

```
In [18]: import pandas as pd
import matplotlib.pyplot as plt
get_ipython().magic('matplotlib notebook')
plt.style.use('seaborn-colorblind')
```

```
In [19]: data = pd.read_csv("E:\\DATA ANALYST\\rainfall.csv")
data.head()
```

Out[19]:

	State	District	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	...	Sep	Oct	Nov	Dec	annual	Jan-Feb (Winter)	Mar-May (Summer)	Jun-Sep (Monsoon)	Oct-Dec (Fall)	Annuals
0	Andhra Pradesh	Srikakulam	1901	41.729	22.540	2.883	5.542	69.155	53.436	79.980	...	202.187	126.637	280.159	0.950	79.777833	64.269	77.580	407.739	407.746	957.334
1	Andhra Pradesh	Srikakulam	1902	6.231	0.025	1.230	10.122	46.258	96.080	130.709	...	161.785	100.428	8.530	28.396	66.568500	6.256	57.610	597.602	137.354	798.822
2	Andhra Pradesh	Srikakulam	1903	1.295	7.861	0.650	2.282	15.254	134.933	284.154	...	173.063	116.758	71.856	9.692	76.413083	9.156	18.186	691.309	198.306	916.957
3	Andhra Pradesh	Srikakulam	1904	0.383	0.461	2.378	0.858	106.056	97.314	127.274	...	186.265	159.421	0.683	12.428	76.569917	0.844	109.292	636.171	172.532	918.839
4	Andhra Pradesh	Srikakulam	1905	1.151	29.107	26.146	122.885	132.909	57.393	139.559	...	307.734	39.765	2.864	0.045	86.372167	30.258	281.940	681.594	42.674	1036.466

5 rows × 21 columns

```
In [20]: list(pd.read_csv("E:\\DATA ANALYST\\rainfall.csv").columns.values)
years = pd.read_csv("E:\\DATA ANALYST\\rainfall.csv", index_col='Year').transpose().columns.values
years
```

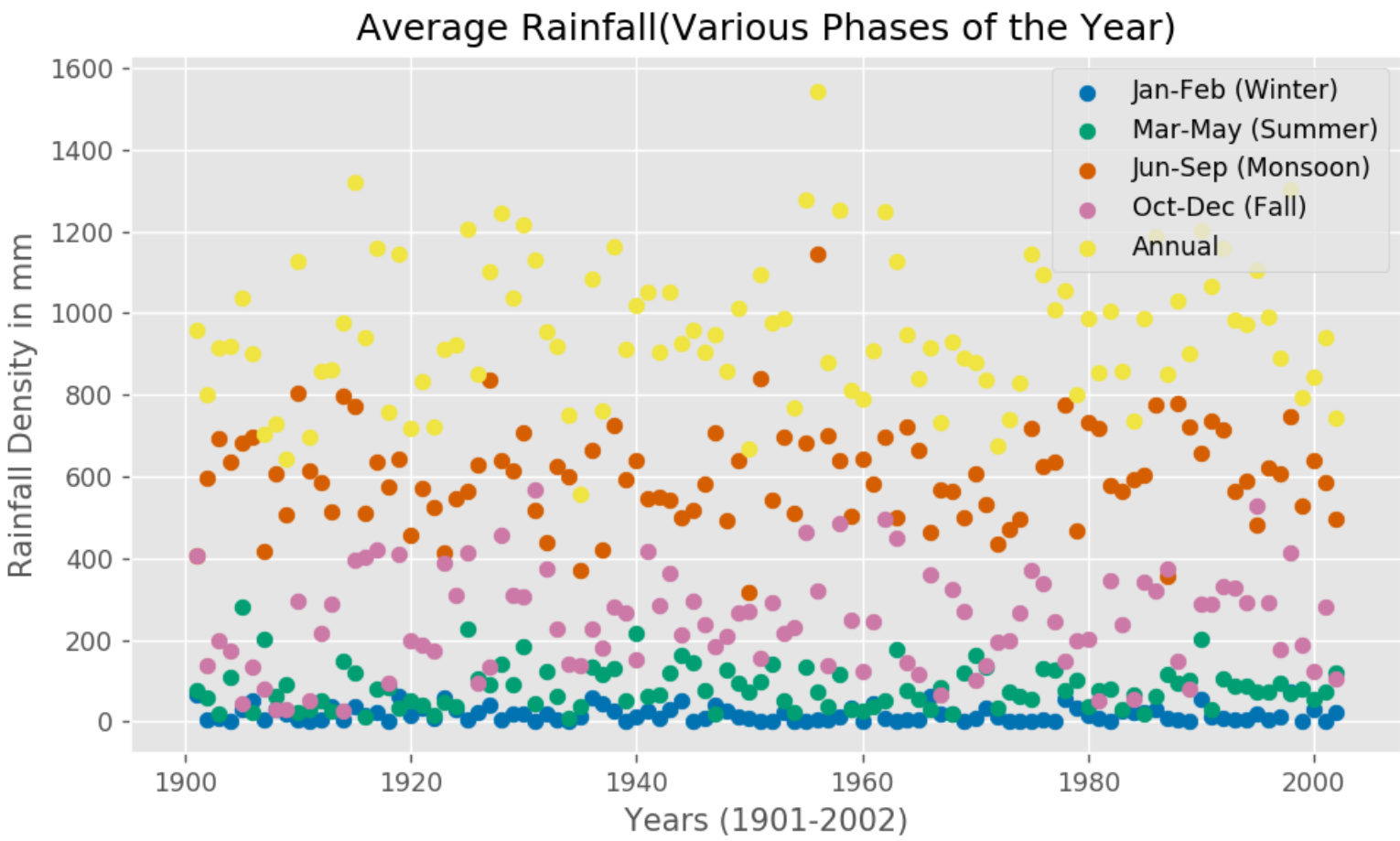
```
Out[20]: array([1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911,
      1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922,
      1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933,
      1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944,
      1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955,
      1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966,
      1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977,
      1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988,
      1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999,
      2000, 2001, 2002], dtype=int64)
```

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In [21]: january = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Jan').transpose().columns.values
february = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Feb').transpose().columns.values
march = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Mar').transpose().columns.values
apr = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Apr').transpose().columns.values
may = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'May').transpose().columns.values
june = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Jun').transpose().columns.values
july = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Jul').transpose().columns.values
august = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Aug').transpose().columns.values
september = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Sep').transpose().columns.values
october = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Oct').transpose().columns.values
november = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Nov').transpose().columns.values
december = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Dec').transpose().columns.values
```

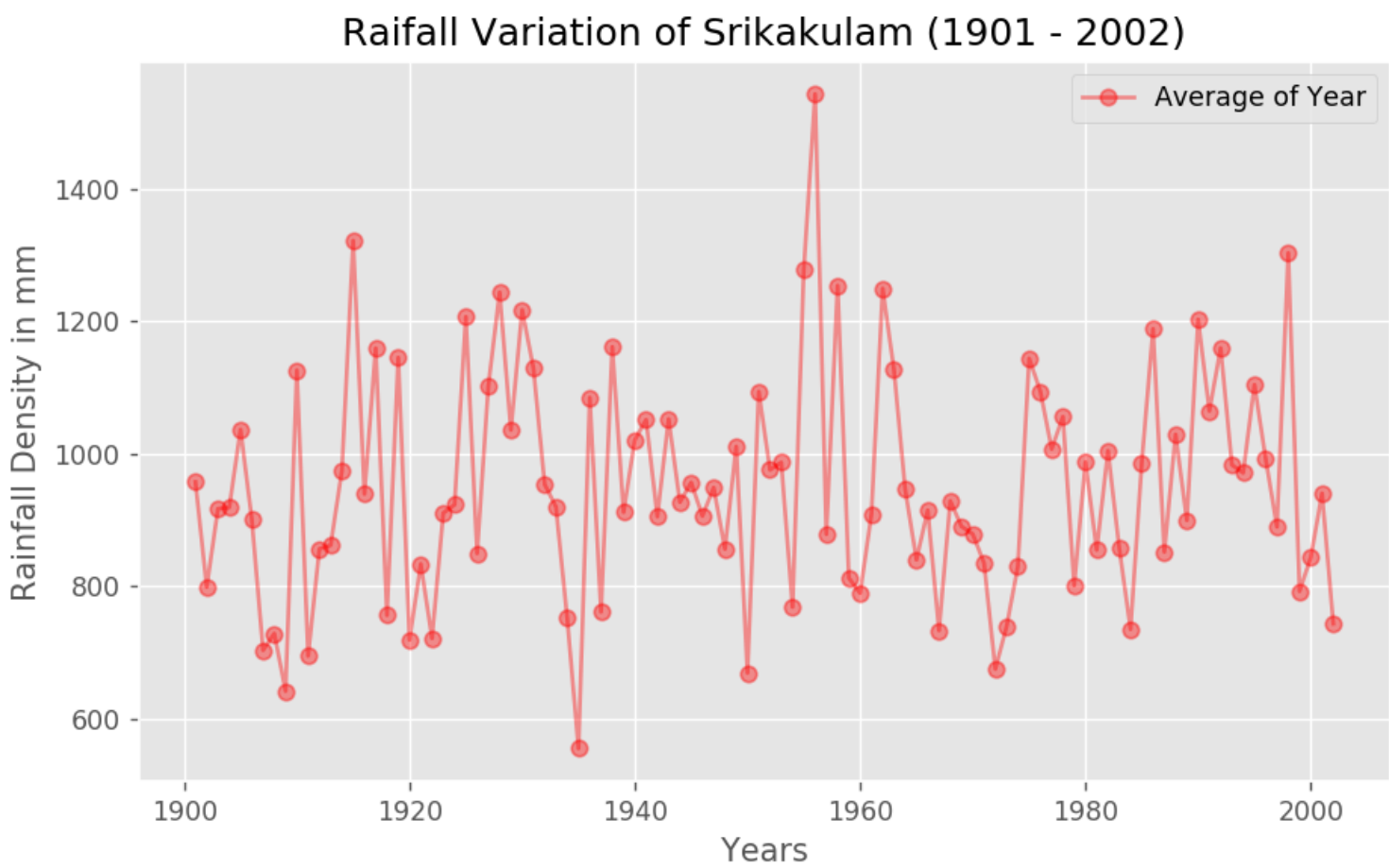
```
In [22]: annual = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Annuals').transpose().columns.values
```

```
In [23]: janfeb = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Jan-Feb (Winter)').transpose().columns.values
marmay = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Mar-May (Summer)').transpose().columns.values
junsep = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Jun-Sep (Monsoon)').transpose().columns.values
octdec = pd.read_csv('E:\\DATA ANALYST\\rainfall.csv', index_col = 'Oct-Dec (Fall)').transpose().columns.values
```

```
In [33]: import numpy as np
import matplotlib
import matplotlib.pyplot as plt
cmap = matplotlib.cm.viridis
plt.figure()
plt.scatter(years, janfeb, cmap=cmap)
plt.scatter(years, marmay, cmap=cmap)
plt.scatter(years, junsep, cmap=cmap)
plt.scatter(years, octdec, cmap=cmap)
plt.scatter(years, annual, cmap=cmap)
plt.xlabel('Years (1901-2002)')
plt.ylabel('Rainfall Density in mm')
plt.title('Average Rainfall(Various Phases of the Year)')
plt.legend(['Jan-Feb (Winter)', 'Mar-May (Summer)', 'Jun-Sep (Monsoon)', 'Oct-Dec (Fall)', 'Annual'])
plt.show()
```



```
In [34]: import numpy as np
import matplotlib
import matplotlib.pyplot as plt
plt.style.use('ggplot')
plt.figure()
plt.plot(years,annual, '-o', c = 'red', alpha=0.4)
plt.xlabel('Years')
plt.ylabel('Rainfall Density in mm')
plt.title('Raifall Variation of Srikakulam (1901 - 2002)')
plt.legend(['Average of Year'])
```



Out[34]: <matplotlib.legend.Legend at 0x15ac67f3308>

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In [ ]:
```