In [1]:
```
import pandas as pd
data=pd.read_csv("/home/placement/Downloads/arunachal.csv")
```

In [2]:
```
data.describe()
```

Out[2]:

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

In [3]:
```
data.head()
```

Out[3]:

| | 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 |
| **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 | 4 |
| **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 | 2 |
| **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 | 2 |

In [4]:
```
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 [5]:
```
data.shape
```

Out[5]:
```
(91, 20)
```

In [6]:
```
list(data)
```

Out[6]:
```
['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 [7]:
```
data1=data.drop(['Unnamed: 0'],axis=1)
```

In [8]:
```
data1
```

Out[8]:

| | SUBDIVISION | YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | Jan-Feb | Mar-May | Jun-Sep | Oc De |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 | Na |
| **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 [9]:
```
data1.isna().sum()
```

Out[9]:
```
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 [10]:
```
data1=data1.fillna(data1.mode())#filling nan values with the mode of each column
```

In [11]:
```
data1.isna().sum()
```

Out[11]:
```
SUBDIVISION    0
YEAR           0
JAN            1
FEB            1
MAR            0
APR            0
MAY            0
JUN            0
JUL            0
AUG            0
SEP            0
OCT            1
NOV            1
DEC            1
ANNUAL         0
Jan-Feb        1
Mar-May        0
Jun-Sep        0
Oct-Dec        2
dtype: int64
```

In [12]:
```
data1.head(10)
```

Out[12]:

| | SUBDIVISION | YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | Jan-Feb | Mar-May | Jun-Sep | Oct De |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | ARUNACHAL PRADESH | 1916 | 48.1 | 69.8 | 71.1 | 316.1 | 424.6 | 1124.9 | 593.0 | 629.7 | 333.9 | 58.5 | 7.8 | 0.0 | 1668.5 | 117.9 | 811.8 | 1111.8 | 130. |
| **1** | ARUNACHAL PRADESH | 1917 | 21.4 | 164.5 | 32.9 | 269.6 | 107.9 | 823.8 | 909.1 | 628.4 | 411.5 | 199.3 | 63.5 | 0.0 | 1749.9 | 185.9 | 379.7 | 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. |
| **5** | ARUNACHAL PRADESH | 1921 | 78.9 | 54.3 | 180.3 | 358.0 | 598.0 | 1233.2 | 1433.0 | 885.9 | 603.4 | 246.3 | 4.6 | 15.5 | 5691.4 | 133.2 | 1136.3 | 4155.5 | 266. |
| **6** | ARUNACHAL PRADESH | 1922 | 50.7 | 59.4 | 170.4 | 299.5 | 350.5 | 1109.3 | 918.7 | 488.3 | 207.6 | 483.5 | 30.3 | 19.0 | 4187.2 | 110.1 | 820.4 | 2723.9 | 532. |
| **7** | ARUNACHAL PRADESH | 1923 | 9.4 | 160.8 | 34.0 | 240.9 | 445.4 | 408.6 | 1278.5 | 251.3 | 617.3 | 50.1 | 8.4 | 2.8 | 3507.5 | 170.2 | 720.3 | 2555.7 | 61. |
| **8** | ARUNACHAL PRADESH | 1924 | 85.7 | 45.1 | 74.1 | 162.4 | 515.7 | 1165.0 | 942.7 | 713.8 | 410.8 | 303.3 | 31.9 | 0.0 | 4450.5 | 130.8 | 752.2 | 3232.3 | 335. |
| **9** | ARUNACHAL PRADESH | 1925 | 80.6 | 114.0 | 143.3 | 223.0 | 587.2 | 611.6 | 611.0 | 684.7 | 1222.0 | 153.2 | 5.1 | 4.1 | 4439.8 | 194.6 | 953.5 | 3129.3 | 162. |

In [13]:
```
data1=data1.fillna(data1.mode())
```

In [14]:
```
data1.head(10)
```

Out[14]:

| | SUBDIVISION | YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL | Jan-Feb | Mar-May | Jun-Sep | Oct De |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | ARUNACHAL PRADESH | 1916 | 48.1 | 69.8 | 71.1 | 316.1 | 424.6 | 1124.9 | 593.0 | 629.7 | 333.9 | 58.5 | 7.8 | 0.0 | 1668.5 | 117.9 | 811.8 | 1111.8 | 130. |
| **1** | ARUNACHAL PRADESH | 1917 | 21.4 | 164.5 | 32.9 | 269.6 | 107.9 | 823.8 | 909.1 | 628.4 | 411.5 | 199.3 | 63.5 | 0.0 | 1749.9 | 185.9 | 379.7 | 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. |
| **5** | ARUNACHAL PRADESH | 1921 | 78.9 | 54.3 | 180.3 | 358.0 | 598.0 | 1233.2 | 1433.0 | 885.9 | 603.4 | 246.3 | 4.6 | 15.5 | 5691.4 | 133.2 | 1136.3 | 4155.5 | 266. |
| **6** | ARUNACHAL PRADESH | 1922 | 50.7 | 59.4 | 170.4 | 299.5 | 350.5 | 1109.3 | 918.7 | 488.3 | 207.6 | 483.5 | 30.3 | 19.0 | 4187.2 | 110.1 | 820.4 | 2723.9 | 532. |
| **7** | ARUNACHAL PRADESH | 1923 | 9.4 | 160.8 | 34.0 | 240.9 | 445.4 | 408.6 | 1278.5 | 251.3 | 617.3 | 50.1 | 8.4 | 2.8 | 3507.5 | 170.2 | 720.3 | 2555.7 | 61. |
| **8** | ARUNACHAL PRADESH | 1924 | 85.7 | 45.1 | 74.1 | 162.4 | 515.7 | 1165.0 | 942.7 | 713.8 | 410.8 | 303.3 | 31.9 | 0.0 | 4450.5 | 130.8 | 752.2 | 3232.3 | 335. |
| **9** | ARUNACHAL PRADESH | 1925 | 80.6 | 114.0 | 143.3 | 223.0 | 587.2 | 611.6 | 611.0 | 684.7 | 1222.0 | 153.2 | 5.1 | 4.1 | 4439.8 | 194.6 | 953.5 | 3129.3 | 162. |

In [ ]:
```

```