

## Importing Libraries

```
In [282]: import numpy as np  
import pandas as pd  
import matplotlib.pyplot as plt  
import seaborn as sns
```

## Importing Datasets

```
In [300]: df = pd.read_csv(r"C:\Users\user\Downloads\New folder\NORTH INTERIOR KARNATAKA.
df
```

Out[300]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	3658	NORTH INTERIOR KARNATAKA	1902	0.0	0.0	0.3	22.5	34.4	111.3	83.2	78.1	146.7	118.8
1	3659	NORTH INTERIOR KARNATAKA	1903	3.5	0.0	0.1	6.9	53.4	102.8	209.4	146.4	189.3	166.4
2	3660	NORTH INTERIOR KARNATAKA	1904	0.2	0.3	8.5	11.0	46.3	120.6	91.6	48.5	165.1	86.5
3	3661	NORTH INTERIOR KARNATAKA	1905	0.0	6.0	2.6	16.0	51.2	99.6	60.1	139.2	42.2	85.0
4	3662	NORTH INTERIOR KARNATAKA	1906	21.3	0.0	0.2	2.6	30.0	142.0	120.3	182.1	116.0	86.2
...	...	...	...	...	...	...	...	...	...	...	...	...	...
109	3767	NORTH INTERIOR KARNATAKA	2011	0.5	7.2	7.2	41.2	46.8	101.3	150.8	152.0	69.0	73.4
110	3768	NORTH INTERIOR KARNATAKA	2012	28.5	6.2	0.4	35.4	19.5	60.0	114.5	105.5	79.2	85.2
111	3769	NORTH INTERIOR KARNATAKA	2013	1.2	6.1	3.0	25.4	47.4	99.4	160.7	73.9	201.0	101.0
112	3770	NORTH INTERIOR KARNATAKA	2014	0.0	6.1	29.2	26.4	93.0	50.4	136.8	205.2	90.2	80.3
113	3771	NORTH INTERIOR KARNATAKA	2015	2.4	0.0	27.5	50.8	45.3	89.6	38.5	78.4	150.8	61.2

114 rows × 20 columns



## Data Cleaning and Data Preprocessing

```
In [301]: df=df.dropna()
```

```
In [302]: df.columns
```

```
Out[302]: 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')
```

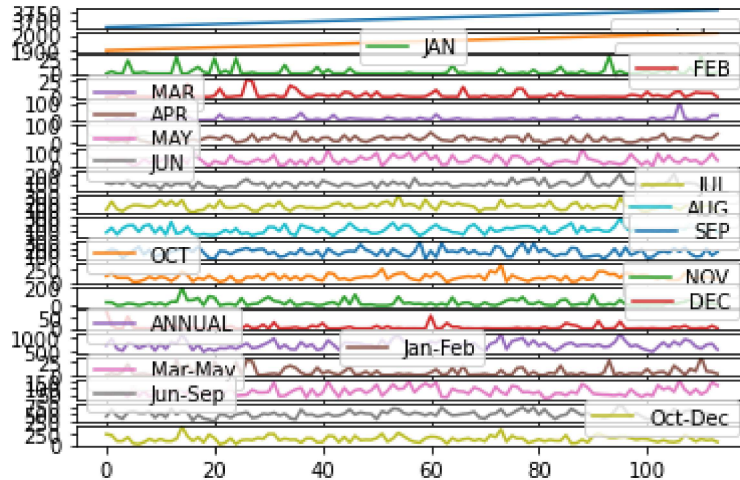
```
In [303]: df.info()
```

```
<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
```

## Line chart

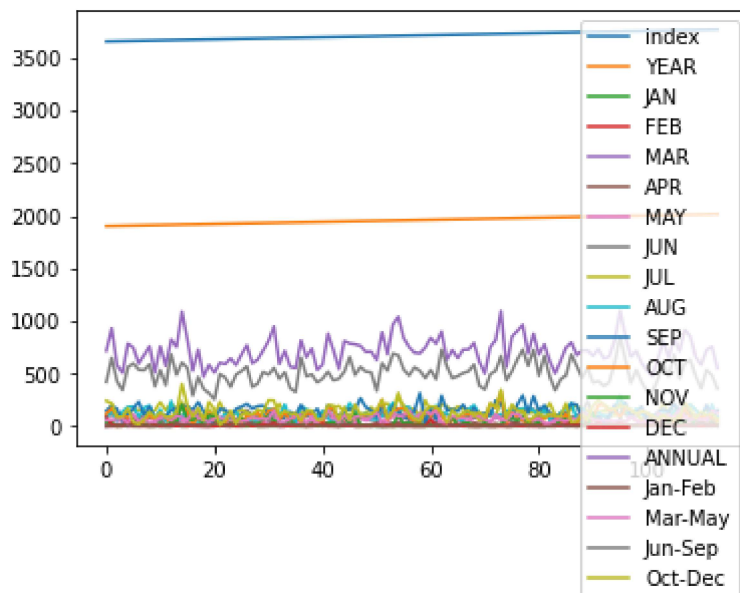
```
In [304]: df.plot.line(subplots=True)
```

```
Out[304]: array([<AxesSubplot:~>, <AxesSubplot:~>, <AxesSubplot:~>, <AxesSubplot:~>,
<AxesSubplot:~>, <AxesSubplot:~>, <AxesSubplot:~>, <AxesSubplot:~>,
<AxesSubplot:~>, <AxesSubplot:~>, <AxesSubplot:~>, <AxesSubplot:~>,
<AxesSubplot:~>, <AxesSubplot:~>, <AxesSubplot:~>], dtype=object)
```



```
In [305]: df.plot.line()
```

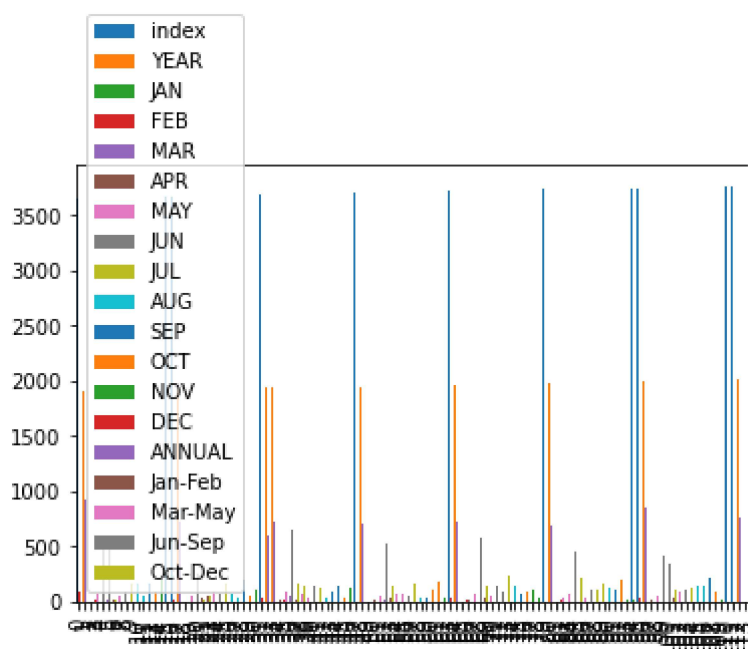
```
Out[305]: <AxesSubplot:~>
```



## Bar chart

In [306]: `df.plot.bar()`

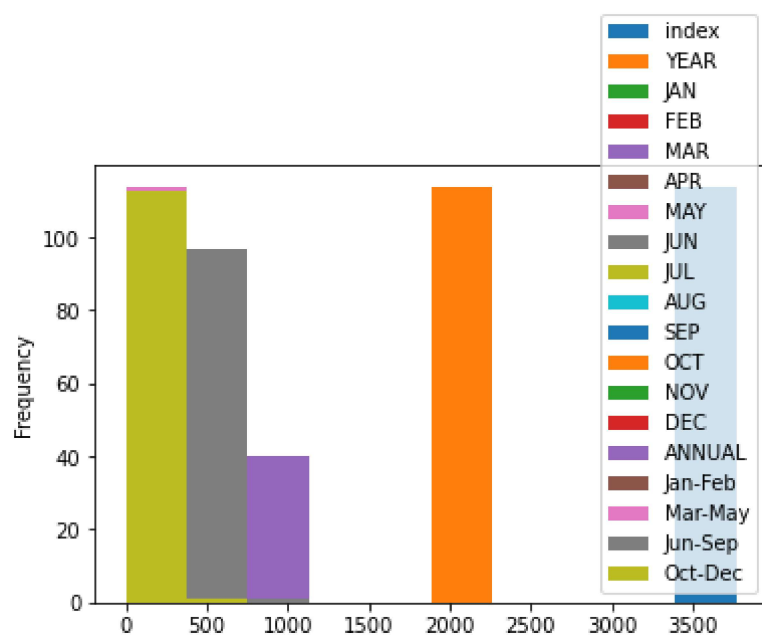
Out[306]: `<AxesSubplot:>`



## Histogram

In [307]: `df.plot.hist()`

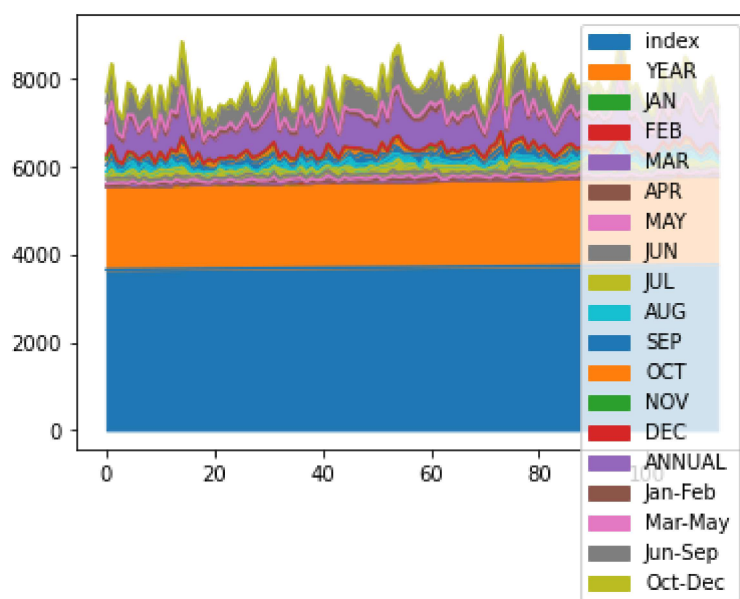
Out[307]: `<AxesSubplot:ylabel='Frequency'>`



## Area chart

```
In [308]: df.plot.area()
```

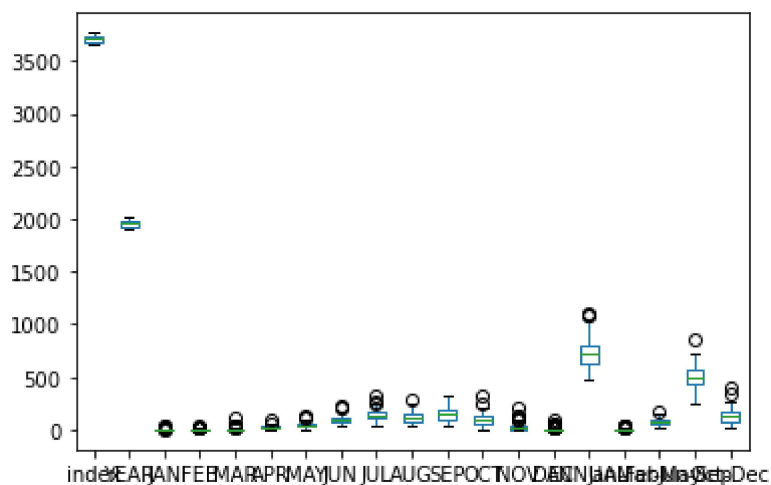
```
Out[308]: <AxesSubplot:>
```



## Box plot

```
In [309]: df.plot.box()
```

```
Out[309]: <AxesSubplot:>
```



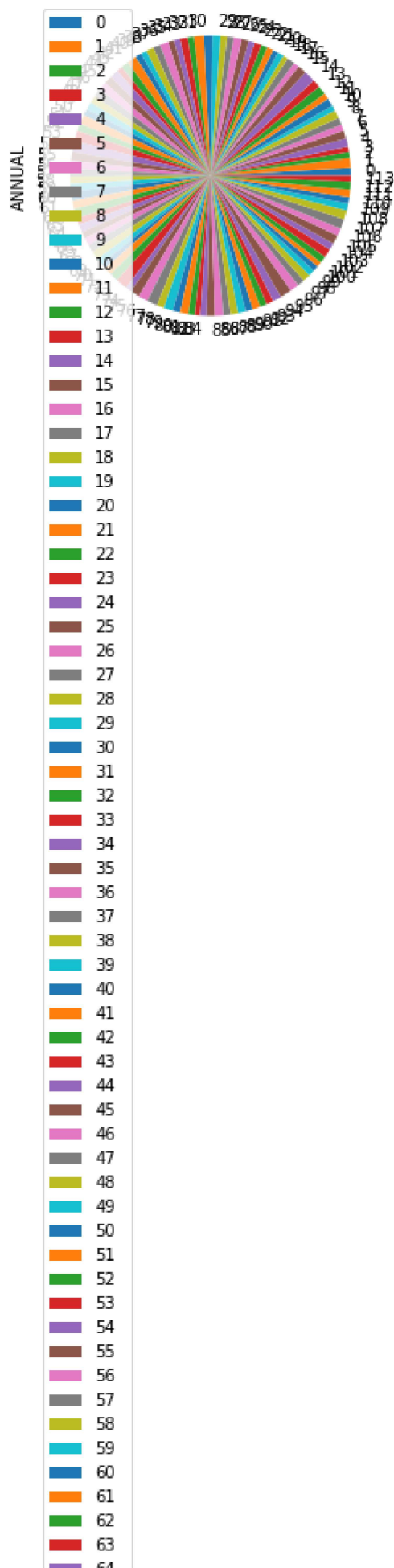
## pie chart

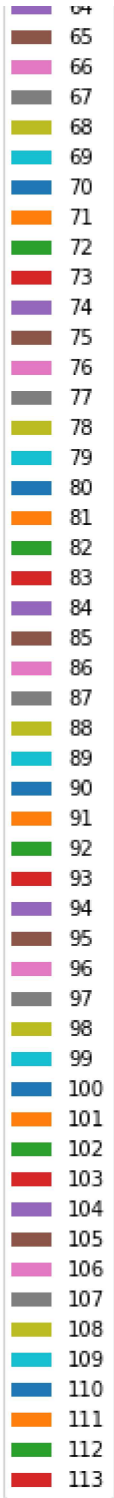
```
In [310]: df.plot.pie(y='ANNUAL')
```

```
Out[310]: <AxesSubplot:ylabel='ANNUAL'>
```





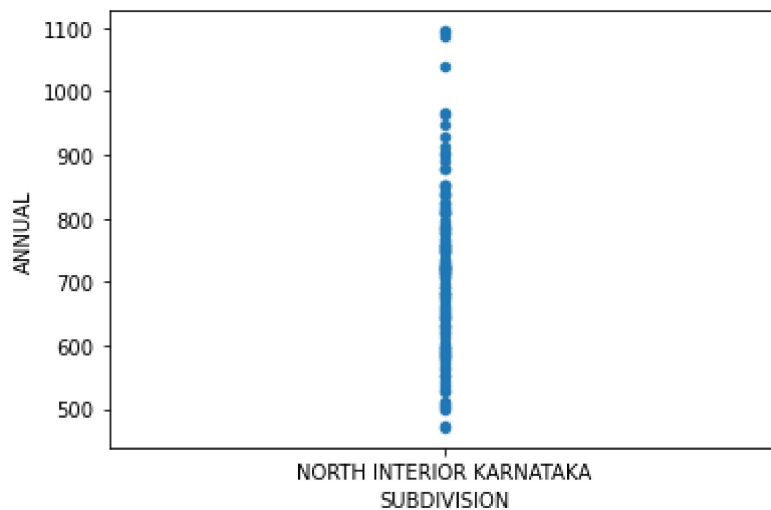




Scatter chart

```
In [311]: df.plot.scatter(x='SUBDIVISION',y='ANNUAL')
```

```
Out[311]: <AxesSubplot:xlabel='SUBDIVISION', ylabel='ANNUAL'>
```



```
In [*]: df.info()
```

## EDA AND VISUALIZATION

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

```
In [*]: sns.displot(df['YEAR'])
```

```
In [315]: sns.heatmap(df.corr())
```

```
Out[315]: <AxesSubplot:>
```

