pandas assignmnet-2

March 19, 2022

```
[5]: import pandas as pd
```

```
[27]: newyork_fire_dept_ds = pd.read_csv('FDNY.csv')
```

```
[28]: newyork_fire_dept_ds.head()
```

```
[28]:                                         FacilityName       FacilityAddress  \
      0                                       FacilityName       FacilityAddress
      1                                   Engine 4/Ladder 15       42 South Street
      2                                  Engine 10/Ladder 10    124 Liberty Street
      3                                            Engine 6      49 Beekman Street
      4  Engine 7/Ladder 1/Battalion 1/Manhattan Boroug…   100-104 Duane Street

            Borough
      0     Borough
      1   Manhattan
      2   Manhattan
      3   Manhattan
      4   Manhattan
```

```
[29]: #skip the first row of dataset(it is repeating column names)
      newyork_fire_dept_ds=newyork_fire_dept_ds.iloc[1: ,:]
      newyork_fire_dept_ds.head()
```

```
[29]:                                         FacilityName       FacilityAddress  \
      1                                   Engine 4/Ladder 15       42 South Street
      2                                  Engine 10/Ladder 10    124 Liberty Street
      3                                            Engine 6      49 Beekman Street
      4  Engine 7/Ladder 1/Battalion 1/Manhattan Boroug…   100-104 Duane Street
      5                                             Ladder 8   14 North Moore Street

            Borough
      1   Manhattan
      2   Manhattan
      3   Manhattan
      4   Manhattan
      5   Manhattan
```

```
[30]: #view data statistics using describe()
      newyork_fire_dept_ds.describe()
```

```
[30]:                                 FacilityName          FacilityAddress  \
      count                                    218                      218
      unique                                   218                      218
      top     Engine 64/Ladder 47/District Office 7   1214 Castle Hill Avenue
      freq                                       1                        1

                 Borough
      count          218
      unique           5
      top       Brooklyn
      freq            66
```

```
[31]: newyork_fire_dept_ds.shape
```

```
[31]: (218, 3)
```

```
[32]: newyork_fire_dept_ds.columns
```

```
[32]: Index(['FacilityName', 'FacilityAddress', 'Borough'], dtype='object')
```

```
[37]: newyork_fire_dept_ds.index
```

```
[37]: RangeIndex(start=1, stop=219, step=1)
```

```
[36]: #1.The total number of fire department facilities in New York city
      newyork_fire_dept_ds.count()
```

```
[36]: FacilityName       218
      FacilityAddress    218
      Borough            218
      dtype: int64
```

```
[100]: #2.Displaying The number of fire department facilities in each borough
       groupby_borough = newyork_fire_dept_ds.groupby('Borough')
       groupby_borough.size()
```

```
[100]: Borough
       Bronx            34
       Brooklyn         66
       Manhattan        48
       Queens           50
       Staten Island    20
       dtype: int64
```

```
[60]: groupby_borough.groups
```

```
[60]: {'Bronx': [49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65,
       66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82], 'Brooklyn':
       [83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101,
       102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117,
       118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133,
       134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148],
       'Manhattan': [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,
       20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39,
       40, 41, 42, 43, 44, 45, 46, 47, 48], 'Queens': [149, 150, 151, 152, 153, 154,
       155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170,
       171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186,
       187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198], 'Staten Island':
       [199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214,
       215, 216, 217, 218]}
```

```
[93]: #finding type of dataframe.groupby object type
      type(groupby_borough)
```

```
[93]: pandas.core.groupby.generic.DataFrameGroupBy
```

```
[63]: groupby_borough.groups['Bronx'].size
```

```
[63]: 34
```

```
[94]: #finding type of DataFrameGroupBy.groups
      type(groupby_borough.groups)
```

```
[94]: pandas.io.formats.printing.PrettyDict
```

```
[101]: #2.Printing the Fire department facilities borough wise
       for key in groupby_borough.groups:
           print(f'Borough "{key}" have "{len(groupby_borough.groups[key])}" no of␣
        ↪Fire deptartment facilities')
```

```
Borough "Bronx" have "34" no of Fire deptartment facilities
Borough "Brooklyn" have "66" no of Fire deptartment facilities
Borough "Manhattan" have "48" no of Fire deptartment facilities
Borough "Queens" have "50" no of Fire deptartment facilities
Borough "Staten Island" have "20" no of Fire deptartment facilities
```

```
[99]: #3.facilities names in Manhattan
      facilities_Manhattan = groupby_borough.get_group('Manhattan')
      facilities_Manhattan
```

```
[99]:                                            FacilityName  \
1                              Engine 4/Ladder 15
2                             Engine 10/Ladder 10
3                                        Engine 6
4       Engine 7/Ladder 1/Battalion 1/Manhattan Boroug…
5                                        Ladder 8
6                              Engine 9/Ladder 6
7                     Engine 15/Ladder 18/Battalion 4
8                             Engine 28/Ladder 11
9                                        Engine 5
10                                      Engine 55
11                           Ladder 20/Division 1
12                  Engine 24/Ladder 5/Battalion 2
13                             Engine 33/Ladder 9
14                         Ladder 3/Battalion 6
15                                        Squad 18
16                             Engine 34/Ladder 21
17                                       Engine 26
18                  Engine 3/Ladder 12/Battalion 7
19                            Engine 1/Ladder 24
20                                       Engine 14
21                           Engine 16 / Ladder 7
22                                       Engine 21
23                  Engine 54/Ladder 4/Battalion 9
24                                       Engine 23
25                                        Rescue 1
26                             Engine 40/Ladder 35
27             Ladder 25/District Office 4/Division 3
28                                       Engine 74
29                                       Engine 65
30                 Engine 8 / Ladder 2 / Battalion 8
31                             Engine 39/Ladder 16
32                                       Engine 44
33                 Engine 22/Ladder 13/Battalion 10
34                             Engine 58/Ladder 26
35                             Engine 53/Ladder 43
36                                       Engine 91
37                             Engine 35/Ladder 14
38                 Engine 76/Ladder 22/Battalion 11
39                                       Engine 47
40                             Engine 59/Ladder 30
41                             Engine 37/Ladder 40
42                 Engine 69/Ladder 28/Battalion 16
43                             Engine 80/Ladder 23
44                             Engine 84/Ladder 34
45                                       Engine 67
46                 Engine 93/Ladder 45/Battalion 13
```

```
47                         Engine 95/Ladder 36
48                              Marine 1


                    FacilityAddress    Borough
1                  42 South Street    Manhattan
2                124 Liberty Street   Manhattan
3                 49 Beekman Street    Manhattan
4               100-104 Duane Street   Manhattan
5              14 North Moore Street   Manhattan
6                  75 Canal Street    Manhattan
7                   25 Pitt Street    Manhattan
8                222 East 2nd Street   Manhattan
9               340 East 14th Street   Manhattan
10                363 Broome Street    Manhattan
11              253 Lafayette Street   Manhattan
12                227-29 6th Avenue    Manhattan
13              42 Great Jones Street  Manhattan
14              108 East 13th Street   Manhattan
15              132 West 10th Street   Manhattan
16              440 West 38th Street   Manhattan
17              220 West 37th Street   Manhattan
18              150 West 19th Street   Manhattan
19            142-46 West 31st Street  Manhattan
20               14 East 18th Street   Manhattan
21              234 East 29th Street   Manhattan
22              238 East 40th Street   Manhattan
23                 782 8th Avenue     Manhattan
24              215 West 58th Street   Manhattan
25              530 West 43rd Street   Manhattan
26             131 Amsterdam Avenue    Manhattan
27           205-207 West 77th Street  Manhattan
28              120 West 83rd Street   Manhattan
29               33 West 43rd Street   Manhattan
30              167 East 51st Street   Manhattan
31            157-59 East 67th Street  Manhattan
32              221 East 75th Street   Manhattan
33              159 East 85th Street   Manhattan
34                1367 5th Avenue     Manhattan
35              1836-46 3rd  Avenue    Manhattan
36              242 East 111th Street  Manhattan
37                2282 3rd Avenue     Manhattan
38            145-51 West 100th Street Manhattan
39              502 West 113th Street  Manhattan
40              111 West 133rd Street  Manhattan
41              415 West 125th Street  Manhattan
42              248 West 143rd Street  Manhattan
43              503 West 139th Street  Manhattan
```

```
44                      513 West 161st Street  Manhattan
45                      518 West 170th Street  Manhattan
46                      515 West 181st Street  Manhattan
47                         29 Vermilyea Avenue  Manhattan
48  Little West 12th Street/Hudson River  Manhattan
```

[ ]: