

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

```
In [2]: import numpy as np
```

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

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

```
Out[4]:
```

| | 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 [6]: data=data.groupby(['model']).count()
```

KeyError Traceback (most recent call last)

Cell In[6], line 1

----> 1 data=data.groupby(['model']).count()

File ~/anaconda3/lib/python3.10/site-packages/pandas/core/frame.py:8402, in DataFrame.groupby(self, by, axis, level, as_index, sort, group_keys, squeeze, observed, dropna)

```
    8399     raise TypeError("You have to supply one of 'by' and 'level'")
    8400     axis = self._get_axis_number(axis)
-> 8402     return DataFrameGroupBy(
    8403         obj=self,
    8404         keys=by,
    8405         axis=axis,
    8406         level=level,
    8407         as_index=as_index,
    8408         sort=sort,
    8409         group_keys=group_keys,
    8410         squeeze=squeeze,
    8411         observed=observed,
    8412         dropna=dropna,
    8413     )
```

File ~/anaconda3/lib/python3.10/site-packages/pandas/core/groupby/groupby.py:965, in GroupBy.__init__(self, obj, keys, axis, level, grouper, exclusions, selection, as_index, sort, group_keys, squeeze, observed, mutated, dropna)

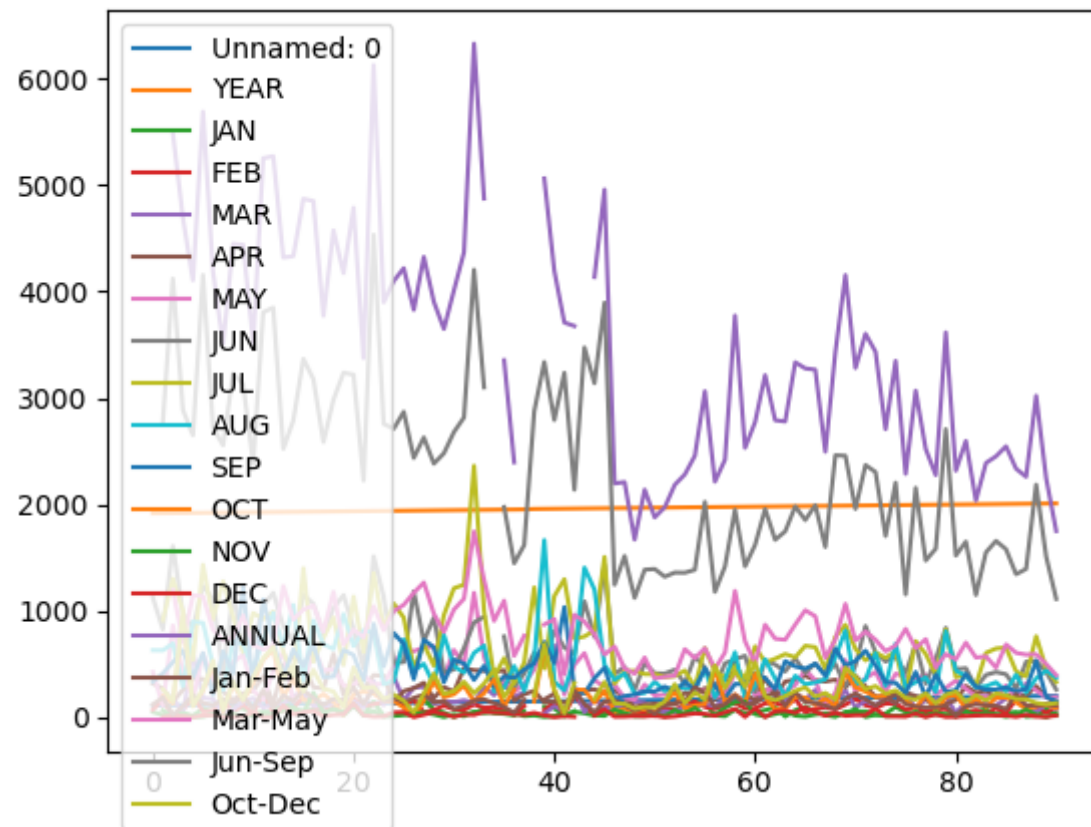
```
    962     if grouper is None:
    963         from pandas.core.groupby.grouper import get_grouper
-> 965     grouper, exclusions, obj = get_grouper(
    966         obj,
    967         keys,
    968         axis=axis,
    969         level=level,
    970         sort=sort,
    971         observed=observed,
    972         mutated=self.mutated,
    973         dropna=self.dropna,
    974     )
    976     self.obj = obj
    977     self.axis = obj._get_axis_number(axis)
```

```
File ~/anaconda3/lib/python3.10/site-packages/pandas/core/groupby/grouper.py:888, in get_grouper(obj, key, axis, level, sort, observed, mutated, validate, dropna)
    886         in_axis, level, gpr = False, gpr, None
    887     else:
--> 888         raise KeyError(gpr)
    889 elif isinstance(gpr, Grouper) and gpr.key is not None:
    890     # Add key to exclusions
    891     exclusions.add(gpr.key)
```

KeyError: 'model'

```
In [7]: data.plot()
```

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



```
In [8]: data=data.rename(columns={'model_name': 'model'})  
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 [ ]:
```