In [4]:

```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np

#https://www.google.com/covid19/mobility/
url='https://drive.google.com/file/d/18gyHbx6rfogq3yQ-GR9COjcGgyYlCnBZ/view?usp=sharing'
url2='https://drive.google.com/uc?id=' + url.split('/')[-2]
df = pd.read_csv(url2)
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 167657 entries, 0 to 167656
Data columns (total 15 columns):
 #   Column                                                Non-Null Count   Dt
ype
---  ------                                                --------------   --
---
 0   country_region_code                                   167657 non-null  ob
ject
 1   country_region                                       167657 non-null  ob
ject
 2   sub_region_1                                          167336 non-null  ob
ject
 3   sub_region_2                                          141692 non-null  ob
ject
 4   metro_area                                            0 non-null       fl
oat64
 5   iso_3166_2_code                                       25644 non-null   ob
ject
 6   census_fips_code                                      0 non-null       fl
oat64
 7   place_id                                              167657 non-null  ob
ject
 8   date                                                  167657 non-null  ob
ject
 9   retail_and_recreation_percent_change_from_baseline    101865 non-null  fl
oat64
 10  grocery_and_pharmacy_percent_change_from_baseline     106104 non-null  fl
oat64
 11  parks_percent_change_from_baseline                    95186 non-null   fl
oat64
 12  transit_stations_percent_change_from_baseline         87723 non-null   fl
oat64
 13  workplaces_percent_change_from_baseline               158870 non-null  fl
oat64
 14  residential_percent_change_from_baseline              98651 non-null   fl
oat64
dtypes: float64(8), object(7)
memory usage: 19.2+ MB
```

In [5]:

```
df
```

Out[5]:

	country_region_code	country_region	sub_region_1	sub_region_2	metro_area	iso_316
0	TR	Turkey	NaN	NaN	NaN	
1	TR	Turkey	NaN	NaN	NaN	
2	TR	Turkey	NaN	NaN	NaN	
3	TR	Turkey	NaN	NaN	NaN	
4	TR	Turkey	NaN	NaN	NaN	
...	...	...	...	...	...	
167652	TR	Turkey	Zonguldak	Zonguldak Merkez	NaN	
167653	TR	Turkey	Zonguldak	Zonguldak Merkez	NaN	
167654	TR	Turkey	Zonguldak	Zonguldak Merkez	NaN	
167655	TR	Turkey	Zonguldak	Zonguldak Merkez	NaN	
167656	TR	Turkey	Zonguldak	Zonguldak Merkez	NaN	

167657 rows × 15 columns

In [6]:

```
#Soru 1 Cevap:
df.describe()
```

Out[6]:

	metro_area	census_fips_code	retail_and_recreation_percent_change_from_baseline	groce
count	0.0	0.0	101865.000000	
mean	NaN	NaN	-26.758749	
std	NaN	NaN	30.125282	
min	NaN	NaN	-100.000000	
25%	NaN	NaN	-44.000000	
50%	NaN	NaN	-24.000000	
75%	NaN	NaN	-8.000000	
max	NaN	NaN	333.000000	

In [7]:

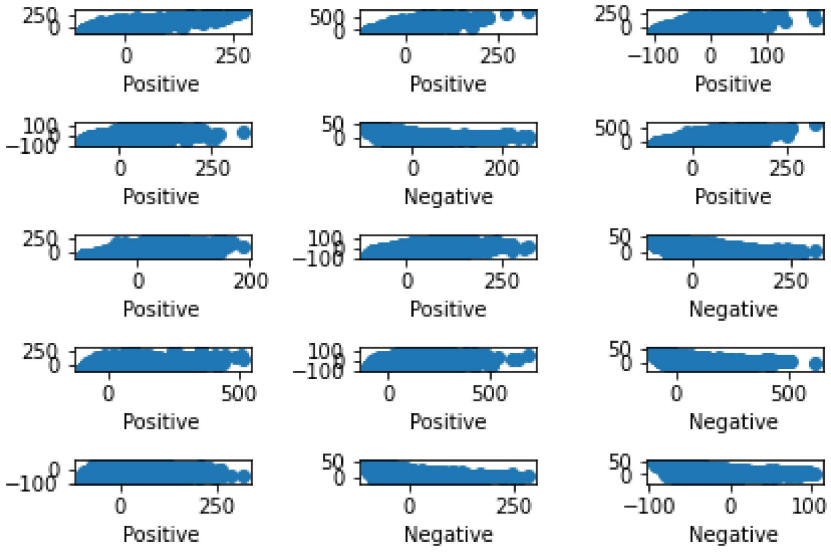
```
#Soru 2 Cevap:
fig, axs = plt.subplots(5,3)
liste=["retail_and_recreation_percent_change_from_baseline", "grocery_and_pharmacy_percent_
i=0
j=0
k=1
y=0
for x in range(0,5,1):
    t=k
    for y in range(k,6,1):
        if(j<3  and i<5 ):
            axs[i,j].scatter(df[liste[x]],df[liste[y]])
            j=j+1

        elif y>5:
            break
        else:
            j=0
            i=i+1
            axs[i,j].scatter(df[liste[x]],df[liste[y]])
            j=j+1

    k=t+1

for p in range(0,5,1):
    for n in range(0,3,1):
        if(axs[p,n] == axs[1,1] or axs[p,n] == axs[2,2] or axs[p,n] == axs[3,2] or axs[p,n]
            axs[p,n].set_xlabel('Negative')
        else:
            axs[p,n].set_xlabel('Positive')

plt.tight_layout()
```

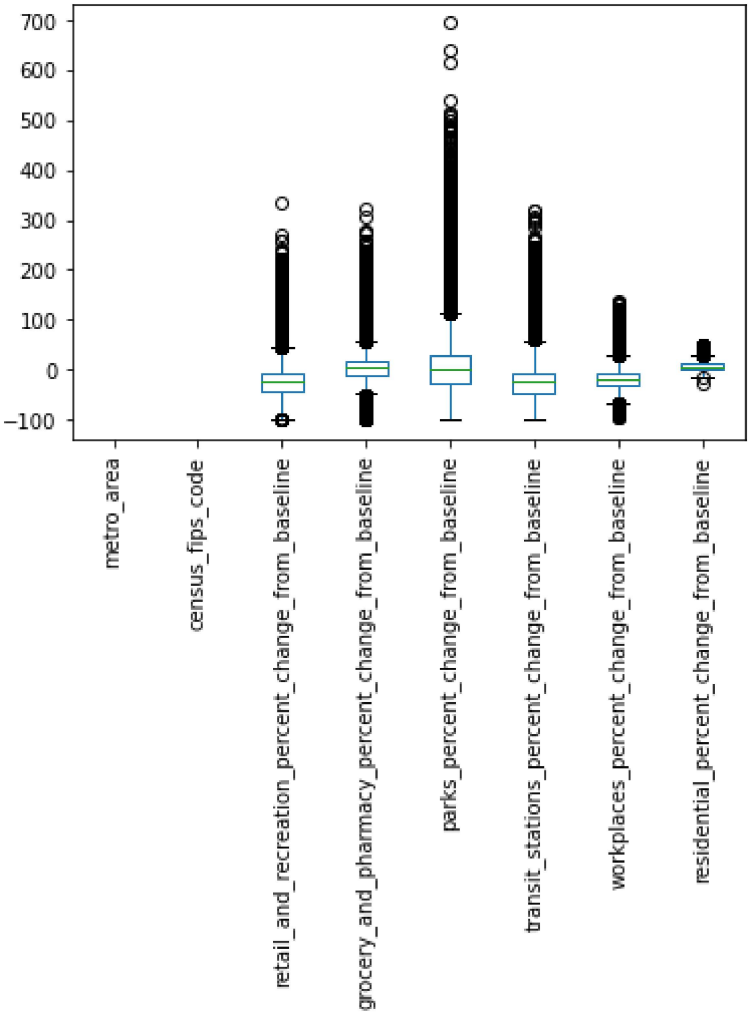


In [8]:

```
#Soru 3 Cevap:
df.plot(kind="box")
plt.xticks(rotation=90)
```

Out[8]:

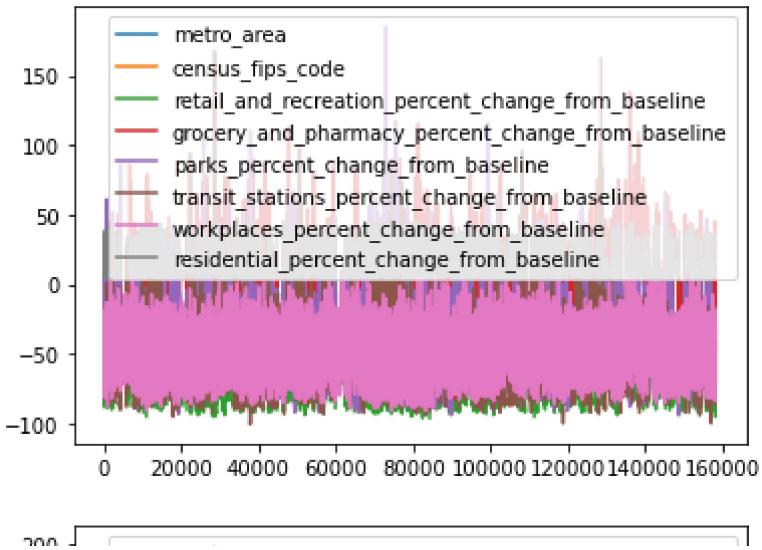
```
(array([1, 2, 3, 4, 5, 6, 7, 8]),
 [Text(1, 0, 'metro_area'),
  Text(2, 0, 'census_fips_code'),
  Text(3, 0, 'retail_and_recreation_percent_change_from_baseline'),
  Text(4, 0, 'grocery_and_pharmacy_percent_change_from_baseline'),
  Text(5, 0, 'parks_percent_change_from_baseline'),
  Text(6, 0, 'transit_stations_percent_change_from_baseline'),
  Text(7, 0, 'workplaces_percent_change_from_baseline'),
  Text(8, 0, 'residential_percent_change_from_baseline')])
```



In [41]:

```
#Soru 4 Cevap:
monthGroup =df.groupby(pd.DatetimeIndex(df['date']).month).plot()
for i in range(0,10):
    answ = pd.concat([monthGroup])
print(answ)
```

```
10    AxesSubplot(0.125,0.125;0.775x0.755)
dtype: object
```



In [31]:

```
#Soru 5 Cevap:
urlNew='https://drive.google.com/file/d/1Eg8Lffm49bc-bGFkv_4ddrQw8U8WE6P4/view?usp=sharing'
urlNew2='https://drive.google.com/uc?id=' + urlNew.split('/')[-2]
df = pd.read_csv(urlNew2)
monthGroup2021 =df.groupby(pd.DatetimeIndex(df['date']).month).plot()
```