```python
import pandas as pd
meteorites = pd.read_csv('/Meteorite_Landings.csv')
meteorites
```

	name	id	nametype	recclass	mass (g)	fall	year	reclat
0	Aachen	1	Valid	L5	21.0	Fell	01/01/1880 12:00:00 AM	50.77500
1	Aarhus	2	Valid	H6	720.0	Fell	01/01/1951 12:00:00 AM	56.18333
2	Abee	6	Valid	EH4	107000.0	Fell	01/01/1952 12:00:00 AM	54.21667
3	Acapulco	10	Valid	Acapulcoite	1914.0	Fell	01/01/1976 12:00:00 AM	16.88333
4	Achiras	370	Valid	L6	780.0	Fell	01/01/1902 12:00:00 AM	-33.16667

Next steps: [Generate code with `meteorites`]   [🔘 View recommended plots]

```python
meteorites.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
```

```python
meteorites.columns
```

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

```python
meteorites.index
```

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

```python
import requests
```

```python
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 succesful and returned code:{response.status_code}')
  payload=None
```

```python
import pandas as pd

df = pd.DataFrame(payload)
df.head(3)
```

	name	id	nametype	recclass	mass	fall	year	reclat	reclong
0	Aachen	1	Valid	L5	21	Fell	1880-01-01T00:00:00.000	50.775000	6.083330
1	Aarhus	2	Valid	H6	720	Fell	1951-01-01T00:00:00.000	56.183330	10.233330
2	Abee	6	Valid	EH4	107000	Fell	1952-01-01T00:00:00.000	54.216670	-113.000000

Next steps: [Generate code with `df`]   [◉ View recommended plots]

```
meteorites.shape
```

```
(45716, 10)
```

```
meteorites.columns
```

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

```
meteorites.dtypes
```

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

```
meteorites.head()
```

	name	id	nametype	recclass	mass (g)	fall	year	reclat	reclong
0	Aachen	1	Valid	L5	21.0	Fell	01/01/1880 12:00:00 AM	50.77500	6.08333
1	Aarhus	2	Valid	H6	720.0	Fell	01/01/1951 12:00:00 AM	56.18333	10.23333

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Next steps: [Generate code with `meteorites`]   [◉ View recommended plots]

```
meteorites.tail()
```

	name	id	nametype	recclass	mass (g)	fall	year	reclat	rec...
45711	Zillah 002	31356	Valid	Eucrite	172.0	Found	01/01/1990 12:00:00 AM	29.03700	17.0
45712	Zinder	30409	Valid	Pallasite, ungrouped	46.0	Found	01/01/1999 12:00:00 AM	13.78333	8.9

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```
meteorites.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
```

meteorites.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
```

meteorites[['name','mass (g)','recclass']]

	name	mass (g)	recclass
0	Aachen	21.0	L5
1	Aarhus	720.0	H6
2	Abee	107000.0	EH4
3	Acapulco	1914.0	Acapulcoite
4	Achiras	780.0	L6
...	...	...	...
45711	Zillah 002	172.0	Eucrite
45712	Zinder	46.0	Pallasite, ungrouped
45713	Zlin	3.3	H4
45714	Zubkovsky	2167.0	L6
45715	Zulu Queen	200.0	L3.7

45716 rows × 3 columns

meteorites[100:104]

	name	id	nametype	recclass	mass (g)	fall	year	reclat	reclong	GeoLocation
100	Benton	5026	Valid	LL6	2840.0	Fell	01/01/1949 12:00:00 AM	45.95000	-67.55000	(45.95, -67.55)
101	Berduc	48975	Valid	L6	270.0	Fell	01/01/2008 12:00:00 AM	-31.91000	-58.32833	(-31.91, -58.32833)
102	Béréba	5028	Valid	Eucrite-mmict	18000.0	Fell	01/01/1924 12:00:00 AM	11.65000	-3.65000	(11.65, -3.65)
103	Berlanguillas	5029	Valid	L6	1440.0	Fell	01/01/1811 12:00:00 AM	41.68333	-3.80000	(41.68333, -3.8)

meteorites.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

meteorites.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

```
(meteorites['mass (g)'] > 50) & (meteorites.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
```

```
meteorites[(meteorites['mass (g)'] > 1e6) & (meteorites.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)

```
meteorites.query("`mass (g)` > 1e6 and 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)

```
meteorites.fall.value_counts()
```

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

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

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

```
meteorites.fall.value_counts(normalize=False)
```

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

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

```
13278.078548601512
```

```
meteorites['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
```

```python
meteorites['mass (g)'].median()
```

```
     32.6
```

```python
meteorites['mass (g)'].max()
```

```
     60000000.0
```

```python
meteorites.loc[meteorites['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
```

```python
meteorites.recclass.nunique()
```

```
     466
```

```python
meteorites.recclass.unique()[:14]
```

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

```python
meteorites.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

```
Start coding or generate with AI.
```