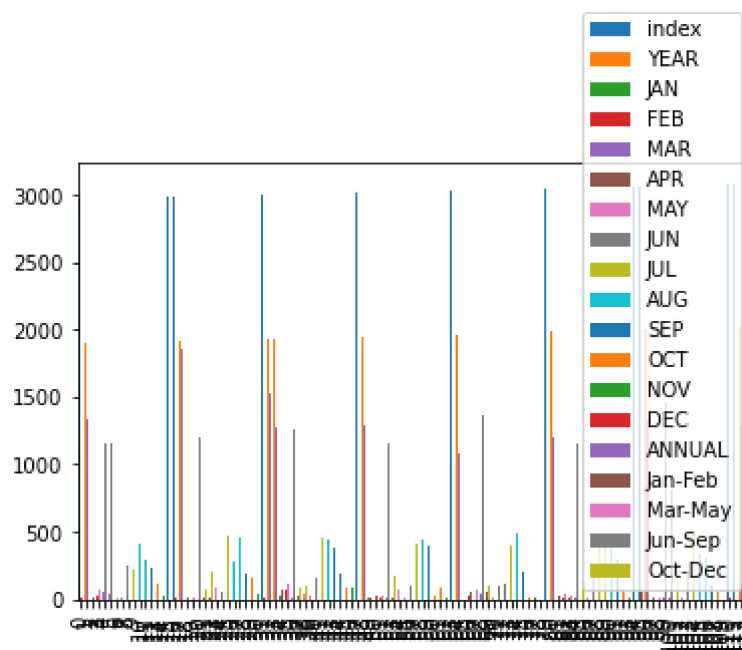
```
In [7]: df.plot.line()
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Out[7]: <AxesSubplot:>
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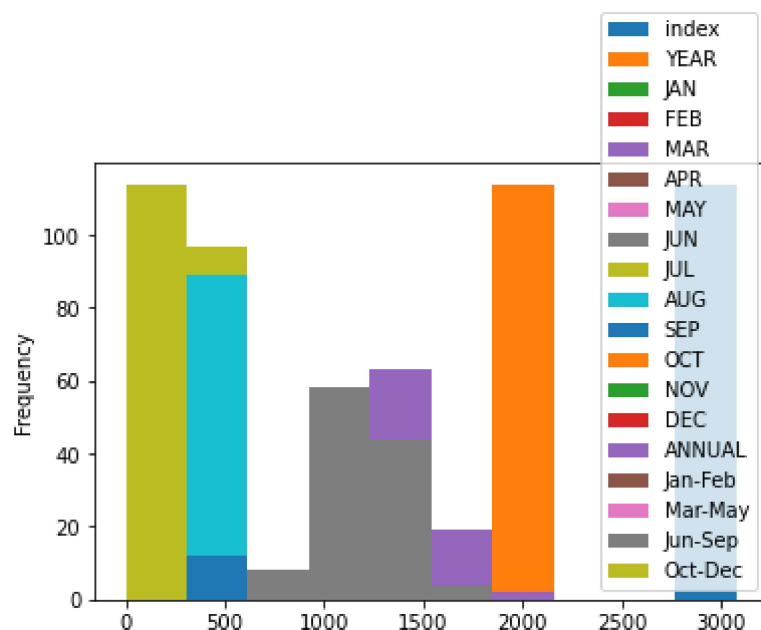
```
In [8]: df.plot.bar()
```

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Out[8]: <AxesSubplot:>
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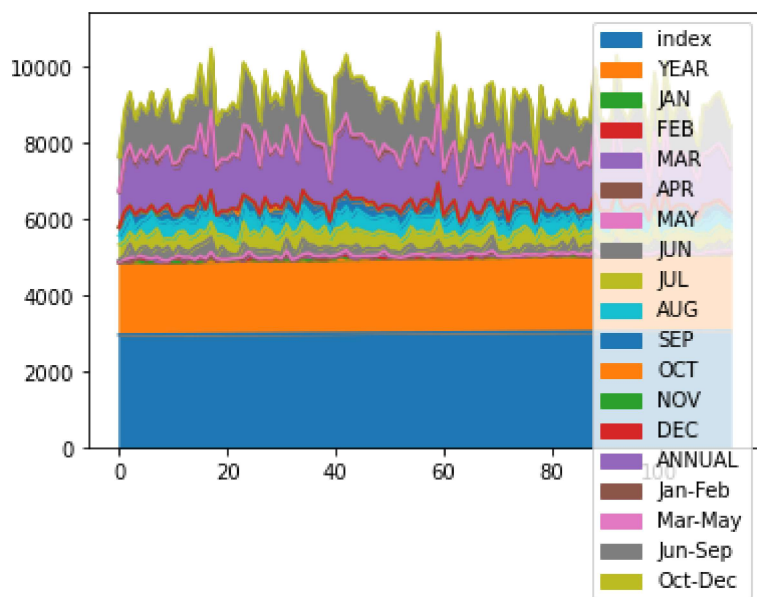
```
In [9]: df.plot.hist()
```

```
Out[9]: <AxesSubplot:ylabel='Frequency'>
```



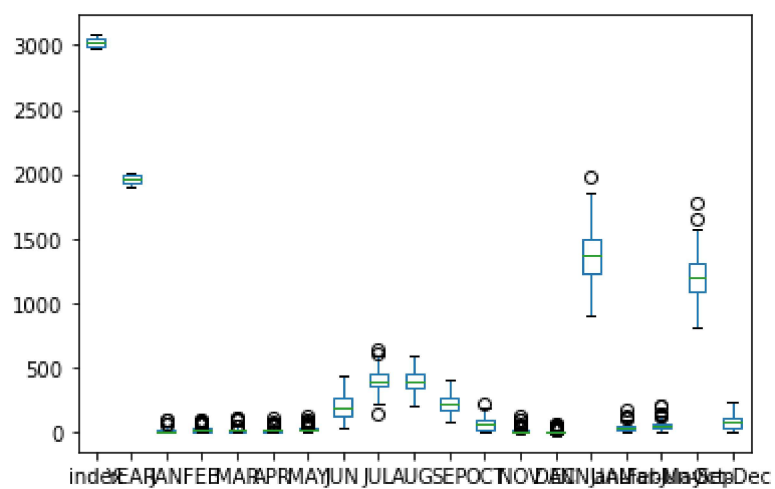
```
In [10]: df.plot.area()
```

```
Out[10]: <AxesSubplot:>
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```
In [11]: df.plot.box()
```

```
Out[11]: <AxesSubplot:>
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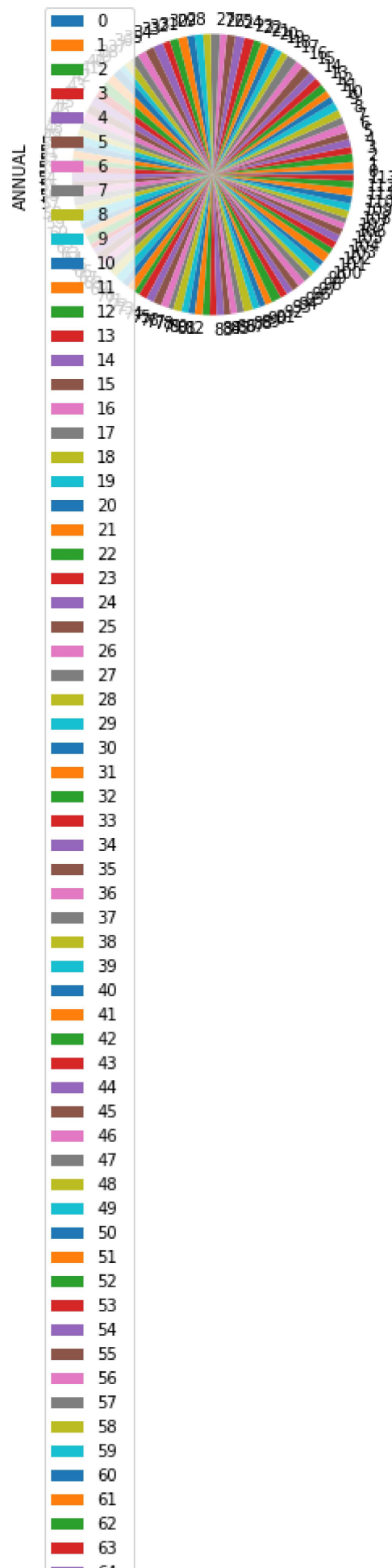


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In [12]: df.plot.pie(y='ANNUAL')
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```
Out[12]: <AxesSubplot:ylabel='ANNUAL'>
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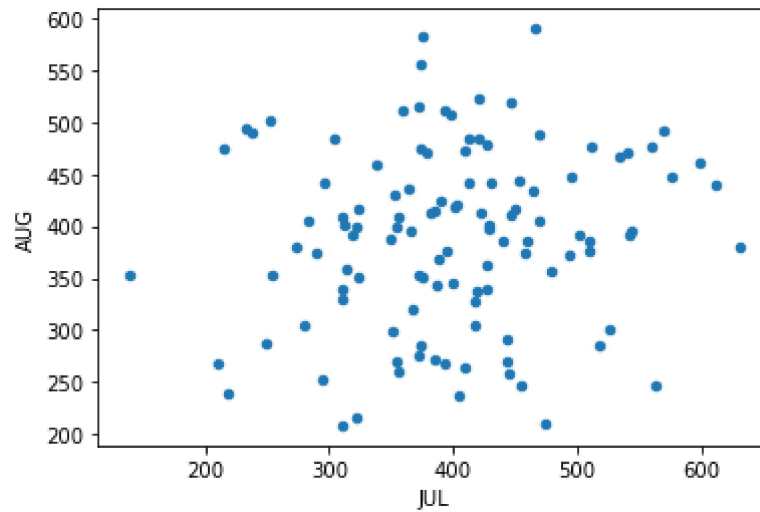




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```
In [13]: df.plot.scatter(x='JUL',y='AUG')
```

```
Out[13]: <AxesSubplot:xlabel='JUL', ylabel='AUG'>
```



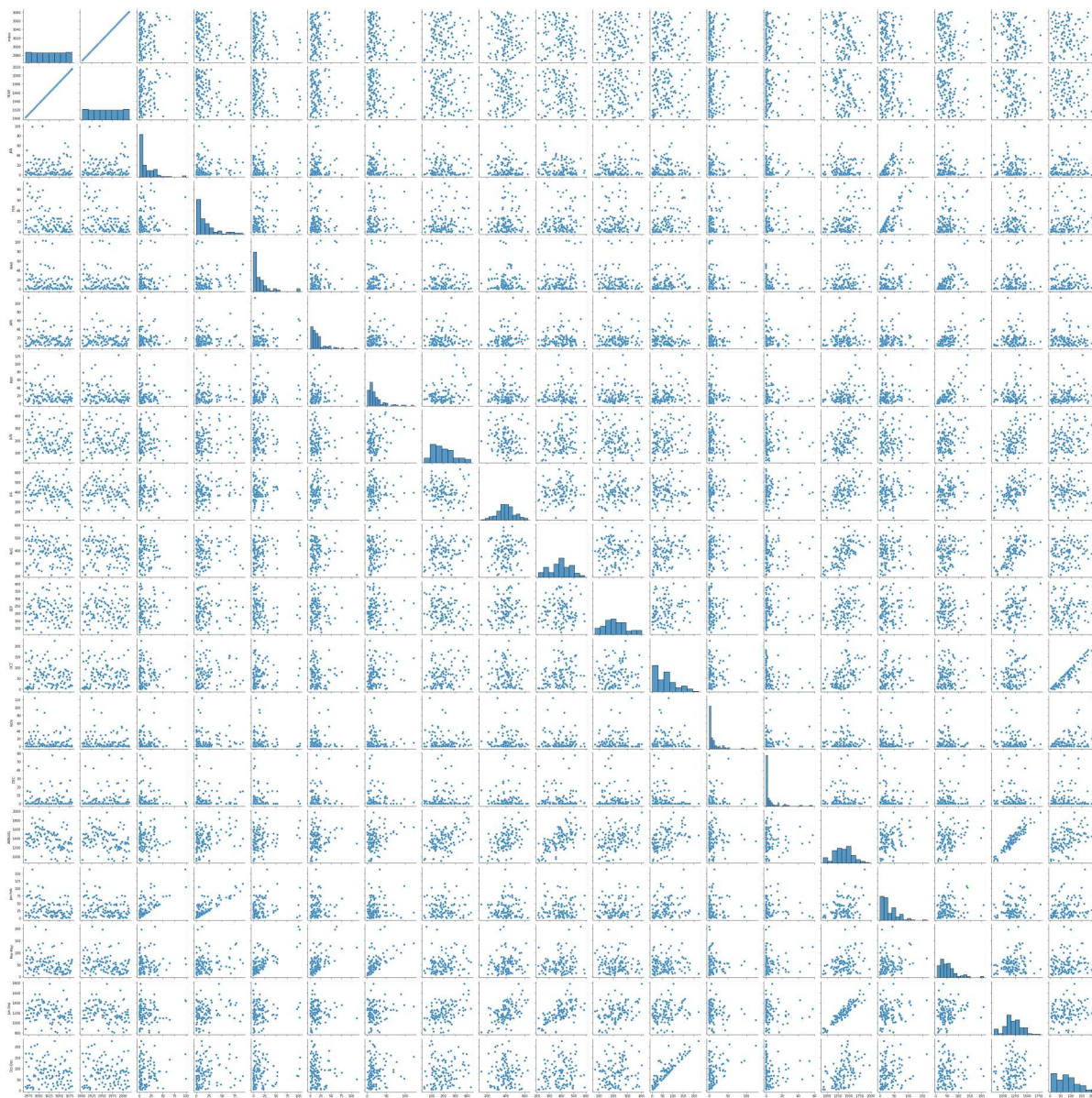
```
In [14]: df.describe()
```

```
Out[14]:
```

	index	YEAR	JAN	FEB	MAR	APR	MAY	
<b>count</b>	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	11
<b>mean</b>	3024.500000	1958.500000	13.902632	18.406140	15.157018	16.871930	21.071930	19
<b>std</b>	33.052988	33.052988	18.102249	21.237062	20.711285	17.167677	20.719921	9
<b>min</b>	2968.000000	1902.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3
<b>25%</b>	2996.250000	1930.250000	1.325000	4.025000	2.200000	5.375000	8.700000	12
<b>50%</b>	3024.500000	1958.500000	6.400000	10.850000	7.900000	12.300000	15.500000	18
<b>75%</b>	3052.750000	1986.750000	21.050000	24.775000	21.150000	21.000000	25.225000	25
<b>max</b>	3081.000000	2015.000000	99.500000	91.000000	102.900000	112.800000	122.300000	43

```
sns.pairplot(df)
```

```
Out[15]: <seaborn.axisgrid.PairGrid at 0x1ac53edb580>
```

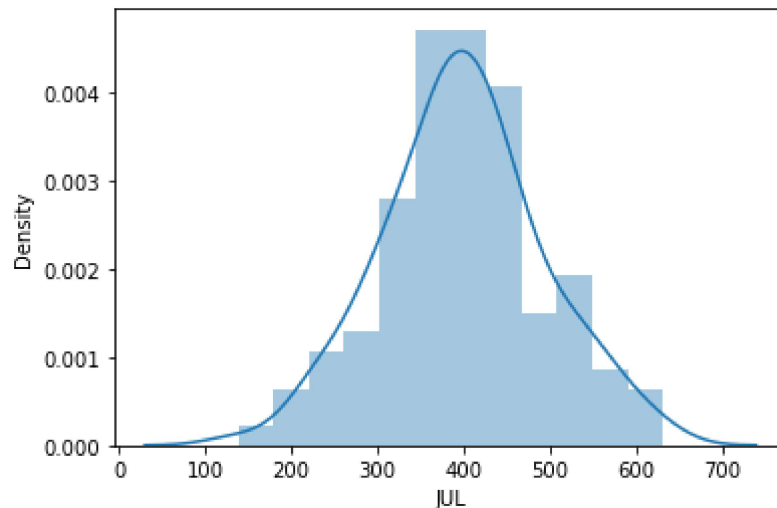


In [16]: `sns.distplot(df['JUL'])`

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).

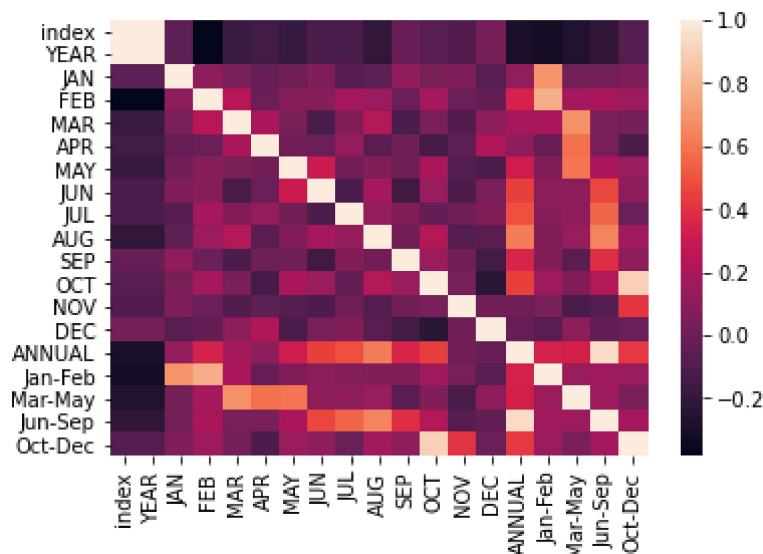
warnings.warn(msg, FutureWarning)

Out[16]: `<AxesSubplot:xlabel='JUL', ylabel='Density'>`



In [17]: `sns.heatmap(df.corr())`

Out[17]: `<AxesSubplot:>`



In [ ]:

