

```
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\KONKAN GOA.csv')
df
```

Out[2]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	O
0	2508	KONKAN & GOA	1902	0.3	0.0	0.0	0.4	7.6	428.2	943.6	515.1	613.8	7
1	2509	KONKAN & GOA	1903	0.0	0.0	0.1	0.0	201.1	470.5	1298.6	673.9	285.1	14
2	2510	KONKAN & GOA	1904	0.0	0.1	6.6	6.3	4.6	975.8	771.7	321.3	217.0	9
3	2511	KONKAN & GOA	1905	0.1	0.1	0.0	0.4	8.6	293.7	770.6	305.5	208.3	8
4	2512	KONKAN & GOA	1906	5.0	0.9	0.0	0.0	2.9	547.4	1090.9	506.7	222.5	3
...
109	2617	KONKAN & GOA	2011	0.0	0.0	0.0	3.4	1.1	857.0	1384.1	987.9	468.3	12
110	2618	KONKAN & GOA	2012	0.0	0.0	0.0	0.6	1.1	633.0	928.5	762.5	515.3	17
111	2619	KONKAN & GOA	2013	1.8	5.4	0.1	0.1	18.5	1028.3	1478.5	497.6	340.7	14
112	2620	KONKAN & GOA	2014	1.3	5.3	1.8	0.7	21.3	238.2	1293.2	658.0	419.5	9
113	2621	KONKAN & GOA	2015	2.7	0.0	36.8	3.6	11.3	764.0	526.5	377.3	240.9	9

114 rows × 20 columns



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

Out[3]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	O
0	2508	KONKAN & GOA	1902	0.3	0.0	0.0	0.4	7.6	428.2	943.6	515.1	613.8	7
1	2509	KONKAN & GOA	1903	0.0	0.0	0.1	0.0	201.1	470.5	1298.6	673.9	285.1	14
2	2510	KONKAN & GOA	1904	0.0	0.1	6.6	6.3	4.6	975.8	771.7	321.3	217.0	9
3	2511	KONKAN & GOA	1905	0.1	0.1	0.0	0.4	8.6	293.7	770.6	305.5	208.3	8
4	2512	KONKAN & GOA	1906	5.0	0.9	0.0	0.0	2.9	547.4	1090.9	506.7	222.5	3
...
109	2617	KONKAN & GOA	2011	0.0	0.0	0.0	3.4	1.1	857.0	1384.1	987.9	468.3	12
110	2618	KONKAN & GOA	2012	0.0	0.0	0.0	0.6	1.1	633.0	928.5	762.5	515.3	17
111	2619	KONKAN & GOA	2013	1.8	5.4	0.1	0.1	18.5	1028.3	1478.5	497.6	340.7	14
112	2620	KONKAN & GOA	2014	1.3	5.3	1.8	0.7	21.3	238.2	1293.2	658.0	419.5	9
113	2621	KONKAN & GOA	2015	2.7	0.0	36.8	3.6	11.3	764.0	526.5	377.3	240.9	9

114 rows × 20 columns



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

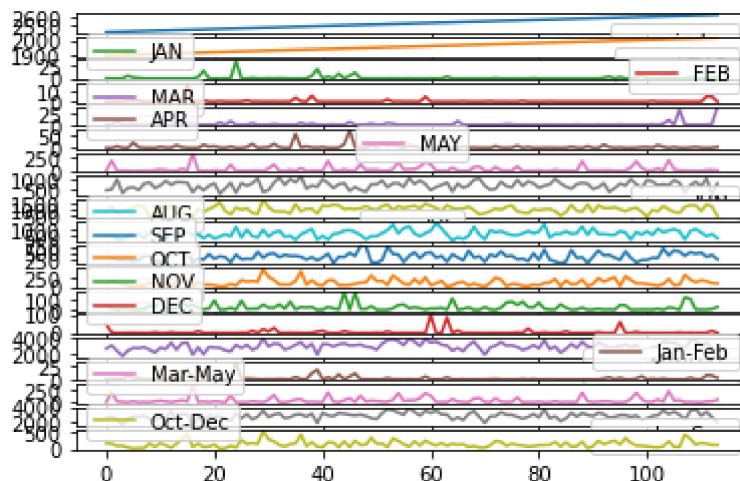
```
Out[4]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',
              'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',
              'Mar-May', 'Jun-Sep', 'Oct-Dec'],
              dtype='object')
```

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
```

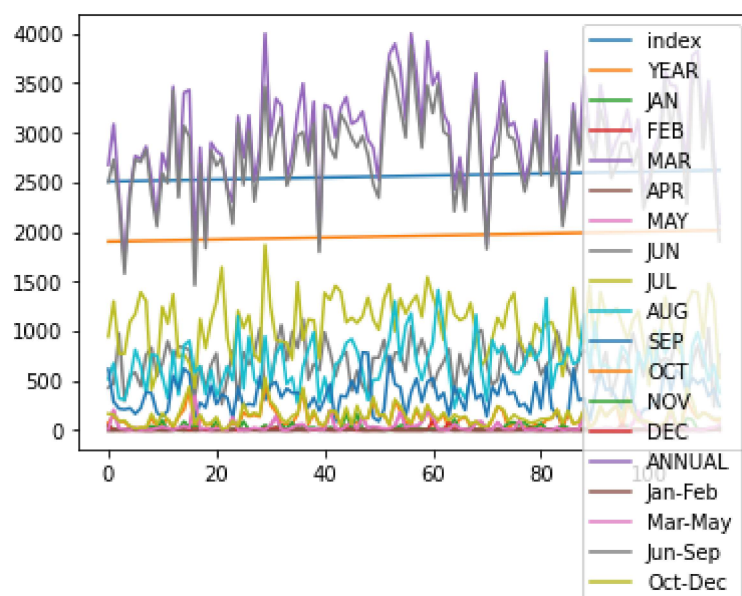
In [6]: `df.plot.line(subplots=True)`

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



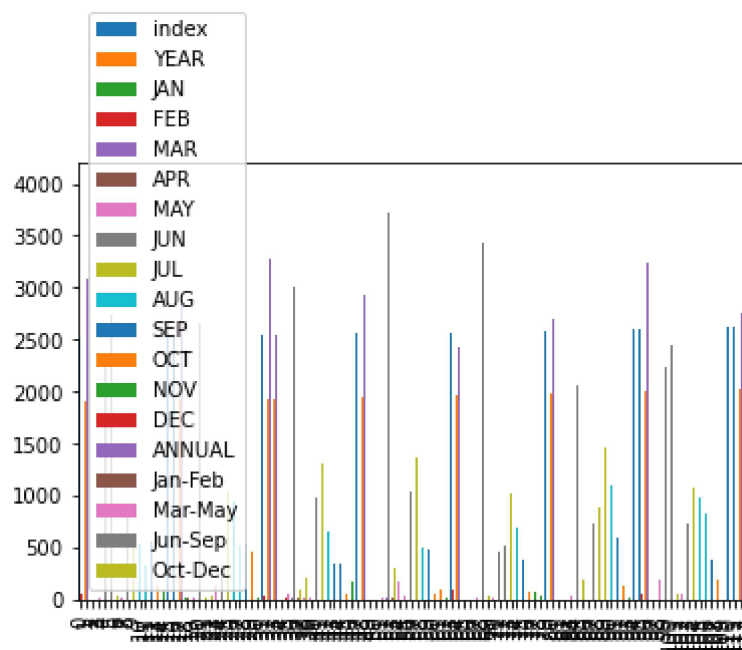
```
In [7]: df.plot.line()
```

```
Out[7]: <AxesSubplot:>
```



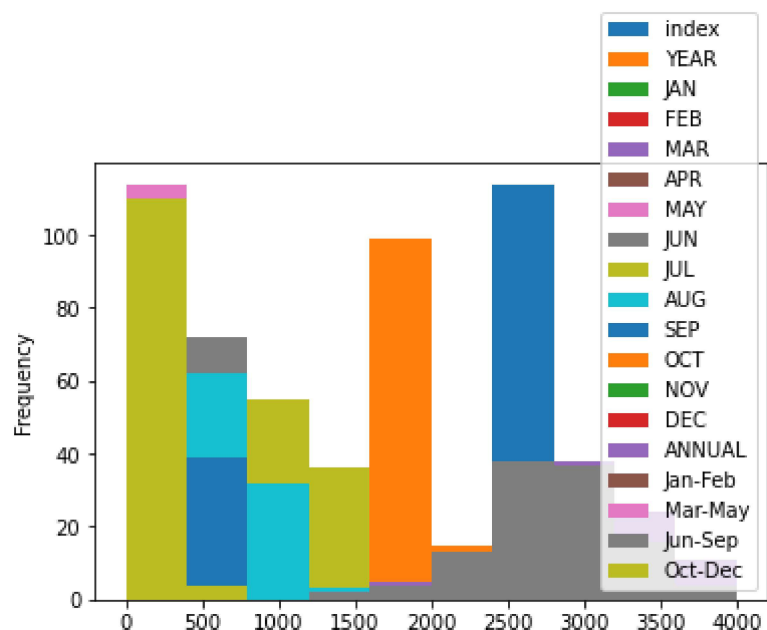
```
In [8]: df.plot.bar()
```

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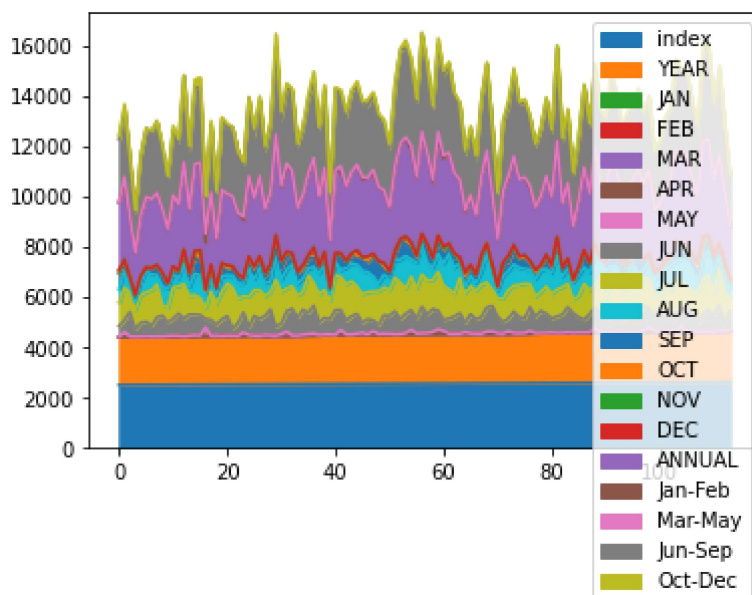
```
In [9]: df.plot.hist()
```

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



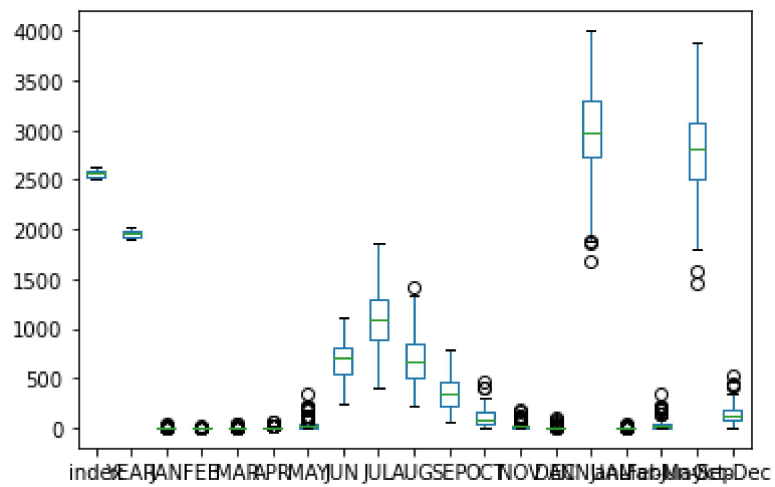
```
In [10]: df.plot.area()
```

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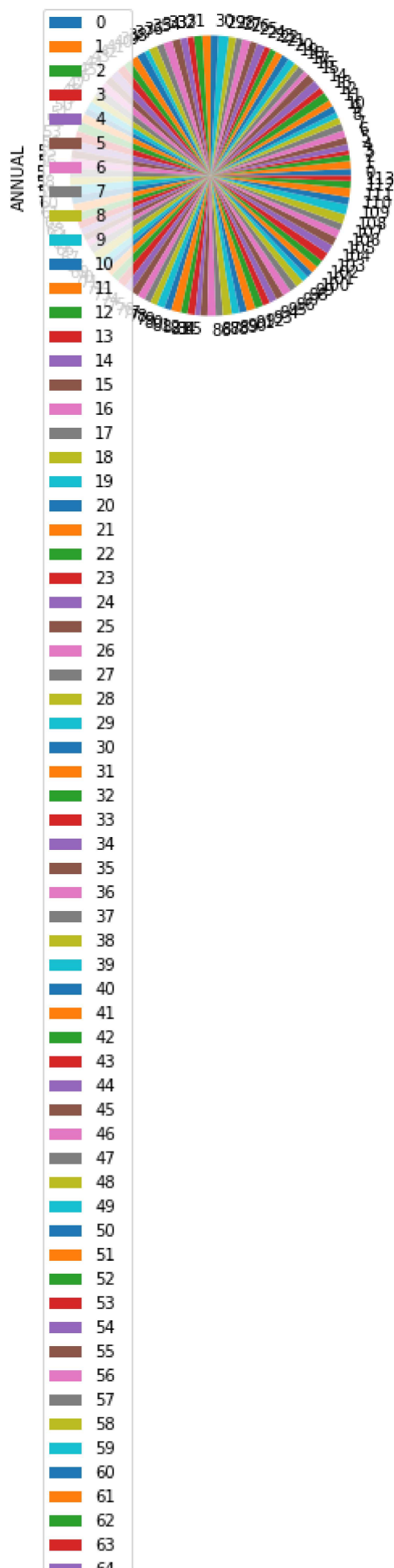
```
In [11]: df.plot.box()
```

```
Out[11]: <AxesSubplot:>
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```
In [12]: df.plot.pie(y='ANNUAL')
```

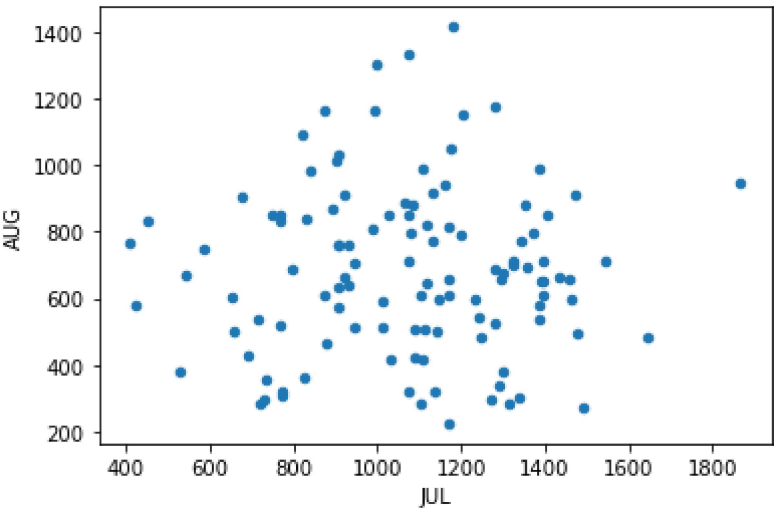
```
Out[12]: <AxesSubplot:ylabel='ANNUAL'>
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```
In [13]: df.plot.scatter(x='JUL',y='AUG')
```

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



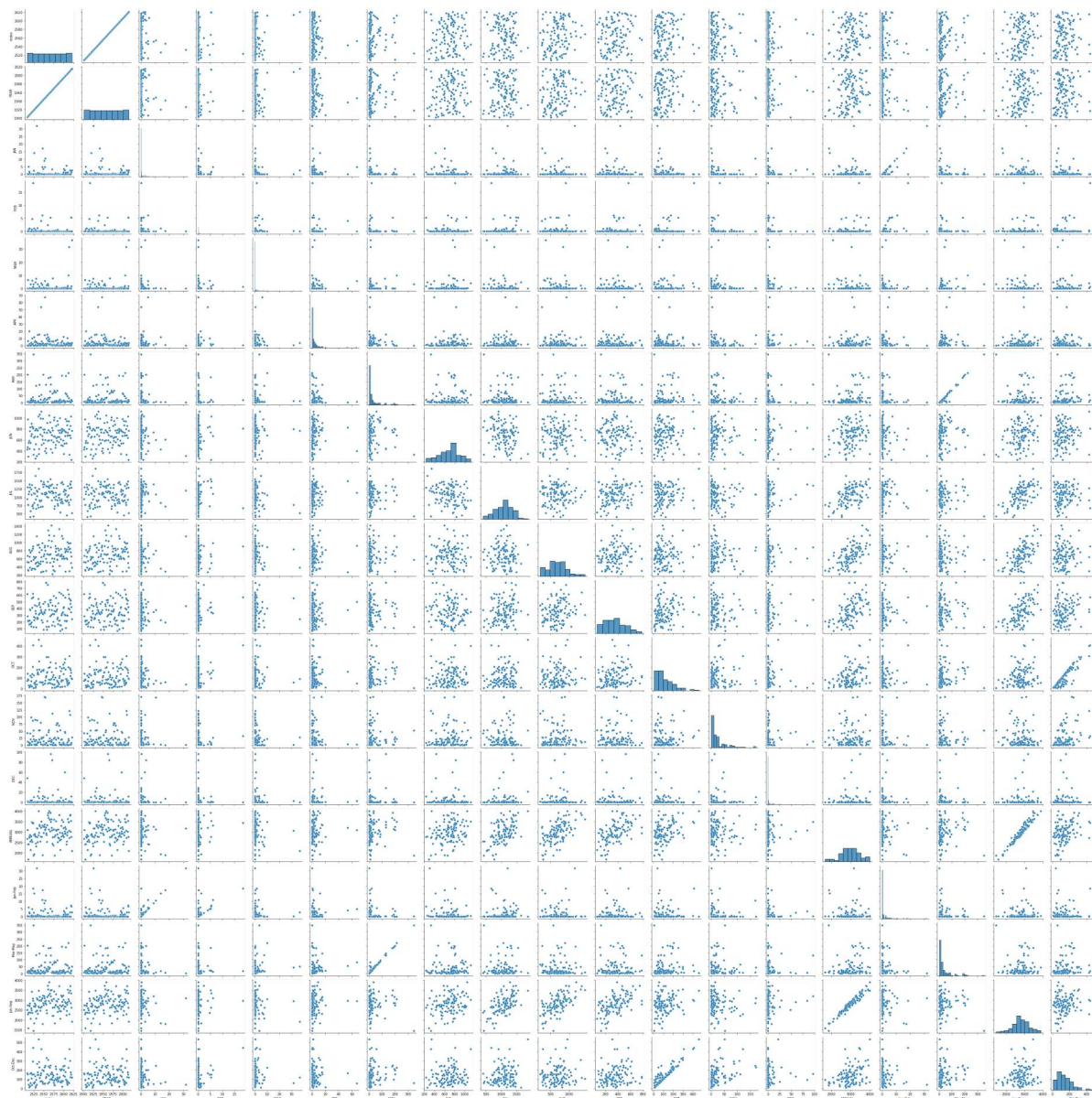
```
In [14]: df.describe()
```

Out[14]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	2564.500000	1958.500000	1.224561	0.550877	1.383333	3.990351	33.635088	68.000000
std	33.052988	33.052988	3.879799	2.056642	4.769388	8.647522	58.570653	19.000000
min	2508.000000	1902.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.000000
25%	2536.250000	1930.250000	0.000000	0.000000	0.000000	0.300000	2.900000	5.000000
50%	2564.500000	1958.500000	0.000000	0.000000	0.050000	1.250000	9.650000	7.000000
75%	2592.750000	1986.750000	0.450000	0.100000	0.375000	4.075000	30.450000	8.000000
max	2621.000000	2015.000000	31.800000	18.400000	36.800000	67.300000	345.400000	11.000000

```
In [15]: sns.pairplot(df)
```

```
Out[15]: <seaborn.axisgrid.PairGrid at 0x1c08a790d00>
```

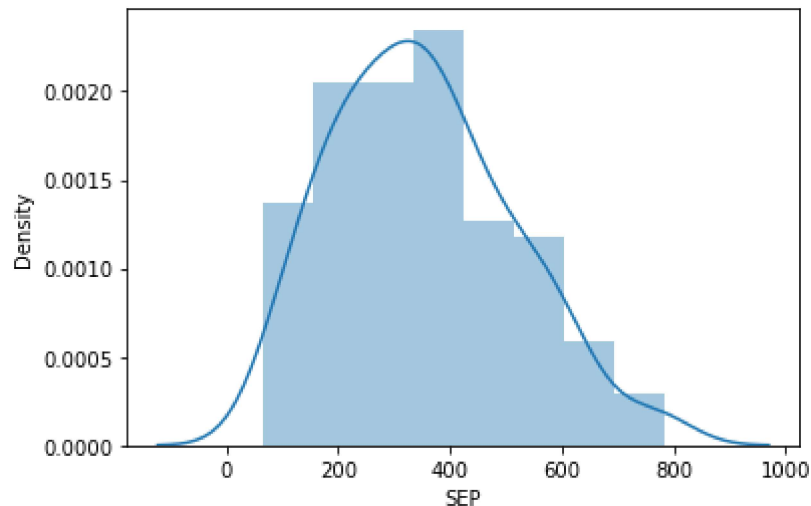


```
In [16]: sns.distplot(df['SEP'])
```

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).

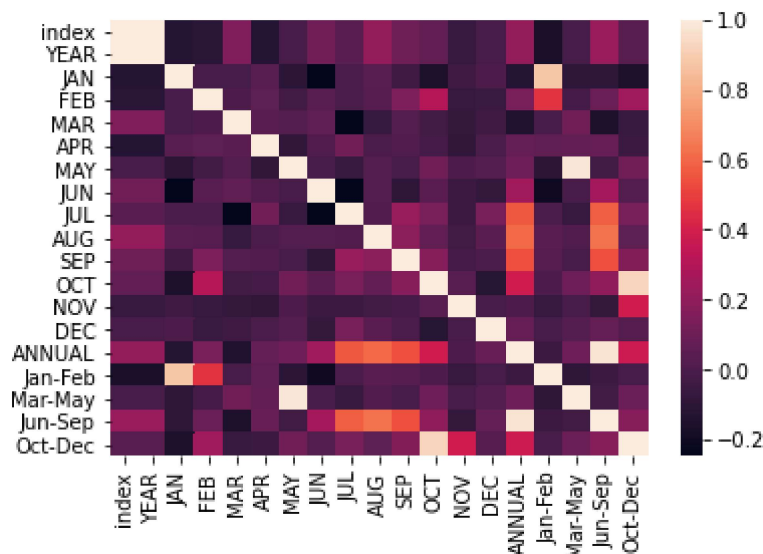
```
warnings.warn(msg, FutureWarning)
```

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



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

```
Out[17]: <AxesSubplot:>
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```
In [ ]:
```

