

```
1 import numpy as np
2 import pandas as pd
```

```
1 Mass = pd.Series([0.3,4,5,0.6,1000,560,80,102,0.01],index=['merc','ven','eart','mar'],
2 Mass
```

```
merc      0.30
ven       4.00
eart      5.00
mar       0.60
jup     1000.00
sat      560.00
ura       80.00
nept     102.00
plu       0.01
dtype: float64
```

```
1 Mass+Mass
```

```
↳ merc      0.60
ven       8.00
eart     10.00
mar       1.20
jup     2000.00
sat     1120.00
ura      160.00
nept     204.00
plu       0.02
dtype: float64
```

```
1 Mass*Mass
```

```
merc      0.0900
ven      16.0000
eart     25.0000
mar       0.3600
jup    1000000.0000
sat     313600.0000
ura      6400.0000
nept     10404.0000
plu       0.0001
dtype: float64
```

```
1 BigMass = Mass[Mass>100]
2 BigMass
```

```
jup     1000.0
sat      560.0
nept     102.0
dtype: float64
```

```
1 NewMass = Mass+BigMass
2 NewMass #nan bcz bigmass had nan
```

```
eart      NaN
jup      2000.0
mar      NaN
merc      NaN
nept     204.0
plu      NaN
sat     1120.0
ura      NaN
ven      NaN
dtype: float64
```

```
1 pd
```

```
<module 'pandas' from '/usr/local/lib/python3.7/dist-packages/pandas/__init__.py'>
```

```
1 print(pd)
```

```
<module 'pandas' from '/usr/local/lib/python3.7/dist-packages/pandas/__init__.py'>
```

```
1 pd.isnull(NewMass)
```

```
eart      True
jup      False
mar      True
merc      True
nept     False
plu      True
sat      False
ura      True
ven      True
dtype: bool
```

```
1 NewMass[pd.isnull(NewMass)]
```

```
eart      NaN
mar      NaN
merc      NaN
plu      NaN
ura      NaN
ven      NaN
dtype: float64
```

```
1 NewMass[~pd.isnull(NewMass)]
```

```
jup      2000.0
nept     204.0
sat     1120.0
dtype: float64
```

```
1 Mass['eris']=0.00029
```

```
2 Mass
```

```
merc      0.30000
```

```

ven      4.00000
eart     5.00000
mar      0.60000
jup     1000.00000
sat      560.00000
ura      80.00000
nept     102.00000
plu      0.01000
eris     0.00029
dtype: float64

```

```

1 Mass['moon']= 0.7
2 Mass

```

```

merc     0.30000
ven      4.00000
eart     5.00000
mar      0.60000
jup     1000.00000
sat      560.00000
ura      80.00000
nept     102.00000
plu      0.01000
eris     0.00029
moon     0.70000
dtype: float64

```

```

1 Mass.drop['moon'] #braces error
2 Mass

```

```

-----
TypeError                                Traceback (most recent call last)
<ipython-input-15-483e0ea56531> in <module>()
----> 1 Mass.drop['moon'] #braces error
      2 Mass

```

TypeError: 'method' object is not subscriptable

SEARCH STACK OVERFLOW

```

1 Mass=Mass.drop(['moon']) #just Mass.drop wont drop , i have to save

```

```

1 Mass

```

```

merc     0.30000
ven      4.00000
eart     5.00000
mar      0.60000
jup     1000.00000
sat      560.00000
ura      80.00000
nept     102.00000
plu      0.01000
eris     0.00029
dtype: float64

```

```
1 diameter=pd.Series((4000,12000,12000,3000,6000,142000,120000,51000,49000,2000),index=[
2 diameter
```

```
merc      4000
ven       12000
eart      12000
mar        3000
jup        6000
sat      142000
ura      120000
nept      51000
plu       49000
eris       2000
dtype: int64
```

```
1 #density = mass / volume
```

```
1 density=Mass/((np.pi*(diameter**3))/6)
2 density
```

```
merc      8.952466e-12
ven       4.420971e-12
eart      5.526213e-12
mar       4.244132e-11
jup       8.841941e-09
sat       3.735290e-13
ura       8.841941e-14
nept      1.468558e-12
plu       1.623354e-16
eris      6.923240e-14
dtype: float64
```

```
1 Mass
```

```
merc      0.30000
ven       4.00000
eart      5.00000
mar       0.60000
jup     1000.00000
sat       560.00000
ura       80.00000
nept     102.00000
plu       0.01000
eris      0.00029
dtype: float64
```

```
1 Mass["unidentified"]=6
```

```
1 Mass
```

```
merc      0.30000
ven       4.00000
eart      5.00000
```

```

mar          0.60000
jup         1000.00000
sat          560.00000
ura          80.00000
nept        102.00000
plu          0.01000
eris         0.00029
unidentified  6.00000
dtype: float64

```

```
1 density
```

```

merc      8.952466e-12
ven       4.420971e-12
eart      5.526213e-12
mar       4.244132e-11
jup       8.841941e-09
sat       3.735290e-13
ura       8.841941e-14
nept      1.468558e-12
plu       1.623354e-16
eris      6.923240e-14
dtype: float64

```

```
1 density=Mass/((np.pi*(diameter**3))/6)
2 density
```

```

eart      5.526213e-12
eris      6.923240e-14
jup       8.841941e-09
mar       4.244132e-11
merc      8.952466e-12
nept      1.468558e-12
plu       1.623354e-16
sat       3.735290e-13
unidentified      NaN
ura       8.841941e-14
ven       4.420971e-12
dtype: float64

```

```
1 #replacing nan values
```

```
1 Density_mean=np.mean(density)
2 Density_mean
```

```
8.90528215144313e-10
```

```
1 density.index
```

```

Index(['eart', 'eris', 'jup', 'mar', 'merc', 'nept', 'plu', 'sat',
      'unidentified', 'ura', 'ven'],
      dtype='object')

```

```
1 for i in density.index :
```

```

2     if pd.isnull(density[i]) :
3         density[i]= Density_mean

```

```
1 density
```

```

eart      5.526213e-12
eris      6.923240e-14
jup       8.841941e-09
mar       4.244132e-11
merc      8.952466e-12
nept      1.468558e-12
plu       1.623354e-16
sat       3.735290e-13
unidentified 8.905282e-10
ura       8.841941e-14
ven       4.420971e-12
dtype: float64

```

```
1 Mass
```

```

merc      0.30000
ven       4.00000
eart      5.00000
mar       0.60000
jup      1000.00000
sat       560.00000
ura       80.00000
nept     102.00000
plu       0.01000
eris      0.00029
unidentified 6.00000
dtype: float64

```

```
1 Mass["unidentified2"]=6
```

```
1 Mass
```

```

merc      0.30000
ven       4.00000
eart      5.00000
mar       0.60000
jup      1000.00000
sat       560.00000
ura       80.00000
nept     102.00000
plu       0.01000
eris      0.00029
unidentified 6.00000
unidentified2 6.00000
dtype: float64

```

```

1 density=Mass/((np.pi*(diameter**3))/6)
2 density

```

```
eart      5.526213e-12
```

```

eris          6.923240e-14
jup           8.841941e-09
mar           4.244132e-11
merc          8.952466e-12
nept          1.468558e-12
plu           1.623354e-16
sat           3.735290e-13
unidentified  NaN
unidentified2 NaN
ura           8.841941e-14
ven           4.420971e-12
dtype: float64

```

```
1 pd.isnull(density)
```

```

eart          False
eris          False
jup           False
mar           False
merc          False
nept          False
plu           False
sat           False
unidentified   True
unidentified2  True
ura           False
ven           False
dtype: bool

```

```

1 density[pd.isnull(density)]= np.mean(density)
2 density

```

```

eart          5.526213e-12
eris          6.923240e-14
jup           8.841941e-09
mar           4.244132e-11
merc          8.952466e-12
nept          1.468558e-12
plu           1.623354e-16
sat           3.735290e-13
unidentified  8.905282e-10
unidentified2 8.905282e-10
ura           8.841941e-14
ven           4.420971e-12
dtype: float64

```

