

```
In [52]: import pandas as pd
```

```
In [53]: import geopandas as gpd
```

```
In [59]: coffee = gpd.read_csv('yelp_coffee.csv')
```

```
-----
AttributeError                                Traceback (most recent call last)
Cell In[59], line 1
----> 1 coffee = gpd.read_csv('yelp_coffee.csv')

AttributeError: module 'geopandas' has no attribute 'read_csv'
```

```
In [60]: coffee = pd.read_file('.csv')
```

```
-----
AttributeError                                Traceback (most recent call last)
Cell In[60], line 1
----> 1 coffee = pd.read_file('yelp_coffee.csv')

File /opt/conda/lib/python3.10/site-packages/pandas/__init__.py:264, in __getattr__(name)
    260     from pandas.core.arrays.sparse import SparseArray as _SparseArray
    262     return _SparseArray
--> 264 raise AttributeError(f"module 'pandas' has no attribute '{name}'")

AttributeError: module 'pandas' has no attribute 'read_file'
```

```
In [62]: coffee = pd.read_csv('yelp_coffee.csv')
```

```
In [63]: coffee.head
```

```

Out[63]: <bound method NDFrame.head of      Unnamed: 0
alias \
0      0      taliza-coffee-santa-fe-springs
1      1      dapuri-malaysian-white-coffee-santa-fe-springs
2      2      starbucks-santa-fe-springs-7
3      4      the-greenhouse-santa-fe-springs
4      7      starbucks-santa-fe-springs-4
...      ...      ...
2106      4473      its-a-grind-coffee-house-lancaster
2107      4474      tea-box-cafe-lancaster-3
2108      4478      starbucks-lancaster-5
2109      4479      the-brewing-grounds-lancaster-2
2110      4480      starbucks-lancaster-17

      categories \
0      ['coffeeroasteries', 'coffee', 'breakfast_brun...
1      ['coffee']
2      ['coffee']
3      ['coffee']
4      ['coffee']
...      ...
2106      ['coffee']
2107      ['coffee', 'bubbletea', 'juicebars']
2108      ['coffee']
2109      ['coffee']
2110      ['coffee']

      id \
0      rs5eKXExQrwSvUJNi0A78g
1      b2domRSPAeUIP9LEARAYMQ
2      g2ldfV2yjU-Yd7r0H-Lh3g
3      BimMFJr3R9_t3CKVLxDvwA
4      dvGiSZlSLB40GfbbNQ0t0jg
...      ...
2106      tnSfdq0beuYzf_8j-ukGhg
2107      wkxPNPUKGu7e8dp6DD9mrQ
2108      VLcDNzCUxijzbT-j9Jvp0w
2109      iLZ_R7xRSGHs1MbQMKSD1w
2110      ZH3cCpUkQ2BVbHbbut7kjlw

      image_url \
0      https://s3-media4.fl.yelpcdn.com/bphoto/LCyCTi...
1      https://s3-media1.fl.yelpcdn.com/bphoto/uPbQGL...
2      https://s3-media2.fl.yelpcdn.com/bphoto/r6Ct_p...
3      NaN
4      https://s3-media1.fl.yelpcdn.com/bphoto/Y4Z_Z1...
...      ...
2106      https://s3-media3.fl.yelpcdn.com/bphoto/3JwZPf...
2107      https://s3-media2.fl.yelpcdn.com/bphoto/HYYQg-...
2108      https://s3-media2.fl.yelpcdn.com/bphoto/rLSH9b...
2109      https://s3-media2.fl.yelpcdn.com/bphoto/YGL4d5...
2110      https://s3-media1.fl.yelpcdn.com/bphoto/EeesaK...

      name price rating review_count transaction
s \
0      Taliza Coffee $ 4.5 132

```

```

[]
1      Dapuri Malaysian White Coffee      $      5.0      1
[]
2              Starbucks      $$      2.5      95
[]
3              The Greenhouse      NaN      2.0      1
[]
4              Starbucks      $$      3.0      71
[]
...              ...      ...      ...      ...
...
2106      Its A Grind Coffee House      $      4.0      53
[]
2107      Tea Box Cafe      $      4.5      120
[]
2108      Starbucks      $$      3.0      75
[]
2109      The Brewing Grounds      NaN      4.0      9
[]
2110      Starbucks      $$      3.0      27
[]

...      long      lat      geometr
y \
0      ... -118.049800  33.902936  POINT (-118.049799576402 33.902936364732
6)
1      ... -118.030580  33.885650      POINT (-118.03058 33.8856
5)
2      ... -118.029368  33.887704      POINT (-118.029368 33.88770
4)
3      ... -118.032532  33.885698  POINT (-118.03253200641 33.885698472487
3)
4      ... -118.049388  33.916618      POINT (-118.049388 33.91661
8)
...      ...      ...      ...
...
2106      ... -118.095470  34.690320      POINT (-118.09547 34.6903
2)
2107      ... -118.097330  34.688379      POINT (-118.09733 34.68837
9)
2108      ... -118.165037  34.704365      POINT (-118.165037 34.70436
5)
2109      ... -118.142274  34.697596  POINT (-118.142273760434 34.697595996783
9)
2110      ... -118.146025  34.697570      POINT (-118.146025 34.6975
7)

neighbourhood price_int chain      store_add1 store_add
2 \
0      Santa Fe Springs      1.0  False      13217 Rosecrans Ave      Na
N
1      Santa Fe Springs      1.0  False      14111 Freeway Dr      Ste 30
0
2      Santa Fe Springs      2.0  True  15905 Valley View Avenue      Na
N
3      Santa Fe Springs      NaN  False      14050 Firestone Blvd      Na

```

N						
4	Santa Fe Springs	2.0	True	13248 Imperial Highway		Na
N						
...		
...						
2106	Lancaster	1.0	False	44421 20th St E		Na
N						
2107	Lancaster	1.0	False	1798 E Ave J		Na
N						
2108	Lancaster	2.0	True	1845 W. Avenue I		Na
N						
2109	Lancaster	NaN	False	706 W Lancaster Blvd	Ste 10	
1						
2110	Lancaster	2.0	True	843 W. Lancaster Blvd		Na
N						

	store_add3	store_zip_code
0	NaN	90670.0
1	NaN	90670.0
2	NaN	90670.0
3	NaN	90670.0
4	NaN	90670.0
...
2106	NaN	93535.0
2107	NaN	93535.0
2108	NaN	93534.0
2109	NaN	93534.0
2110	NaN	93534.0

[2111 rows x 21 columns]>

In [64]:

coffee.tail(3)

Out [64]:

	Unnamed: 0	alias	categories		id
2108	4478	starbucks-lancaster-5	['coffee']	VLcDNzCUxijzbT-j9JvpOw	media2.fl.yelpcdn.com/bpl
2109	4479	the-brewing-grounds-lancaster-2	['coffee']	iLZ_R7xRSGHs1MbQMKSD1w	media2.fl.yelpcdn.com/bpl
2110	4480	starbucks-lancaster-17	['coffee']	ZH3cCpUkQ2BVbHbbut7kjl	media1.fl.yelpcdn.com/bpl

3 rows x 21 columns

In [65]:

coffee.info

```

Out[65]: <bound method DataFrame.info of      Unnamed: 0
alias \
0      0      taliza-coffee-santa-fe-springs
1      1  dapuri-malaysian-white-coffee-santa-fe-springs
2      2      starbucks-santa-fe-springs-7
3      4      the-greenhouse-santa-fe-springs
4      7      starbucks-santa-fe-springs-4
...      ...      ...
2106    4473      its-a-grind-coffee-house-lancaster
2107    4474      tea-box-cafe-lancaster-3
2108    4478      starbucks-lancaster-5
2109    4479      the-brewing-grounds-lancaster-2
2110    4480      starbucks-lancaster-17

      categories \
0  ['coffeeroasteries', 'coffee', 'breakfast_brun...
1  ['coffee']
2  ['coffee']
3  ['coffee']
4  ['coffee']
...      ...
2106    ['coffee']
2107    ['coffee', 'bubbletea', 'juicebars']
2108    ['coffee']
2109    ['coffee']
2110    ['coffee']

      id \
0  rs5eKXExQrwSvUJNi0A78g
1  b2domRSPAeUIP9LEARAYMQ
2  g2ldfV2yjU-Yd7r0H-Lh3g
3  BimMFJr3R9_t3CKVLxDvwA
4  dvGiSZlSLB40GfbbNQ0t0jg
...      ...
2106  tnSfdq0beuYzf_8j-ukGhg
2107  wkxPNPUKGu7e8dp6DD9mrQ
2108  VLcDNzCUxijzbT-j9Jvp0w
2109  iLZ_R7xRSGHs1MbQMKSD1w
2110  ZH3cCpUkQ2BVbHbbut7kjlw

      image_url \
0  https://s3-media4.fl.yelpcdn.com/bphoto/LCyCTi...
1  https://s3-media1.fl.yelpcdn.com/bphoto/uPbQGL...
2  https://s3-media2.fl.yelpcdn.com/bphoto/r6Ct_p...
3  NaN
4  https://s3-media1.fl.yelpcdn.com/bphoto/Y4Z_Z1...
...      ...
2106  https://s3-media3.fl.yelpcdn.com/bphoto/3JwZPf...
2107  https://s3-media2.fl.yelpcdn.com/bphoto/HYYQg-...
2108  https://s3-media2.fl.yelpcdn.com/bphoto/rLSH9b...
2109  https://s3-media2.fl.yelpcdn.com/bphoto/YGL4d5...
2110  https://s3-media1.fl.yelpcdn.com/bphoto/EeesaK...

      name price  rating  review_count transaction
s \
0  Taliza Coffee  $      4.5      132

```

```

[]
1      Dapuri Malaysian White Coffee      $      5.0      1
[]
2              Starbucks      $$      2.5      95
[]
3              The Greenhouse      NaN      2.0      1
[]
4              Starbucks      $$      3.0      71
[]
...              ...      ...      ...      ...
...
2106      Its A Grind Coffee House      $      4.0      53
[]
2107      Tea Box Cafe      $      4.5      120
[]
2108      Starbucks      $$      3.0      75
[]
2109      The Brewing Grounds      NaN      4.0      9
[]
2110      Starbucks      $$      3.0      27
[]

...      long      lat      geometr
y \
0      ... -118.049800  33.902936  POINT (-118.049799576402 33.902936364732
6)
1      ... -118.030580  33.885650      POINT (-118.03058 33.8856
5)
2      ... -118.029368  33.887704      POINT (-118.029368 33.88770
4)
3      ... -118.032532  33.885698  POINT (-118.03253200641 33.885698472487
3)
4      ... -118.049388  33.916618      POINT (-118.049388 33.91661
8)
...      ...      ...      ...
...
2106      ... -118.095470  34.690320      POINT (-118.09547 34.6903
2)
2107      ... -118.097330  34.688379      POINT (-118.09733 34.68837
9)
2108      ... -118.165037  34.704365      POINT (-118.165037 34.70436
5)
2109      ... -118.142274  34.697596  POINT (-118.142273760434 34.697595996783
9)
2110      ... -118.146025  34.697570      POINT (-118.146025 34.6975
7)

neighbourhood price_int chain      store_add1 store_add
2 \
0      Santa Fe Springs      1.0  False      13217 Rosecrans Ave      Na
N
1      Santa Fe Springs      1.0  False      14111 Freeway Dr      Ste 30
0
2      Santa Fe Springs      2.0  True  15905 Valley View Avenue      Na
N
3      Santa Fe Springs      NaN  False      14050 Firestone Blvd      Na

```

```

N
4      Santa Fe Springs      2.0  True   13248 Imperial Highway      Na
N
...      ...      ...      ...      ...
...
2106      Lancaster      1.0  False      44421 20th St E      Na
N
2107      Lancaster      1.0  False      1798 E Ave J      Na
N
2108      Lancaster      2.0  True      1845 W. Avenue I      Na
N
2109      Lancaster      NaN  False      706 W Lancaster Blvd      Ste 10
1
2110      Lancaster      2.0  True      843 W. Lancaster Blvd      Na
N

      store_add3 store_zip_code
0      NaN      90670.0
1      NaN      90670.0
2      NaN      90670.0
3      NaN      90670.0
4      NaN      90670.0
...      ...      ...
2106      NaN      93535.0
2107      NaN      93535.0
2108      NaN      93534.0
2109      NaN      93534.0
2110      NaN      93534.0

```

[2111 rows x 21 columns]>

```
In [66]: coffee.columns.to_list()
```

```

Out[66]: ['Unnamed: 0',
          'alias',
          'categories',
          'id',
          'image_url',
          'name',
          'price',
          'rating',
          'review_count',
          'transactions',
          'url',
          'long',
          'lat',
          'geometry',
          'neighbourhood',
          'price_int',
          'chain',
          'store_add1',
          'store_add2',
          'store_add3',
          'store_zip_code']

```

```
In [67]: desiredcolumns = ['name', 'geometry', 'long', 'lat', 'neighborhood', 'chain',
                           'store_zip_code']
```

```
In [68]: desiredcolumns.head
```

```
-----
AttributeError                                Traceback (most recent call last)
Cell In[68], line 1
----> 1 desiredcolumns.head

AttributeError: 'list' object has no attribute 'head'
```

```
In [69]: coffee[['name', 'geometry', 'long', 'lat', 'chain',
                 'store_zip_code', 'neighbourhood']]
```

```
Out[69]:
```

	name	geometry	long	lat	chain	store_zip_code	neig
--	------	----------	------	-----	-------	----------------	------

0	Taliza Coffee	POINT (-118.049799576402 33.9029363647326)	-118.049800	33.902936	False	90670.0	
1	Dapuri Malaysian White Coffee	POINT (-118.03058 33.88565)	-118.030580	33.885650	False	90670.0	
2	Starbucks	POINT (-118.029368 33.887704)	-118.029368	33.887704	True	90670.0	
3	The Greenhouse	POINT (-118.03253200641 33.8856984724873)	-118.032532	33.885698	False	90670.0	
4	Starbucks	POINT (-118.049388 33.916618)	-118.049388	33.916618	True	90670.0	
...
2106	Its A Grind Coffee House	POINT (-118.09547 34.69032)	-118.095470	34.690320	False	93535.0	
2107	Tea Box Cafe	POINT (-118.09733 34.688379)	-118.097330	34.688379	False	93535.0	
2108	Starbucks	POINT (-118.165037 34.704365)	-118.165037	34.704365	True	93534.0	
2109	The Brewing Grounds	POINT (-118.142273760434 34.6975959967839)	-118.142274	34.697596	False	93534.0	
2110	Starbucks	POINT (-118.146025 34.69757)	-118.146025	34.697570	True	93534.0	

2111 rows x 7 columns

```
In [70]: desired_columns = ['name', 'geometry', 'long', 'lat', 'chain',
                             'store_zip_code', 'neighbourhood']
```



```
In [71]: coffee[desired_columns].sample(5)
```

```
Out[71]:
```

	name	geometry	long	lat	chain	store_zip_code	neighb
861	Starbucks	POINT (-118.256942 34.051537)	-118.256942	34.051537	True	90071.0	D
1776	Starbucks	POINT (-118.322024 34.167987)	-118.322024	34.167987	True	91506.0	
932	Starbucks	POINT (-117.760768 34.02839)	-117.760768	34.028390	True	91766.0	
1740	Nesmon Caf√É→©	POINT (-118.4235992 34.1470604)	-118.423599	34.147060	False	91423.0	Sherr
155	Nitro Cafe	POINT (-118.392439708114 33.9009564242229)	-118.392440	33.900956	False	90266.0	M

```
In [72]: coffee_subset = coffee[desired_columns].copy()
```

```
In [73]: coffee_subset.columns.to_list()
```

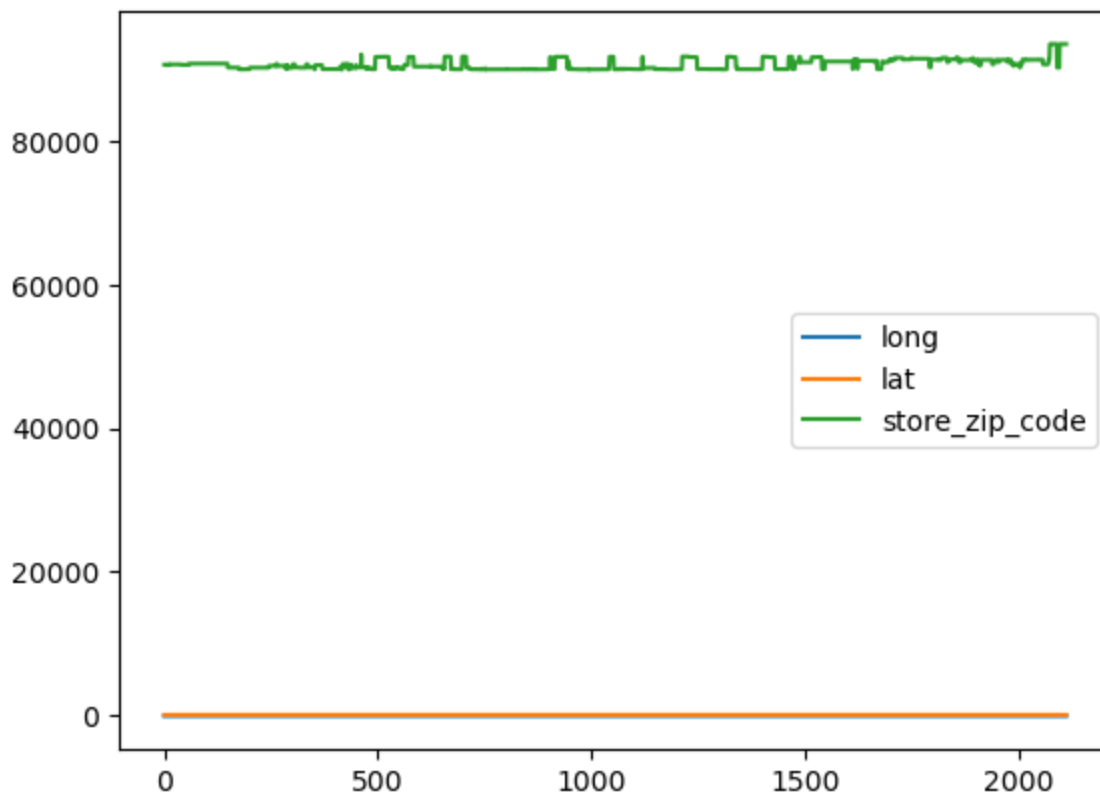
```
Out[73]: ['name', 'geometry', 'long', 'lat', 'chain', 'store_zip_code', 'neighbourho  
od']
```

```
In [74]: coffee_subset.shape
```

```
Out[74]: (2111, 7)
```

```
In [75]: coffee_subset.plot()
```

```
Out[75]: <AxesSubplot: >
```



```
In [76]: import geopandas as gpd
```

```
In [77]: import folium
```

```
In [78]: m = folium.Map()
```

```
In [79]: m
```

Out [79]: Make this Notebook Trusted to load map: File -> Trust Notebook

```
In [80]: latm = coffee_subset.lat.mean()
```

```
In [81]: latm
```

```
Out[81]: 34.056329098086216
```

```
In [82]: longm = coffee_subset.long.mean()
```

```
In [83]: longm
```

```
Out[83]: -118.27337457797252
```

```
In [84]: m = folium.Map(location=[latm, longm])  
m
```

```
Out[84]: Make this Notebook Trusted to load map: File -> Trust Notebook
```

```
In [85]: geo_coffee = gpd.GeoDataFrame(  
    coffee_subset)
```

```
In [86]: geo_coffee
```

Out [86]:

	name	geometry	long	lat	chain	store_zip_code	neig
0	Taliza Coffee	POINT (-118.049799576402 33.9029363647326)	-118.049800	33.902936	False	90670.0	
1	Dapuri Malaysian White Coffee	POINT (-118.03058 33.88565)	-118.030580	33.885650	False	90670.0	
2	Starbucks	POINT (-118.029368 33.887704)	-118.029368	33.887704	True	90670.0	
3	The Greenhouse	POINT (-118.03253200641 33.8856984724873)	-118.032532	33.885698	False	90670.0	
4	Starbucks	POINT (-118.049388 33.916618)	-118.049388	33.916618	True	90670.0	
...
2106	Its A Grind Coffee House	POINT (-118.09547 34.69032)	-118.095470	34.690320	False	93535.0	
2107	Tea Box Cafe	POINT (-118.09733 34.688379)	-118.097330	34.688379	False	93535.0	
2108	Starbucks	POINT (-118.165037 34.704365)	-118.165037	34.704365	True	93534.0	
2109	The Brewing Grounds	POINT (-118.142273760434 34.6975959967839)	-118.142274	34.697596	False	93534.0	
2110	Starbucks	POINT (-118.146025 34.69757)	-118.146025	34.697570	True	93534.0	

2111 rows x 7 columns

In [87]: m

Out [87]: Make this Notebook Trusted to load map: File -> Trust Notebook

In [88]:

g

```
-----  
NameError                                Traceback (most recent call last)  
Cell In[88], line 1  
----> 1 g  
  
NameError: name 'g' is not defined
```

In [89]:

```
gdf = gpd.GeoDataFrame(  
    coffee_subset, geometry = gpd.points_from_xy(coffee_subset.long, coffee_s  
    #crs command allows you to project data points on an interactive map. 4326 i  
    # ax is the plot
```

In [90]:

```
import contextily as cx
```

In [91]:

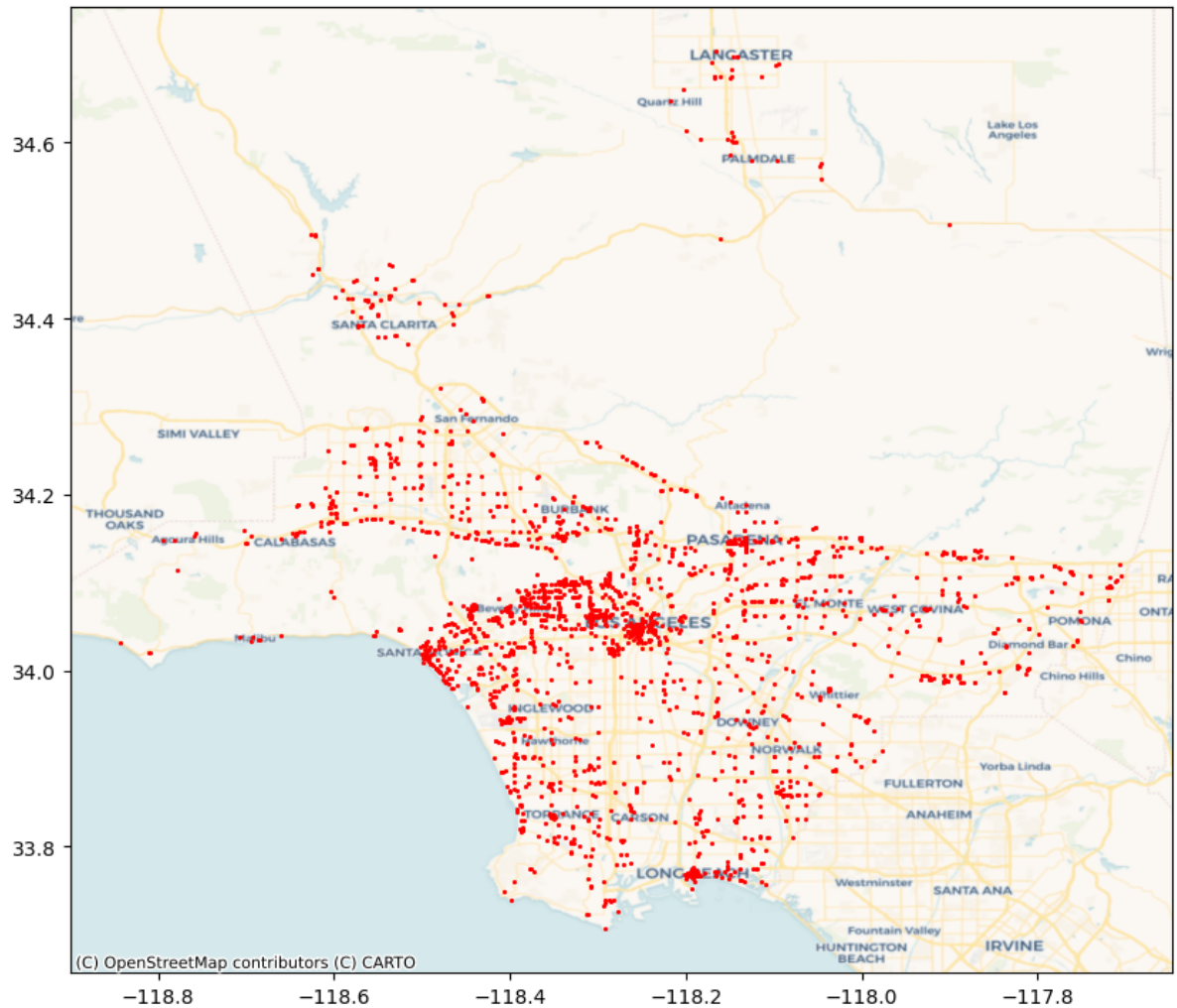
```
cx.providers
```

Out [91]: xyzservices.Bunch 39 items

- ▶ OpenStreetMap xyzservices.Bunch
- ▶ MapTilesAPI xyzservices.Bunch
- ▶ OpenSeaMap xyzservices.TileProvider
- ▶ OPNVKarte xyzservices.TileProvider
- ▶ OpenTopoMap xyzservices.TileProvider
- ▶ OpenRailwayMap xyzservices.TileProvider
- ▶ OpenFireMap xyzservices.TileProvider
- ▶ SafeCast xyzservices.TileProvider
- ▶ Stadia xyzservices.Bunch
- ▶ Thunderforest xyzservices.Bunch
- ▶ CycloSM xyzservices.TileProvider
- ▶ Jawg xyzservices.Bunch
- ▶ MapBox xyzservices.TileProvider
- ▶ MapTiler xyzservices.Bunch
- ▶ Stamen xyzservices.Bunch
- ▶ TomTom xyzservices.Bunch
- ▶ Esri xyzservices.Bunch
- ▶ OpenWeatherMap xyzservices.Bunch
- ▶ HERE xyzservices.Bunch
- ▶ HEREv3 xyzservices.Bunch
- ▶ FreeMapSK xyzservices.TileProvider
- ▶ MtbMap xyzservices.TileProvider
- ▶ CartoDB xyzservices.Bunch
- ▶ HikeBike xyzservices.Bunch
- ▶ BasemapAT xyzservices.Bunch
- ▶ nlmaps xyzservices.Bunch
- ▶ NASAGIBS xyzservices.Bunch
- ▶ NLS xyzservices.TileProvider
- ▶ JusticeMap xyzservices.Bunch
- ▶ GeoportailFrance xyzservices.Bunch
- ▶ OneMapSG xyzservices.Bunch
- ▶ USGS xyzservices.Bunch
- ▶ WaymarkedTrails xyzservices.Bunch
- ▶ OpenAIP xyzservices.TileProvider
- ▶ OpenSnowMap xyzservices.Bunch
- ▶ AzureMaps xyzservices.Bunch
- ▶ SwissFederalGeoportal xyzservices.Bunch
- ▶ Gaode xyzservices.Bunch
- ▶ Strava xyzservices.Bunch

```
coffee_subset.plot(ax = world.plot(figsize = (10,10)), color = 'red', markersize = 10)
```

```
In [97]: ax = gdf.plot(figsize = (10,10), color = 'red', markersize = 1.5)  
cx.add_basemap(ax, crs=gdf.crs.to_string(),source=cx.providers.CartoDB.Voyager)
```



```
In [93]: gdf.head()
```

Out [93]:

	name	geometry	long	lat	chain	store_zip_code	neighbourhood
0	Taliza Coffee	POINT (-118.04980 33.90294)	-118.049800	33.902936	False	90670.0	Santa Fe Springs
1	Dapuri Malaysian White Coffee	POINT (-118.03058 33.88565)	-118.030580	33.885650	False	90670.0	Santa Fe Springs
2	Starbucks	POINT (-118.02937 33.88770)	-118.029368	33.887704	True	90670.0	Santa Fe Springs
3	The Greenhouse	POINT (-118.03253 33.88570)	-118.032532	33.885698	False	90670.0	Santa Fe Springs
4	Starbucks	POINT (-118.04939 33.91662)	-118.049388	33.916618	True	90670.0	Santa Fe Springs

In [94]: `gdf.sample`


```
Out[94]: <bound method NDFrame.sample of
geometry      long \
0              Taliza Coffee POINT (-118.04980 33.90294) -118.04980
0
1      Dapuri Malaysian White Coffee POINT (-118.03058 33.88565) -118.03058
0
2              Starbucks POINT (-118.02937 33.88770) -118.02936
8
3              The Greenhouse POINT (-118.03253 33.88570) -118.03253
2
4              Starbucks POINT (-118.04939 33.91662) -118.04938
8
...
...
2106      Its A Grind Coffee House POINT (-118.09547 34.69032) -118.09547
0
2107      Tea Box Cafe POINT (-118.09733 34.68838) -118.09733
0
2108      Starbucks POINT (-118.16504 34.70437) -118.16503
7
2109      The Brewing Grounds POINT (-118.14227 34.69760) -118.14227
4
2110      Starbucks POINT (-118.14602 34.69757) -118.14602
5

      lat chain store_zip_code neighbourhood
0      33.902936 False      90670.0 Santa Fe Springs
1      33.885650 False      90670.0 Santa Fe Springs
2      33.887704 True      90670.0 Santa Fe Springs
3      33.885698 False      90670.0 Santa Fe Springs
4      33.916618 True      90670.0 Santa Fe Springs
...
2106      34.690320 False      93535.0 Lancaster
2107      34.688379 False      93535.0 Lancaster
2108      34.704365 True      93534.0 Lancaster
2109      34.697596 False      93534.0 Lancaster
2110      34.697570 True      93534.0 Lancaster
```

[2111 rows x 7 columns]>

```
In [98]: import nbconvert as nb
```

```
In [101... import pandoc as pd
```

```
-----
ModuleNotFoundError                                Traceback (most recent call last)
Cell In[101], line 1
----> 1 import pandoc as pd

ModuleNotFoundError: No module named 'pandoc'
```

```
In [100... $ jupyter nbconvert --to pdf notebook.ipynb
```

```
Cell In[100], line 1
      $ jupyter nbconvert --to pdf notebook.ipynb
      ^
```

SyntaxError: invalid syntax

In []: