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

```python
In [2]: data=pd.read_csv(r"C:\Users\user\Desktop\vicky\rainfall\rainfall in india 1901-2015.csv")[2394:250
```

```python
In [3]: data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 2394 to 2507
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: 17.9+ KB
```

```python
In [4]: data.head()
```

Out[4]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	J
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	0.0	0.0	522.8	
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	1.7	0.0	185.6	
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	0.0	0.0	290.0	
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	0.0	0.6	540.3	2
2398	2398	SAURASHTRA & KUTCH	1907	0.0	19.7	0.0	2.3	0.4	69.0	201.1	213.7	3.3	0.0	0.0	0.0	509.6	1

```python
In [5]: data.shape
```

Out[5]: (114, 20)

In [6]:
```python
new_data=data.fillna(value=1)
new_data
```

Out[6]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
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	0.0	0.0	522.8
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	1.7	0.0	185.6
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	0.0	0.0	290.0
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	0.0	0.6	540.3
2398	2398	SAURASHTRA & KUTCH	1907	0.0	19.7	0.0	2.3	0.4	69.0	201.1	213.7	3.3	0.0	0.0	0.0	509.6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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	0.0	1.0	323.8
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	0.0	0.0	681.8
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	2.7	0.0	383.9
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	0.3	0.0	441.7
2507	2507	KONKAN & GOA	1901	5.6	0.1	0.4	35.7	19.9	746.1	1075.5	748.0	117.4	38.6	5.4	0.1	2792.9

114 rows × 20 columns

In [7]:
```python
new_data.index
```

Out[7]: RangeIndex(start=2394, stop=2508, step=1)

In [8]:
```python
new_data.columns
```

Out[8]:
```
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 [9]: `new_data.plot.line()`

Out[9]: `<AxesSubplot:>`

In [10]: `new_data.plot.bar()`

Out[10]: `<AxesSubplot:>`

In [11]: `new_data.plot.area()`

Out[11]: `<AxesSubplot:>`

In [12]: `new_data.plot.hist()`

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

In [13]: `new_data.plot.pie(y='ANNUAL')`

Out[13]: `<AxesSubplot:ylabel='ANNUAL'>`

```
In [14]: new_data.plot.scatter(x='YEAR',y='ANNUAL')
```

Out[14]: <AxesSubplot:xlabel='YEAR', ylabel='ANNUAL'>

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

Out[15]: `<seaborn.axisgrid.PairGrid at 0x2cd13b8a2b0>`

In [16]: `sns.distplot(data['YEAR'])`

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

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

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

Out[17]: `<AxesSubplot:>`