

Importing Libraries

In [1]:

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

Importing Datasets

In [2]:

```
df=pd.read_csv("rainfall_haryana delhi _ chandigarh.csv")
df
```

Out[2]:

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	D
0	1357		HARYANA DELHI & CHANDIGARH	1901	35.4	28.9	11.1	0.0	5.1	13.2	126.4	151.5	10.5	2.0	0.0	
1	1358		HARYANA DELHI & CHANDIGARH	1902	0.0	0.7	2.9	10.2	15.8	74.6	149.3	97.1	59.8	9.3	0.0	
2	1359		HARYANA DELHI & CHANDIGARH	1903	14.7	0.5	2.3	0.5	8.5	8.6	151.6	138.2	97.7	4.0	0.0	
3	1360		HARYANA DELHI & CHANDIGARH	1904	7.6	0.7	48.0	0.5	29.3	34.3	109.7	162.9	102.3	1.5	10.4	2
4	1361		HARYANA DELHI & CHANDIGARH	1905	44.8	20.8	14.0	1.3	7.4	20.1	93.6	23.1	92.6	0.0	0.0	
...
110	1467		HARYANA DELHI & CHANDIGARH	2011	0.7	26.7	6.9	8.9	28.7	94.4	85.0	127.3	133.1	0.0	0.0	
111	1468		HARYANA DELHI & CHANDIGARH	2012	8.2	0.2	0.1	11.8	3.8	5.3	68.1	196.6	90.7	2.4	0.6	
112	1469		HARYANA DELHI & CHANDIGARH	2013	21.1	52.2	5.3	3.3	1.4	62.1	96.5	161.9	42.8	10.9	1.7	
113	1470		HARYANA DELHI & CHANDIGARH	2014	13.0	17.3	26.8	7.5	20.3	25.9	72.3	34.8	67.3	10.5	0.2	
114	1471		HARYANA DELHI & CHANDIGARH	2015	12.4	6.6	71.8	34.8	8.4	43.7	130.3	89.2	32.1	3.7	2.3	

115 rows × 20 columns

Data Cleaning and Data Preprocessing

```
In [3]: df=df.dropna()
```

```
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')
```

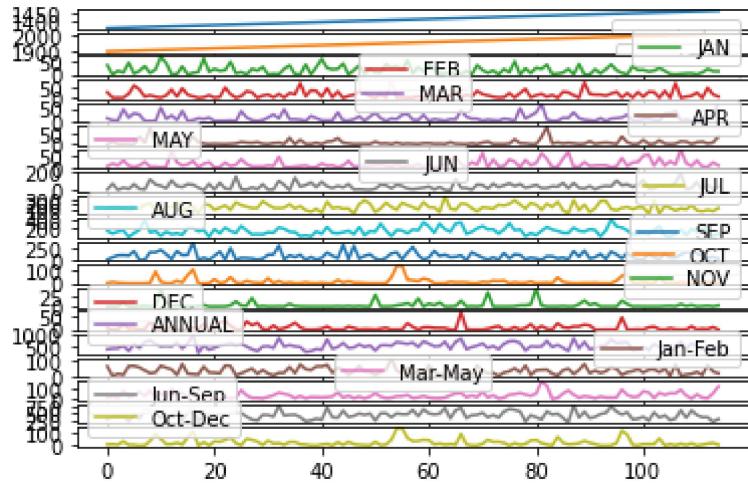
```
In [5]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 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: 18.9+ KB
```

Line chart

```
In [6]: df.plot.line(subplots=True)
```

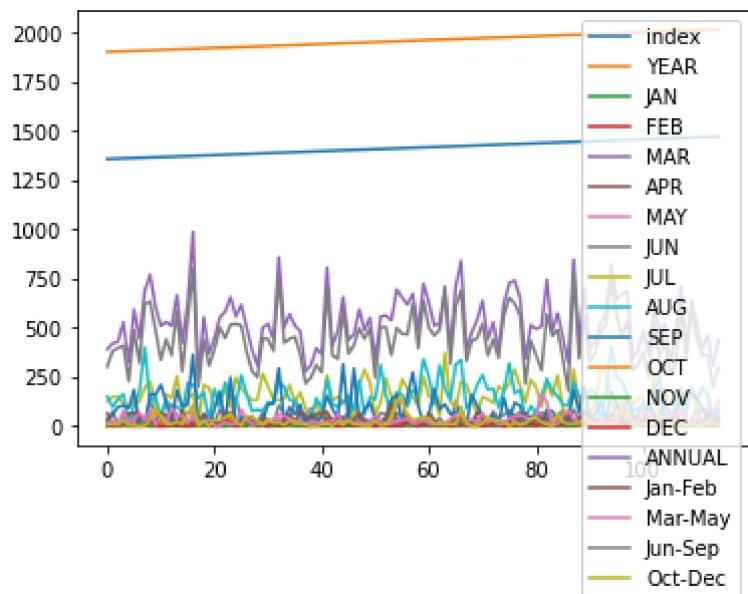
```
Out[6]: array([<AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
    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



Line chart

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

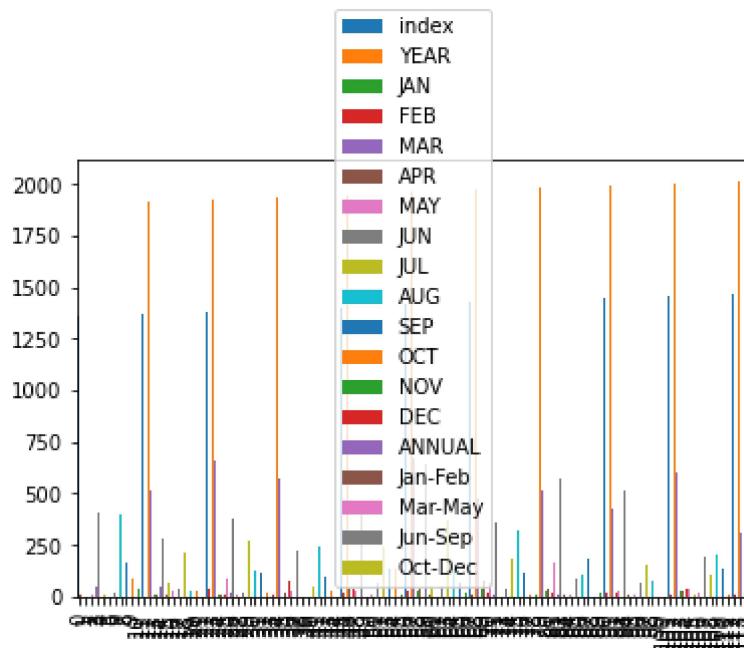
```
Out[7]: <AxesSubplot:>
```



Bar chart

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

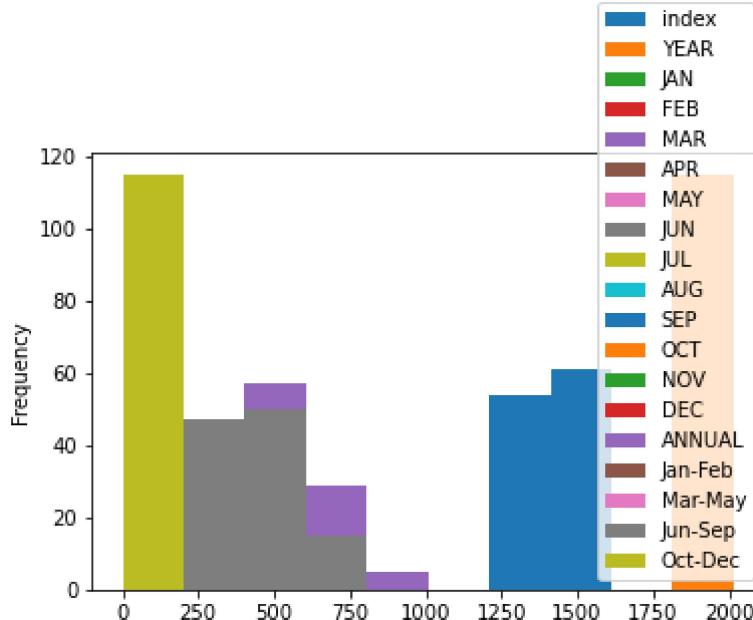
```
Out[8]: <AxesSubplot:>
```



Histogram

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

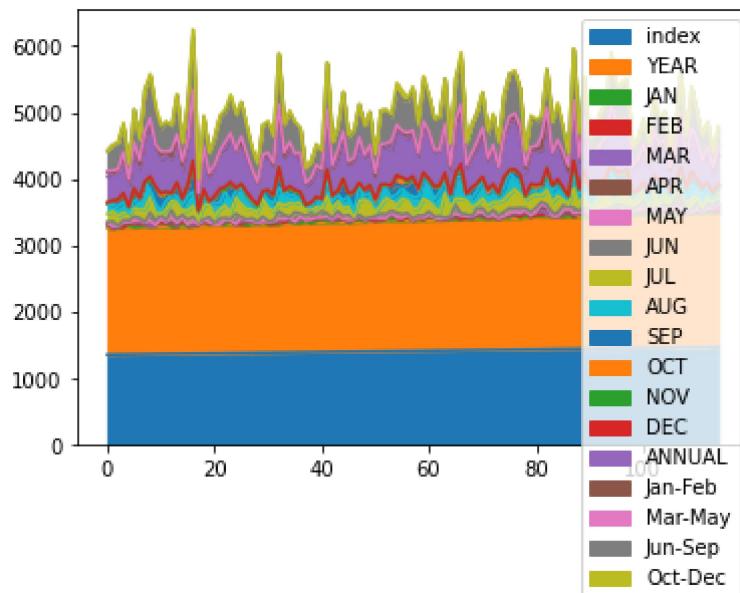
Out[9]: <AxesSubplot:ylabel='Frequency'>



Area chart

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

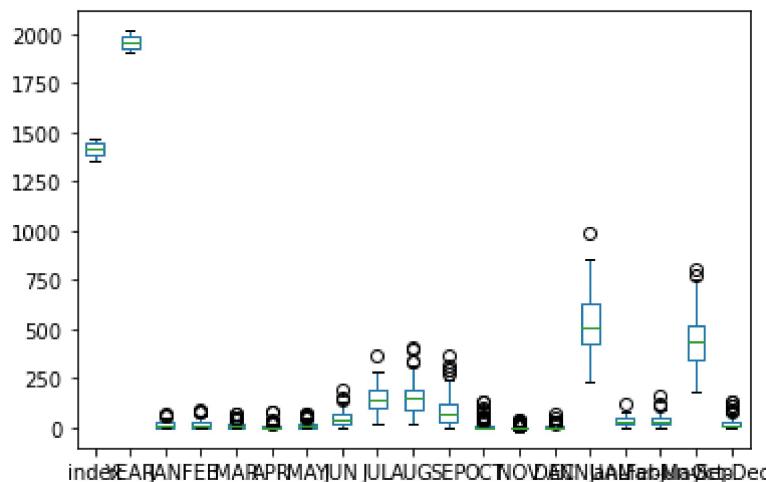
Out[10]: <AxesSubplot:>



Box chart

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

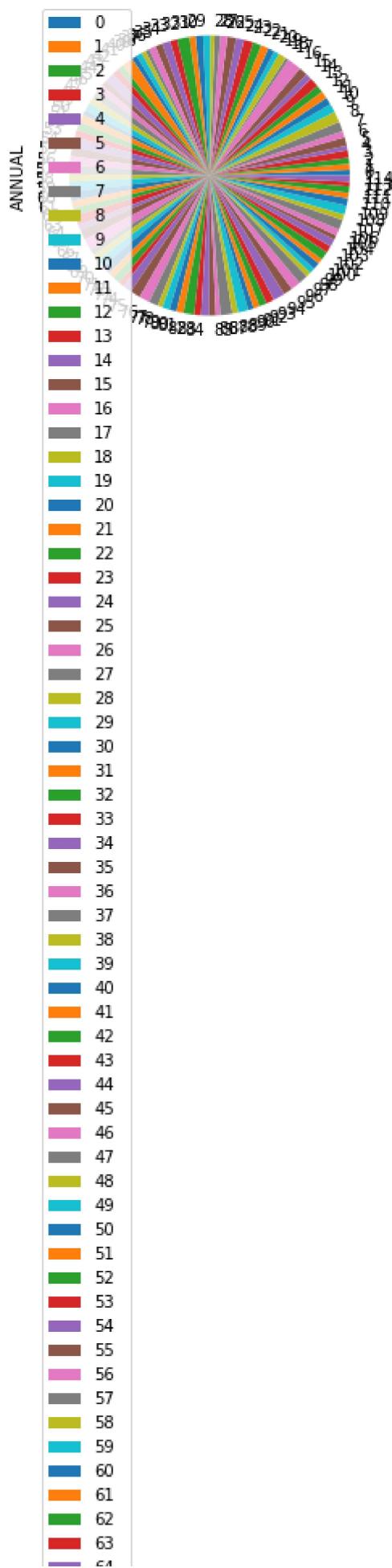
```
Out[11]: <AxesSubplot:>
```

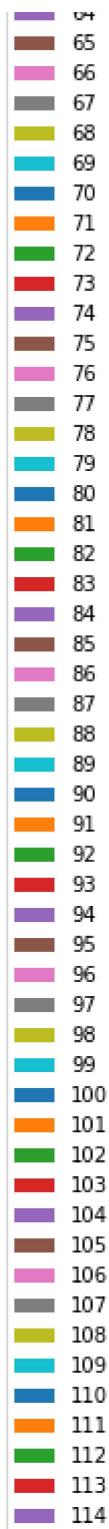


Pie chart

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

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

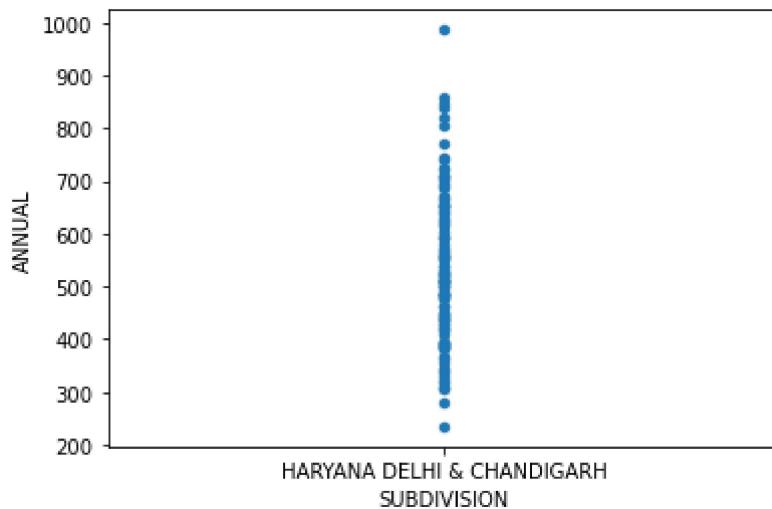




Scatter chart

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

Out[13]: <AxesSubplot:xlabel='SUBDIVISION', ylabel='ANNUAL'>

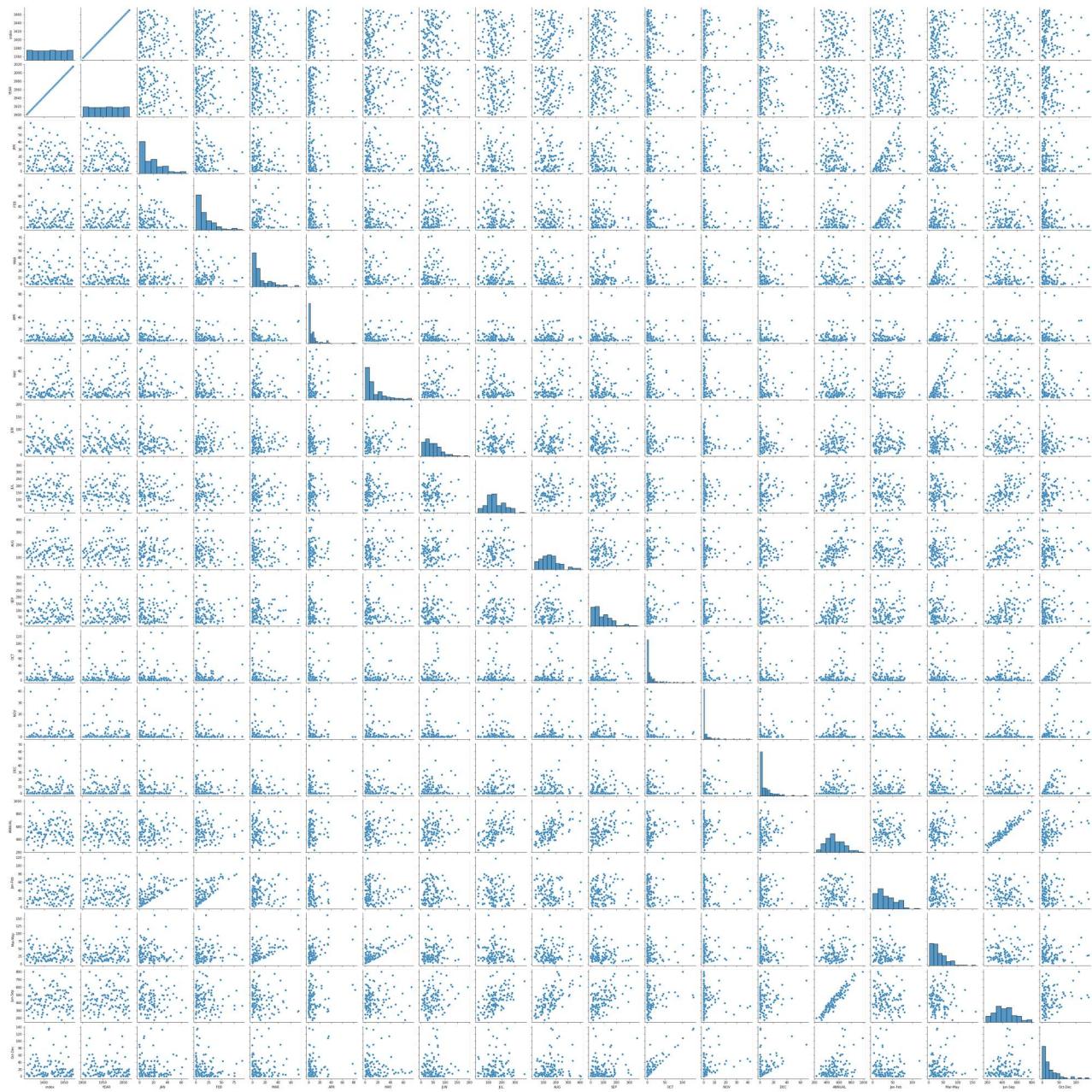


Seaborn

In [14]:

```
sns.pairplot(df)
```

Out[14]: <seaborn.axisgrid.PairGrid at 0x26d203a9700>

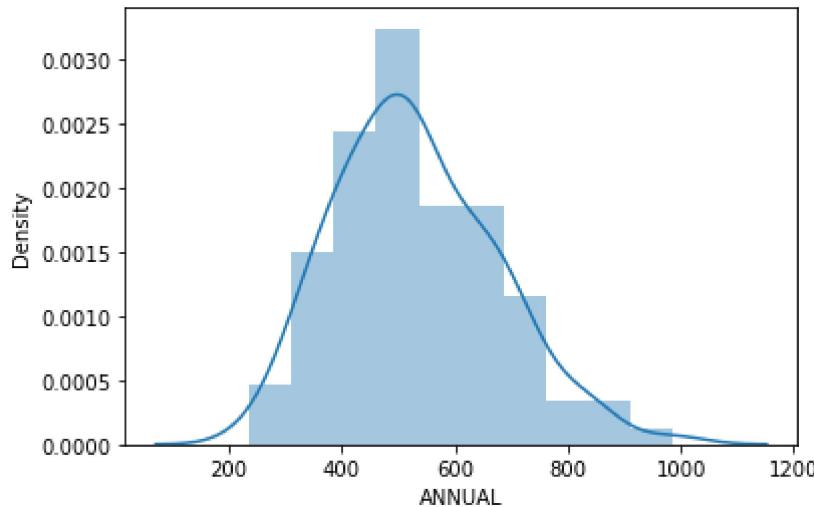


In [15]:
`sns.distplot(df['ANNUAL'])`

```
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning:
`distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
```

```
warnings.warn(msg, FutureWarning)
```

Out[15]: `<AxesSubplot:xlabel='ANNUAL', ylabel='Density'>`



```
In [16]: sns.heatmap(df.corr())
```

```
Out[16]: <AxesSubplot:
```

