```
In [13]:    1  import pandas as pd
```

```
In [14]:    1  df = pd.read_csv('russia_losses_equipment.csv')
```

```
In [15]:    1  df.head()
```

Out[15]:

	date	day	aircraft	helicopter	tank	APC	field artillery	MRL	military auto	fuel tank	drone	naval ship	anti-aircraft warfare
0	2022-02-25	2	10	7	80	516	49	4	100	60	0	2	0
1	2022-02-26	3	27	26	146	706	49	4	130	60	2	2	0
2	2022-02-27	4	27	26	150	706	50	4	130	60	2	2	0
3	2022-02-28	5	29	29	150	816	74	21	291	60	3	2	5
4	2022-03-01	6	29	29	198	846	77	24	305	60	3	2	7

```
In [16]:    1  df.tail()
```

Out[16]:

	date	day	aircraft	helicopter	tank	APC	field artillery	MRL	military auto	fuel tank	drone	naval ship	anti aircraft warfare
36	2022-04-02	38	143	134	631	1776	317	100	1236	76	87	7	54
37	2022-04-03	39	143	134	644	1830	325	105	1249	76	89	7	54
38	2022-04-04	40	147	134	647	1844	330	107	1273	76	91	7	54
39	2022-04-05	41	150	134	676	1858	332	107	1322	76	94	7	55
40	2022-04-06	42	150	135	684	1861	332	107	1324	76	96	7	55

```
In [17]:    1  len(df)
```

Out[17]: 41

```
In [18]:   1  '''
           2  EDA = EXPLORATORY DATA ANALYSIS
           3
           4  WE CAN ANALYZE THE DATA IN TWO WAYS
           5  1) WE CAN ANALYSIZE THE DATA WITH HELP OF MATHS AND STATICS
           6   BY USING MIN,MAX,MEAN,MEDIAN,MODE,&STANDARD DEVIATION AMD FREQUENCY
           7  '''
```

Out[18]: '\nEDA = EXPLORATORY DATA ANALYSIS\n\nWE CAN ANALYZE THE DATA IN TWO WAYS\n1) W
         E CAN ANALYSIZE THE DATA WITH HELP OF MATHS AND STATICS\n BY USING MIN,MAX,MEA
         N,MEDIAN,MODE,&STANDARD DEVIATION AMD FREQUENCY\n'

```
In [19]:   1  df.describe()
```

Out[19]:

	day	aircraft	helicopter	tank	APC	field artillery	MRL	m
count	41.000000	41.000000	41.000000	41.000000	41.000000	41.000000	41.000000	41.0
mean	22.000000	83.926829	92.756098	425.146341	1335.292683	197.609756	67.756098	780.8
std	11.979149	42.768791	40.527633	170.695718	380.066523	96.905593	28.721752	378.5
min	2.000000	10.000000	7.000000	80.000000	516.000000	49.000000	4.000000	100.0
25%	12.000000	46.000000	68.000000	290.000000	999.000000	117.000000	50.000000	454.0
50%	22.000000	86.000000	108.000000	444.000000	1435.000000	201.000000	72.000000	864.0
75%	32.000000	121.000000	127.000000	582.000000	1664.000000	294.000000	93.000000	1144.0
max	42.000000	150.000000	135.000000	684.000000	1861.000000	332.000000	107.000000	1324.0

```
df.isnull()#if true is improper data and false is ther is proper data
```

Out[20]:

	date	day	aircraft	helicopter	tank	APC	field artillery	MRL	military auto	fuel tank	drone	naval ship
0	False	False	False	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False	False
5	False	False	False	False	False	False	False	False	False	False	False	False
6	False	False	False	False	False	False	False	False	False	False	False	False
7	False	False	False	False	False	False	False	False	False	False	False	False
8	False	False	False	False	False	False	False	False	False	False	False	False
9	False	False	False	False	False	False	False	False	False	False	False	False
10	False	False	False	False	False	False	False	False	False	False	False	False
11	False	False	False	False	False	False	False	False	False	False	False	False
12	False	False	False	False	False	False	False	False	False	False	False	False
13	False	False	False	False	False	False	False	False	False	False	False	False
14	False	False	False	False	False	False	False	False	False	False	False	False
15	False	False	False	False	False	False	False	False	False	False	False	False
16	False	False	False	False	False	False	False	False	False	False	False	False
17	False	False	False	False	False	False	False	False	False	False	False	False
18	False	False	False	False	False	False	False	False	False	False	False	False
19	False	False	False	False	False	False	False	False	False	False	False	False
20	False	False	False	False	False	False	False	False	False	False	False	naval
21	False	False	False	False	False	False	False	False	False	False	False	False
22	False	False	False	False	False	False	False	False	False	False	False	False
23	False	False	False	False	False	False	False	False	False	False	False	False
24	False	False	False	False	False	False	False	False	False	False	False	False
25	False	False	False	False	False	False	False	False	False	False	False	False
26	False	False	False	False	False	False	False	False	False	False	False	False
27	False	False	False	False	False	False	False	False	False	False	False	False
28	False	False	False	False	False	False	False	False	False	False	False	False
29	False	False	False	False	False	False	False	False	False	False	False	False
30	False	False	False	False	False	False	False	False	False	False	False	False
31	False	False	False	False	False	False	False	False	False	False	False	False
32	False	False	False	False	False	False	False	False	False	False	False	False

	date	day	aircraft	helicopter	tank	APC	field artillery	MRL	military auto	fuel tank	drone	naval ship
33	False	False	False	False	False	False	False	False	False	False	False	False
34	False	False	False	False	False	False	False	False	False	False	False	False
35	False	False	False	False	False	False	False	False	False	False	False	False
36	False	False	False	False	False	False	False	False	False	False	False	False
37	False	False	False	False	False	False	False	False	False	False	False	False
38	False	False	False	False	False	False	False	False	False	False	False	False
39	False	False	False	False	False	False	False	False	False	False	False	False
40	False	False	False	False	False	False	False	False	False	False	False	False

```
In [21]:   1  df.isna().sum()
```

```
Out[21]: date                        0
         day                         0
         aircraft                    0
         helicopter                  0
         tank                        0
         APC                         0
         field artillery             0
         MRL                         0
         military auto               0
         fuel tank                   0
         drone                       0
         naval ship                  0
         anti-aircraft warfare       0
         special equipment          19
         mobile SRBM system         29
         dtype: int64
```
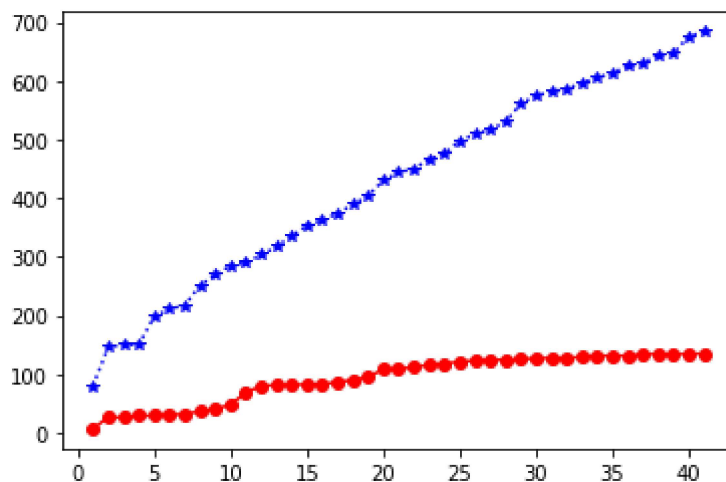
In [22]:
```python
df.fillna({'special equipment':0, 'mobile SRBM system':1},inplace=True)
df.head()
```

Out[22]:

	date	day	aircraft	helicopter	tank	APC	field artillery	MRL	military auto	fuel tank	drone	naval ship	anti-aircraft warfare
0	2022-02-25	2	10	7	80	516	49	4	100	60	0	2	0
1	2022-02-26	3	27	26	146	706	49	4	130	60	2	2	0
2	2022-02-27	4	27	26	150	706	50	4	130	60	2	2	0
3	2022-02-28	5	29	29	150	816	74	21	291	60	3	2	5
4	2022-03-01	6	29	29	198	846	77	24	305	60	3	2	7

In [23]:
```python
import matplotlib.pyplot as plt
```

In [24]:
```python
x = [i for i in range(1,42)]
y = df['helicopter']
y2 = df['tank']

plt.plot(x,y,'o-r',label='helicopters')
plt.plot(x,y2,'*:b',label='tanks')
plt.plot()
plt.show()
```


In [ ]: