```
import pandas as pd
m=pd.read_csv('/content/Meteorite_Landings.csv')
m
```

	name	id	nametype	recclass	mass (g)	fall	year	reclat	reclong	GeoLocation
0	Aachen	1	Valid	L5	21.0	Fell	01/01/1880 12:00:00 AM	50.77500	6.08333	(50.775, 6.08333)
1	Aarhus	2	Valid	H6	720.0	Fell	01/01/1951 12:00:00 AM	56.18333	10.23333	(56.18333, 10.23333)
2	Abee	6	Valid	EH4	107000.0	Fell	01/01/1952 12:00:00 AM	54.21667	-113.00000	(54.21667, -113.0)
3	Acapulco	10	Valid	Acapulcoite	1914.0	Fell	01/01/1976 12:00:00 AM	16.88333	-99.90000	(16.88333, -99.9)
4	Achiras	370	Valid	L6	780.0	Fell	01/01/1902 12:00:00 AM	-33.16667	-64.95000	(-33.16667, -64.95)
...	...	...	...	...	...	...	...	...	...	...
45711	Zillah 002	31356	Valid	Eucrite	172.0	Found	01/01/1990 12:00:00 AM	29.03700	17.01850	(29.037, 17.0185)
45712	Zinder	30409	Valid	Pallasite, ungrouped	46.0	Found	01/01/1999 12:00:00 AM	13.78333	8.96667	(13.78333, 8.96667)

```
m.name
```

```
0            Aachen
1            Aarhus
2              Abee
3           Acapulco
4            Achiras
             ...
45711    Zillah 002
45712        Zinder
45713          Zlin
45714     Zubkovsky
45715    Zulu Queen
Name: name, Length: 45716, dtype: object
```

```
m.columns
```

```
Index(['name', 'id', 'nametype', 'recclass', 'mass (g)', 'fall', 'year',
       'reclat', 'reclong', 'GeoLocation'],
      dtype='object')
```

```
m.index
```

```
RangeIndex(start=0, stop=45716, step=1)
```

```
import requests
response=requests.get('https://data.nasa.gov/resource/gh4g-9sfh.json',
params={'$limit':50_000})
if response.ok:
  payload=response.json()
else:
  print(f'request was not sucessful and returned code:{response.status_code}')
  payload=None
```

```
import pandas as pd
df=pd.DataFrame(payload)
df.head()
```

	name	id	nametype	recclass	mass	fall	year	reclat	reclong	geolocation	:@computed_region_cbhk_fwbd
0	Aachen	1	Valid	L5	21	Fell	1880-01-01T00:00:00.000	50.775000	6.083330	{'latitude': '50.775', 'longitude': '6.08333'}	NaN
1	Aarhus	2	Valid	H6	720	Fell	1951-01-01T00:00:00.000	56.183330	10.233330	{'latitude': '56.18333', 'longitude': '10.23333'}	NaN
2	Abee	6	Valid	EH4	107000	Fell	1952-01-01T00:00:00.000	54.216670	-113.000000	{'latitude': '54.21667', 'longitude': '-113.0'}	NaN

m.shape

```
(45716, 10)
```

m.dtypes

```
name            object
id               int64
nametype        object
recclass        object
mass (g)       float64
fall            object
year            object
reclat         float64
reclong        float64
GeoLocation     object
dtype: object
```

m.tail()

	name	id	nametype	recclass	mass (g)	fall	year	reclat	reclong	GeoLocation
45711	Zillah 002	31356	Valid	Eucrite	172.0	Found	01/01/1990 12:00:00 AM	29.03700	17.01850	(29.037, 17.0185)
45712	Zinder	30409	Valid	Pallasite, ungrouped	46.0	Found	01/01/1999 12:00:00 AM	13.78333	8.96667	(13.78333, 8.96667)
45713	Zlin	30410	Valid	H4	3.3	Found	01/01/1939 12:00:00 AM	49.25000	17.66667	(49.25, 17.66667)

m.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 45716 entries, 0 to 45715
Data columns (total 10 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   name         45716 non-null  object
 1   id           45716 non-null  int64
 2   nametype     45716 non-null  object
 3   recclass     45716 non-null  object
 4   mass (g)     45585 non-null  float64
 5   fall         45716 non-null  object
 6   year         45425 non-null  object
 7   reclat       38401 non-null  float64
 8   reclong      38401 non-null  float64
 9   GeoLocation  38401 non-null  object
dtypes: float64(3), int64(1), object(6)
memory usage: 3.5+ MB
```

m.name

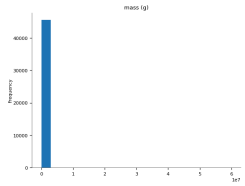
```
0            Aachen
1            Aarhus
2              Abee
3           Acapulco
4            Achiras
             ...
45711    Zillah 002
45712         Zinder
45713           Zlin
45714      Zubkovsky
45715    Zulu Queen
Name: name, Length: 45716, dtype: object
```

```
m[['name','mass (g)']]
```

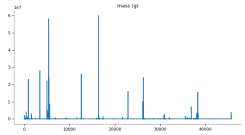
	name	mass (g)
0	Aachen	21.0
1	Aarhus	720.0
2	Abee	107000.0
3	Acapulco	1914.0
4	Achiras	780.0
...	...	...
45711	Zillah 002	172.0
45712	Zinder	46.0
45713	Zlin	3.3
45714	Zubkovsky	2167.0
45715	Zulu Queen	200.0

45716 rows × 2 columns

Distributions



Values



```
m[100:104]
```

	name	id	nametype	recclass	mass (g)	fall	year	reclat	recl
100	Benton	5026	Valid	LL6	2840.0	Fell	01/01/1949 12:00:00 AM	45.95000	-67.55
							01/01/2008		

```
m.iloc[100:104,[0,3,4,6]]
```

	name	recclass	mass (g)	year
100	Benton	LL6	2840.0	01/01/1949 12:00:00 AM
101	Berduc	L6	270.0	01/01/2008 12:00:00 AM
102	Béréba	Eucrite-mmict	18000.0	01/01/1924 12:00:00 AM
103	Berlanguillas	L6	1440.0	01/01/1811 12:00:00 AM

```
m.loc[100:104,'mass (g)': 'year']
```

	mass (g)	fall	year
100	2840.0	Fell	01/01/1949 12:00:00 AM
101	270.0	Fell	01/01/2008 12:00:00 AM
102	18000.0	Fell	01/01/1924 12:00:00 AM
103	1440.0	Fell	01/01/1811 12:00:00 AM
104	960.0	Fell	01/01/2004 12:00:00 AM

```
(m['mass (g)']>50) & (m.fall=='Found')
```

```
0        False
1        False
2        False
3        False
4        False
         ...
45711     True
45712    False
45713    False
45714     True
45715     True
Length: 45716, dtype: bool
```

```
m[(m['mass (g)']>1e6) & (m.fall=='Fell')]
```

	name	id	nametype	recclass	mass (g)	fall	year	reclat	reclong	GeoLocation
29	Allende	2278	Valid	CV3	2000000.0	Fell	01/01/1969 12:00:00 AM	26.96667	-105.31667	(26.96667, -105.31667)
419	Jilin	12171	Valid	H5	4000000.0	Fell	01/01/1976 12:00:00 AM	44.05000	126.16667	(44.05, 126.16667)
506	Kunya-Urgench	12379	Valid	H5	1100000.0	Fell	01/01/1998 12:00:00 AM	42.25000	59.20000	(42.25, 59.2)
707	Norton County	17922	Valid	Aubrite	1100000.0	Fell	01/01/1948 12:00:00 AM	39.68333	-99.86667	(39.68333, -99.86667)
920	Sikhote-Alin	23593	Valid	Iron, IIAB	23000000.0	Fell	01/01/1947 12:00:00 AM	46.16000	134.65333	(46.16, 134.65333)

```
m.query ("`mass (g)`>1e6 and 'fall' =='Fell'")
```

name	id	nametype	recclass	mass (g)	fall	year	reclat	reclong	GeoLocation

```
m.fall.value_counts()
```

```
Found    44609
Fell      1107
Name: fall, dtype: int64
```

```
m.fall.value_counts(normalize =True)
```

```
Found    0.975785
Fell     0.024215
Name: fall, dtype: float64
```

```
m['mass (g)'].mean()
```

```
13278.078548601512
```

```
m['mass (g)'].describe()
```

```
count    4.558500e+04
mean     1.327808e+04
std      5.749889e+05
min      0.000000e+00
25%      7.200000e+00
50%      3.260000e+01
75%      2.026000e+02
max      6.000000e+07
Name: mass (g), dtype: float64
```

```
m['mass (g)'].quantile([0.01,0.05,0.5,0.95,0.99])
```

```
0.01       0.44
0.05       1.10
0.50      32.60
0.95    4000.00
0.99   50600.00
Name: mass (g), dtype: float64
```

```
m['mass (g)'].median()
```

```
32.6
```

```
m.loc[m['mass (g)'].idxmax()]
```

```
name                            Hoba
id                             11890
nametype                       Valid
recclass                  Iron, IVB
mass (g)                 60000000.0
fall                          Found
year           01/01/1920 12:00:00 AM
reclat                     -19.58333
reclong                     17.91667
GeoLocation     (-19.58333, 17.91667)
Name: 16392, dtype: object
```

```
m.recclass.nunique()
```

```
466
```

```
m.recclass.unique()[:14]
```

```
array(['L5', 'H6', 'EH4', 'Acapulcoite', 'L6', 'LL3-6', 'H5', 'L',
       'Diogenite-pm', 'Unknown', 'H4', 'H', 'Iron, IVA', 'CR2-an'],
      dtype=object)
```

```
m.describe(include = 'all')
```

	name	id	nametype	recclass	mass (g)	fall	year	reclat	reclong	GeoLocation
count	45716	45716.000000	45716	45716	4.558500e+04	45716	45425	38401.000000	38401.000000	38401
unique	45716	NaN	2	466	NaN	2	266	NaN	NaN	17100
top	Aachen	NaN	Valid	L6	NaN	Found	01/01/2003 12:00:00 AM	NaN	NaN	(0.0, 0.0)
freq	1	NaN	45641	8285	NaN	44609	3323	NaN	NaN	6214
mean	NaN	26889.735104	NaN	NaN	1.327808e+04	NaN	NaN	-39.122580	61.074319	NaN
std	NaN	16860.683030	NaN	NaN	5.749889e+05	NaN	NaN	46.378511	80.647298	NaN
min	NaN	1.000000	NaN	NaN	0.000000e+00	NaN	NaN	-87.366670	-165.433330	NaN
25%	NaN	12688.750000	NaN	NaN	7.200000e+00	NaN	NaN	-76.714240	0.000000	NaN
50%	NaN	24261.500000	NaN	NaN	3.260000e+01	NaN	NaN	-71.500000	35.666670	NaN
75%	NaN	40656.750000	NaN	NaN	2.026000e+02	NaN	NaN	0.000000	157.166670	NaN
max	NaN	57458.000000	NaN	NaN	6.000000e+07	NaN	NaN	81.166670	354.473330	NaN