```
# Part 1
import requests
import pandas as pd
import numpy as np
table =
pd.read_csv("http://www.hcbravo.org/IntroDataSci/misc/BPD_Arrests.csv"
)
table["race_new"] = table["sex"]
table["sex_new"] = table["race"]
table["race"] = table["race_new"]
table["sex"] = table["sex_new"]
table = table.drop('race_new', 1)
table = table.drop('sex_new', 1)
table = table[pd.notnull(table["Location 1"])]
table["lat"], table["long"] = table["Location 1"].str.split(",").str
table["lat"] = table["lat"].str.replace("(", "").astype(float)
table["long"] = table["long"].str.replace(")", "").astype(float)
table = table.head(200)
table
```

```
/var/folders/yl/0_18jst15nb9gbl2n_j_z5tw0000gn/T/
ipykernel_54557/2476020964.py:10: FutureWarning: In a future version
of pandas all arguments of DataFrame.drop except for the argument
'labels' will be keyword-only.
  table = table.drop('race_new', 1)
/var/folders/yl/0_18jst15nb9gbl2n_j_z5tw0000gn/T/ipykernel_54557/24760
20964.py:11: FutureWarning: In a future version of pandas all
arguments of DataFrame.drop except for the argument 'labels' will be
keyword-only.
  table = table.drop('sex_new', 1)
/var/folders/yl/0_18jst15nb9gbl2n_j_z5tw0000gn/T/ipykernel_54557/24760
20964.py:13: FutureWarning: Columnar iteration over characters will be
deprecated in future releases.
  table["lat"], table["long"] = table["Location 1"].str.split(",").str
/var/folders/yl/0_18jst15nb9gbl2n_j_z5tw0000gn/T/ipykernel_54557/24760
20964.py:14: FutureWarning: The default value of regex will change
from True to False in a future version. In addition, single character
regular expressions will *not* be treated as literal strings when
regex=True.
  table["lat"] = table["lat"].str.replace("(", "").astype(float)
/var/folders/yl/0_18jst15nb9gbl2n_j_z5tw0000gn/T/ipykernel_54557/24760
20964.py:15: FutureWarning: The default value of regex will change
from True to False in a future version. In addition, single character
regular expressions will *not* be treated as literal strings when
regex=True.
  table["long"] = table["long"].str.replace(")", "").astype(float)
```

```
        arrest  age race sex  arrestDate arrestTime
arrestLocation  \
1    11127013.0   37    M   B  01/01/2011   00:01:00      2000 Wilkens
Ave
```

```
2    11126887.0   46    M   B  01/01/2011   00:01:00     2800 Mayfield
Ave
3    11126873.0   50    M   B  01/01/2011   00:04:00     2100
Ashburton St
4    11126968.0   33    M   B  01/01/2011   00:05:00       4000 Wilsby
Ave
5    11127041.0   41    M   B  01/01/2011   00:05:00      2900
Spellman Rd
..          ...  ...  ...  ..         ...        ...
...
337  11128462.0   23    M   W  01/04/2011   17:00:00       3200 Tioga
Pkwy
344  11128630.0   28    M   B  01/04/2011   17:45:00        600 E
Eutaw St
345  11128583.0   29    M   B  01/04/2011   17:50:00      200 S
Calhoun St
346  11128437.0   63    M   B  01/04/2011   17:50:00    2400
Winchester St
349  11128410.0   36    M   B  01/04/2011   18:00:00  1300 E Lafayette
Ave

             incidentOffense          incidentLocation  charge  \
1                   79-Other  Wilkens Av & S Payson St  1 1425
2            Unknown Offense                       NaN     NaN
3                   79-Other         2100 Ashburton St  1 1106
4            Unknown Offense         1700 Aliceanna St     NaN
5      81-Recovered Property           2900 Spelman Rd  1 1425
..                       ...                       ...     ...
337  6C-Larceny- Shoplifting             3200 Tioga Pw  1 0521
344             87-Narcotics            600 N Eutaw St  1 0573
345    81-Recovered Property          200 S Calhoun St  1 0256
346             87-Narcotics        2400 Winchester St  4 3550
349             87-Narcotics       1300 E Lafayette Av  4 3550

                                    chargeDescription      district
post  \
1        Reckless Endangerment || Hand Gun Violation      SOUTHERN
934.0
2                                     Unknown Charge  NORTHEASTERN
415.0
3              Reg Firearm:Illegal Possession || Hgv       WESTERN
735.0
4                                     Unknown Charge      NORTHERN
525.0
5         Reckless Endangerment || Handgun Violation      SOUTHERN
924.0
..                                                ...           ...
...
337               Theft Less Than $100.00 || Larceny  NORTHWESTERN
611.0
```

```
344              Cds: Possession-Marihuana || 1 0233       CENTRAL
123.0
345  Cds Pack Materl Poss/Distr || Handgun Violation      SOUTHERN
933.0
346   Cds:Possess-Not Marihuana || Cds: Poss-Cocaine       WESTERN
725.0
349             Cds:Possess-Not Marihuana || Cds Pwi       EASTERN
313.0

                  neighborhood                       Location 1
lat  \
1             Carrollton Ridge  (39.2814026274, -76.6483635135)
39.281403
2                Belair-Edison  (39.3227699160, -76.5735750473)
39.322770
3       Panway/Braddish Avenue  (39.3117196723, -76.6623546313)
39.311720
4                    Pen Lucy  (39.3382885254, -76.6045667070)
39.338289
5                  Cherry Hill  (39.2449886230, -76.6273582432)
39.244989
..                          ...                               ...
...
337                  Mondawmin  (39.3179957509, -76.6582134943)
39.317996
344                 Seton Hill  (39.2959096608, -76.6213664716)
39.295910
345  New Southwest/Mount Clare  (39.2851139075, -76.6393239085)
39.285114
346       Bridgeview/Greenlawn  (39.3016707280, -76.6554003363)
39.301671
349                     Oliver  (39.3104432926, -76.6008808434)
39.310443

          long
1   -76.648364
2   -76.573575
3   -76.662355
4   -76.604567
5   -76.627358
..         ...
337 -76.658213
344 -76.621366
345 -76.639324
346 -76.655400
349 -76.600881

[200 rows x 17 columns]
```

```
# Part 2
import folium
map_osm = folium.Map(location=[39.29, -76.61], zoom_start=11)
map_osm
```

```
<folium.folium.Map at 0x7fe6f94e7670>
```

```
# Part 3
from folium import IFrame
from folium.plugins import MarkerCluster
mc = MarkerCluster().add_to(map_osm)
for idx, row in table.iterrows():
    if (row['sex'] == 'M'):
        sex = str(row['sex'])
        race = str(row['race'])
        date = str(row['arrestDate'])
        chargeDecription = str(row['chargeDescription'])
        iframe = IFrame(table(sex, race, date, chargeDecription),
width=500, height=200)
        popup = folium.Popup(iframe, max_width=500)
        folium.Marker(location=[row['lat'], row['long']], popup=popup,
            icon=folium.Icon(color='blue', icon='info-
sign')).add_to(mc)
    elif (row['sex'] == 'F'):
        sex = str(row['sex'])
        race = str(row['race'])
        chargeDecription = str(row['chargeDescription'])
        iframe = IFrame(table(sex, race, date, chargeDecription),
width=500, height=200)
        popup = folium.Popup(iframe, max_width=500)
        folium.Marker(location=[row['lat'], row['long']], popup=popup,
            icon=folium.Icon(color='red', icon='info-
sign')).add_to(mc)
map_osm
```

```
<folium.folium.Map at 0x7fe6f94e7670>
```

```
# My dataset shows the criminal map for Baltimore.
# For this we decided to split the data up into male vs female. We can
show the
# distribution of location for each gender of criminal.
```