In [2]:

```
pwd
```

Out[2]:

```
'E:\\DataScience\\MachineLearning\\Ukraine_Russia_War_Analysis'
```

In [3]:

```
path ='E:\\DataScience\\MachineLearning\\Ukraine_Russia_War_Analysis'
import os
os.listdir(path)
```

Out[3]:

```
['.ipynb_checkpoints',
 'russia_losses_equipment.csv',
 'russia_losses_personnel.csv',
 'Ukraine_Russia_War_Analysis.ipynb',
 'Ukraine_Russia_War_Analysis.py']
```

In [4]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import plotly
import plotly.graph_objs as go
import plotly.express as px
from plotly.subplots import make_subplots
```

In [5]:

```
df_equip = pd.read_csv(path+"\\russia_losses_equipment.csv")
```

In [6]:

```
df_per = pd.read_csv(path+"\\russia_losses_personnel.csv")
```

In [7]:

```
df_equip.head()
```

Out[7]:

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

In [8]:

```
df_equip.tail()
```

Out[8]:

	date	day	aircraft	helicopter	tank	APC	field artillery	MRL	military auto	fuel tank	drone	naval ship	anti-aircraft warfare	special equipment	mobile SRBM system
33	2022-03-30	35	131	131	605	1723	305	96	1184	75	81	7	54	21.0	4.0
34	2022-03-31	36	135	131	614	1735	311	96	1201	75	83	7	54	22.0	4.0
35	2022-04-01	37	143	131	625	1751	316	96	1220	76	85	7	54	24.0	4.0
36	2022-04-02	38	143	134	631	1776	317	100	1236	76	87	7	54	24.0	4.0
37	2022-04-03	39	143	134	644	1830	325	105	1249	76	89	7	54	24.0	4.0

In [9]:

```
df_per.head()
```

Out[9]:

	date	day	personnel	personnel*	POW
0	2022-02-25	2	2800	about	0
1	2022-02-26	3	4300	about	0
2	2022-02-27	4	4500	about	0
3	2022-02-28	5	5300	about	0
4	2022-03-01	6	5710	about	200

In [10]:

```
df_per.tail()
```

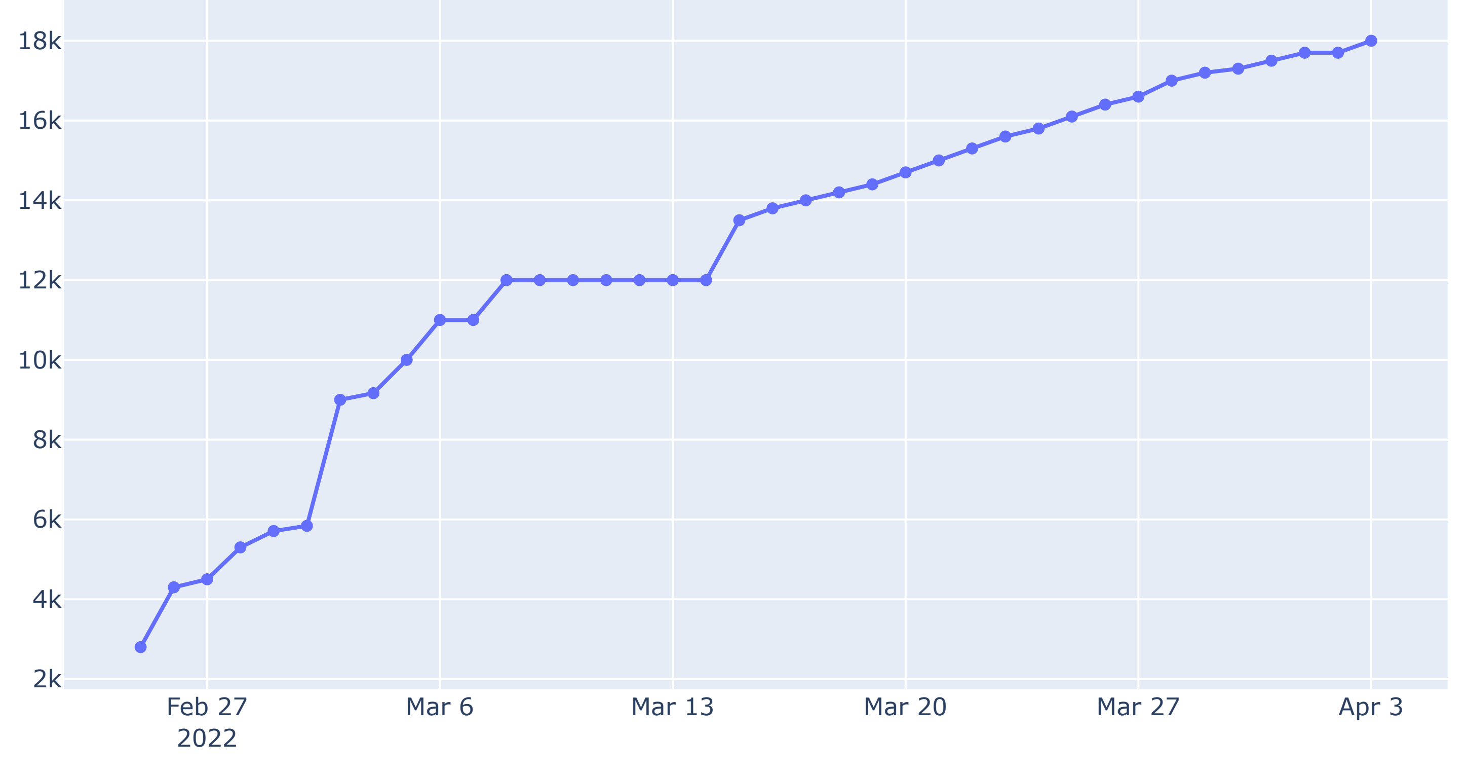
Out[10]:

	date	day	personnel	personnel*	POW
33	2022-03-30	35	17300	about	430
34	2022-03-31	36	17500	about	459
35	2022-04-01	37	17700	about	459
36	2022-04-02	38	17700	about	460
37	2022-04-03	39	18000	about	460

In [11]:

```
x, y = df_per['date'],df_per['personnel']
fig = go.Figure()
fig.add_trace(go.Scatter(x=x, y=y,
                    mode='lines+markers',
                    name='lines+markers'))

fig.show()
```



In [12]:

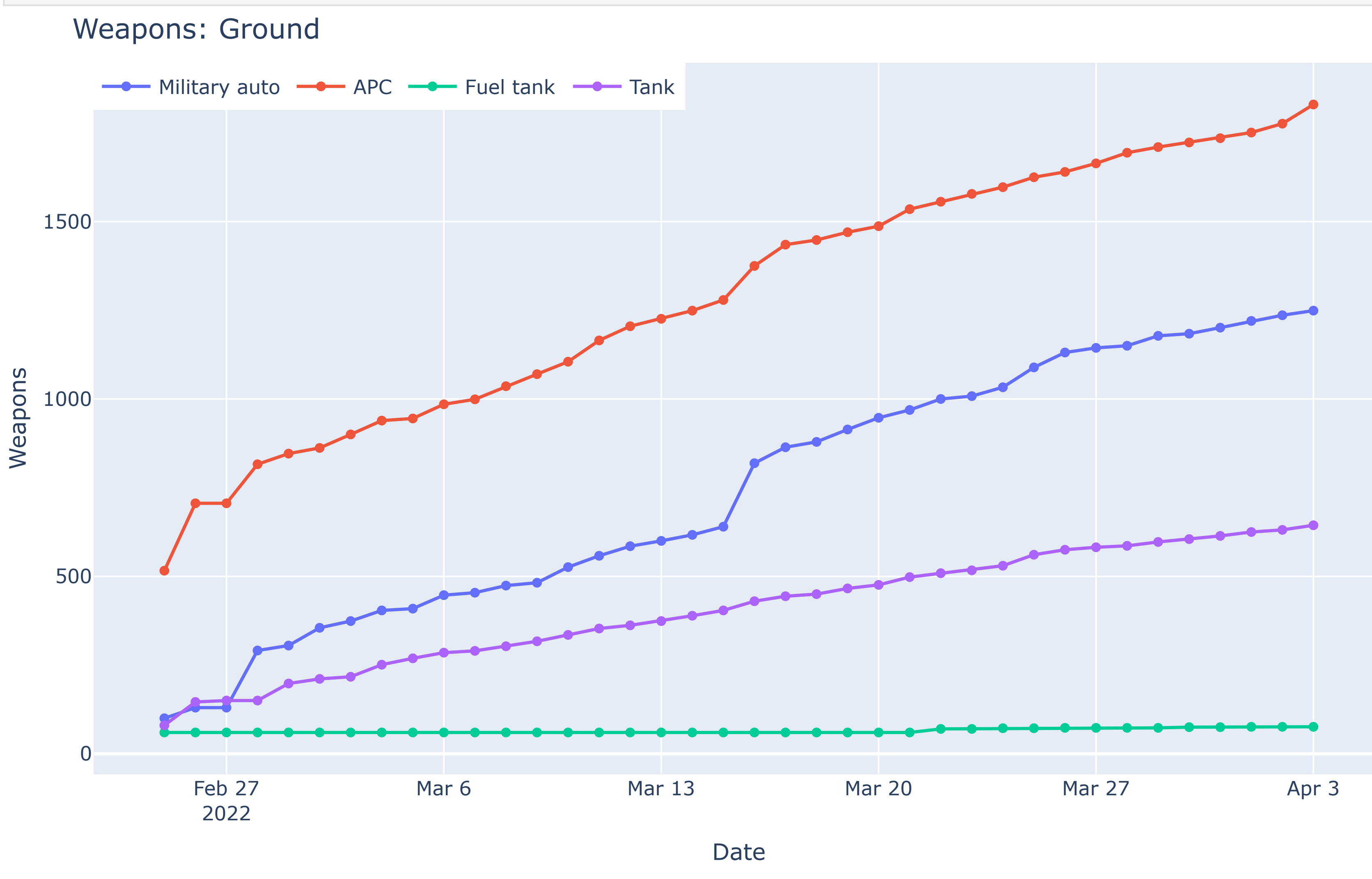
```
x = df_equip['date']
y0 = df_equip['aircraft']
y1 = df_equip['helicopter']
y2 = df_equip['anti-aircraft warfare']
y3 = df_equip['drone']

fig = go.Figure()
fig.add_trace(go.Scatter(x=x, y=y0,
                    mode='lines+markers',
                    name='Aircraft'))
fig.add_trace(go.Scatter(x=x, y=y1,
                    mode='lines+markers',
                    name='Helicopter'))
fig.add_trace(go.Scatter(x=x, y=y2,
                    mode='lines+markers',
                    name='Anti-aircraft warfare'))
fig.add_trace(go.Scatter(x=x, y=y3,
                    mode='lines+markers',
                    name='Drone'))
fig.update_layout(legend_orientation="h",
                  legend=dict(x=0, y=1, traceorder="normal"),
                  title="Weapons: Air",
                  xaxis_title="Date",
                  yaxis_title="Weapons ",
                  margin=dict(l=0, r=0, t=30, b=0))
fig.show()
```

In [13]:

```
x  = df_equip['date']
y0 =df_equip['military auto']
y1 =df_equip['APC']
y2 =df_equip['fuel tank']
y3 =df_equip['tank']

fig = go.Figure()
fig.add_trace(go.Scatter(x=x, y=y0,
                    mode='lines+markers',
                    name='Military auto'))
fig.add_trace(go.Scatter(x=x, y=y1,
                    mode='lines+markers',
                    name='APC'))
fig.add_trace(go.Scatter(x=x, y=y2,
                    mode='lines+markers',
                    name='Fuel tank'))
fig.add_trace(go.Scatter(x=x, y=y3,
                    mode='lines+markers',
                    name='Tank'))
fig.update_layout(legend_orientation="h",
                  legend=dict(x=0, y=1, traceorder="normal"),
                  title="Weapons: Ground",
                  xaxis_title="Date",
                  yaxis_title="Weapons",
                  margin=dict(l=0, r=0, t=30, b=0))
fig.show()
```

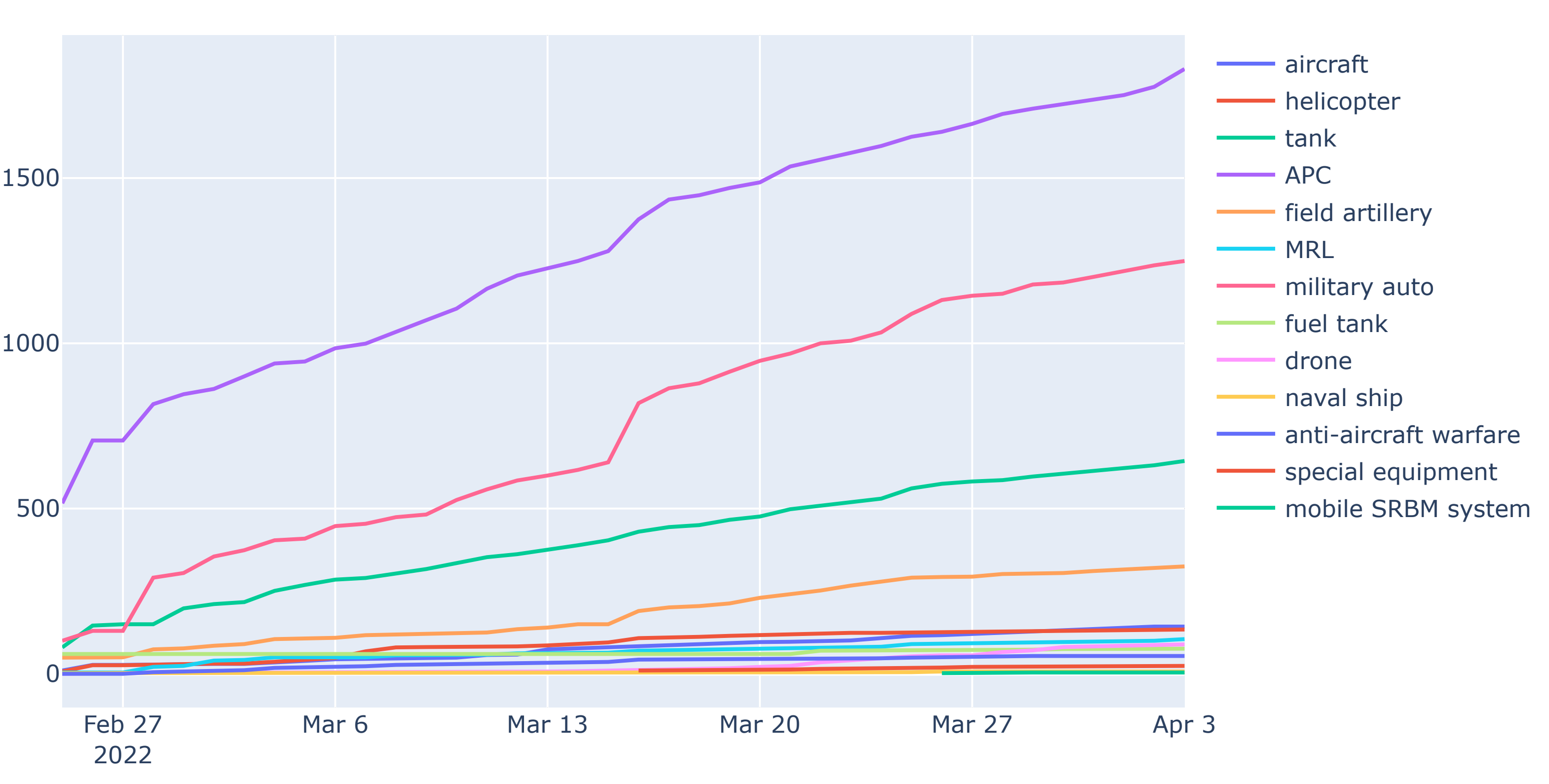


In [14]:

```
col = ['aircraft', 'helicopter', 'tank', 'APC','field artillery', 'MRL', 'military auto', 'fuel tank',
       'drone','naval ship', 'anti-aircraft warfare', 'special equipment','mobile SRBM system']
```

In [15]:

```
fig = go.Figure()
for i in col:
    fig.add_trace(go.Scatter(x=df_equip['date'], y=df_equip[i], mode='lines',name=i,))
fig.show()
```



Saurabh Kumar

In [ ]: