

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

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

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

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

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

KeyError Traceback (most recent call last)

Cell In[9], 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)
```

```

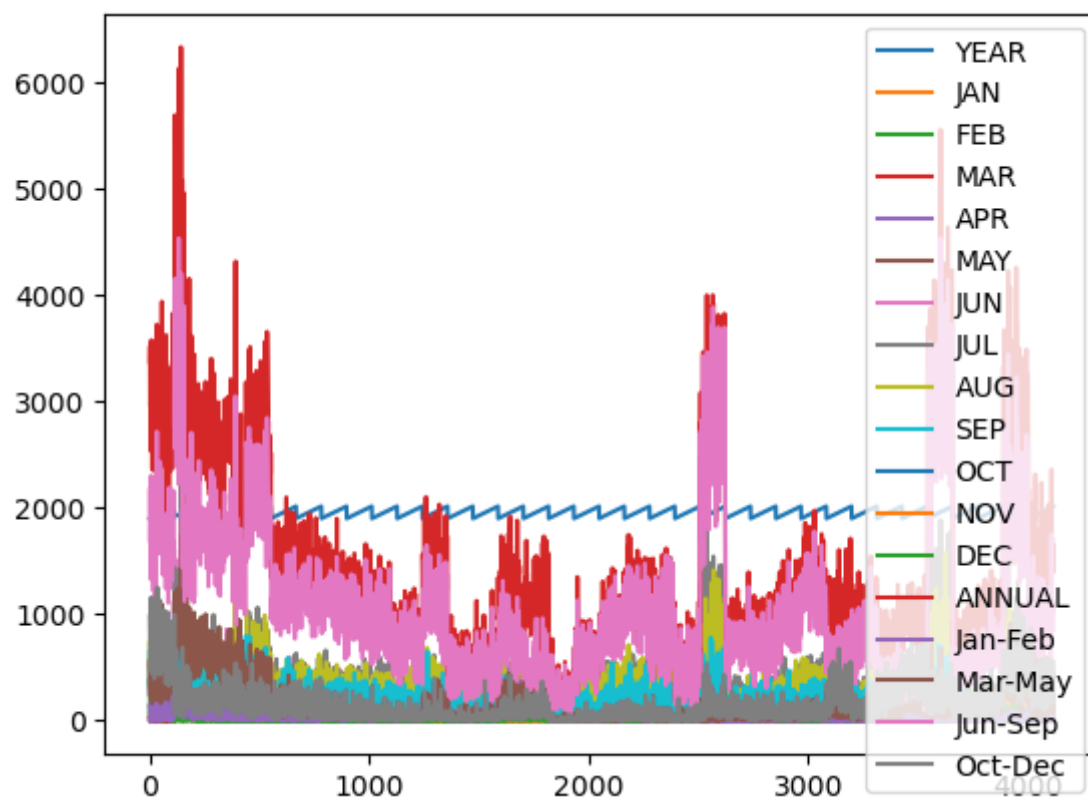
File ~/anaconda3/lib/python3.10/site-packages/pandas/core/groupby/grouper.py:888, in get_grouper(obj, key, axis, level, sort, observed, mutated, validate, dropna)
    886         in_axis, level, gpr = False, gpr, None
    887     else:
--> 888         raise KeyError(gpr)
    889 elif isinstance(gpr,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

```

KeyError: 'model'

In [10]: data.plot()

Out[10]: <Axes: >



```
In [14]: data=data.rename(columns={'model_name':'model'})  
list(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']
```

```
In [ ]:
```