pandas_Aditya

March 6, 2024

[2]:
```
import pandas as pd
import matplotlib.pyplot as plt
```

[3]:
```
pk=pd.read_csv("pokemon.csv")
print(pk)
```

```
     Unnamed: 0.3  Unnamed: 0.2  Unnamed: 0.1  Unnamed: 0    #  \
0               0             0             0           0    1
1               1             1             1           1    2
2               2             2             2           2    3
3               3             3             3           3    3
4               4             4             4           4    4
..            ...           ...           ...         ...  ...
795           795           795           795         795  719
796           796           796           796         796  719
797           797           797           797         797  720
798           798           798           798         798  720
799           799           799           799         799  721

                      Name   Type 1  Type 2  Total  HP  Attack  Defense  \
0                Bulbasaur    Grass  Poison    318  45      49       49
1                  Ivysaur    Grass  Poison    405  60      62       63
2                 Venusaur    Grass  Poison    525  80      82       83
3    VenusaurMega Venusaur    Grass  Poison    625  80     100      123
4                Charmander     Fire      10    309  39      52       43
..                      ...      ...     ...    ...  ..     ...      ...
795                Diancie     Rock   Fairy    600  50     100      150
796    DiancieMega Diancie     Rock   Fairy    700  50     160      110
797    HoopaHoopa Confined  Psychic   Ghost    600  80     110       60
798     HoopaHoopa Unbound  Psychic    Dark    680  80     160       60
799              Volcanion     Fire   Water    600  80     110      120

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

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

[800 rows x 19 columns]
```

[4]:
```
pk['avg1']=(pk['HP']+pk['Attack']+pk['Defense'])/2 #create new column named avg␣
 ↪with average value of this field
pk.head(5)
```

[4]:
```
   Unnamed: 0.3  Unnamed: 0.2  Unnamed: 0.1  Unnamed: 0  #  \
0             0             0             0           0  1
1             1             1             1           1  2
2             2             2             2           2  3
3             3             3             3           3  3
4             4             4             4           4  4

                   Name Type 1  Type 2  Total  HP  Attack  Defense  Sp. Atk  \
0             Bulbasaur  Grass  Poison    318  45      49       49       65
1               Ivysaur  Grass  Poison    405  60      62       63       80
2              Venusaur  Grass  Poison    525  80      82       83      100
3  VenusaurMega Venusaur  Grass  Poison    625  80     100      123      122
4            Charmander   Fire      10    309  39      52       43       60

   Sp. Def  Speed  Generation  Legendary    avg   avg1
0       65     45           1      False   71.5   71.5
1       80     60           1      False   92.5   92.5
2      100     80           1      False  122.5  122.5
3      120     80           1      False  151.5  151.5
4       50     65           1      False   67.0   67.0
```

[5]:
```
m=pk["Total"].mean() #give mean of data
print(m)
```

```
435.1025
```

[6]:
```
m=pk["Total"].median() #give median of data
print(m)
```

```
450.0
```

[7]:
```
m=pk["Attack"].mode() #give mode of data
print(m)
```

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

[8]:
```
print(pk.head())#to fetch first 5 records
```

```
   Unnamed: 0.3  Unnamed: 0.2  Unnamed: 0.1  Unnamed: 0  #  \
0             0             0             0           0  1
1             1             1             1           1  2
2             2             2             2           2  3
3             3             3             3           3  3
4             4             4             4           4  4

                   Name Type 1  Type 2  Total  HP  Attack  Defense  Sp. Atk  \
0             Bulbasaur  Grass  Poison    318  45      49       49       65
1               Ivysaur  Grass  Poison    405  60      62       63       80
2              Venusaur  Grass  Poison    525  80      82       83      100
3  VenusaurMega Venusaur  Grass  Poison    625  80     100      123      122
4            Charmander   Fire      10    309  39      52       43       60

   Sp. Def  Speed  Generation  Legendary    avg   avg1
0       65     45           1      False   71.5   71.5
1       80     60           1      False   92.5   92.5
2      100     80           1      False  122.5  122.5
3      120     80           1      False  151.5  151.5
4       50     65           1      False   67.0   67.0
```

[9]:
```
print(pk.tail())#to fetch last 5 records
```

```
     Unnamed: 0.3  Unnamed: 0.2  Unnamed: 0.1  Unnamed: 0    #  \
795           795           795           795         795  719
796           796           796           796         796  719
797           797           797           797         797  720
798           798           798           798         798  720
799           799           799           799         799  721

                   Name   Type 1 Type 2  Total  HP  Attack  Defense  Sp. Atk  \
795             Diancie     Rock  Fairy    600  50     100      150      100
796  DiancieMega Diancie     Rock  Fairy    700  50     160      110      160
797  HoopaHoopa Confined  Psychic  Ghost    600  80     110       60      150
798   HoopaHoopa Unbound  Psychic   Dark    680  80     160       60      170
799            Volcanion     Fire  Water    600  80     110      120      130

     Sp. Def  Speed  Generation  Legendary    avg   avg1
795      150     50           6       True  150.0  150.0
796      110    110           6       True  160.0  160.0
797      130     70           6       True  125.0  125.0
798      130     80           6       True  150.0  150.0
799       90     70           6       True  155.0  155.0
```

[10]:
```
print(pk.loc[2])#to fetch single row
```

```
Unnamed: 0.3          2
```

```
Unnamed: 0.2           2
Unnamed: 0.1           2
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
avg1                122.5
Name: 2, dtype: object
```

[11]:
```
print(pk.info)
```

```
<bound method DataFrame.info of      Unnamed: 0.3  Unnamed: 0.2  Unnamed: 0.1
Unnamed: 0    #  \
0               0             0             0           0    1
1               1             1             1           1    2
2               2             2             2           2    3
3               3             3             3           3    3
4               4             4             4           4    4
..            …           …           …         …  …
795           795           795           795         795  719
796           796           796           796         796  719
797           797           797           797         797  720
798           798           798           798         798  720
799           799           799           799         799  721

                     Name   Type 1  Type 2  Total  HP  Attack  Defense  \
0               Bulbasaur    Grass  Poison    318  45      49       49
1                 Ivysaur    Grass  Poison    405  60      62       63
2                Venusaur    Grass  Poison    525  80      82       83
3    VenusaurMega Venusaur    Grass  Poison    625  80     100      123
4              Charmander     Fire      10    309  39      52       43
..                    …      …     …    …  ..      …      …
795               Diancie     Rock   Fairy    600  50     100      150
796    DiancieMega Diancie     Rock   Fairy    700  50     160      110
797    HoopaHoopa Confined  Psychic   Ghost    600  80     110       60
798     HoopaHoopa Unbound  Psychic    Dark    680  80     160       60
799              Volcanion     Fire   Water    600  80     110      120
```

```
     Sp. Atk  Sp. Def  Speed  Generation  Legendary    avg   avg1
0         65       65     45           1      False   71.5   71.5
1         80       80     60           1      False   92.5   92.5
2        100      100     80           1      False  122.5  122.5
3        122      120     80           1      False  151.5  151.5
4         60       50     65           1      False   67.0   67.0
..       …        …    …          …         …    …    …
795      100      150     50           6       True  150.0  150.0
796      160      110    110           6       True  160.0  160.0
797      150      130     70           6       True  125.0  125.0
798      170      130     80           6       True  150.0  150.0
799      130       90     70           6       True  155.0  155.0

[800 rows x 19 columns]>
```

[12]:
```
d=pk.iloc[0:2]#fetch specific rows
print(d)
```

```
   Unnamed: 0.3  Unnamed: 0.2  Unnamed: 0.1  Unnamed: 0  #       Name Type 1  \
0             0             0             0           0  1  Bulbasaur  Grass
1             1             1             1           1  2    Ivysaur  Grass

   Type 2  Total  HP  Attack  Defense  Sp. Atk  Sp. Def  Speed  Generation  \
0  Poison    318  45      49       49       65       65     45           1
1  Poison    405  60      62       63       80       80     60           1

   Legendary   avg  avg1
0      False  71.5  71.5
1      False  92.5  92.5
```

[13]:
```
newstd_data=pk.dropna()#to remove null value
print(newstd_data)
```

```
     Unnamed: 0.3  Unnamed: 0.2  Unnamed: 0.1  Unnamed: 0    #  \
0               0             0             0           0    1
1               1             1             1           1    2
2               2             2             2           2    3
3               3             3             3           3    3
4               4             4             4           4    4
..            …             …           …         …  …
795           795           795           795         795  719
796           796           796           796         796  719
797           797           797           797         797  720
798           798           798           798         798  720
799           799           799           799         799  721

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

```
1                  Ivysaur    Grass  Poison    405  60      62       63
2                 Venusaur    Grass  Poison    525  80      82       83
3    VenusaurMega Venusaur    Grass  Poison    625  80     100      123
4                Charmander     Fire      10    309  39      52       43
..                      …       …     …    …   ..     …       …
795                 Diancie     Rock   Fairy    600  50     100      150
796    DiancieMega Diancie     Rock   Fairy    700  50     160      110
797    HoopaHoopa Confined  Psychic   Ghost    600  80     110       60
798     HoopaHoopa Unbound  Psychic    Dark    680  80     160       60
799              Volcanion     Fire   Water    600  80     110      120

     Sp. Atk  Sp. Def  Speed  Generation  Legendary    avg   avg1
0         65       65     45           1      False   71.5   71.5
1         80       80     60           1      False   92.5   92.5
2        100      100     80           1      False  122.5  122.5
3        122      120     80           1      False  151.5  151.5
4         60       50     65           1      False   67.0   67.0
..       …      …    …         …         …    …    …
795      100      150     50           6       True  150.0  150.0
796      160      110    110           6       True  160.0  160.0
797      150      130     70           6       True  125.0  125.0
798      170      130     80           6       True  150.0  150.0
799      130       90     70           6       True  155.0  155.0

[800 rows x 19 columns]
```

[14]:
```
#fill null value with 10
newstd_data=pk.fillna(10,inplace=True)
print(newstd_data)
```

```
None
```

[15]:
```
#to change specific colum with null value
new=pk["avg"].fillna("90.33")
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
```

[16]:
```
#modify data in same object(modify object) (update data in std_data variable)
new=pk.fillna({"Total": "90"}, inplace=True)
print(new)
```

```
None
```

[17]:
```
pk.to_csv('pokemon.csv')#toupdate original file
```

[18]:
```
# to sort data in asending order1
pk.sort_values(['Total'],ascending=1)

# to sort data in descending order0
pk.sort_values(['Total'],ascending=0)
```

[18]:

	Unnamed: 0.3	Unnamed: 0.2	Unnamed: 0.1	Unnamed: 0	#	\
426	426	426	426	426	384	
164	164	164	164	164	150	
163	163	163	163	163	150	
422	422	422	422	422	382	
424	424	424	424	424	383	
..	…	…	…	…	…	
13	13	13	13	13	10	
288	288	288	288	288	265	
446	446	446	446	446	401	
322	322	322	322	322	298	
206	206	206	206	206	191	

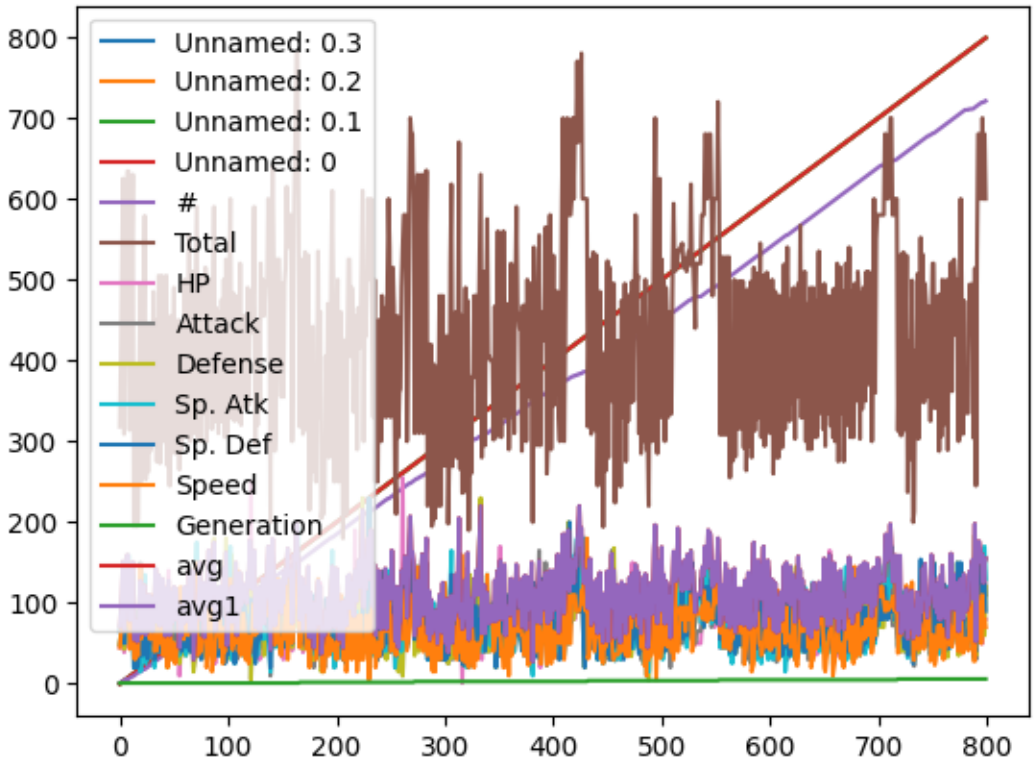
	Name	Type 1	Type 2	Total	HP	Attack	Defense	\
426	RayquazaMega Rayquaza	Dragon	Flying	780	105	180	100	
164	MewtwoMega Mewtwo Y	Psychic	10	780	106	150	70	
163	MewtwoMega Mewtwo X	Psychic	Fighting	780	106	190	100	
422	KyogrePrimal Kyogre	Water	10	770	100	150	90	
424	GroudonPrimal Groudon	Ground	Fire	770	100	180	160	
..	…	…	…	…	…	…	…	
13	Caterpie	Bug	10	195	45	30	35	
288	Wurmple	Bug	10	195	45	45	35	
446	Kricketot	Bug	10	194	37	25	41	
322	Azurill	Normal	Fairy	190	50	20	40	
206	Sunkern	Grass	10	180	30	30	30	

	Sp. Atk	Sp. Def	Speed	Generation	Legendary	avg	avg1
426	180	100	115	3	True	192.5	192.5
164	194	120	140	1	True	163.0	163.0
163	154	100	130	1	True	198.0	198.0
422	180	160	90	3	True	170.0	170.0
424	150	90	90	3	True	220.0	220.0
..	…	…	…	…	…	…	…
13	20	20	45	1	False	55.0	55.0

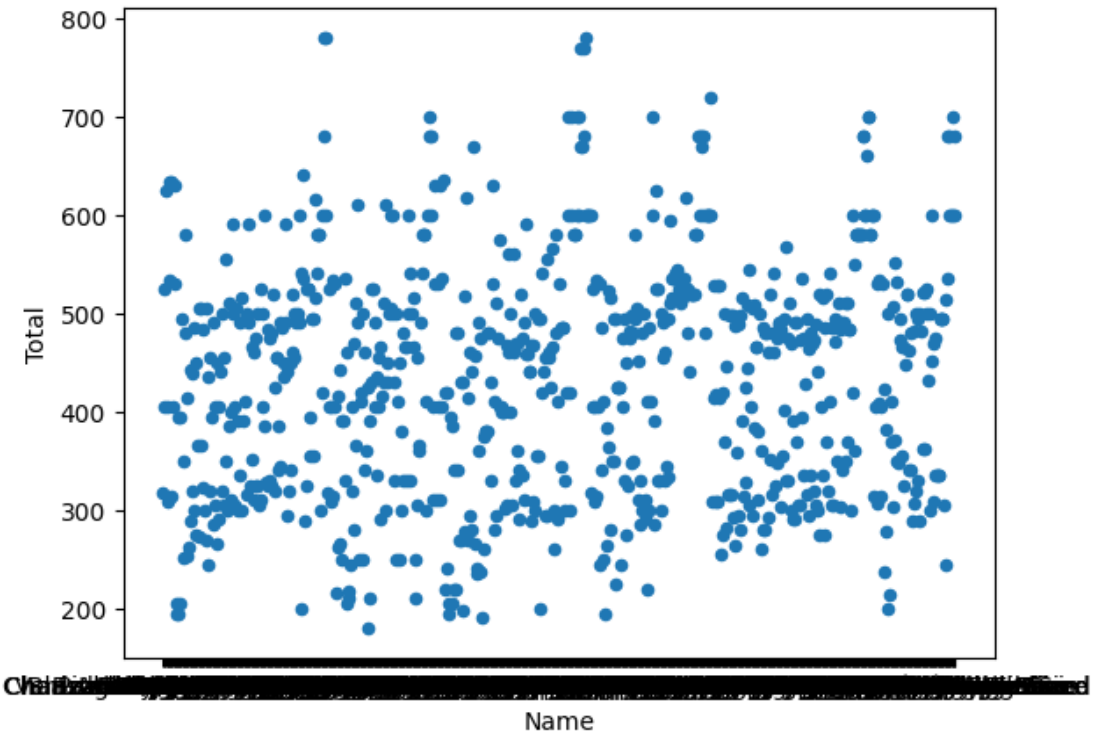
```
288        20        30        20           3      False   62.5   62.5
446        25        41        25           4      False   51.5   51.5
322        20        40        20           3      False   55.0   55.0
206        30        30        30           2      False   45.0   45.0

[800 rows x 19 columns]
```

[19]:
```
pk.plot()#to create visual presentation of data
plt.show
```

[19]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```

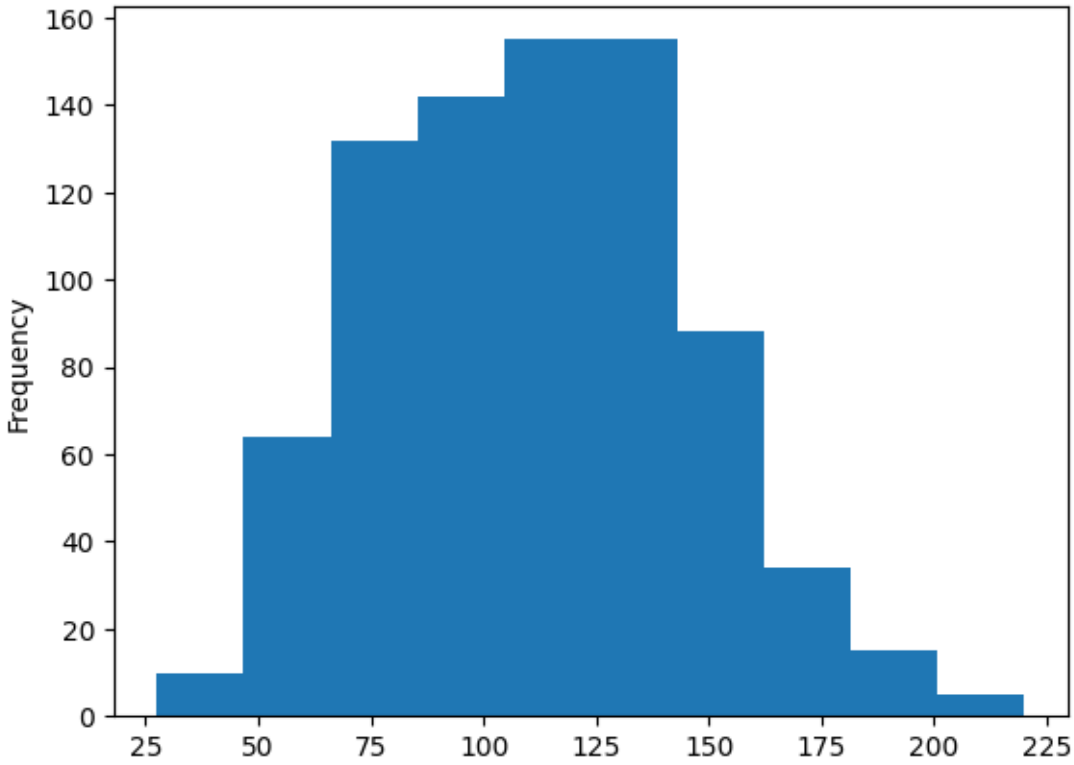


[20]:
```
pk.plot(kind="scatter",x='Name',y='Total')
plt.show()
```



[21]:
```
pk['avg'].plot(kind='hist')#kind use to define type
```

[21]: <Axes: ylabel='Frequency'>



[22]:
```
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
```

```
[10, 20, 30, 40, 50]
40
```

[23]:
```
print(s1)
print(s1["13"]) #to find specific index
```

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

[24]:
```
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
```

[25]:
```
std={"student":["aiml","ccn","ws","cs"],"marks":[90,89,99,98]}
print(std)
```

```
{'student': ['aiml', 'ccn', 'ws', 'cs'], 'marks': [90, 89, 99, 98]}
```

[26]:
```
#to create data frame which store data intabular Format
dfstd=pd.DataFrame(std)
print(dfstd)
print(dfstd.loc[3])
```

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