

In [6]:

```
import pandas as pd

import numpy as np
```

In [9]:

```
ufo = pd.read_csv('ufo.csv')

ufo
```

Out[9]:

	City	Colors Reported	Shape Reported	State	Time
0	Ithaca	NaN	TRIANGLE	NY	6/1/1930 22:00
1	Willingboro	NaN	OTHER	NJ	6/30/1930 20:00
2	Holyoke	NaN	OVAL	CO	2/15/1931 14:00
3	Abilene	NaN	DISK	KS	6/1/1931 13:00
4	New York Worlds Fair	NaN	LIGHT	NY	4/18/1933 19:00
...
18236	Grant Park	NaN	TRIANGLE	IL	12/31/2000 23:00
18237	Spirit Lake	NaN	DISK	IA	12/31/2000 23:00
18238	Eagle River	NaN	NaN	WI	12/31/2000 23:45
18239	Eagle River	RED	LIGHT	WI	12/31/2000 23:45
18240	Ybor	NaN	OVAL	FL	12/31/2000 23:59

18241 rows × 5 columns

In [10]:

```
ufo.head(5)
```

Out[10]:

	City	Colors Reported	Shape Reported	State	Time
0	Ithaca	NaN	TRIANGLE	NY	6/1/1930 22:00
1	Willingboro	NaN	OTHER	NJ	6/30/1930 20:00
2	Holyoke	NaN	OVAL	CO	2/15/1931 14:00
3	Abilene	NaN	DISK	KS	6/1/1931 13:00
4	New York Worlds Fair	NaN	LIGHT	NY	4/18/1933 19:00

In [11]:

```
ufo.tail(10)
```

Out[11]:

	City	Colors Reported	Shape Reported	State	Time
18231	Pismo Beach	NaN	OVAL	CA	12/31/2000 20:00
18232	Lodi	NaN	NaN	WI	12/31/2000 20:30
18233	Anchorage	RED	VARIOUS	AK	12/31/2000 21:00
18234	Capitola	NaN	TRIANGLE	CA	12/31/2000 22:00
18235	Fountain Hills	NaN	NaN	AZ	12/31/2000 23:00
18236	Grant Park	NaN	TRIANGLE	IL	12/31/2000 23:00
18237	Spirit Lake	NaN	DISK	IA	12/31/2000 23:00
18238	Eagle River	NaN	NaN	WI	12/31/2000 23:45
18239	Eagle River	RED	LIGHT	WI	12/31/2000 23:45
18240	Ybor	NaN	OVAL	FL	12/31/2000 23:59

In [12]:

```
ufo.dtypes
```

Out[12]:

```
City          object
Colors Reported  object
Shape Reported  object
State          object
Time           object
dtype: object
```

In [33]:

```
ufo.iloc[:,0]
```

Out[33]:

```
0          Ithaca
1    Willingboro
2        Holyoke
3        Abilene
4  New York Worlds Fair
...
18236    Grant Park
18237    Spirit Lake
18238    Eagle River
18239    Eagle River
18240          Ybor
Name: City, Length: 18241, dtype: object
```

In [25]:

```
ufo.City
```

Out[25]:

```
0           Ithaca
1    Willingboro
2       Holyoke
3       Abilene
4 New York Worlds Fair
...
18236    Grant Park
18237    Spirit Lake
18238    Eagle River
18239    Eagle River
18240         Ybor
Name: City, Length: 18241, dtype: object
```

In [34]:

```
ufo.shape
```

Out[34]:

(18241, 5)

In [39]:

```
ufo[ufo["City"].str.startswith("E", na = False)]
```

Out[39]:

	City	Colors Reported	Shape Reported	State	Time
8	Eklutna	NaN	CIGAR	AK	10/15/1936 17:00
55	Espanola	NaN	CIRCLE	NM	6/1/1947 17:00
109	Excelsior	NaN	CIRCLE	MN	8/15/1949 0:00
140	East Palestine	NaN	LIGHT	OH	7/10/1950 20:30
179	Evergreen	NaN	DISK	CO	6/6/1952 13:00
...
18182	Evansville	NaN	FIREBALL	IN	12/24/2000 20:00
18215	El Campo	NaN	OTHER	TX	12/29/2000 9:00
18224	Eufaula	NaN	DISK	OK	12/29/2000 23:30
18238	Eagle River	NaN	NaN	WI	12/31/2000 23:45
18239	Eagle River	RED	LIGHT	WI	12/31/2000 23:45

557 rows × 5 columns

In [65]:

```
ufo[ufo["Shape Reported"].str.startswith("LIGHT", na = False)]
```

Out[65]:

	City	Colors Reported	Shape Reported	State	Time
4	New York Worlds Fair	NaN	LIGHT	NY	4/18/1933 19:00
10	Fontana	NaN	LIGHT	CA	8/15/1937 21:00
22	NaN	NaN	LIGHT	LA	8/15/1943 0:00
54	Cleveland	NaN	LIGHT	OH	6/1/1947 2:30
86	Henrietta	NaN	LIGHT	OK	8/12/1947 1:00
...
18201	Santa Paula	NaN	LIGHT	CA	12/27/2000 10:00
18209	Houston	NaN	LIGHT	TX	12/28/2000 17:09
18216	Garden Grove	ORANGE	LIGHT	CA	12/29/2000 16:10
18228	Kingsville	NaN	LIGHT	TX	12/31/2000 4:00
18239	Eagle River	RED	LIGHT	WI	12/31/2000 23:45

2803 rows × 5 columns

In [64]:

```
(ufo.groupby('')
```

File "C:\Users\TARUMT\AppData\Local\Temp\ipykernel_5756\2375931447.py",
line 1

```
(ufo[Shape Reported] == "LIGHT").sum()  
      ^
```

SyntaxError: invalid syntax

In []: