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

In [2]:
```
data=pd.read_csv(r"C:\Users\user\Desktop\vicky\rainfall\GANGETIC WEST BENGAL.cs
```

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

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 0 to 114
Data columns (total 20 columns):
 #   Column       Non-Null Count  Dtype  
---  ------       --------------  -----  
 0   index        115 non-null    int64  
 1   SUBDIVISION  115 non-null    object 
 2   YEAR         115 non-null    int64  
 3   JAN          115 non-null    float64
 4   FEB          115 non-null    float64
 5   MAR          115 non-null    float64
 6   APR          115 non-null    float64
 7   MAY          115 non-null    float64
 8   JUN          115 non-null    float64
 9   JUL          115 non-null    float64
 10  AUG          115 non-null    float64
 11  SEP          115 non-null    float64
 12  OCT          115 non-null    float64
 13  NOV          115 non-null    float64
 14  DEC          115 non-null    float64
 15  ANNUAL       115 non-null    float64
 16  Jan-Feb      115 non-null    float64
 17  Mar-May      115 non-null    float64
 18  Jun-Sep      115 non-null    float64
 19  Oct-Dec      115 non-null    float64
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

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

Out[4]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	552	GANGETIC WEST BENGAL	1901	37.1	58.4	3.9	64.1	121.7	198.0	280.8	275.7	313.5	51.1
1	553	GANGETIC WEST BENGAL	1902	0.0	1.2	44.2	103.8	161.6	140.9	347.8	264.8	230.5	32.5
2	554	GANGETIC WEST BENGAL	1903	17.5	24.6	37.3	30.6	78.5	201.7	179.6	277.6	300.7	198.0
3	555	GANGETIC WEST BENGAL	1904	0.1	23.9	35.6	17.5	160.2	286.7	435.3	241.7	142.8	35.1
4	556	GANGETIC WEST BENGAL	1905	30.9	49.6	84.7	84.9	156.8	70.9	525.5	263.6	287.6	107.3

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

Out[5]: (115, 20)

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

Out[6]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
0	552	GANGETIC WEST BENGAL	1901	37.1	58.4	3.9	64.1	121.7	198.0	280.8	275.7	313.5	51.
1	553	GANGETIC WEST BENGAL	1902	0.0	1.2	44.2	103.8	161.6	140.9	347.8	264.8	230.5	32.
2	554	GANGETIC WEST BENGAL	1903	17.5	24.6	37.3	30.6	78.5	201.7	179.6	277.6	300.7	198.
3	555	GANGETIC WEST BENGAL	1904	0.1	23.9	35.6	17.5	160.2	286.7	435.3	241.7	142.8	35.
4	556	GANGETIC WEST BENGAL	1905	30.9	49.6	84.7	84.9	156.8	70.9	525.5	263.6	287.6	107.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	.
110	662	GANGETIC WEST BENGAL	2011	2.5	2.7	40.5	75.0	132.6	434.5	219.9	443.2	295.9	36.
111	663	GANGETIC WEST BENGAL	2012	40.7	15.3	4.4	57.7	44.2	146.6	315.0	261.4	246.9	64.
112	664	GANGETIC WEST BENGAL	2013	2.5	10.0	4.8	45.6	195.9	233.4	263.2	401.4	254.0	353.
113	665	GANGETIC WEST BENGAL	2014	0.9	42.2	19.9	1.9	124.4	193.6	298.7	292.6	229.5	56.
114	666	GANGETIC WEST BENGAL	2015	12.9	5.5	19.3	88.7	57.6	247.2	633.1	260.6	164.0	32.

115 rows × 20 columns

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

Out[7]:
```
RangeIndex(start=0, stop=115, step=1)
```

In [8]:
```
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 0x2a0e7a24520>
```

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

```
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='YEAR', ylabel='Density'>
```

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

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