pre_APIdata

June 12, 2021

[ ]:
```
# notes:
# conda stopped automatically setting environments up as jupyter kernels. You␣
 ↪need to manually add kernels for each environment
# ------------------ code in terminal --------------------:
#source activate myenv
#python -m ipykernel install --user --name myenv --display-name "Python (myenv)"
```

[ ]:
```
#conda install -c conda-forge cartopy
```

[ ]:
```
#conda install geopandas
```

[ ]:
```
#conda install pyproj
```

[1]:
```
import matplotlib.pyplot as plt
import cartopy.crs as ccrs
import geopandas
import csv
import os
import pandas as pd
import json
import numpy as np
import pandas as pd
import re
import warnings
from shapely.geometry import Point
import geopandas as gpd
from geopandas import GeoDataFrame
from pyproj import CRS
```

[ ]:
```
#fig = plt.figure()
#ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
#ax.coastlines()
#plt.show()
```

[2]:
```
mydata = pd.read_csv('mydata.csv',dtype="a", encoding='utf-8')
```

[3]:
```
# remove geo NAN cells
print(len(mydata.index))
nan_value = float("NaN")
mydata.replace("", nan_value, inplace=True)
mydata.dropna(subset = ["geo.geo.bbox"], inplace=True)
print(len(mydata.index))
```

```
428078
417255
```

[4]:
```
mydata['geo.geo.bbox'] = mydata['geo.geo.bbox'].astype(str)
mydata['geo.geo.bbox'] =  mydata['geo.geo.bbox'].apply(lambda x: x.
 ↪replace('[','').replace(']',''))
```

[5]:
```
# split 'geo.geo.bbox' , keep only one pair of lon & lat
mydata[['lon','lat','lon1','lat2']] = mydata['geo.geo.bbox'].str.
 ↪split(',',expand=True)
```

[6]:
```
mydata.lat.dtype
```

[6]:
```
dtype('O')
```

[ ]:
```
# errors occur : this raw dataset has one line lack of "created info",
# causing data Indent Forward, lon&lat contents wrong
# check position of a given cell value, find error in lat:"' CA'" - row 103355␣
 ↪- delete
```

[ ]:
```
"""
def getIndexes(dfObj, value):

    # Empty list
    listOfPos = []

    # isin() method will return a dataframe with boolean values, True at the␣
 ↪positions where element exists
    result = dfObj.isin([value])

    # any() method will return
    # a boolean series
    seriesObj = result.any()

    # Get list of column names where element exists
    columnNames = list(seriesObj[seriesObj == True].index)

    # Iterate over the list of columns and extract the row index where element␣
 ↪exists
    for col in columnNames:
```

```
        rows = list(result[col][result[col] == True].index)

        for row in rows:
            listOfPos.append((row, col))

    # This list contains a list tuples with the index of element in the␣
 ↪dataframe
    return listOfPos

# Calling getIndexes() function to get the index positions of all occurrences␣
 ↪of "value" in the dataframe
listOfPositions = getIndexes(mydata, ' CA')
print('Index positions of " CA" in Dataframe : ')

# Printing the position
for i in range(len(listOfPositions)):
    print( listOfPositions[i])

"""
```

[ ]:
```
# check dataset
# mydata.loc[[410755]]
```

[ ]:
```
#i = mydata[((mydata.lat == ' CA') &( mydata.lon == 'San Francisco'))].index
#mydata=mydata.drop(i)
#print(len(mydata.index))
```

[ ]:
```
mydata[['geo.full_name']].head(10)
```

[7]:
```
mydata['lon'] = mydata['lon'].astype(float)
```

[8]:
```
mydata['lat'] = mydata['lat'].astype(float, errors = 'raise')
```

[9]:
```
geometry = [Point(xy) for xy in zip(mydata['lon'], mydata['lat'])]
```

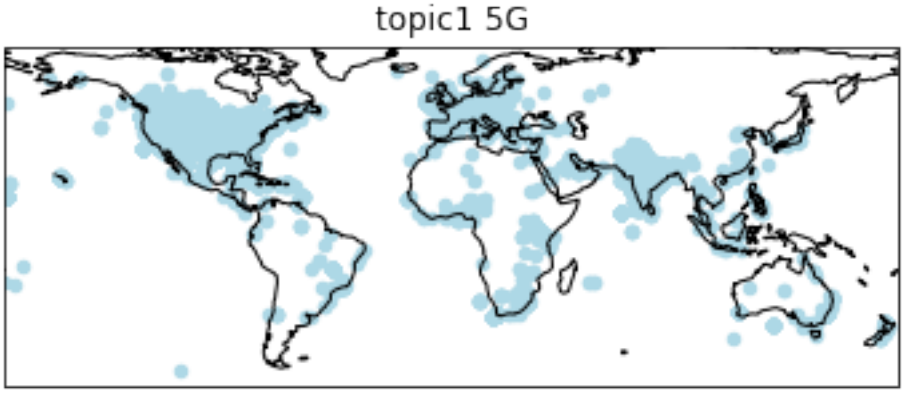
[10]:
```
df1 = mydata.iloc[:23109,:]
df2 = mydata.iloc[23109:34953,:]
df3 = mydata.iloc[34953:49136,:]
df4 = mydata.iloc[49136:59880,:]
df5 = mydata.iloc[59880:86704,:]
df6 = mydata.iloc[86704:101974,:]
df7 = mydata.iloc[101974:118201,:]
df8 = mydata.iloc[118201:167648,:]
df9 = mydata.iloc[167648:185461,:]
df10 = mydata.iloc[185461:194728,:]
df11 = mydata.iloc[194728:234272,:]
df12 = mydata.iloc[234272:247020,:]
```

```
df13 = mydata.iloc[247020:261805,:]
df14 = mydata.iloc[261805:282176,:]
df15 = mydata.iloc[282176:296948,:]
df16 = mydata.iloc[296948:313534,:]
df17 = mydata.iloc[313534:323817,:]
df18 = mydata.iloc[323817:381165,:]
df19 = mydata.iloc[381165:404897,:]
df20 = mydata.iloc[404897:,:]
```

[ ]:
```
'''
frames =␣
 ↪[dt1,dt2,dt3,dt4,dt5,dt6,dt7,dt8,dt9,dt10,dt11,dt12,dt13,dt14,dt15,dt16,dt17,dt18,dt19,dt20
testdata = pd.concat(frames)
print(len(testdata.index))
'''
```

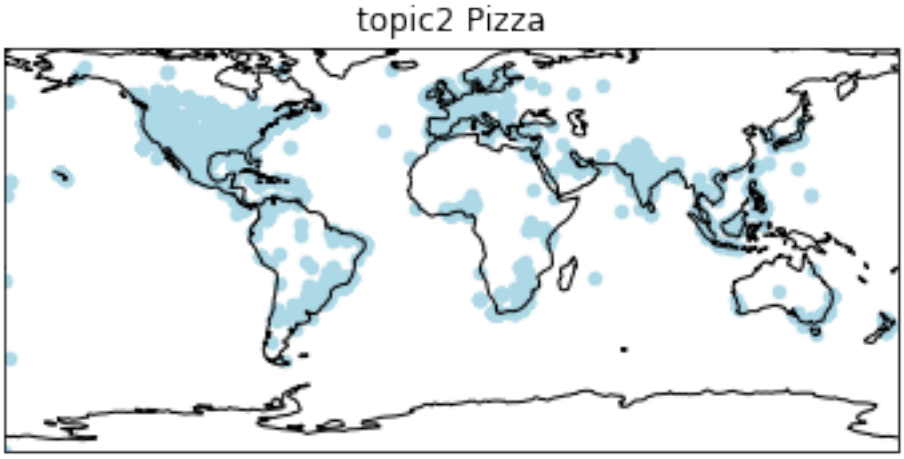
[11]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df1.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="YlOrRd",
        title=f"topic1 5G",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



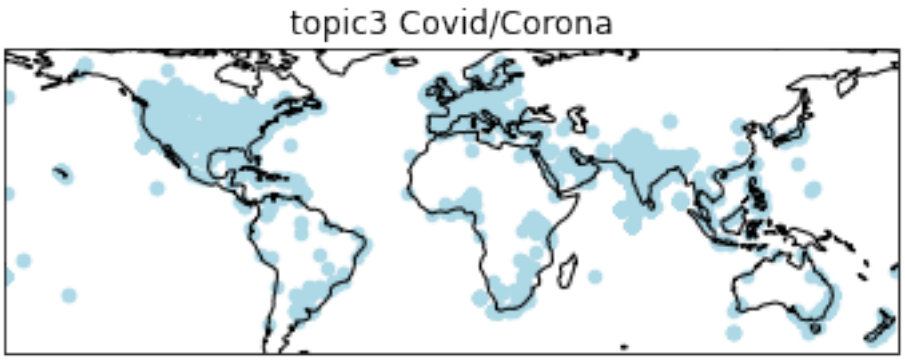
[12]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df2.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="YlOrRd",
        title=f"topic2 Pizza",
        ax=ax)
# add grid
ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



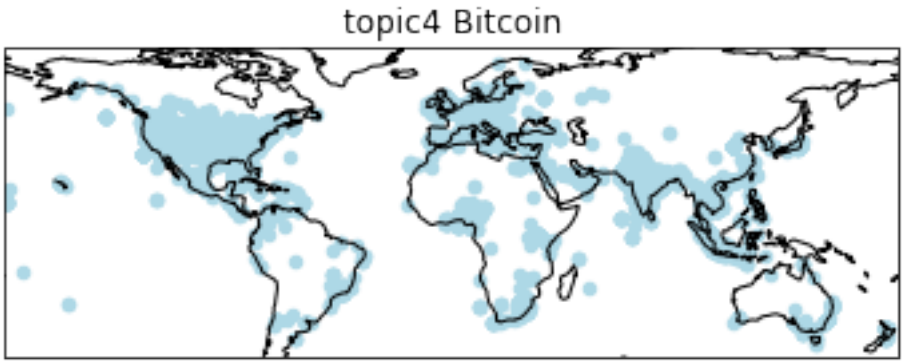
[13]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df3.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="YlOrRd",
        title=f"topic3 Covid/Corona",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



[14]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df4.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="YlOrRd",
        title=f"topic4 Bitcoin",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

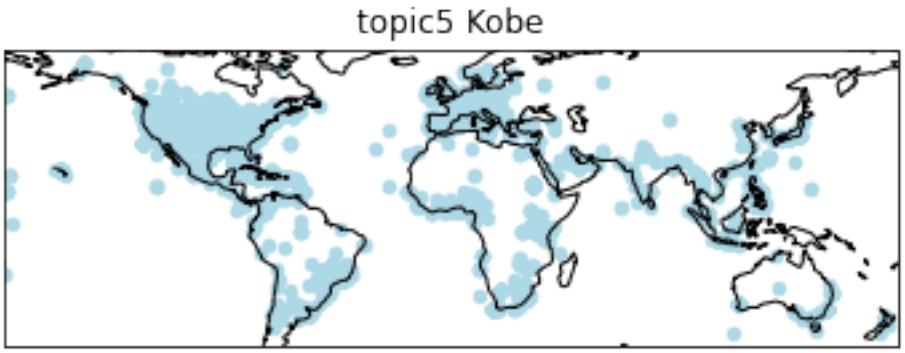
```
<Figure size 8640x7200 with 0 Axes>
```



[15]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
```

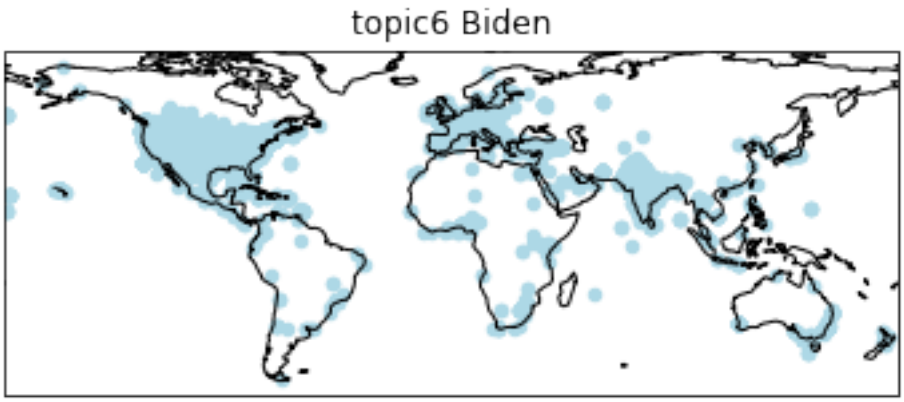
```
ax.coastlines()

df5.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="YlOrRd",
        title=f"topic5 Kobe",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



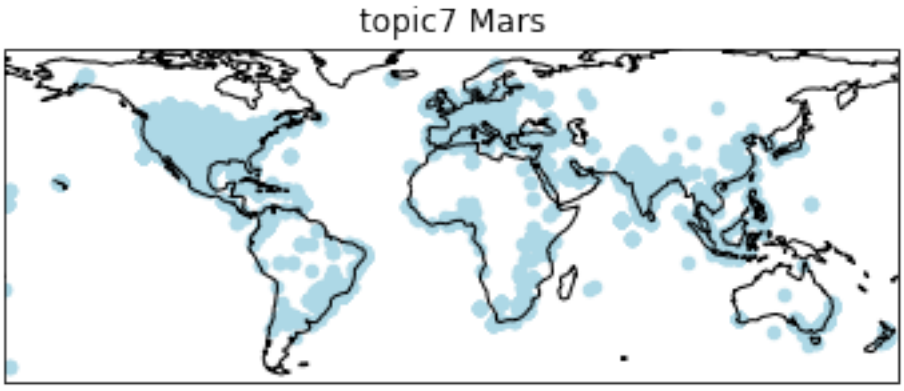
[16]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df6.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic6 Biden",
        ax=ax)
# add grid
ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



[17]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df7.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic7 Mars",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

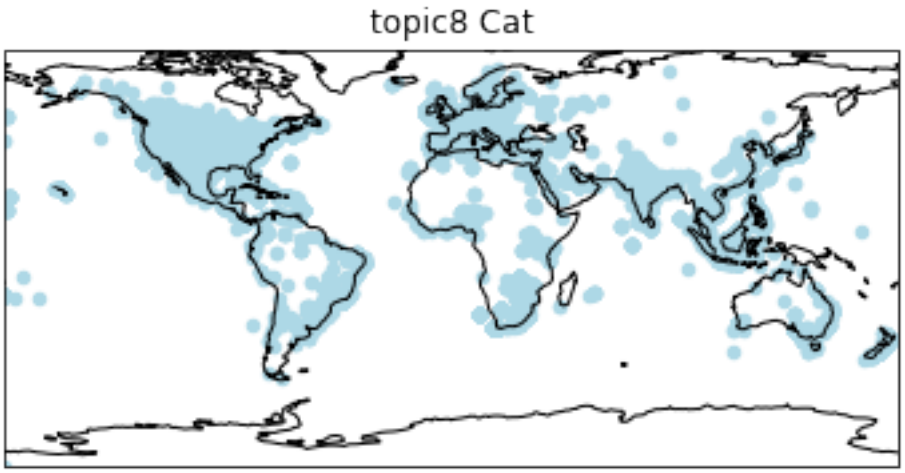
```
<Figure size 8640x7200 with 0 Axes>
```



[18]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
```

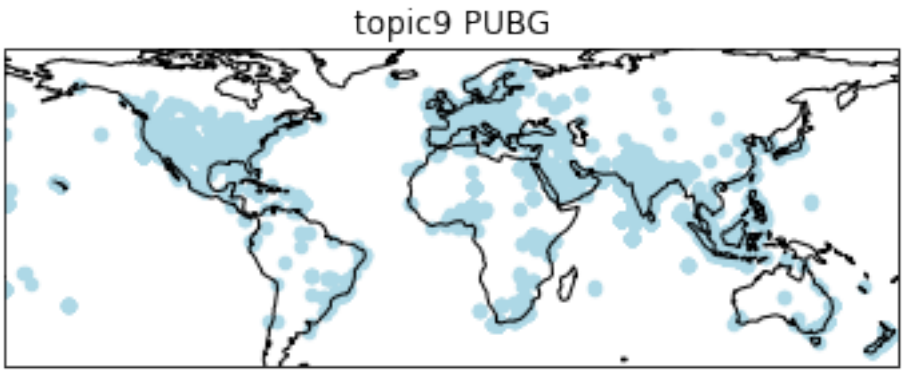
```
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df8.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic8 Cat",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



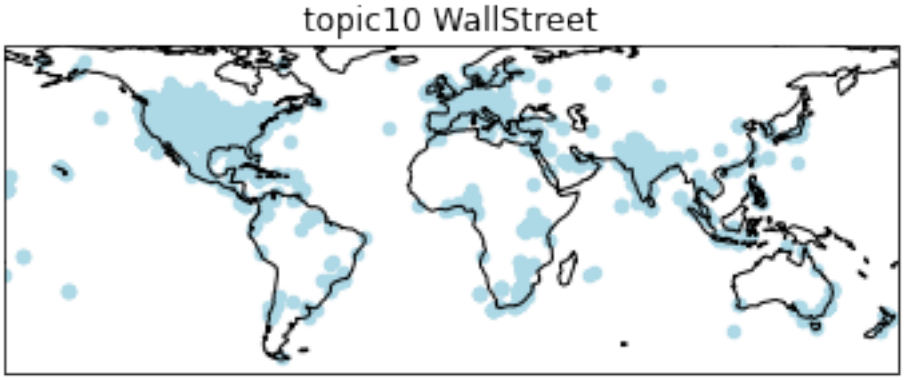
[19]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())
#  ax
ax.coastlines()

df9.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic9 PUBG",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



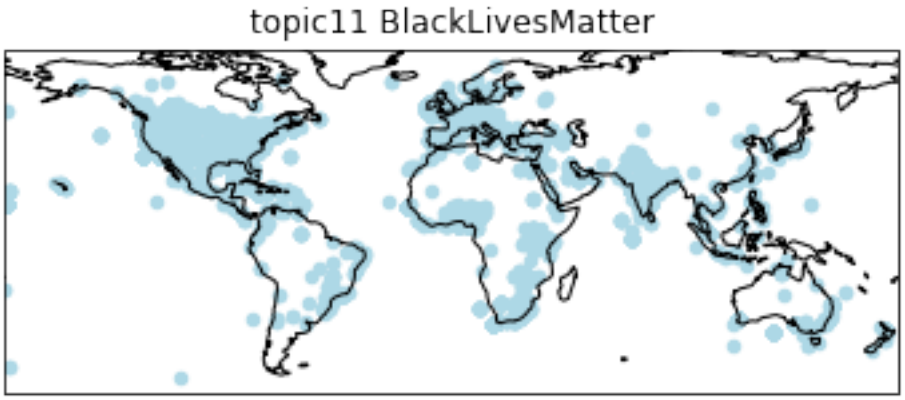
[21]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df10.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic10 WallStreet",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



[22]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df11.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic11 BlackLivesMatter",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

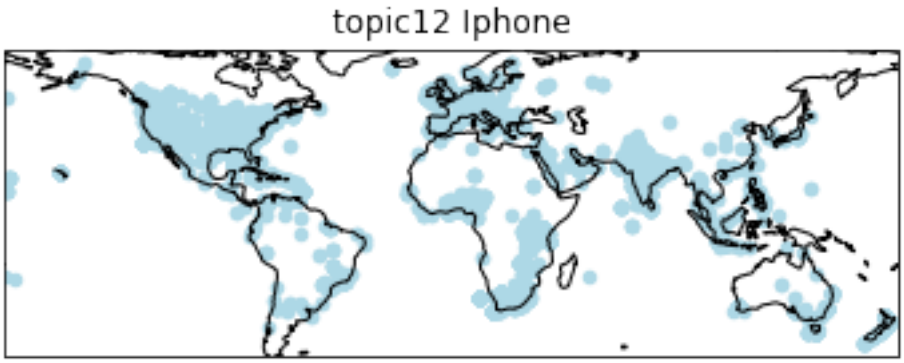
```
<Figure size 8640x7200 with 0 Axes>
```



[23]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df12.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic12 Iphone",
        ax=ax)
```

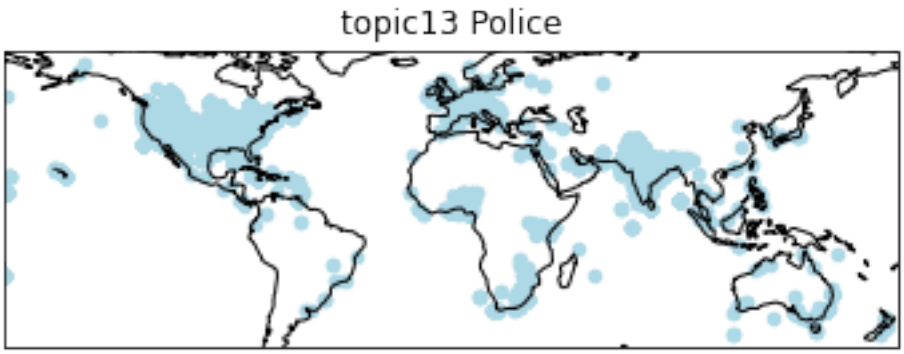
```
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



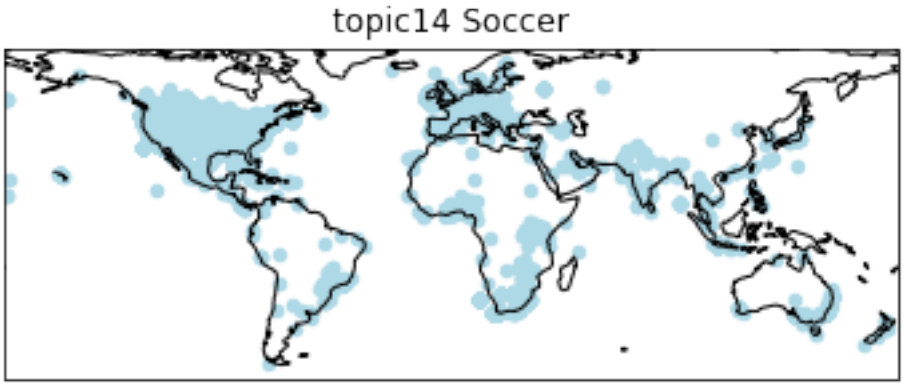
[24]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df13.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic13 Police",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



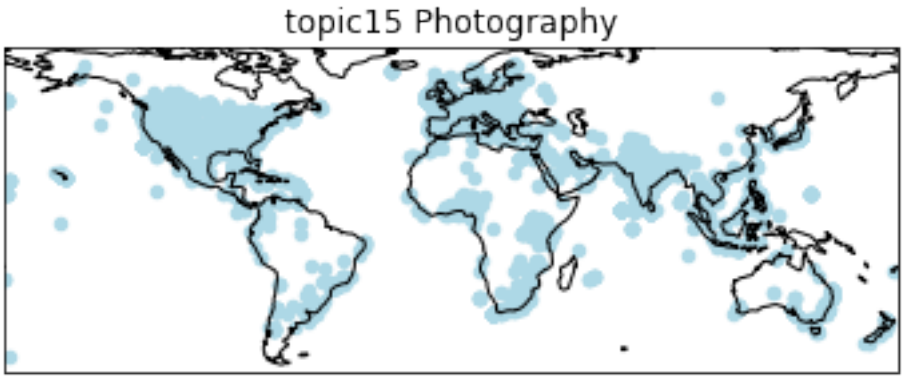
[25]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df14.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic14 Soccer",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



[26]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df15.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic15 Photography",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

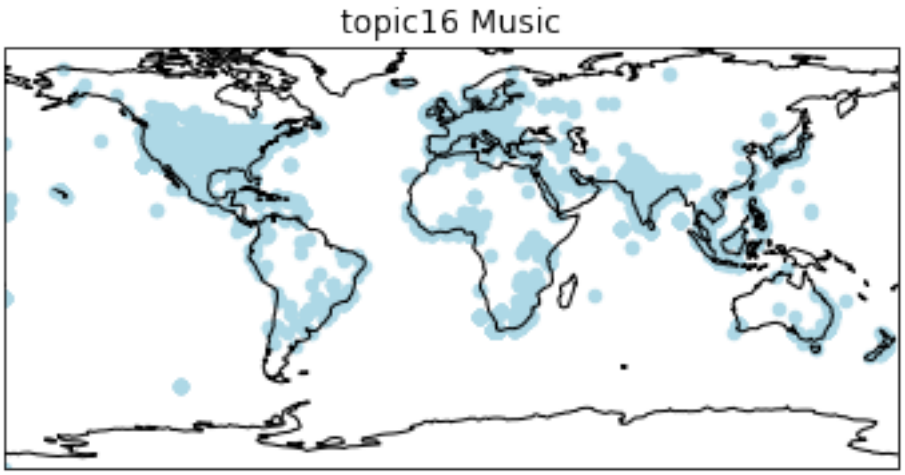
```
<Figure size 8640x7200 with 0 Axes>
```



[27]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df16.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic16 Music",
        ax=ax)
# add grid
```

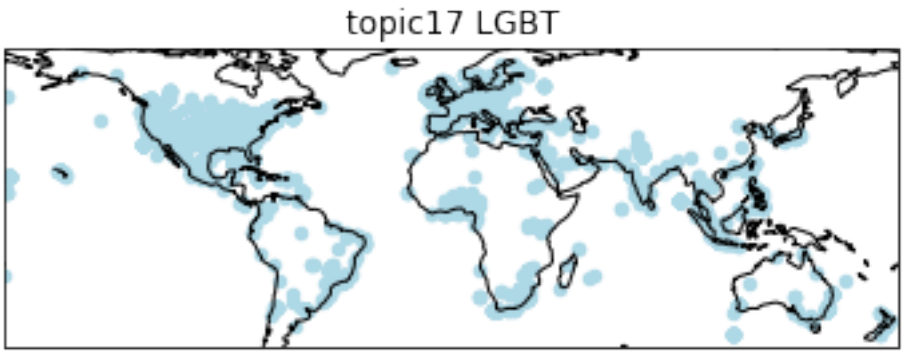
```
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



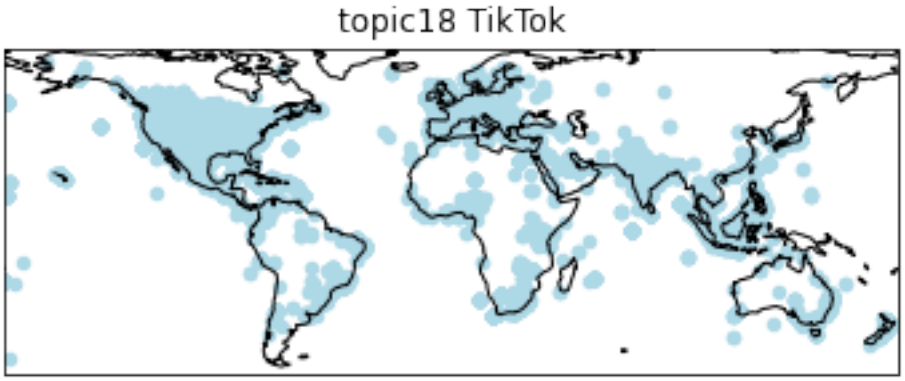
[28]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df17.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic17 LGBT",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



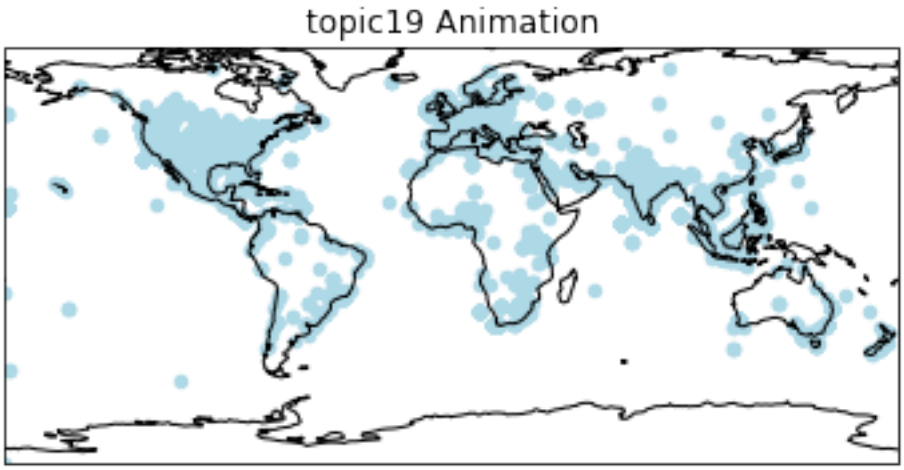
[29]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df18.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic18 TikTok",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



[30]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df19.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
        title=f"topic19 Animation",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

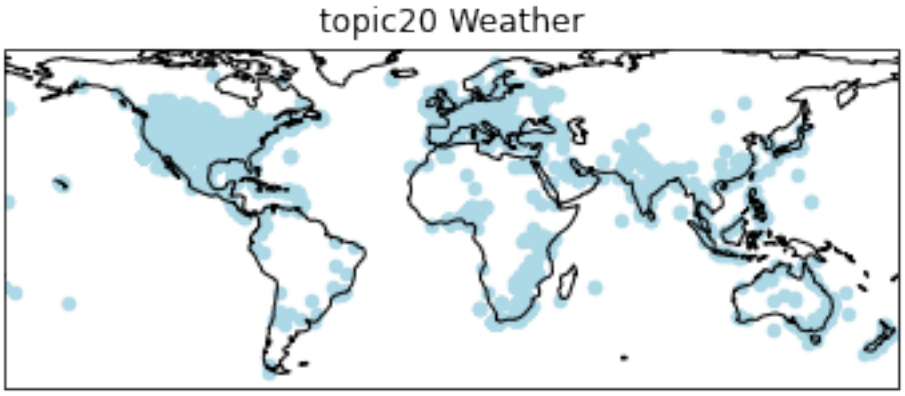
```
<Figure size 8640x7200 with 0 Axes>
```



[31]:
```
plt.figure(figsize=(120,100))
fig = plt.figure()
ax = fig.add_subplot(111, projection=ccrs.PlateCarree())

#  ax
ax.coastlines()
#ax.stock_img()
#ax.gridlines()

df20.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", #colormap="Blues",
```

```
        title=f"topic20 Weather",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 8640x7200 with 0 Axes>
```



[ ]:
```
# -------------------------     USA plot     ----------------------  #
```

[32]:
```
#df1[['geo.full_name']].head(10)
df1.head(2)
```

[32]:
```
                  created_at lang  \
0  2021-04-29T23:39:55.000Z   en
1  2021-04-29T23:33:03.000Z   en

                                                text                   id  \
0  Customers are loving this 5G for All Trade in …  1387914576784592896
1  These 5G speeds are crazy! @TMobile #WeWontSto…  1387912847909220352

            author_id      geo.place_id     geo.name geo.country_code  \
0  992609029326176257  0fc3474d6915b000     T-Mobile               US
1            66944716  3b77caf94bfc81fe  Los Angeles               US

  geo.country            geo.id  … author.public_metrics.listed_count  \
0  Etats-Unis  0fc3474d6915b000  …                                   0
1  Etats-Unis  3b77caf94bfc81fe  …                                   2

            author.id   author.name  author.location geo.coordinates.type  \
0  992609029326176257  Martin Moore              NaN                   NaN
1            66944716  Berny Palomo  Los Angeles, CA                   NaN
```

```
  geo.coordinates.coordinates         lon        lat                   lon1  \
0                         NaN -117.987669  33.700940   -117.98766875335787
1                         NaN -118.668404  33.704538           -118.155409

                  lat2
0   33.70094049431383
1           34.337041

[2 rows x 33 columns]
```

[33]:
```
USdata1 = df1.loc[df1['geo.country_code'] == 'US']
index =USdata1.index
number_of_rows = len(index)
#find length of index
print(number_of_rows)
```

```
16542
```

[34]:
```
USdata2 = df2.loc[df2['geo.country_code'] == 'US']
USdata3 = df3.loc[df3['geo.country_code'] == 'US']
USdata4 = df4.loc[df4['geo.country_code'] == 'US']
USdata5 = df5.loc[df5['geo.country_code'] == 'US']
USdata6 = df6.loc[df6['geo.country_code'] == 'US']
USdata7 = df7.loc[df7['geo.country_code'] == 'US']
USdata8 = df8.loc[df8['geo.country_code'] == 'US']
USdata9 = df9.loc[df9['geo.country_code'] == 'US']
USdata10 = df10.loc[df10['geo.country_code'] == 'US']
USdata11 = df11.loc[df11['geo.country_code'] == 'US']
USdata12 = df12.loc[df12['geo.country_code'] == 'US']
USdata13 = df13.loc[df13['geo.country_code'] == 'US']
USdata14 = df14.loc[df14['geo.country_code'] == 'US']
USdata15 = df15.loc[df15['geo.country_code'] == 'US']
USdata16 = df16.loc[df16['geo.country_code'] == 'US']
USdata17 = df17.loc[df17['geo.country_code'] == 'US']
USdata18 = df18.loc[df18['geo.country_code'] == 'US']
USdata19 = df19.loc[df19['geo.country_code'] == 'US']
USdata20 = df20.loc[df20['geo.country_code'] == 'US']
```

[35]:
```
USdata1.head(3)
```

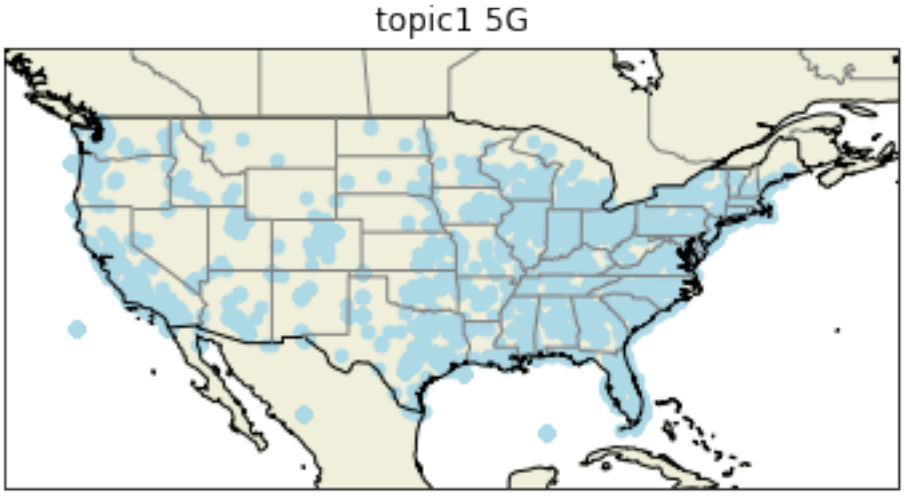
[35]:
```
                 created_at lang  \
0  2021-04-29T23:39:55.000Z   en
1  2021-04-29T23:33:03.000Z   en
2  2021-04-29T23:02:52.000Z   en

                                                text                   id  \
```

```
0  Customers are loving this 5G for All Trade in …  1387914576784592896
1  These 5G speeds are crazy! @TMobile #WeWontSto…  1387912847909220352
2  This reads very strangely because it's an inco…  1387905252066832384

            author_id      geo.place_id     geo.name geo.country_code  \
0  992609029326176257  0fc3474d6915b000     T-Mobile               US
1            66944716  3b77caf94bfc81fe  Los Angeles               US
2            18609072  91eb113282d003a1      Lansing               US

  geo.country            geo.id  … author.public_metrics.listed_count  \
0  Etats-Unis  0fc3474d6915b000  …                                    0
1  Etats-Unis  3b77caf94bfc81fe  …                                    2
2  Etats-Unis  91eb113282d003a1  …                                  143

            author.id   author.name  \
0  992609029326176257  Martin Moore
1            66944716  Berny Palomo
2            18609072   Joshua Pugh

                           author.location geo.coordinates.type  \
0                                      NaN                  NaN
1                           Los Angeles, CA                 NaN
2  No more than 6 miles from a body of water                NaN

  geo.coordinates.coordinates         lon        lat                  lon1  \
0                         NaN -117.987669  33.700940   -117.98766875335787
1                         NaN -118.668404  33.704538           -118.155409
2                         NaN  -84.631840  42.618566            -84.483958

                lat2
0   33.70094049431383
1           34.337041
2           42.805532

[3 rows x 33 columns]
```

[36]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
```

```
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata1.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic1 5G",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 864x720 with 0 Axes>
```



[ ]:
```
# USdata1['geo.full_name'].unique()
```

[ ]:
```
#test2=USdata1.loc[USdata1['geo.full_name'] != 'T-Mobile']
```

[ ]:
```
#test2.head(3)
```

[ ]:
```
## error: split 'geo.full_name'
# test2[['geocity','geostate']] = test2['geo.full_name'].str.
 ↪split(',',expand=True)
```

[37]:
```
USdata1['count'] = 1
dataByNeighbourhood = USdata1.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
```

```
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<ipython-input-37-bec9ec357018>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata1['count'] = 1
```

[37]:

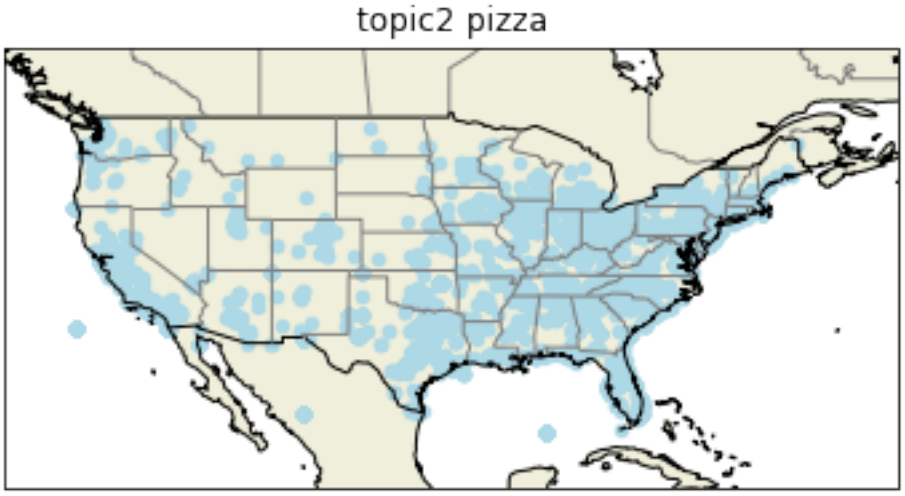
	geo.full_name	count
1611	los angeles, ca	591
2977	washington, dc	500
1662	manhattan, ny	434
331	brooklyn, ny	335
481	chicago, il	315
1241	houston, tx	242
2290	portland, or	225
1038	georgia, usa	211
2230	philadelphia, pa	185
2538	seattle, wa	165

[ ]:
```
#conda install -c conda-forge geoplot
```

[38]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata2.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic2 pizza",
```

```
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 864x720 with 0 Axes>
```



[39]:
```
USdata2['count'] = 1
dataByNeighbourhood = USdata2.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<ipython-input-39-d9a4c651133f>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata2['count'] = 1
```

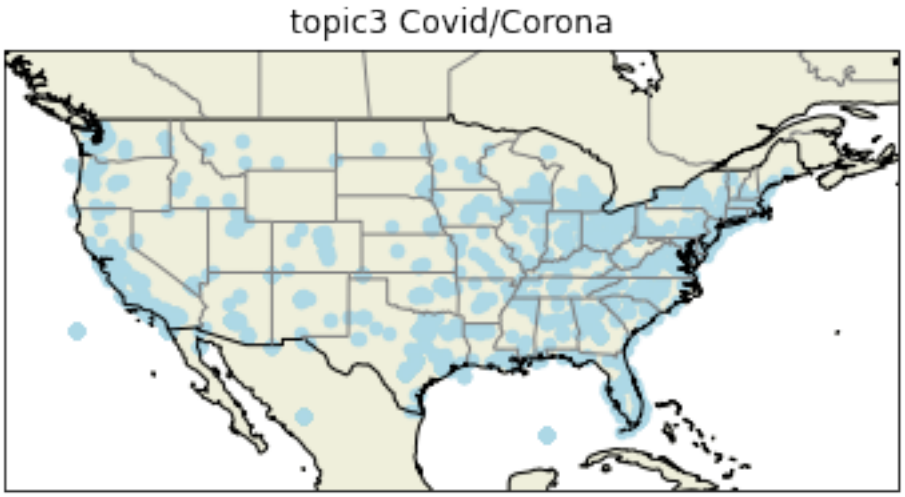
[39]:

	geo.full_name	count
1201	los angeles, ca	241
365	chicago, il	211
961	houston, tx	177
1256	manhattan, ny	176
619	elizabeth, nj	114
1899	san francisco, ca	111
705	florida, usa	103

```
256         brooklyn, ny     98
1674   philadelphia, pa     97
1894    san antonio, tx     83
```

[40]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata3.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic3 Covid/Corona",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 864x720 with 0 Axes>
```



[41]:
```
USdata3['count'] = 1
dataByNeighbourhood = USdata3.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<ipython-input-41-4d2ffacb9bc0>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata3['count'] = 1
```

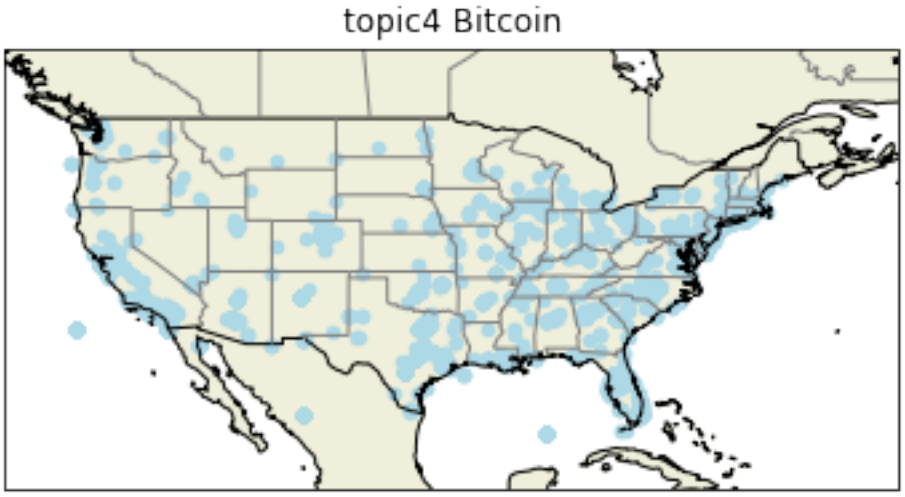
[41]:

	geo.full_name	count
690	los angeles, ca	86
1279	washington, dc	77
722	manhattan, ny	70
208	chicago, il	63
144	brooklyn, ny	61
541	houston, tx	55
399	florida, usa	51
992	queens, ny	48
959	philadelphia, pa	46
977	portland, or	38

[42]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata4.plot(x="lon", y="lat", kind="scatter",
```

```
        c="lightblue", colormap="Blues",
        title=f"topic4 Bitcoin",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
```

```
<Figure size 864x720 with 0 Axes>
```



[43]:
```
USdata4['count'] = 1
dataByNeighbourhood = USdata4.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<ipython-input-43-39caf2cd64f3>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata4['count'] = 1
```

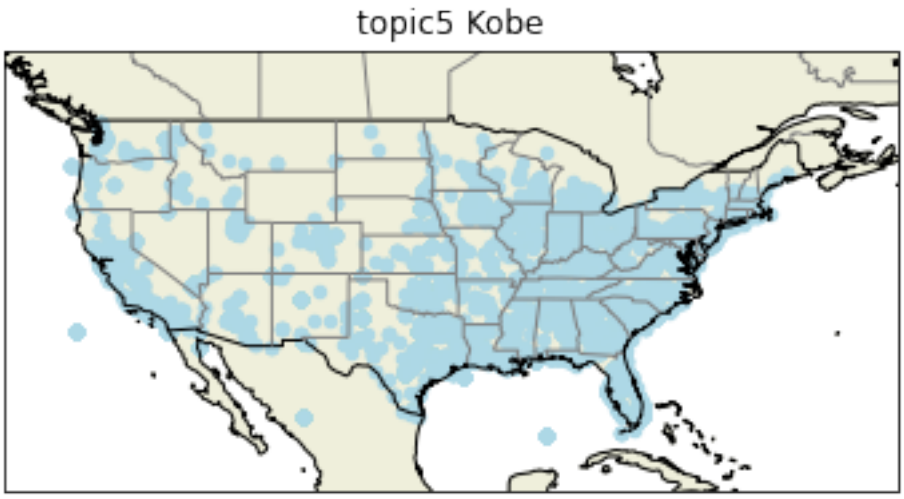
[43]:

	geo.full_name	count
555	los angeles, ca	265
954	staten island, ny	240
571	manhattan, ny	140
163	chicago, il	133
45	austin, tx	112

```
430        houston, tx    103
858      san diego, ca    101
317       florida, usa     89
113       brooklyn, ny     72
355       georgia, usa     63
```

[44]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata5.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic5 Kobe",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
USdata5['count'] = 1
dataByNeighbourhood = USdata5.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-44-fcc47838bae8>:26: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata5['count'] = 1
```

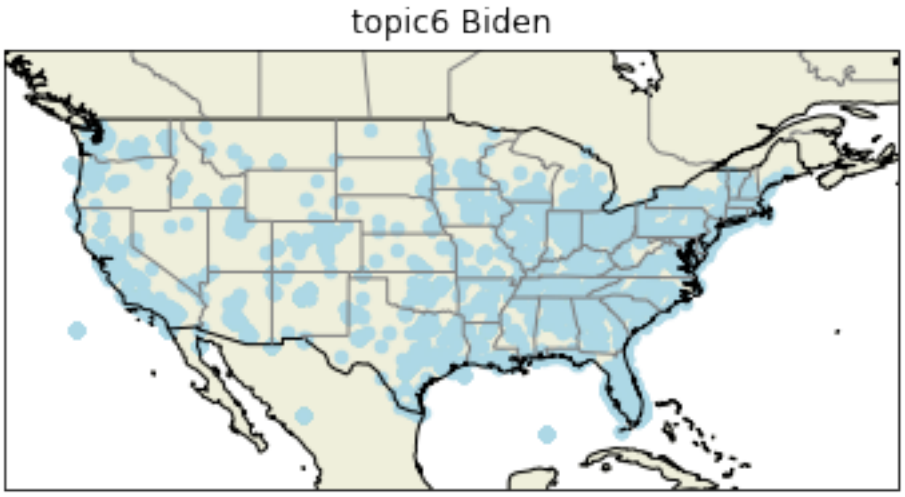
[44]:

	geo.full_name	count
1720	los angeles, ca	1698
1360	houston, tx	630
1107	georgia, usa	467
514	chicago, il	363
2417	philadelphia, pa	323
2473	pomona, ca	318
996	florida, usa	309
347	brooklyn, ny	280
3072	texas, usa	241
110	atlanta, ga	235

[45]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
```

```
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata6.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic6 Biden",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
USdata6['count'] = 1
dataByNeighbourhood = USdata6.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-45-76678835e8f7>:26: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
```

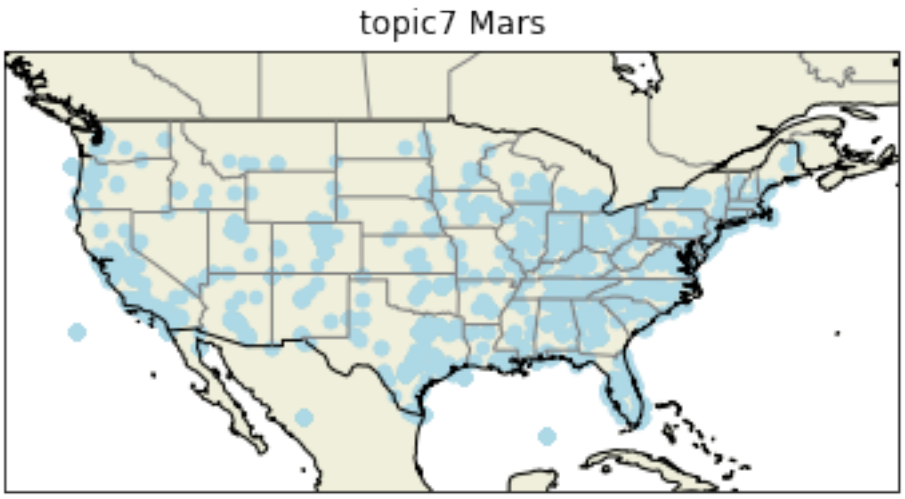
```
USdata6['count'] = 1
```

[45]:

	geo.full_name	count
2196	washington, dc	487
1162	los angeles, ca	272
670	florida, usa	249
1214	manhattan, ny	236
762	georgia, usa	210
475	dallas, tx	194
715	franklin park, nj	166
245	brooklyn, ny	159
1622	pennsylvania, usa	150
1533	ohio, usa	132

[46]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata7.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic7 Mars",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
USdata7['count'] = 1
dataByNeighbourhood = USdata7.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-46-a5f986a469d6>:26: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata7['count'] = 1
```

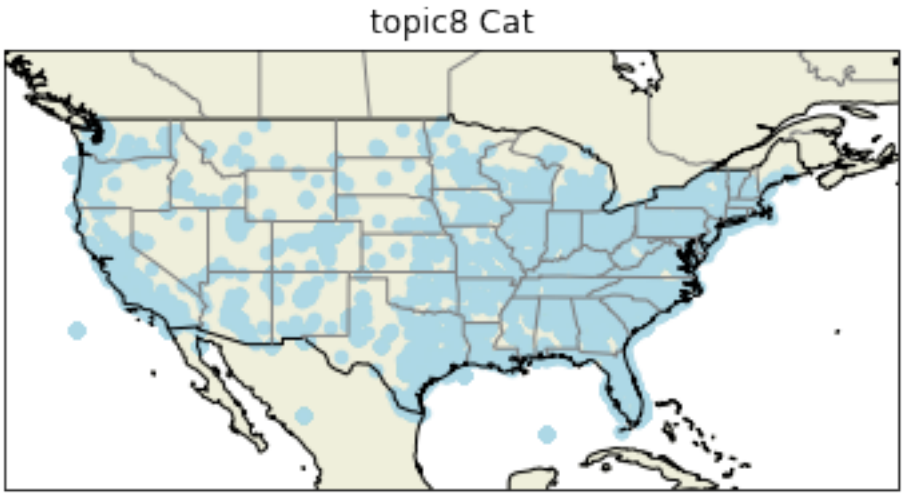
[46]:

	geo.full_name	count
162	california, usa	570
681	los angeles, ca	304
1295	waimalu, hi	259
588	kentucky, usa	202
702	manhattan, ny	149
138	brooklyn, ny	147
204	chicago, il	143
394	florida, usa	114
528	houston, tx	113
55	austin, tx	109

[47]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
```

```
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata8.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic8 Cat",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
USdata8['count'] = 1
dataByNeighbourhood = USdata8.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-47-b11ae3cc8090>:26: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
```

```
USdata8['count'] = 1
```

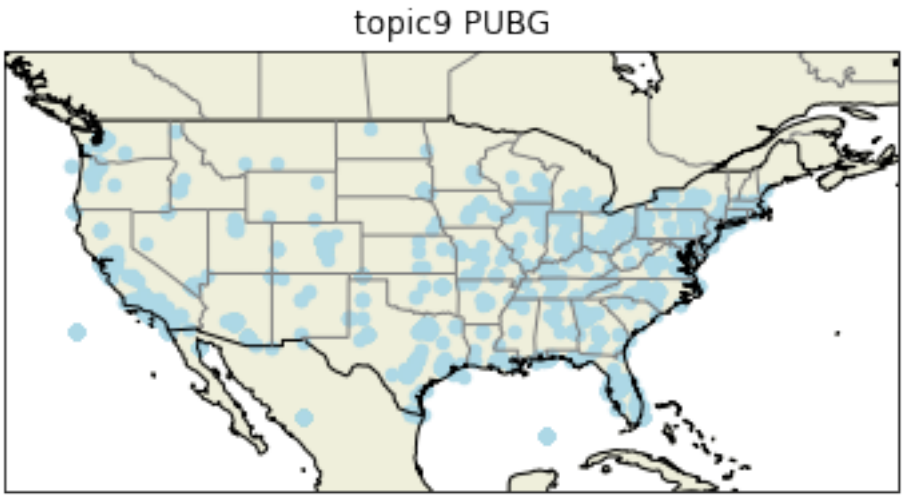
[47]:

	geo.full_name	count
2254	los angeles, ca	982
474	brooklyn, ny	576
683	chicago, il	563
1804	houston, tx	512
2338	manhattan, ny	501
3105	philadelphia, pa	376
1292	florida, usa	373
3471	san diego, ca	351
1463	georgia, usa	343
188	austin, tx	305

[48]:

```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()

import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata9.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic9 PUBG",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
USdata9['count'] = 1
dataByNeighbourhood = USdata9.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-48-8b69426f68fa>:26: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata9['count'] = 1
```

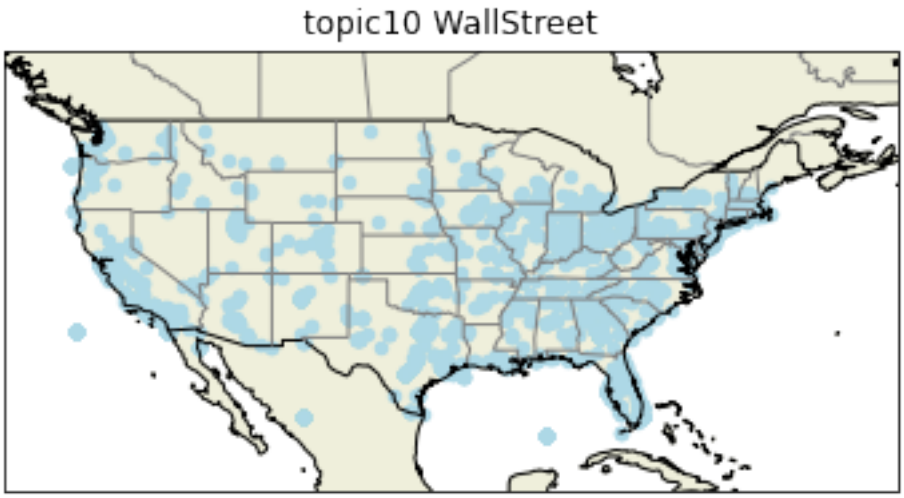
[48]:

	geo.full_name	count
110	charlotte, nc	174
303	huntington beach, ca	160
390	los angeles, ca	85
259	grandview, mo	66
36	austin, tx	64
560	pleasant hill, mo	61
114	chicago, il	59
28	arizona, usa	49
401	malden, ma	45
704	texas, usa	44

[50]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
#ax = plt.subplot(111, projection=ccrs.LambertConformal())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
#ax.add_feature(cfeature.OCEAN.with_scale('50m'))
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
```

```
states_provinces = cfeature.NaturalEarthFeature(
        category='cultural',
        name='admin_1_states_provinces_lines',
        scale='50m',
        facecolor='none')

ax.add_feature(states_provinces, edgecolor='gray')
USdata10.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic10 WallStreet",
        ax=ax)
# add grid
#ax.grid(b=True, alpha=0.5)
plt.show()
USdata10['count'] = 1
dataByNeighbourhood = USdata10.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```



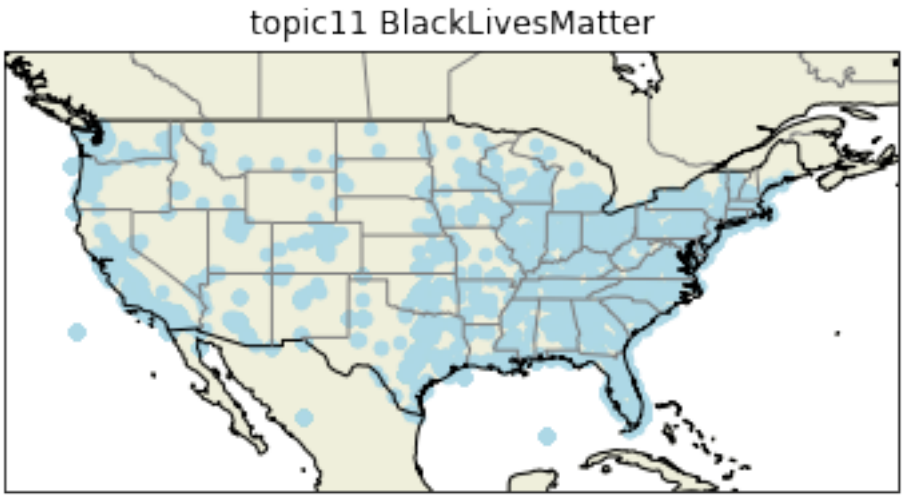

```
<ipython-input-50-5b8f47004da6>:26: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata10['count'] = 1
```

[50]:

	geo.full_name	count
894	manhattan, ny	658
860	los angeles, ca	254
162	brooklyn, ny	212
242	chicago, il	123
667	houston, tx	121
1629	washington, dc	86
490	florida, usa	85
545	georgia, usa	84
1226	philadelphia, pa	77
137	boston, ma	76

[51]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata11.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic11 BlackLivesMatter",
        ax=ax)
plt.show()
USdata11['count'] = 1
dataByNeighbourhood = USdata11.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-51-5cdc18ecdc65>:15: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata11['count'] = 1
```

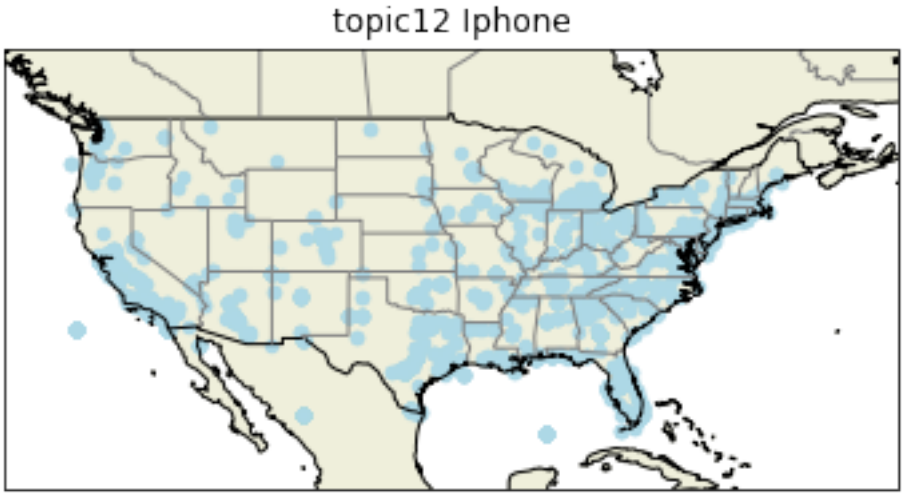
[51]:

	geo.full_name	count
1695	manhattan, ny	1135
1641	los angeles, ca	1092
3087	washington, dc	891
491	chicago, il	621
2609	seattle, wa	594
327	brooklyn, ny	554
1851	minneapolis, mn	468
1289	houston, tx	464
1065	georgia, usa	462
116	atlanta, ga	445

[52]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata12.plot(x="lon", y="lat", kind="scatter",
```

```
        c="lightblue", colormap="Blues",
        title=f"topic12 Iphone",
        ax=ax)
plt.show()
USdata12['count'] = 1
dataByNeighbourhood = USdata12.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-52-1d343c6941d5>:15: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata12['count'] = 1
```

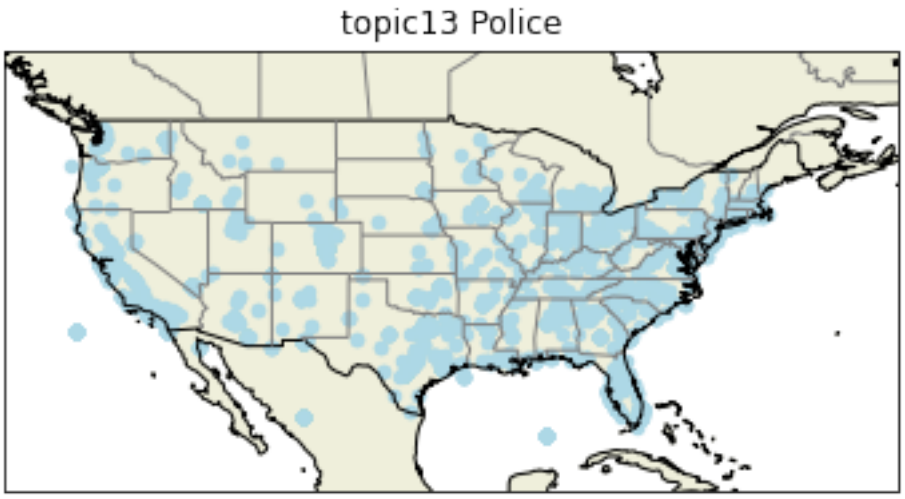
[52]:

	geo.full_name	count
572	los angeles, ca	194
460	houston, tx	120
592	manhattan, ny	117
174	chicago, il	115
111	brooklyn, ny	93
493	jonesboro, ga	89
338	florida, usa	77
381	georgia, usa	68

```
42        atlanta, ga     68
46         austin, tx     67
```

[53]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata13.plot(x="lon", y="lat", kind="scatter",
        c="lightblue", colormap="Blues",
        title=f"topic13 Police",
        ax=ax)
plt.show()
USdata13['count'] = 1
dataByNeighbourhood = USdata13.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-53-76b3f3fe43d4>:15: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead
```

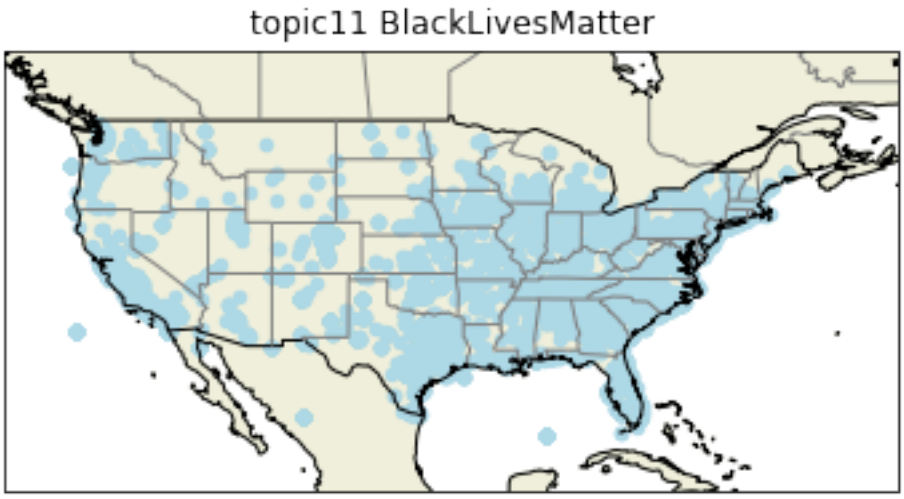
```
See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata13['count'] = 1
```

[53]:

	geo.full_name	count
984	portland, or	3213
501	gresham, or	479
1286	washington, dc	346
694	los angeles, ca	242
172	california, usa	157
217	chicago, il	120
713	manhattan, ny	108
550	houston, tx	88
410	florida, usa	88
466	georgia, usa	87

[54]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata14.plot(x="lon", y="lat", kind="scatter", c="lightblue", colormap="Blues",
              title=f"topic11 BlackLivesMatter", ax=ax)
plt.show()
USdata14['count'] = 1
dataByNeighbourhood = USdata14.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-54-112570366bd2>:13: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata14['count'] = 1
```

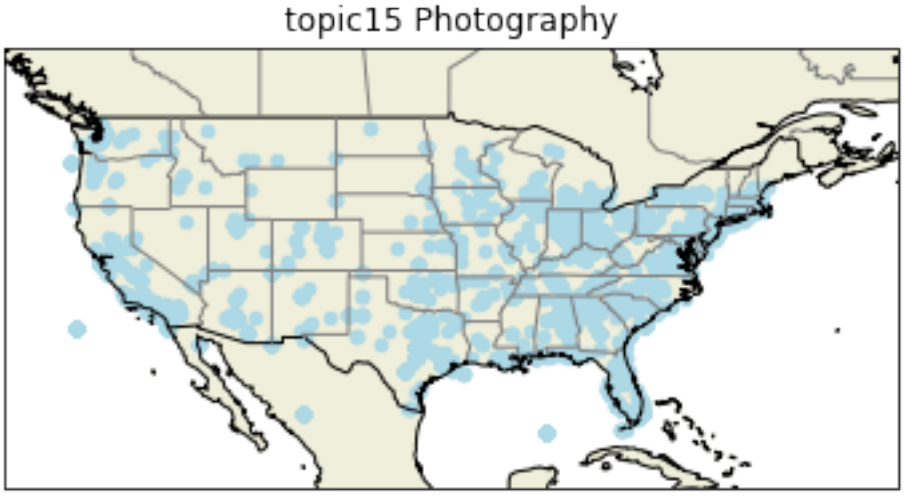
[54]:

	geo.full_name	count
3361	texas, usa	346
1289	georgia, usa	242
2423	north carolina, usa	234
1551	houston, tx	201
570	charlotte, nc	173
1965	los angeles, ca	162
805	dallas, tx	148
2232	missouri, usa	139
594	chicago, il	135
2989	san antonio, tx	132

[55]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata15.plot(x="lon", y="lat", kind="scatter", c="lightblue", colormap="Blues",
```

```
              title=f"topic15 Photography", ax=ax)
plt.show()
USdata15['count'] = 1
dataByNeighbourhood = USdata15.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```



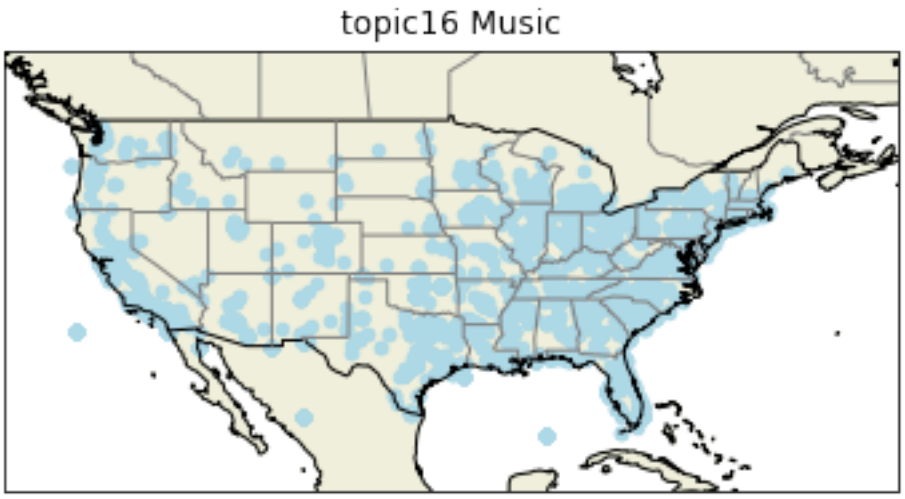

```
<ipython-input-55-42c21d34e3e3>:13: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata15['count'] = 1
```

[55]:

	geo.full_name	count
660	los angeles, ca	330
682	manhattan, ny	247
579	killeen, tx	160
214	chicago, il	109
145	brooklyn, ny	77
1197	texas, usa	70
838	north carolina, usa	65
522	houston, tx	61
57	atlanta, ga	60
778	murfreesboro, tn	56

[56]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata16.plot(x="lon", y="lat", kind="scatter", c="lightblue", colormap="Blues",
              title=f"topic16 Music", ax=ax)
plt.show()
USdata16['count'] = 1
dataByNeighbourhood = USdata16.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```



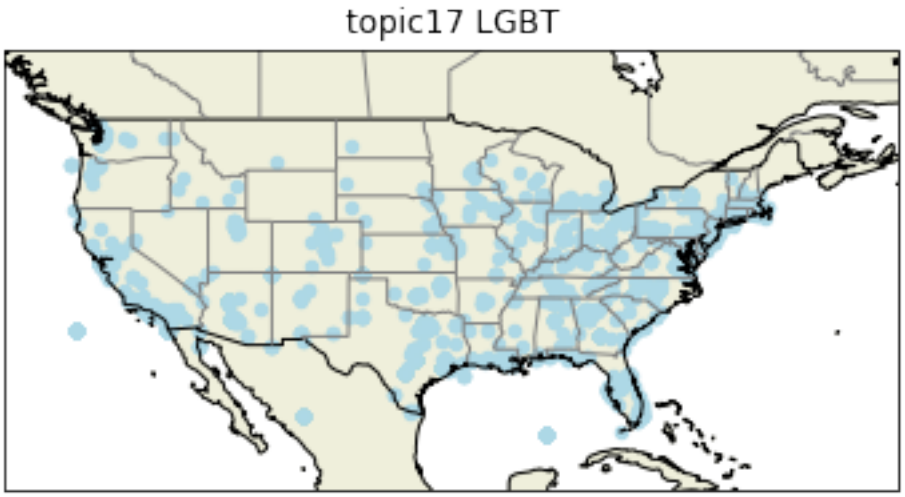

```
<ipython-input-56-067d834abcc5>:13: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata16['count'] = 1
```

[56]:

	geo.full_name	count
1115	los angeles, ca	497
884	houston, tx	228
1164	manhattan, ny	223
329	chicago, il	203
228	brooklyn, ny	175
63	atlanta, ga	143
1343	nashville, tn	136
2024	texas, usa	128
717	georgia, usa	125
1579	philadelphia, pa	119

[57]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata17.plot(x="lon", y="lat", kind="scatter", c="lightblue", colormap="Blues",
              title=f"topic17 LGBT", ax=ax)
plt.show()
USdata17['count'] = 1
dataByNeighbourhood = USdata17.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```



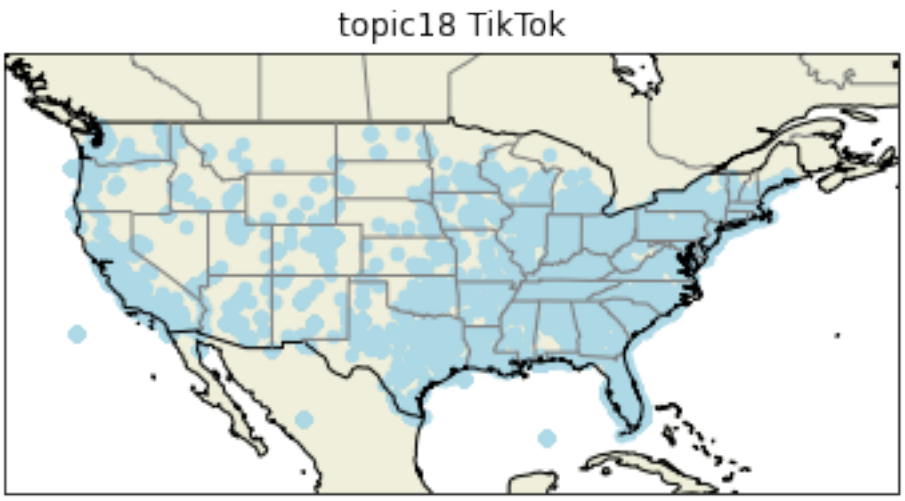
```
<ipython-input-57-8f1be43e3ba8>:13: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata17['count'] = 1
```

[57]:

	geo.full_name	count
475	los angeles, ca	284
500	manhattan, ny	125
139	chino valley, az	100
90	brooklyn, ny	80
137	chicago, il	72
761	san francisco, ca	71
370	houston, tx	69
79	boston, ma	68
100	california, usa	67
37	atlanta, ga	66

[58]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata18.plot(x="lon", y="lat", kind="scatter", c="lightblue", colormap="Blues",
              title=f"topic18 TikTok", ax=ax)
plt.show()
USdata18['count'] = 1
dataByNeighbourhood = USdata18.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-58-0eff91c86e77>:13: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata18['count'] = 1
```

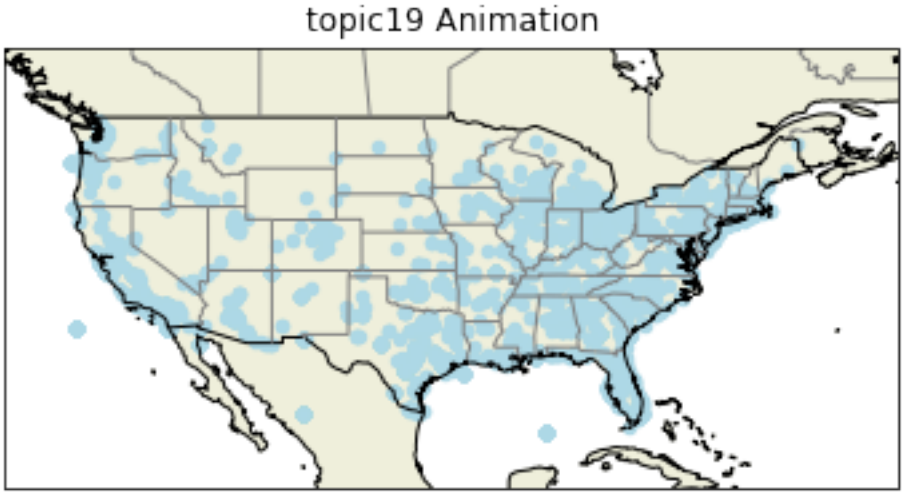
[58]:

	geo.full_name	count
2092	los angeles, ca	1647
2169	manhattan, ny	1097
2678	norwalk, ca	946
440	brooklyn, ny	725
1670	houston, tx	706
651	chicago, il	700
1372	georgia, usa	613
3280	san antonio, tx	601
1218	florida, usa	557
3721	texas, usa	522

[59]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata19.plot(x="lon", y="lat", kind="scatter", c="lightblue", colormap="Blues",
```

```
              title=f"topic19 Animation", ax=ax)
plt.show()
USdata19['count'] = 1
dataByNeighbourhood = USdata19.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```



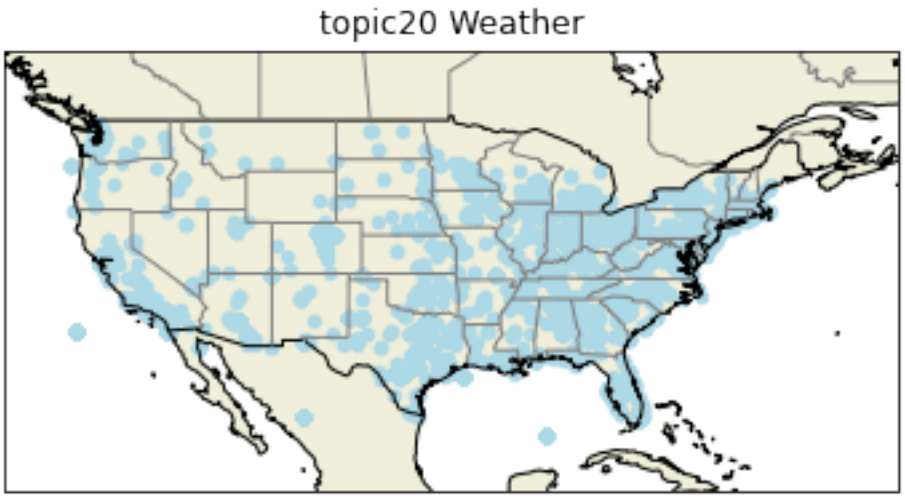

```
<ipython-input-59-45713dc0d3d0>:13: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata19['count'] = 1
```

[59]:

	geo.full_name	count
1149	los angeles, ca	1364
262	burbank, ca	377
1192	manhattan, ny	350
245	brooklyn, ny	234
359	chicago, il	234
910	houston, tx	224
670	florida, usa	210
1791	san francisco, ca	176
748	georgia, usa	167
277	california, usa	149

[60]:
```
fig = plt.figure(figsize=(12,10))
fig = plt.figure()
import cartopy.feature as cfeature
ax = fig.add_subplot(1,1,1, projection=ccrs.PlateCarree())
ax.set_extent([-130,-60,20,49])
ax.coastlines()
ax.add_feature(cfeature.LAND.with_scale('50m'))
ax.add_feature(cfeature.BORDERS.with_scale('50m'))
ax.add_feature(states_provinces, edgecolor='gray')
USdata20.plot(x="lon", y="lat", kind="scatter", c="lightblue", colormap="Blues",
              title=f"topic20 Weather", ax=ax)
plt.show()
USdata20['count'] = 1
dataByNeighbourhood = USdata20.groupby('geo.full_name').count()[['count']].
 ↪reset_index()
dataByNeighbourhood['geo.full_name'] = dataByNeighbourhood['geo.full_name'].str.
 ↪lower()
dataByNeighbourhood.sort_values('count', ascending=False).head(10)
```

```
<Figure size 864x720 with 0 Axes>
```




```
<ipython-input-60-eec3eefc7b36>:13: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  USdata20['count'] = 1
```

[60]:

	geo.full_name	count
1016	louisiana, usa	1307
1049	manhattan, ny	141
320	chicago, il	123
53	apache junction, az	119
1588	san antonio, tx	115
1015	los angeles, ca	110
1806	texas, usa	106
242	california, usa	91
798	houston, tx	82
673	georgia, usa	67

[ ]:
```
###  Create heatmap of user activity ?
```

[ ]:
```
"""
def graph_heatmap(userId, num_of_tweets, utc_offset):
    index = ["Monday", "Tuesday", "Wednesday", "Thursday", "Friday",␣
↪"Saturday", "Sunday"]
    cols = ["%.2d:00" %x for x in range(24)]
    df_activity = pd.DataFrame(daily_activity_matrix, index=index, columns=cols)
    axes = sns.heatmap(df_activity, annot=True)
    axes.set_title('Heatmap of @%s Twitter Activity \n Generated %s for last %s␣
↪tweets' %(userId, datetime.date.today(), num_of_tweets), fontsize=14)
    plt.xlabel("Time (UTC offset in seconds: %s)" %utc_offset)
    plt.yticks(rotation=0)
    plt.savefig("graphs/" + str(userId) + ".png")
"""
```