

```
In [2]: import pandas as pd
```

```
In [3]: data=pd.read_csv("/home/placement/Desktop/divyasri/rainfall in india 1901-2015.csv")
```

```
In [4]: data.describe()#description of data in dataframe
```

```
Out[4]:
```

	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
count	4116.000000	4112.000000	4113.000000	4110.000000	4112.000000	4113.000000	4111.000000	4109.000000	4112.000000	4110.000000	4109.0
mean	1958.218659	18.957320	21.805325	27.359197	43.127432	85.745417	230.234444	347.214334	290.263497	197.361922	95.1
std	33.140898	33.585371	35.909488	46.959424	67.831168	123.234904	234.710758	269.539667	188.770477	135.408345	99.1
min	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.400000	0.000000	0.000000	0.100000	0.0
25%	1930.000000	0.600000	0.600000	1.000000	3.000000	8.600000	70.350000	175.600000	155.975000	100.525000	14.0
50%	1958.000000	6.000000	6.700000	7.800000	15.700000	36.600000	138.700000	284.800000	259.400000	173.900000	65.1
75%	1987.000000	22.200000	26.800000	31.300000	49.950000	97.200000	305.150000	418.400000	377.800000	265.800000	148.4
max	2015.000000	583.700000	403.500000	605.600000	595.100000	1168.600000	1609.900000	2362.800000	1664.600000	1222.000000	948.1

```
In [5]: data.info()#information about dataframe
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 4116 entries, 0 to 4115
Data columns (total 19 columns):
#   Column                Non-Null Count  Dtype
---  -
0   SUBDIVISION           4116 non-null   object
1   YEAR                  4116 non-null   int64
2   JAN                   4112 non-null   float64
3   FEB                   4113 non-null   float64
4   MAR                   4110 non-null   float64
5   APR                   4112 non-null   float64
6   MAY                   4113 non-null   float64
7   JUN                   4111 non-null   float64
8   JUL                   4109 non-null   float64
9   AUG                   4112 non-null   float64
10  SEP                   4110 non-null   float64
11  OCT                   4109 non-null   float64
12  NOV                   4105 non-null   float64
13  DEC                   4106 non-null   float64
14  ANNUAL                4090 non-null   float64
15  Jan-Feb              4110 non-null   float64
16  Mar-May              4107 non-null   float64
17  Jun-Sep              4106 non-null   float64
18  Oct-Dec              4103 non-null   float64
dtypes: float64(17), int64(1), object(1)
memory usage: 611.1+ KB
```

```
In [6]: data.groupby(['SUBDIVISION']).count()#split the data into groups
```

```
Out[6]:
```

	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
SUBDIVISION																		
ANDAMAN & NICOBAR ISLANDS	110	110	110	108	108	109	108	108	108	107	108	108	107	104	110	107	107	107
ARUNACHAL PRADESH	97	96	96	95	97	97	96	96	97	97	95	95	95	91	96	95	95	94
ASSAM & MEGHALAYA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
BIHAR	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
CHHATTISGARH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
COASTAL ANDHRA PRADESH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
COASTAL KARNATAKA	115	114	115	115	115	115	115	115	115	115	115	115	115	114	114	115	115	115
EAST MADHYA PRADESH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
EAST RAJASTHAN	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
EAST UTTAR PRADESH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
GANGETIC WEST BENGAL	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
GUJARAT REGION	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
HARYANA DELHI & CHANDIGARH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
HIMACHAL PRADESH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
JAMMU & KASHMIR	115	115	115	115	115	115	115	114	115	115	115	114	114	114	115	115	114	114
JHARKHAND	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
KERALA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
KONKAN & GOA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
LAKSHADWEEP	114	112	113	112	112	112	112	111	112	111	111	108	110	103	111	110	110	108
MADHYA MAHARASHTRA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
MATATHWADA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
NAGA MANI MIZO TRIPURA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115

	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
SUBDIVISION																		
NORTH INTERIOR KARNATAKA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
ORISSA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
PUNJAB	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
RAYALSEEMA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
SAURASHTRA & KUTCH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
SOUTH INTERIOR KARNATAKA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
SUB HIMALAYAN WEST BENGAL & SIKKIM	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
TAMIL NADU	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
TELANGANA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
UTTARAKHAND	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
VIDARBHA	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
WEST MADHYA PRADESH	115	115	114	115	115	115	115	115	115	115	115	115	115	115	114	114	115	115
WEST RAJASTHAN	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
WEST UTTAR PRADESH	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115

```
In [7]: data.isna().sum()#for checking statement for null
```

```
Out[7]: SUBDIVISION      0  
        YEAR            0  
        JAN             4  
        FEB             3  
        MAR             6  
        APR             4  
        MAY             3  
        JUN             5  
        JUL             7  
        AUG             4  
        SEP             6  
        OCT             7  
        NOV            11  
        DEC            10  
        ANNUAL          26  
        Jan-Feb         6  
        Mar-May         9  
        Jun-Sep         10  
        Oct-Dec         13  
        dtype: int64
```

```
In [9]: data1=data.loc[(data.YEAR<=2010)]#location of data
```

In [10]: data1

Out[10]:

	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	
0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	388.5	558.2	33.6	3373.2	136.3	560.3	1696.3	9
1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	197.2	359.0	160.5	3520.7	159.8	458.3	2185.9	7
2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	181.2	284.4	225.0	2957.4	156.7	236.1	1874.0	6
3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	222.2	308.7	40.1	3079.6	24.1	506.9	1977.6	5
4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	260.7	25.4	344.7	2566.7	1.3	309.7	1624.9	6
...
4106	LAKSHADWEEP	2006	20.1	0.0	33.0	0.3	327.9	286.9	172.3	150.7	318.5	119.1	158.9	10.9	1598.6	20.1	361.2	928.4	2
4107	LAKSHADWEEP	2007	2.5	4.2	0.2	22.2	166.2	573.4	427.4	294.7	457.5	256.1	47.6	109.6	2361.6	6.7	188.6	1753.0	4
4108	LAKSHADWEEP	2008	5.5	19.8	120.7	15.8	180.4	254.6	363.9	206.6	108.9	252.9	67.6	130.1	1726.8	25.3	316.9	934.0	4
4109	LAKSHADWEEP	2009	4.7	1.5	0.1	18.1	162.1	401.2	266.4	185.0	145.1	87.4	166.2	132.3	1570.1	6.2	180.3	997.7	3
4110	LAKSHADWEEP	2010	18.8	0.0	1.2	35.6	79.0	318.9	336.7	335.1	161.5	155.4	201.5	81.5	1725.2	18.8	115.8	1152.2	4

3936 rows × 19 columns



In [11]: data2=data.drop(['ANNUAL','Jan-Feb','Mar-May','Jun-Sep','Oct-Dec'],axis=1)#removes the columns

In [12]: data2

Out[12]:

	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	388.5	558.2	33.6
1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	197.2	359.0	160.5
2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	181.2	284.4	225.0
3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	222.2	308.7	40.1
4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	260.7	25.4	344.7
...
4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2	117.4	184.3	14.9
4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8	145.9	12.4	8.8
4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0	72.8	78.1	26.7
4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2	169.2	59.0	62.3
4115	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4	165.4	231.0	159.0

4116 rows × 14 columns

```
In [13]: data2['SUBDIVISION'].unique()#find the unique data
```

```
Out[13]: array(['ANDAMAN & NICOBAR ISLANDS', 'ARUNACHAL PRADESH',  
               'ASSAM & MEGHALAYA', 'NAGA MANI MIZO TRIPURA',  
               'SUB HIMALAYAN WEST BENGAL & SIKKIM', 'GANGETIC WEST BENGAL',  
               'ORISSA', 'JHARKHAND', 'BIHAR', 'EAST UTTAR PRADESH',  
               'WEST UTTAR PRADESH', 'UTTARAKHAND', 'HARYANA DELHI & CHANDIGARH',  
               'PUNJAB', 'HIMACHAL PRADESH', 'JAMMU & KASHMIR', 'WEST RAJASTHAN',  
               'EAST RAJASTHAN', 'WEST MADHYA PRADESH', 'EAST MADHYA PRADESH',  
               'GUJARAT REGION', 'SAURASHTRA & KUTCH', 'KONKAN & GOA',  
               'MADHYA MAHARASHTRA', 'MATATHWADA', 'VIDARBHA', 'CHHATTISGARH',  
               'COASTAL ANDHRA PRADESH', 'TELANGANA', 'RAYALSEEMA', 'TAMIL NADU',  
               'COASTAL KARNATAKA', 'NORTH INTERIOR KARNATAKA',  
               'SOUTH INTERIOR KARNATAKA', 'KERALA', 'LAKSHADWEEP'], dtype=object)
```

```
In [132]: data3=data2.loc[(data2.SUBDIVISION=="NAGA MANI MIZO TRIPURA")]#extracting the data of specific station
```

```
In [133]: data3
```

```
Out[133]:
```

	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
322	NAGA MANI MIZO TRIPURA	1901	11.7	18.1	29.4	206.2	124.0	443.3	331.4	466.0	304.1	166.7	67.4	0.0
323	NAGA MANI MIZO TRIPURA	1902	4.8	0.5	36.3	297.8	215.5	480.1	392.4	312.8	318.7	102.4	8.9	4.7
324	NAGA MANI MIZO TRIPURA	1903	6.5	40.5	139.8	45.5	159.9	458.6	300.2	470.6	366.1	166.4	76.7	0.1
325	NAGA MANI MIZO TRIPURA	1904	2.3	46.9	47.5	290.3	230.5	455.3	423.5	423.6	375.8	128.9	90.0	5.0
326	NAGA MANI MIZO TRIPURA	1905	9.1	35.3	306.5	161.7	193.6	339.7	450.1	429.9	320.1	246.4	8.0	27.1
...
432	NAGA MANI MIZO TRIPURA	2011	12.6	3.6	51.4	81.1	334.9	374.2	313.3	367.6	258.3	92.6	2.4	0.2
433	NAGA MANI MIZO TRIPURA	2012	24.5	10.2	20.3	243.5	163.5	396.2	280.1	342.7	248.7	160.9	32.0	0.4
434	NAGA MANI MIZO TRIPURA	2013	0.2	5.7	19.7	60.3	348.9	206.6	255.9	291.3	241.4	125.6	0.3	1.2
435	NAGA MANI MIZO TRIPURA	2014	1.2	21.0	25.4	49.6	192.5	268.3	295.7	372.3	300.9	69.6	3.3	0.1
436	NAGA MANI MIZO TRIPURA	2015	14.4	14.2	21.6	253.5	198.3	283.9	413.6	334.2	255.9	118.7	3.9	10.0

115 rows × 14 columns


```
In [134]: data3.isna().sum()
```

```
Out[134]: SUBDIVISION    0  
YEAR                0  
JAN                 0  
FEB                 0  
MAR                 0  
APR                 0  
MAY                 0  
JUN                 0  
JUL                 0  
AUG                 0  
SEP                 0  
OCT                 0  
NOV                 0  
DEC                 0  
dtype: int64
```

```
In [135]: data4=data3.drop(['JAN','FEB','MAR','APR','MAY'],axis=1)#removes the specific columns
```

In [136]: data4

Out[136]:

	SUBDIVISION	YEAR	JUN	JUL	AUG	SEP	OCT	NOV	DEC
322	NAGA MANI MIZO TRIPURA	1901	443.3	331.4	466.0	304.1	166.7	67.4	0.0
323	NAGA MANI MIZO TRIPURA	1902	480.1	392.4	312.8	318.7	102.4	8.9	4.7
324	NAGA MANI MIZO TRIPURA	1903	458.6	300.2	470.6	366.1	166.4	76.7	0.1
325	NAGA MANI MIZO TRIPURA	1904	455.3	423.5	423.6	375.8	128.9	90.0	5.0
326	NAGA MANI MIZO TRIPURA	1905	339.7	450.1	429.9	320.1	246.4	8.0	27.1
...
432	NAGA MANI MIZO TRIPURA	2011	374.2	313.3	367.6	258.3	92.6	2.4	0.2
433	NAGA MANI MIZO TRIPURA	2012	396.2	280.1	342.7	248.7	160.9	32.0	0.4
434	NAGA MANI MIZO TRIPURA	2013	206.6	255.9	291.3	241.4	125.6	0.3	1.2
435	NAGA MANI MIZO TRIPURA	2014	268.3	295.7	372.3	300.9	69.6	3.3	0.1
436	NAGA MANI MIZO TRIPURA	2015	283.9	413.6	334.2	255.9	118.7	3.9	10.0

115 rows × 9 columns

In [137]: data4['ANNUAL RAIN']=data3.apply(**lambda** row: row.JAN+row.FEB+row.MAR+row.APR+row.MAY+row.JUN+row.JUL+row.AUG

In [138]: data4

Out[138]:

	SUBDIVISION	YEAR	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL RAIN
322	NAGA MANI MIZO TRIPURA	1901	443.3	331.4	466.0	304.1	166.7	67.4	0.0	2168.3
323	NAGA MANI MIZO TRIPURA	1902	480.1	392.4	312.8	318.7	102.4	8.9	4.7	2174.9
324	NAGA MANI MIZO TRIPURA	1903	458.6	300.2	470.6	366.1	166.4	76.7	0.1	2230.9
325	NAGA MANI MIZO TRIPURA	1904	455.3	423.5	423.6	375.8	128.9	90.0	5.0	2519.6
326	NAGA MANI MIZO TRIPURA	1905	339.7	450.1	429.9	320.1	246.4	8.0	27.1	2527.5
...
432	NAGA MANI MIZO TRIPURA	2011	374.2	313.3	367.6	258.3	92.6	2.4	0.2	1892.2
433	NAGA MANI MIZO TRIPURA	2012	396.2	280.1	342.7	248.7	160.9	32.0	0.4	1923.0
434	NAGA MANI MIZO TRIPURA	2013	206.6	255.9	291.3	241.4	125.6	0.3	1.2	1557.1
435	NAGA MANI MIZO TRIPURA	2014	268.3	295.7	372.3	300.9	69.6	3.3	0.1	1599.9
436	NAGA MANI MIZO TRIPURA	2015	283.9	413.6	334.2	255.9	118.7	3.9	10.0	1922.2

115 rows × 10 columns

In [139]: data4['SWM']=data3.apply(lambda row: row.JUN+row.JUL+row.AUG+row.SEP,axis=1)

In [140]: data4

Out[140]:

	SUBDIVISION	YEAR	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL RAIN	SWM
322	NAGA MANI MIZO TRIPURA	1901	443.3	331.4	466.0	304.1	166.7	67.4	0.0	2168.3	1544.8
323	NAGA MANI MIZO TRIPURA	1902	480.1	392.4	312.8	318.7	102.4	8.9	4.7	2174.9	1504.0
324	NAGA MANI MIZO TRIPURA	1903	458.6	300.2	470.6	366.1	166.4	76.7	0.1	2230.9	1595.5
325	NAGA MANI MIZO TRIPURA	1904	455.3	423.5	423.6	375.8	128.9	90.0	5.0	2519.6	1678.2
326	NAGA MANI MIZO TRIPURA	1905	339.7	450.1	429.9	320.1	246.4	8.0	27.1	2527.5	1539.8
...
432	NAGA MANI MIZO TRIPURA	2011	374.2	313.3	367.6	258.3	92.6	2.4	0.2	1892.2	1313.4
433	NAGA MANI MIZO TRIPURA	2012	396.2	280.1	342.7	248.7	160.9	32.0	0.4	1923.0	1267.7
434	NAGA MANI MIZO TRIPURA	2013	206.6	255.9	291.3	241.4	125.6	0.3	1.2	1557.1	995.2
435	NAGA MANI MIZO TRIPURA	2014	268.3	295.7	372.3	300.9	69.6	3.3	0.1	1599.9	1237.2
436	NAGA MANI MIZO TRIPURA	2015	283.9	413.6	334.2	255.9	118.7	3.9	10.0	1922.2	1287.6

115 rows × 11 columns

In [141]: data4['NEM']=data3.apply(lambda row: row.OCT+row.NOV+row.DEC,axis=1)

In [142]: data4

Out[142]:

	SUBDIVISION	YEAR	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL RAIN	SWM	NEM
322	NAGA MANI MIZO TRIPURA	1901	443.3	331.4	466.0	304.1	166.7	67.4	0.0	2168.3	1544.8	234.1
323	NAGA MANI MIZO TRIPURA	1902	480.1	392.4	312.8	318.7	102.4	8.9	4.7	2174.9	1504.0	116.0
324	NAGA MANI MIZO TRIPURA	1903	458.6	300.2	470.6	366.1	166.4	76.7	0.1	2230.9	1595.5	243.2
325	NAGA MANI MIZO TRIPURA	1904	455.3	423.5	423.6	375.8	128.9	90.0	5.0	2519.6	1678.2	223.9
326	NAGA MANI MIZO TRIPURA	1905	339.7	450.1	429.9	320.1	246.4	8.0	27.1	2527.5	1539.8	281.5
...
432	NAGA MANI MIZO TRIPURA	2011	374.2	313.3	367.6	258.3	92.6	2.4	0.2	1892.2	1313.4	95.2
433	NAGA MANI MIZO TRIPURA	2012	396.2	280.1	342.7	248.7	160.9	32.0	0.4	1923.0	1267.7	193.3
434	NAGA MANI MIZO TRIPURA	2013	206.6	255.9	291.3	241.4	125.6	0.3	1.2	1557.1	995.2	127.1
435	NAGA MANI MIZO TRIPURA	2014	268.3	295.7	372.3	300.9	69.6	3.3	0.1	1599.9	1237.2	73.0
436	NAGA MANI MIZO TRIPURA	2015	283.9	413.6	334.2	255.9	118.7	3.9	10.0	1922.2	1287.6	132.6

115 rows × 12 columns

In [143]: data5=data4.drop(['JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC'],axis=1)

In [144]: data5

Out[144]:

	SUBDIVISION	YEAR	ANNUAL RAIN	SWM	NEM
322	NAGA MANI MIZO TRIPURA	1901	2168.3	1544.8	234.1
323	NAGA MANI MIZO TRIPURA	1902	2174.9	1504.0	116.0
324	NAGA MANI MIZO TRIPURA	1903	2230.9	1595.5	243.2
325	NAGA MANI MIZO TRIPURA	1904	2519.6	1678.2	223.9
326	NAGA MANI MIZO TRIPURA	1905	2527.5	1539.8	281.5
...
432	NAGA MANI MIZO TRIPURA	2011	1892.2	1313.4	95.2
433	NAGA MANI MIZO TRIPURA	2012	1923.0	1267.7	193.3
434	NAGA MANI MIZO TRIPURA	2013	1557.1	995.2	127.1
435	NAGA MANI MIZO TRIPURA	2014	1599.9	1237.2	73.0
436	NAGA MANI MIZO TRIPURA	2015	1922.2	1287.6	132.6

115 rows × 5 columns

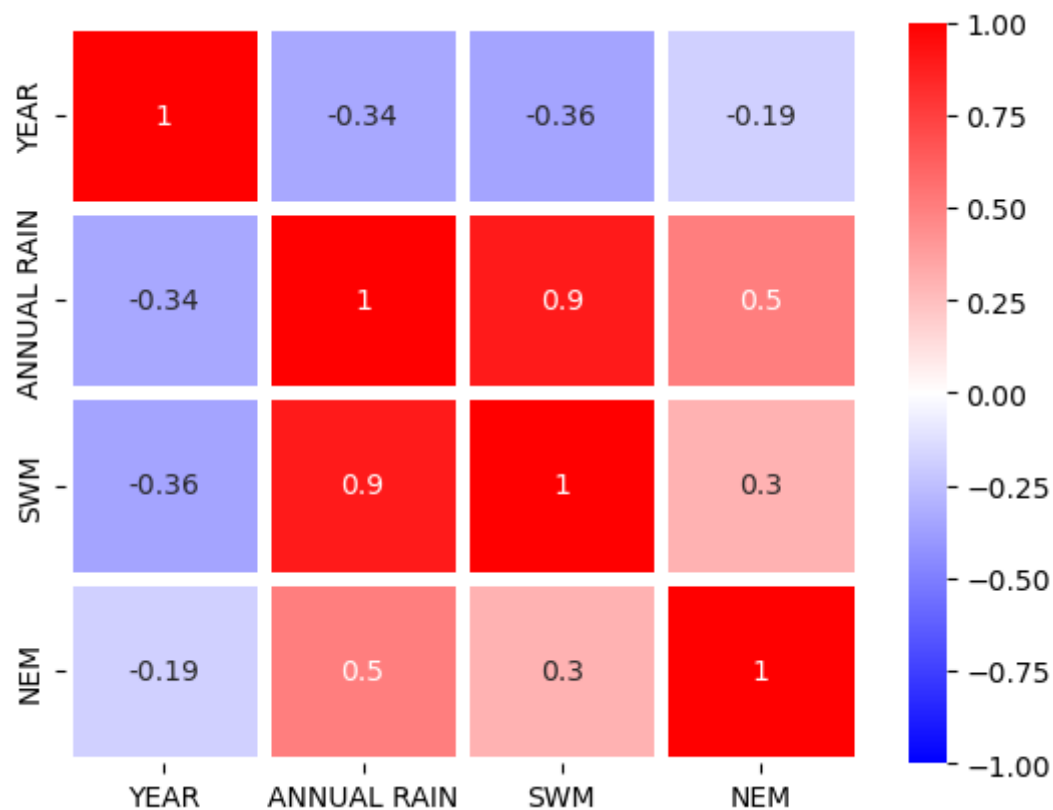
In [145]: cor=data5.corr()*#correalation*
cor

Out[145]:

	YEAR	ANNUAL RAIN	SWM	NEM
YEAR	1.000000	-0.338969	-0.357308	-0.185913
ANNUAL RAIN	-0.338969	1.000000	0.897675	0.502399
SWM	-0.357308	0.897675	1.000000	0.303419
NEM	-0.185913	0.502399	0.303419	1.000000

```
In [146]: import seaborn as sns #correlation graph
sns.heatmap(cor, vmax=1, vmin=-1, annot=True, linewidths=5, cmap='bwr') #blue-negative corr, #red-positive corr
```

Out[146]: <Axes: >



In []:

