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\VIDARBHA.csv')
df
```

Out[2]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	2853	VIDARBHA	1902	1.6	0.1	0.0	6.5	4.1	38.0	270.7	204.7	150.9	29.6
1	2854	VIDARBHA	1903	5.2	4.0	0.1	2.5	37.8	121.2	475.5	325.5	154.8	100.8
2	2855	VIDARBHA	1904	4.3	2.4	12.9	0.2	14.8	148.9	158.3	151.8	196.9	61.7
3	2856	VIDARBHA	1905	7.3	12.7	12.4	16.2	14.0	81.0	254.5	216.3	321.3	6.0
4	2857	VIDARBHA	1906	12.9	3.3	11.9	0.2	6.1	328.1	350.4	325.8	113.3	6.9
...	...	...	...	...	...	...	...	...	...	...	...	...	...
109	2962	VIDARBHA	2011	0.0	1.2	0.1	7.7	0.6	137.9	247.1	302.8	191.0	4.7
110	2963	VIDARBHA	2012	3.1	0.1	0.0	0.6	0.2	125.5	370.5	316.2	249.4	34.9
111	2964	VIDARBHA	2013	6.6	13.0	3.8	2.8	0.5	366.7	535.5	326.1	131.7	133.5
112	2965	VIDARBHA	2014	1.2	18.3	49.6	2.6	4.0	63.3	337.6	191.7	224.9	17.3
113	2966	VIDARBHA	2015	26.3	4.7	66.3	28.1	12.8	254.6	137.2	288.9	167.5	7.0

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	2853	VIDARBHA	1902	1.6	0.1	0.0	6.5	4.1	38.0	270.7	204.7	150.9	29.6
1	2854	VIDARBHA	1903	5.2	4.0	0.1	2.5	37.8	121.2	475.5	325.5	154.8	100.8
2	2855	VIDARBHA	1904	4.3	2.4	12.9	0.2	14.8	148.9	158.3	151.8	196.9	61.7
3	2856	VIDARBHA	1905	7.3	12.7	12.4	16.2	14.0	81.0	254.5	216.3	321.3	6.0
4	2857	VIDARBHA	1906	12.9	3.3	11.9	0.2	6.1	328.1	350.4	325.8	113.3	6.9
...	...	...	...	...	...	...	...	...	...	...	...	...	...
109	2962	VIDARBHA	2011	0.0	1.2	0.1	7.7	0.6	137.9	247.1	302.8	191.0	4.7
110	2963	VIDARBHA	2012	3.1	0.1	0.0	0.6	0.2	125.5	370.5	316.2	249.4	34.9
111	2964	VIDARBHA	2013	6.6	13.0	3.8	2.8	0.5	366.7	535.5	326.1	131.7	133.5
112	2965	VIDARBHA	2014	1.2	18.3	49.6	2.6	4.0	63.3	337.6	191.7	224.9	17.3
113	2966	VIDARBHA	2015	26.3	4.7	66.3	28.1	12.8	254.6	137.2	288.9	167.5	7.0

114 rows × 20 columns

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

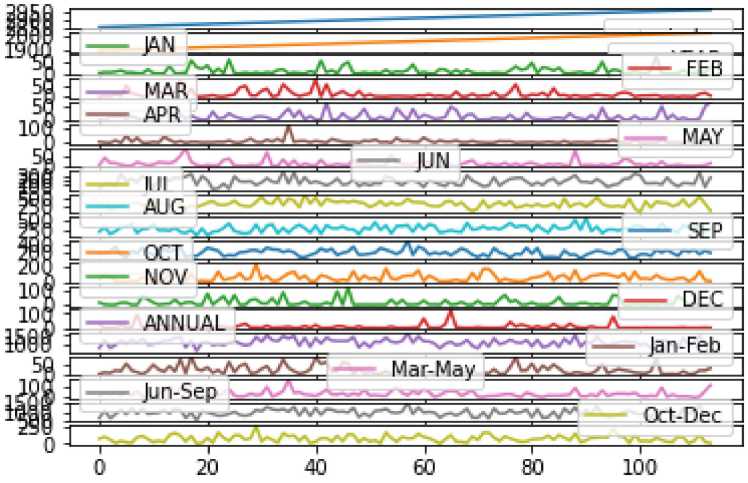
Out[4]:
```
Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],
      dtype='object')
```

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)
```

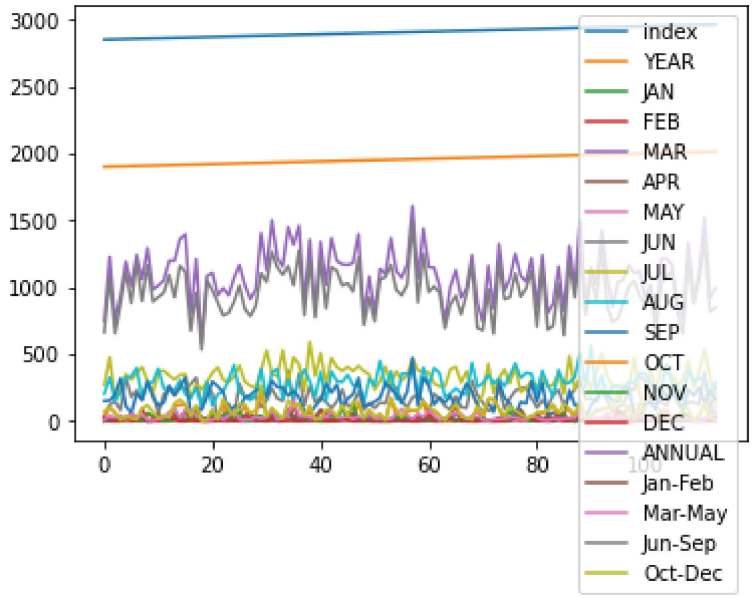
Out[6]:
```
array([<AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
    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



Loading [MathJax]/extensions/Safe.js

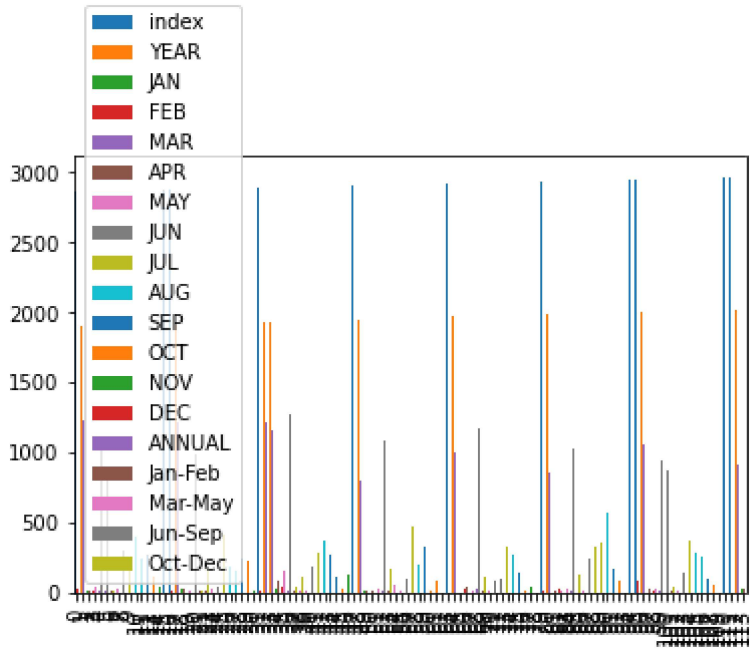
In [7]:
```
df.plot.line()
```

Out[7]: <AxesSubplot:>



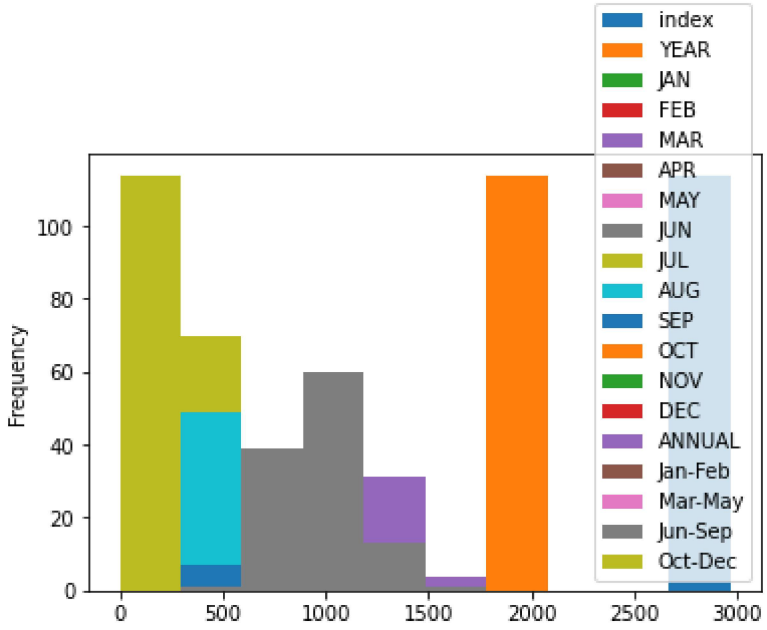
In [8]:
```
df.plot.bar()
```

Out[8]: <AxesSubplot:>



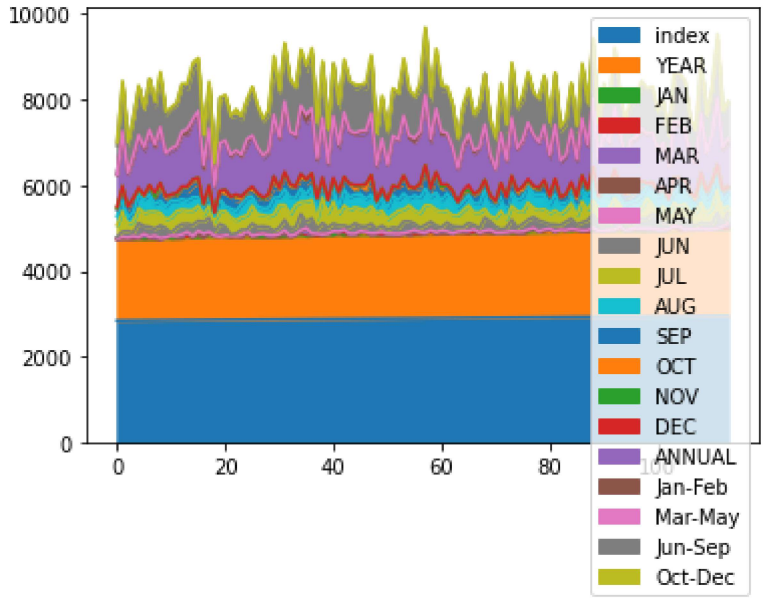
In [9]:
```
df.plot.hist()
```

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



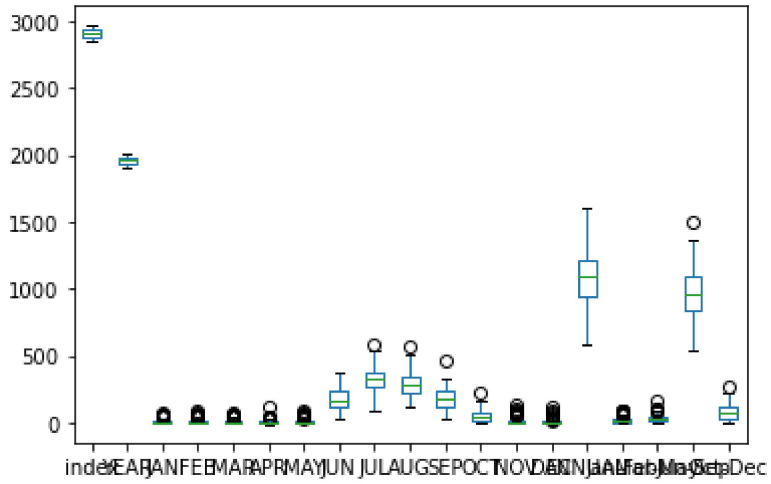
In [10]:
```
df.plot.area()
```

Out[10]: <AxesSubplot:>



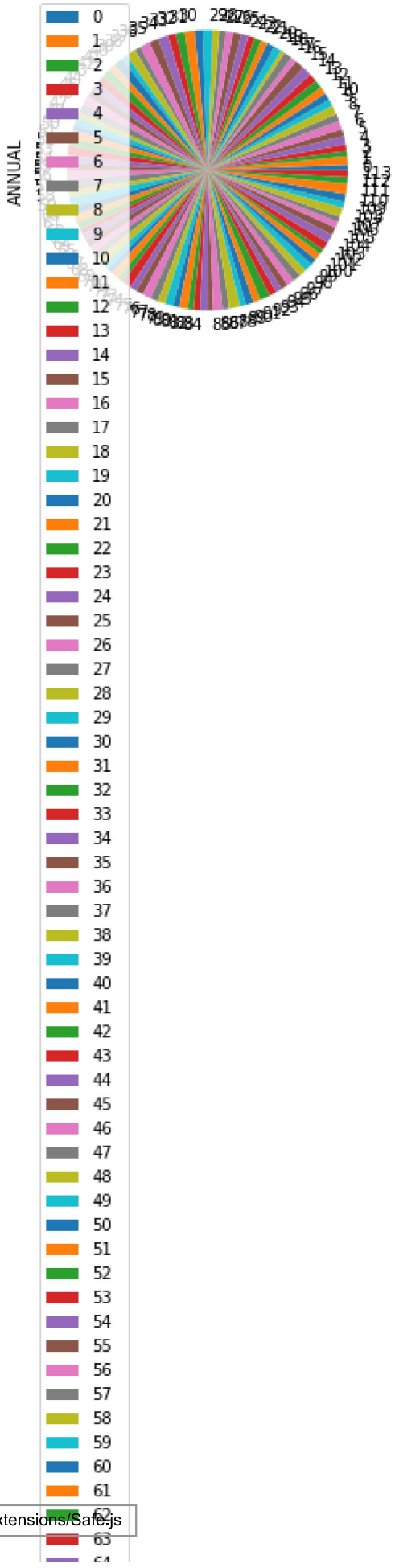
In [11]:
```
df.plot.box()
```

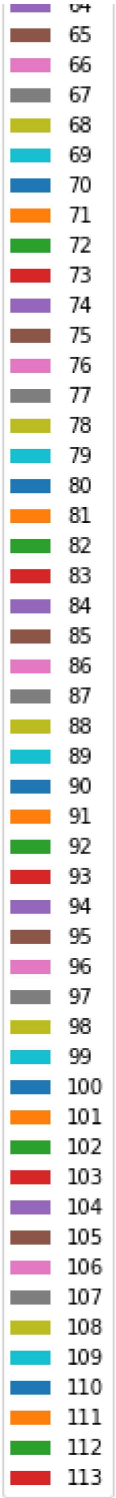
Out[11]: <AxesSubplot:>



In [12]:
```
df.plot.pie(y='ANNUAL')
```

Out[12]:
```
<AxesSubplot:ylabel='ANNUAL'>
```





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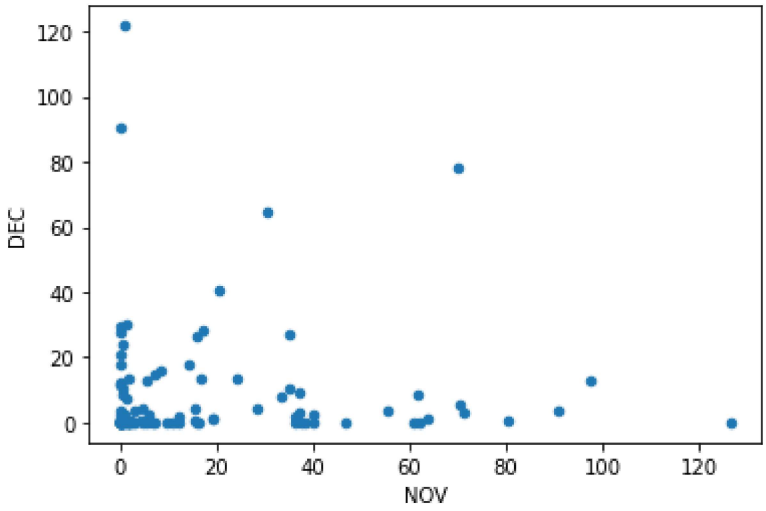
In [13]:
```
df.plot.scatter(x='NOV',y='DEC')
```

Out[13]: <AxesSubplot:xlabel='NOV', ylabel='DEC'>



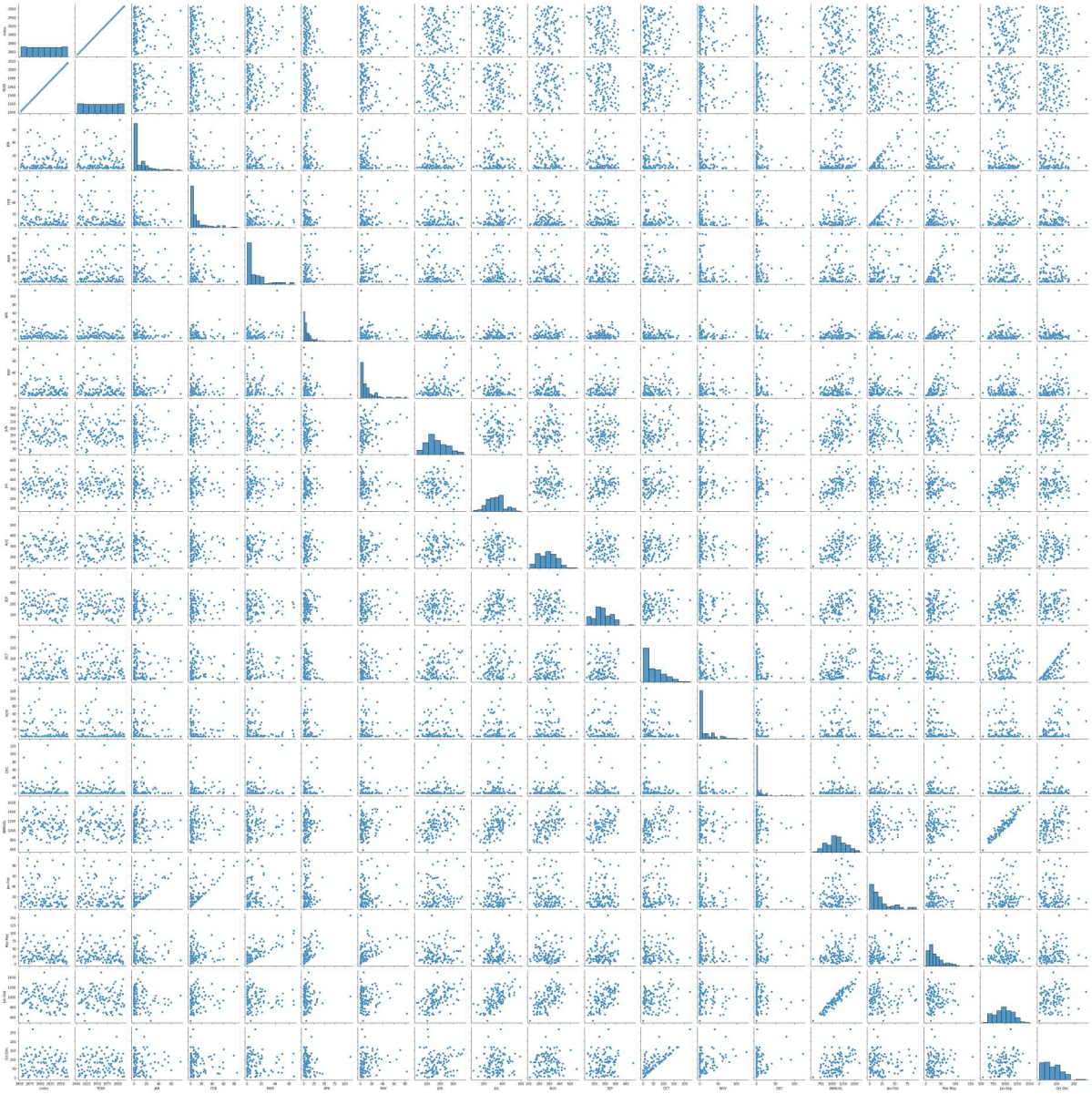
In [14]:
```
df.describe()
```

Out[14]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	11
mean	2909.500000	1958.500000	10.333333	11.737719	11.705263	9.289474	11.588596	17
std	33.052988	33.052988	14.968567	17.163717	15.504729	13.141748	14.663342	7
min	2853.000000	1902.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2
25%	2881.250000	1930.250000	0.350000	1.100000	0.925000	2.625000	2.225000	11
50%	2909.500000	1958.500000	3.750000	4.750000	4.850000	5.600000	6.150000	15
75%	2937.750000	1986.750000	14.575000	14.000000	15.725000	11.800000	14.950000	23
max	2966.000000	2015.000000	74.900000	84.900000	66.300000	112.700000	83.100000	37

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

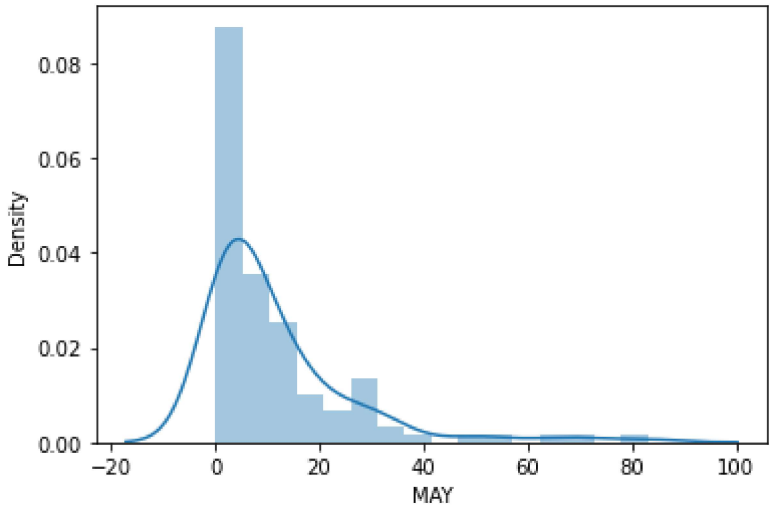
Out[15]:
```
<seaborn.axisgrid.PairGrid at 0x203063bcfa0>
```



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

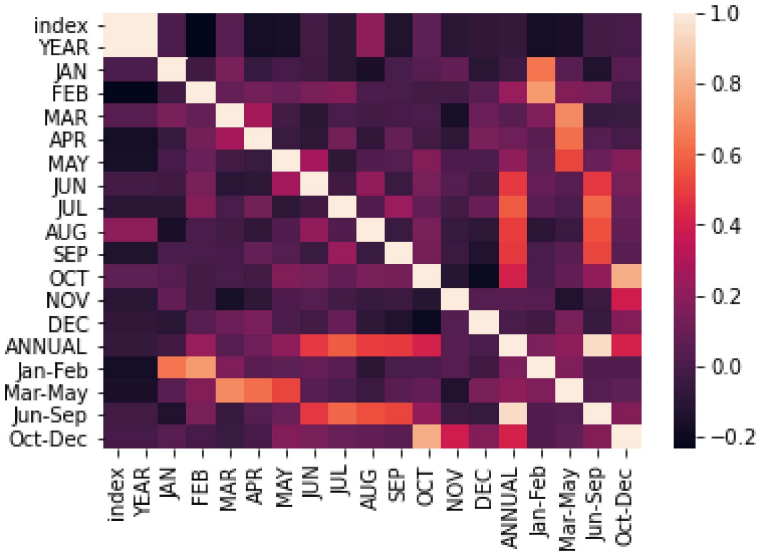
```
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: Fut
ureWarning: `distplot` is a deprecated function and will be removed in a futu
re version. Please adapt your code to use either `displot` (a figure-level fu
nction with similar flexibility) or `histplot` (an axes-level function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

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



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

Out[17]: <AxesSubplot:>



In [ ]: