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\SUB HIMALAYAN.csv")
```

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	437	SUB HIMALAYAN WEST BENGAL & SIKKIM	1901	26.5	14.8	14.1	29.2	195.5	488.4	524.8	501.1	242.7	55.5
1	438	SUB HIMALAYAN WEST BENGAL & SIKKIM	1902	1.2	0.7	87.1	126.1	271.3	539.2	671.0	603.8	799.9	74.4
2	439	SUB HIMALAYAN WEST BENGAL & SIKKIM	1903	5.5	8.7	19.6	18.6	163.6	541.2	431.5	708.8	365.2	141.3
3	440	SUB HIMALAYAN WEST BENGAL & SIKKIM	1904	3.4	29.2	0.9	124.3	333.6	274.2	500.4	468.5	260.6	164.8
4	441	SUB HIMALAYAN WEST BENGAL & SIKKIM	1905	12.0	31.2	51.9	104.4	290.6	524.8	523.1	1036.6	321.1	87.9

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	437	SUB HIMALAYAN WEST BENGAL & SIKKIM	1901	26.5	14.8	14.1	29.2	195.5	488.4	524.8	501.1	242.7	5
1	438	SUB HIMALAYAN WEST BENGAL & SIKKIM	1902	1.2	0.7	87.1	126.1	271.3	539.2	671.0	603.8	799.9	7
2	439	SUB HIMALAYAN WEST BENGAL & SIKKIM	1903	5.5	8.7	19.6	18.6	163.6	541.2	431.5	708.8	365.2	14
3	440	SUB HIMALAYAN WEST BENGAL & SIKKIM	1904	3.4	29.2	0.9	124.3	333.6	274.2	500.4	468.5	260.6	16
4	441	SUB HIMALAYAN WEST BENGAL & SIKKIM	1905	12.0	31.2	51.9	104.4	290.6	524.8	523.1	1036.6	321.1	8
...	...	...	...	...	...	...	...	...	...	...	...	...	...
110	547	SUB HIMALAYAN WEST BENGAL & SIKKIM	2011	8.5	19.9	71.2	135.0	247.8	419.8	612.3	470.3	356.3	4
111	548	SUB HIMALAYAN WEST BENGAL & SIKKIM	2012	15.3	13.9	45.5	159.8	202.4	604.2	684.5	332.7	434.7	11
112	549	SUB HIMALAYAN WEST BENGAL & SIKKIM	2013	3.0	23.6	32.1	114.7	296.5	404.9	588.4	416.3	308.0	19
113	550	SUB HIMALAYAN WEST BENGAL & SIKKIM	2014	0.2	26.6	37.7	47.9	308.6	543.2	384.6	563.3	371.5	3
114	551	SUB HIMALAYAN WEST BENGAL & SIKKIM	2015	15.7	15.0	64.8	149.0	304.6	508.2	393.3	626.6	354.9	5

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 0x113c233dd60>
```

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:>
```