```
import pandas as pd

pk=pd.read_csv("pokemon.csv")
print(pk)

pk['avg1']=(pk['HP']+pk['Attack']+pk['Defense'])/2 #create new colum
named avg with average value of this field
pk.head(5)
```

```
     Unnamed: 0    #                   Name   Type 1  Type 2  Total
HP  \
0             0    1              Bulbasaur    Grass  Poison    318
45
1             1    2                Ivysaur    Grass  Poison    405
60
2             2    3               Venusaur    Grass  Poison    525
80
3             3    3  VenusaurMega Venusaur    Grass  Poison    625
80
4             4    4             Charmander     Fire     NaN    309
39
..          ...  ...                    ...      ...     ...    ...  .
.
795         795  719                Diancie     Rock   Fairy    600
50
796         796  719    DiancieMega Diancie     Rock   Fairy    700
50
797         797  720    HoopaHoopa Confined  Psychic   Ghost    600
80
798         798  720     HoopaHoopa Unbound  Psychic    Dark    680
80
799         799  721              Volcanion     Fire   Water    600
80

     Attack  Defense  Sp. Atk  Sp. Def  Speed  Generation  Legendary
avg
0        49       49       65       65     45           1      False
71.5
1        62       63       80       80     60           1      False
92.5
2        82       83      100      100     80           1      False
122.5
3       100      123      122      120     80           1      False
151.5
4        52       43       60       50     65           1      False
67.0
..      ...      ...      ...      ...    ...         ...        ...
...
795     100      150      100      150     50           6       True
150.0
```

```
796     160      110      160      110    110           6       True
160.0
797     110       60      150      130     70           6       True
125.0
798     160       60      170      130     80           6       True
150.0
799     110      120      130       90     70           6       True
155.0

[800 rows x 15 columns]
```

```
   Unnamed: 0  #                   Name Type 1  Type 2  Total  HP
Attack  \
0           0  1              Bulbasaur  Grass  Poison    318  45
49
1           1  2                Ivysaur  Grass  Poison    405  60
62
2           2  3               Venusaur  Grass  Poison    525  80
82
3           3  3  VenusaurMega Venusaur  Grass  Poison    625  80
100
4           4  4             Charmander   Fire     NaN    309  39
52

   Defense  Sp. Atk  Sp. Def  Speed  Generation  Legendary    avg
avg1
0       49       65       65     45           1      False   71.5
71.5
1       63       80       80     60           1      False   92.5
92.5
2       83      100      100     80           1      False  122.5
122.5
3      123      122      120     80           1      False  151.5
151.5
4       43       60       50     65           1      False   67.0
67.0
```

```
m=pk["Total"].mean() #give mean of data
print(m)
m=pk["Total"].median() #give median of data
print(m)
m=pk["Attack"].mode() #give mode of data
print(m)
```

```
435.1025
450.0
0    100
Name: Attack, dtype: int64
```

```
print(pk.head())#to fetch first 5 records
```

```
   Unnamed: 0  #                   Name Type 1  Type 2  Total  HP
Attack  \
0           0  1              Bulbasaur  Grass  Poison    318  45
49
1           1  2                Ivysaur  Grass  Poison    405  60
62
2           2  3               Venusaur  Grass  Poison    525  80
82
3           3  3  VenusaurMega Venusaur  Grass  Poison    625  80
100
4           4  4             Charmander   Fire     NaN    309  39
52

   Defense  Sp. Atk  Sp. Def  Speed  Generation  Legendary    avg
0       49       65       65     45           1      False   71.5
1       63       80       80     60           1      False   92.5
2       83      100      100     80           1      False  122.5
3      123      122      120     80           1      False  151.5
4       43       60       50     65           1      False   67.0
```

```
print(pk.tail())#to fetch last 5 records
```

```
     Unnamed: 0    #                  Name   Type 1 Type 2  Total  HP
Attack  \
795         795  719              Diancie     Rock  Fairy    600  50
100
796         796  719  DiancieMega Diancie     Rock  Fairy    700  50
160
797         797  720  HoopaHoopa Confined  Psychic  Ghost    600  80
110
798         798  720   HoopaHoopa Unbound  Psychic   Dark    680  80
160
799         799  721            Volcanion     Fire  Water    600  80
110

     Defense  Sp. Atk  Sp. Def  Speed  Generation  Legendary    avg
795      150      100      150     50           6       True  150.0
796      110      160      110    110           6       True  160.0
797       60      150      130     70           6       True  125.0
798       60      170      130     80           6       True  150.0
799      120      130       90     70           6       True  155.0
```

```
print(pk.loc[2])#to fetch single row
```

```
Unnamed: 0           2
#                    3
Name          Venusaur
Type 1           Grass
Type 2          Poison
Total              525
```

```
HP                  80
Attack              82
Defense             83
Sp. Atk            100
Sp. Def            100
Speed               80
Generation           1
Legendary        False
avg              122.5
Name: 2, dtype: object
```

```
print(pk.info)
```

```
<bound method DataFrame.info of      Unnamed: 0    #
Name   Type 1  Type 2  Total  HP  \
0             0    1              Bulbasaur    Grass  Poison    318
45
1             1    2                Ivysaur    Grass  Poison    405
60
2             2    3               Venusaur    Grass  Poison    525
80
3             3    3  VenusaurMega Venusaur    Grass  Poison    625
80
4             4    4             Charmander     Fire     NaN    309
39
..          ...  ...                    ...      ...     ...    ...  .
.
795         795  719                Diancie     Rock   Fairy    600
50
796         796  719    DiancieMega Diancie     Rock   Fairy    700
50
797         797  720    HoopaHoopa Confined  Psychic   Ghost    600
80
798         798  720     HoopaHoopa Unbound  Psychic    Dark    680
80
799         799  721              Volcanion     Fire   Water    600
80

     Attack  Defense  Sp. Atk  Sp. Def  Speed  Generation  Legendary
avg
0        49       49       65       65     45           1      False
71.5
1        62       63       80       80     60           1      False
92.5
2        82       83      100      100     80           1      False
122.5
3       100      123      122      120     80           1      False
151.5
4        52       43       60       50     65           1      False
67.0
```

```
..      ...      ...      ...      ...    ...         ...         ...
...
795     100      150      100      150     50           6       True
150.0
796     160      110      160      110    110           6       True
160.0
797     110       60      150      130     70           6       True
125.0
798     160       60      170      130     80           6       True
150.0
799     110      120      130       90     70           6       True
155.0

[800 rows x 15 columns]>
```

```
d=pk.iloc[0:2]#fetch specific rows
print(d)
```

```
   Unnamed: 0  #       Name Type 1  Type 2  Total  HP  Attack  Defense
\
0           0  1  Bulbasaur  Grass  Poison    318  45      49       49

1           1  2    Ivysaur  Grass  Poison    405  60      62       63


   Sp. Atk  Sp. Def  Speed  Generation  Legendary   avg
0       65       65     45           1      False  71.5
1       80       80     60           1      False  92.5
```

```
newstd_data=pk.dropna()#to remove null value
print(newstd_data)
```

```
     Unnamed: 0    #                   Name   Type 1  Type 2  Total
HP  \
0             0    1              Bulbasaur    Grass  Poison    318
45
1             1    2                Ivysaur    Grass  Poison    405
60
2             2    3               Venusaur    Grass  Poison    525
80
3             3    3  VenusaurMega Venusaur    Grass  Poison    625
80
6             6    6              Charizard     Fire  Flying    534
78
..          ...  ...                    ...      ...     ...    ...  .
.
795         795  719                Diancie     Rock   Fairy    600
50
796         796  719    DiancieMega Diancie     Rock   Fairy    700
50
797         797  720    HoopaHoopa Confined  Psychic   Ghost    600
```

```
80
798         798  720     HoopaHoopa Unbound  Psychic    Dark    680
80
799         799  721               Volcanion     Fire   Water    600
80

     Attack  Defense  Sp. Atk  Sp. Def  Speed  Generation  Legendary
avg
0        49       49       65       65     45           1      False
71.5
1        62       63       80       80     60           1      False
92.5
2        82       83      100      100     80           1      False
122.5
3       100      123      122      120     80           1      False
151.5
6        84       78      109       85    100           1      False
120.0
..      ...      ...      ...      ...    ...         ...        ...
...
795     100      150      100      150     50           6       True
150.0
796     160      110      160      110    110           6       True
160.0
797     110       60      150      130     70           6       True
125.0
798     160       60      170      130     80           6       True
150.0
799     110      120      130       90     70           6       True
155.0

[414 rows x 15 columns]
```

```
newstd_data=pk.fillna(10,inplace=True)#fill null value with 10
print(newstd_data)
```

```
None
```

```
new=pk["avg"].fillna("90.33")#to change specific colum with null value
print(new)
```

```
0       71.5
1       92.5
2      122.5
3      151.5
4       67.0
       ...
795    150.0
796    160.0
797    125.0
```

```
798    150.0
799    155.0
Name: avg, Length: 800, dtype: float64
```

```
new=pk["Total"].fillna("90",inplace=True)#modify data in same
object(modify object) (update data in std_data variable)
print(new)
```

```
None
```

```
pk.to_csv('pokemon.csv')#toupdate original file
```

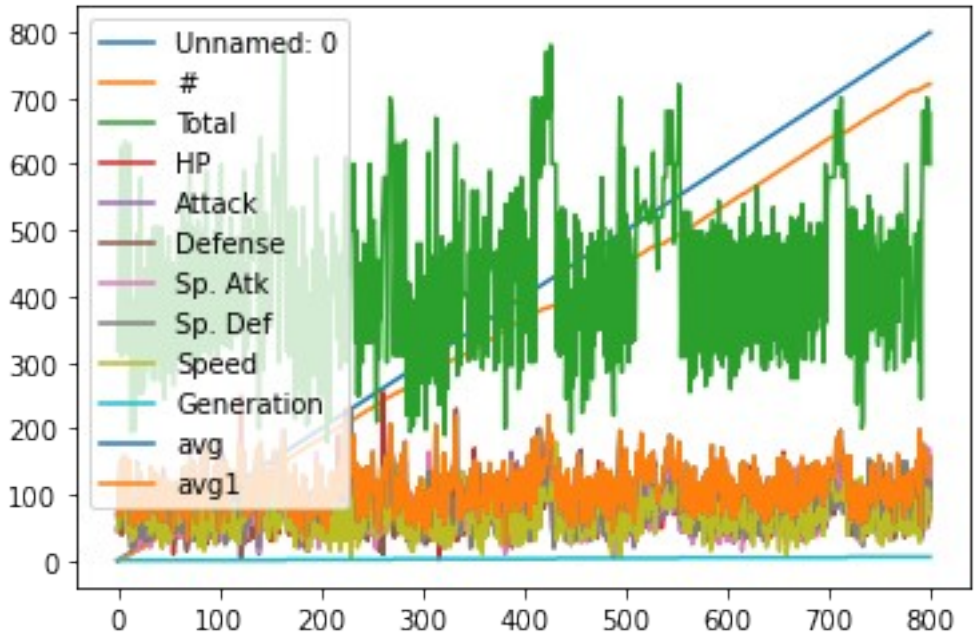
```
pk.sort_values(['Total'],ascending=1)# to sort data in asending order
1-for ascending and 0-for desending
```

```
     Unnamed: 0    #                   Name   Type 1    Type 2  Total
HP  \
206         206  191                Sunkern    Grass       NaN    180
30
322         322  298                Azurill   Normal     Fairy    190
50
446         446  401              Kricketot      Bug       NaN    194
37
288         288  265                Wurmple      Bug       NaN    195
45
16           16   13                 Weedle      Bug    Poison    195
40
..          ...  ...                    ...      ...       ...    ...
...
424         424  383  GroudonPrimal Groudon   Ground      Fire    770
100
422         422  382    KyogrePrimal Kyogre    Water       NaN    770
100
164         164  150    MewtwoMega Mewtwo Y  Psychic       NaN    780
106
426         426  384  RayquazaMega Rayquaza   Dragon    Flying    780
105
163         163  150    MewtwoMega Mewtwo X  Psychic  Fighting    780
106

     Attack  Defense  Sp. Atk  Sp. Def  Speed  Generation  Legendary
avg  \
206      30       30       30       30     30           2      False
45.0
322      20       40       20       40     20           3      False
55.0
446      25       41       25       41     25           4      False
51.5
288      45       35       20       30     20           3      False
62.5
```

```
16       35       30       20       20     50           1      False
52.5
..      ...      ...      ...      ...    ...         ...        ...
...
424     180      160      150       90     90           3       True
220.0
422     150       90      180      160     90           3       True
170.0
164     150       70      194      120    140           1       True
163.0
426     180      100      180      100    115           3       True
192.5
163     190      100      154      100    130           1       True
198.0

      avg1
206   45.0
322   55.0
446   51.5
288   62.5
16    52.5
..     ...
424  220.0
422  170.0
164  163.0
426  192.5
163  198.0

[800 rows x 16 columns]
```

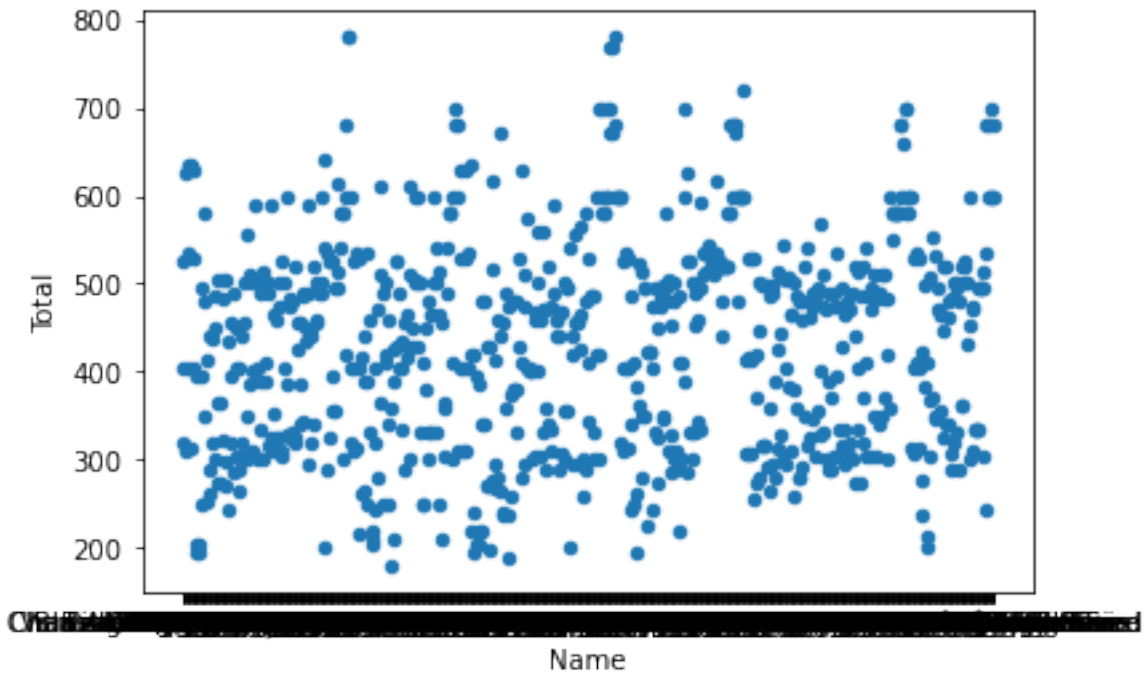
```
pk.plot()#to create visual presentation of data
plt.show()
```

```
---------------------------------------------------------------------------
-----
NameError                                 Traceback (most recent call
last)
Input In [18], in <cell line: 2>()
      1 pk.plot()#to create visual presentation of data
----> 2 plt.show()

NameError: name 'plt' is not defined
```



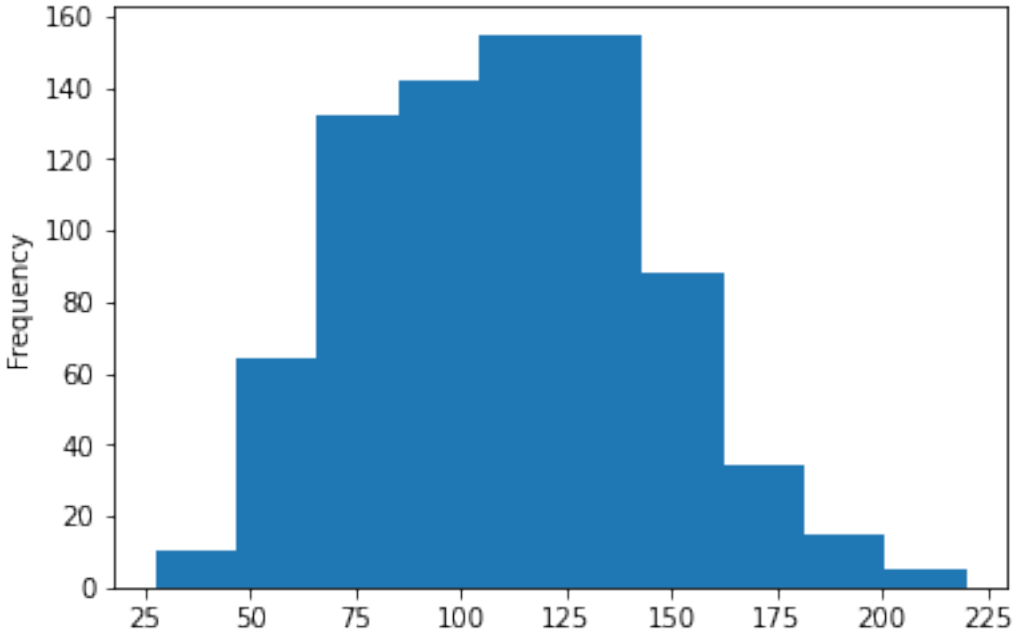

```
pk.plot(kind="scatter",x='Name',y='Total')
plt.show()
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Input In [19], in <cell line: 2>()
      1 pk.plot(kind="scatter",x='Name',y='Total')
----> 2 plt.show()

NameError: name 'plt' is not defined
```




```
pk['avg'].plot(kind='hist')#kind use to define type
```

```
<AxesSubplot:ylabel='Frequency'>
```




```
a=[10,20,30,40,50]
s1=pd.Series(a,index=["11","12","13","14","15"]) #to change index
print(a)
print(a[3])#display data of third index
```

```
print(s1)
print(s1["13"]) #to find specific index
```

```
[10, 20, 30, 40, 50]
40
11    10
12    20
13    30
14    40
15    50
dtype: int64
30
```

```
keyval={"AIML":4,"CCN":4,"WS":3,"CS":4}
print(keyval)
key=pd.Series(keyval)
print(key)
print(key["CCN"])
```

```
{'AIML': 4, 'CCN': 4, 'WS': 3, 'CS': 4}
AIML    4
CCN     4
WS      3
CS      4
dtype: int64
4
```

```
std={"student":["aiml","ccn","ws","cs"],
    "marks":[90,89,99,98]}
print(std)
dfstd=pd.DataFrame(std)#to create data frame which store data in
tabular formate
print(dfstd)
print(dfstd.loc[3])
```

```
{'student': ['aiml', 'ccn', 'ws', 'cs'], 'marks': [90, 89, 99, 98]}
  student  marks
0    aiml     90
1     ccn     89
2      ws     99
3      cs     98
student    cs
marks      98
Name: 3, dtype: object
```