

```
In [1]: import pandas as pd
```

```
In [3]: data=pd.read_csv("/home/placement/Downloads/arunachal.csv")
```

```
In [4]: data.head()
```

```
Out[4]:
```

|   | Unnamed: 0 | SUBDIVISION       | YEAR | JAN  | FEB   | MAR   | APR   | MAY   | JUN    | JUL    | AUG   | SEP   | OCT   | NOV  | DEC  | ANNUAL | Jan-Feb | Mar-May |
|---|------------|-------------------|------|------|-------|-------|-------|-------|--------|--------|-------|-------|-------|------|------|--------|---------|---------|
| 0 | 110        | ARUNACHAL PRADESH | 1916 | 48.1 | 69.8  | 71.1  | 316.1 | 424.6 | 1124.9 | NaN    | 629.7 | 333.9 | NaN   | NaN  | NaN  | NaN    | 117.9   | 811.8   |
| 1 | 111        | ARUNACHAL PRADESH | 1917 | 21.4 | 164.5 | NaN   | 269.6 | 107.9 | 823.8  | 909.1  | 628.4 | 411.5 | 199.3 | 63.5 | 0.0  | NaN    | 185.9   | NaN     |
| 2 | 112        | ARUNACHAL PRADESH | 1918 | 10.4 | 11.0  | 191.2 | 144.6 | 861.1 | 1609.9 | 1303.0 | 692.6 | 515.8 | 125.2 | 7.8  | 13.7 | 5486.3 | 21.4    | 1196.9  |
| 3 | 113        | ARUNACHAL PRADESH | 1919 | 34.5 | 67.8  | 28.5  | 256.9 | 420.6 | 973.6  | 999.0  | 286.7 | 628.7 | 948.3 | 40.7 | 8.6  | 4693.9 | 102.3   | 706.0   |
| 4 | 114        | ARUNACHAL PRADESH | 1920 | 14.0 | 196.3 | 605.6 | 364.7 | 173.6 | 840.6  | 535.4  | 896.5 | 376.7 | 103.3 | 0.0  | 0.0  | 4106.7 | 210.3   | 1143.9  |

In [5]: data.describe()

Out[5]:

|              | Unnamed:<br>0 | YEAR        | JAN        | FEB        | MAR        | APR        | MAY         | JUN         | JUL         | AUG         | SEP         |
|--------------|---------------|-------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| <b>count</b> | 91.00000      | 91.000000   | 90.000000  | 90.000000  | 89.000000  | 91.000000  | 91.000000   | 90.000000   | 90.000000   | 91.000000   | 91.000000   |
| <b>mean</b>  | 155.00000     | 1962.747253 | 48.598889  | 93.966667  | 154.446067 | 262.990110 | 364.651648  | 659.556667  | 711.963333  | 502.163736  | 433.273626  |
| <b>std</b>   | 26.41338      | 27.695003   | 34.687078  | 46.258375  | 87.918484  | 113.395773 | 181.095447  | 311.642230  | 356.372598  | 275.716730  | 204.991358  |
| <b>min</b>   | 110.00000     | 1916.000000 | 1.800000   | 6.100000   | 28.500000  | 94.700000  | 101.800000  | 239.400000  | 233.000000  | 172.400000  | 152.500000  |
| <b>25%</b>   | 132.50000     | 1938.500000 | 20.075000  | 65.625000  | 101.700000 | 180.600000 | 237.150000  | 425.675000  | 442.150000  | 301.100000  | 282.150000  |
| <b>50%</b>   | 155.00000     | 1964.000000 | 45.400000  | 87.600000  | 141.700000 | 245.400000 | 314.600000  | 545.750000  | 613.000000  | 411.600000  | 384.300000  |
| <b>75%</b>   | 177.50000     | 1986.500000 | 65.150000  | 120.400000 | 189.600000 | 335.300000 | 447.050000  | 840.400000  | 922.075000  | 669.200000  | 521.150000  |
| <b>max</b>   | 200.00000     | 2009.000000 | 164.500000 | 208.500000 | 605.600000 | 595.100000 | 1168.600000 | 1609.900000 | 2362.800000 | 1664.600000 | 1222.000000 |

In [6]: data.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 91 entries, 0 to 90
Data columns (total 20 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Unnamed: 0            91 non-null    int64
1   SUBDIVISION           91 non-null    object
2   YEAR                  91 non-null    int64
3   JAN                   90 non-null    float64
4   FEB                   90 non-null    float64
5   MAR                   89 non-null    float64
6   APR                   91 non-null    float64
7   MAY                   91 non-null    float64
8   JUN                   90 non-null    float64
9   JUL                   90 non-null    float64
10  AUG                   91 non-null    float64
11  SEP                   91 non-null    float64
12  OCT                   89 non-null    float64
13  NOV                   89 non-null    float64
14  DEC                   89 non-null    float64
15  ANNUAL                85 non-null    float64
16  Jan-Feb              90 non-null    float64
17  Mar-May              89 non-null    float64
18  Jun-Sep              89 non-null    float64
19  Oct-Dec              88 non-null    float64
dtypes: float64(17), int64(2), object(1)
memory usage: 14.3+ KB
```

In [7]: data.shape

Out[7]: (91, 20)

```
In [8]: list(data)
```

```
Out[8]: ['Unnamed: 0',  
        'SUBDIVISION',  
        'YEAR',  
        'JAN',  
        'FEB',  
        'MAR',  
        'APR',  
        'MAY',  
        'JUN',  
        'JUL',  
        'AUG',  
        'SEP',  
        'OCT',  
        'NOV',  
        'DEC',  
        'ANNUAL',  
        'Jan-Feb',  
        'Mar-May',  
        'Jun-Sep',  
        'Oct-Dec']
```

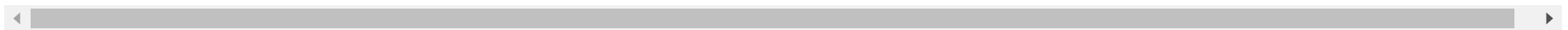
```
In [13]: data=data.drop(['Unnamed: 0'],axis=1)
```

In [14]: data

Out[14]:

|     | SUBDIVISION       | YEAR | JAN  | FEB   | MAR   | APR   | MAY   | JUN    | JUL    | AUG   | SEP   | OCT   | NOV  | DEC  | ANNUAL | Jan-Feb | Mar-May | Jun-Sep | Oct-Dec |
|-----|-------------------|------|------|-------|-------|-------|-------|--------|--------|-------|-------|-------|------|------|--------|---------|---------|---------|---------|
| 0   | ARUNACHAL PRADESH | 1916 | 48.1 | 69.8  | 71.1  | 316.1 | 424.6 | 1124.9 | NaN    | 629.7 | 333.9 | NaN   | NaN  | NaN  | NaN    | 117.9   | 811.8   | NaN     | NaN     |
| 1   | ARUNACHAL PRADESH | 1917 | 21.4 | 164.5 | NaN   | 269.6 | 107.9 | 823.8  | 909.1  | 628.4 | 411.5 | 199.3 | 63.5 | 0.0  | NaN    | 185.9   | NaN     | 2772.8  | 262.    |
| 2   | ARUNACHAL PRADESH | 1918 | 10.4 | 11.0  | 191.2 | 144.6 | 861.1 | 1609.9 | 1303.0 | 692.6 | 515.8 | 125.2 | 7.8  | 13.7 | 5486.3 | 21.4    | 1196.9  | 4121.3  | 146.    |
| 3   | ARUNACHAL PRADESH | 1919 | 34.5 | 67.8  | 28.5  | 256.9 | 420.6 | 973.6  | 999.0  | 286.7 | 628.7 | 948.3 | 40.7 | 8.6  | 4693.9 | 102.3   | 706.0   | 2888.0  | 997.    |
| 4   | ARUNACHAL PRADESH | 1920 | 14.0 | 196.3 | 605.6 | 364.7 | 173.6 | 840.6  | 535.4  | 896.5 | 376.7 | 103.3 | 0.0  | 0.0  | 4106.7 | 210.3   | 1143.9  | 2649.2  | 103.    |
| ... | ...               | ...  | ...  | ...   | ...   | ...   | ...   | ...    | ...    | ...   | ...   | ...   | ...  | ...  | ...    | ...     | ...     | ...     | ...     |
| 86  | ARUNACHAL PRADESH | 2005 | 48.4 | 167.6 | 229.5 | 195.3 | 179.8 | 269.3  | 430.8  | 400.0 | 243.6 | 139.3 | 28.6 | 3.3  | 2335.5 | 216.0   | 604.6   | 1343.7  | 171.    |
| 87  | ARUNACHAL PRADESH | 2006 | 6.0  | 103.7 | 63.3  | 202.7 | 321.7 | 520.4  | 382.2  | 227.6 | 263.2 | 77.2  | 69.7 | 21.7 | 2259.6 | 109.7   | 587.7   | 1393.5  | 168.    |
| 88  | ARUNACHAL PRADESH | 2007 | 13.4 | 97.4  | 48.1  | 292.4 | 250.4 | 530.2  | 761.0  | 364.6 | 529.3 | 102.6 | 24.3 | 6.9  | 3020.7 | 110.8   | 590.9   | 2185.1  | 133.    |
| 89  | ARUNACHAL PRADESH | 2008 | 76.7 | 39.7  | 122.6 | 192.4 | 185.0 | 423.6  | 456.1  | 439.3 | 189.7 | 115.1 | 1.7  | 2.6  | 2244.4 | 116.4   | 499.9   | 1508.7  | 119.    |
| 90  | ARUNACHAL PRADESH | 2009 | 18.0 | 92.8  | 72.1  | 132.7 | 189.9 | 259.1  | 329.9  | 370.3 | 152.5 | 82.9  | 33.9 | 15.9 | 1749.9 | 110.8   | 394.7   | 1111.8  | 132.    |

91 rows × 19 columns



```
In [15]: data.isna().sum()
```

```
Out[15]: SUBDIVISION    0  
        YEAR          0  
        JAN           1  
        FEB           1  
        MAR           2  
        APR           0  
        MAY           0  
        JUN           1  
        JUL           1  
        AUG           0  
        SEP           0  
        OCT           2  
        NOV           2  
        DEC           2  
        ANNUAL        6  
        Jan-Feb       1  
        Mar-May       2  
        Jun-Sep       2  
        Oct-Dec       3  
        dtype: int64
```

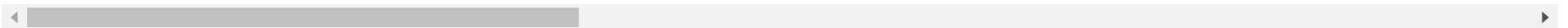
```
In [16]: data=data.fillna(data.mean)
```

In [17]: data

Out[17]:

|     | SUBDIVISION       | YEAR | JAN  | FEB   |   | MAR   | APR   | MAY   | JUN    |   | JUL    | AUG   | SEP   |
|-----|-------------------|------|------|-------|---|-------|-------|-------|--------|---|--------|-------|-------|
| 0   | ARUNACHAL PRADESH | 1916 | 48.1 | 69.8  |   | 71.1  | 316.1 | 424.6 | 1124.9 | <bound method NDFrame._add_numeric_operations.... | 629.7  | 333.9 |       |
| 1   | ARUNACHAL PRADESH | 1917 | 21.4 | 164.5 | <bound method NDFrame._add_numeric_operations.... |       | 269.6 | 107.9 | 823.8  |   | 909.1  | 628.4 | 411.5 |
| 2   | ARUNACHAL PRADESH | 1918 | 10.4 | 11.0  |   | 191.2 | 144.6 | 861.1 | 1609.9 |   | 1303.0 | 692.6 | 515.8 |
| 3   | ARUNACHAL PRADESH | 1919 | 34.5 | 67.8  |   | 28.5  | 256.9 | 420.6 | 973.6  |   | 999.0  | 286.7 | 628.7 |
| 4   | ARUNACHAL PRADESH | 1920 | 14.0 | 196.3 |   | 605.6 | 364.7 | 173.6 | 840.6  |   | 535.4  | 896.5 | 376.7 |
| ... | ...               | ...  | ...  | ...   |   | ...   | ...   | ...   | ...    |   | ...    | ...   | ...   |
| 86  | ARUNACHAL PRADESH | 2005 | 48.4 | 167.6 |   | 229.5 | 195.3 | 179.8 | 269.3  |   | 430.8  | 400.0 | 243.6 |
| 87  | ARUNACHAL PRADESH | 2006 | 6.0  | 103.7 |   | 63.3  | 202.7 | 321.7 | 520.4  |   | 382.2  | 227.6 | 263.2 |
| 88  | ARUNACHAL PRADESH | 2007 | 13.4 | 97.4  |   | 48.1  | 292.4 | 250.4 | 530.2  |   | 761.0  | 364.6 | 529.3 |
| 89  | ARUNACHAL PRADESH | 2008 | 76.7 | 39.7  |   | 122.6 | 192.4 | 185.0 | 423.6  |   | 456.1  | 439.3 | 189.7 |
| 90  | ARUNACHAL PRADESH | 2009 | 18.0 | 92.8  |   | 72.1  | 132.7 | 189.9 | 259.1  |   | 329.9  | 370.3 | 152.5 |

91 rows × 19 columns



In [18]: data.isna().sum()

```
Out[18]: 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
ANNUAL              0
Jan-Feb             0
Mar-May             0
Jun-Sep             0
Oct-Dec             0
dtype: int64
```

In [19]: data.head()

```
Out[19]:
```

|   | SUBDIVISION       | YEAR | JAN  | FEB   | MAR   | APR   | MAY   | JUN    | JUL   | AUG   | SEP   |
|---|-------------------|------|------|-------|---|-------|-------|--------|---|-------|-------|
| 0 | ARUNACHAL PRADESH | 1916 | 48.1 | 69.8  | 71.1  | 316.1 | 424.6 | 1124.9 | <bound method NDFrame._add_numeric_operations.... | 629.7 | 333.9 |
| 1 | ARUNACHAL PRADESH | 1917 | 21.4 | 164.5 | <bound method NDFrame._add_numeric_operations.... | 269.6 | 107.9 | 823.8  | 909.1   | 628.4 | 411.5 |
| 2 | ARUNACHAL PRADESH | 1918 | 10.4 | 11.0  | 191.2   | 144.6 | 861.1 | 1609.9 | 1303.0  | 692.6 | 515.8 |
| 3 | ARUNACHAL PRADESH | 1919 | 34.5 | 67.8  | 28.5  | 256.9 | 420.6 | 973.6  | 999.0   | 286.7 | 628.7 |
| 4 | ARUNACHAL PRADESH | 1920 | 14.0 | 196.3 | 605.6   | 364.7 | 173.6 | 840.6  | 535.4   | 896.5 | 376.7 |



In [ ]: