# **NYPD Crime Dashboard-Tableau**

1	ARREST_KEY	ARREST_DATE	P	D_CD	PD_DESC	KY_CD	OFNS_DES	LAW_COD LA	W_CAT_ARREST_B	ARREST_P JU	RISDICT AGE_GR	O PERP_SI	EX PERP_RACE
2	238942621	01	-10-2022	101	ASSAULT	344	ASSAULT :	PL 12000( M	Manhatta	9	0 18-24	M	WHITE
3	238980679	01	-11-2022	244	BURGLAR	107	BURGLAR	PL 14020( F	Queens	101	0 25-44	M	WHITE
4	239553009		-01-2022		JOSTLING			PL 16525( M	Queens	110	1 25-44	M	BLACK
5	239651234		-01-2022	153				PL 13025(F	NA	71	0 25-44	M	BLACK
6	241524225		-03-2022		RAPE 1			PL 13035(F	Brooklyn	84	0 18-24	M	BLACK
7	241038267		-02-2022		RAPE 1			PL 13035(F	Bronx	41	0 45-64	M	BLACK
8		02/17/2022		175				PL 13052/ M	Brooklyn	71 79	0 <18	M	BLACK
10	241433334	03/22/2022	-03-2022		STRANGU BURGLAR		BURGLAR	PL 12112(F NA F	Brooklyn Bronx	44	0 45-64 0 25-44	M	BLACK BLACK
11	242064330		-03-2022	101				PL 12000( M	Brooklyn	75	0 25-44	M	BLACK
12	242479143		-03-2022		RAPE 1			PL 13035( F	NA	41	0 45-64	M	BLACK
13	243994388		-04-2022		RAPE 1			PL 13035(F	Brooklyn	77	0 25-44	M	BLACK
14		04/24/2022			WEAPON:			PL 26502(F	Brooklyn	67	0 25-44	М	BLACK
15	244769471	05	-08-2022	263	ARSON 2,	114	ARSON	PL 15015(F	Brooklyn	79	71 18-24	F	BLACK
16	245645876	25	-05-2022	168	NA	116	SEX CRIMI	PL 13050(F	Queens	110	0 <18	M	WHITE HISPAN
17	245666690	26	-05-2022	157	RAPE 1	104	RAPE	PL 13035(F	Queens	106	0 45-64	M	BLACK
18		06/19/2022			ROBBERY,			PL 16005( F	Bronx	48	0 25-44	F	BLACK
19	246856453		-06-2022		RAPE 1			PL 13035(F	Bronx	47	0 25-44	M	BLACK
20	246834681		-06-2022		ASSAULT			PL 12000( M	Bronx	41	0 25-44	F	BLACK
21	247908306		-12-2022		STRANGU			PL 12112(F	Brooklyn	73	0 18-24	M	BLACK
22	248439863		-07-2022		BURGLAR			PL 14020(F	Manhatta	1	0 25-44	M	WHITE
23 24	248272104 248355121		-07-2022 -07-2022		ASSAULT RAPE 2			PL 12000( M PL 13030( F	Bronx Bronx	44 41	0 18-24 0 18-24	M	BLACK BLACK
25		09/18/2022	-07-2022		ASSAULT			PL 13030(F	Queens	107	0 25-44	M	WHITE
26	250655271		-06-2022		WEAPON:			PL 26501( M	Manhatta	9	0 25-44	M	BLACK
27	251397200		-09-2022		SEXUAL A			PL 13052/ M	Queens	102	0 18-24	M	BLACK
28	239648389	2"	-01-2022		RAPE 1			PL 13035(F	Queens	112	0 25-44	M	BLACK
29	241800232	0.3	-08-2022		ARSON 2.			PL 15015(F	Brooklyn	60	0 25-44	F	WHITE
	A	B	С		D	E	F	G	Н		I K	L	
1	ARREST_KEY	X COOR	D Y COOI	RD Latit	ude Lo	ngitude	New.Geor	eferenced.	Column				_
2	238942			-1		-			40.72558254)				
3	238980							3.754742 40	•			-	
4	239553			05 40.7					40.75533648)	40005041			
5	239651			35 40.6					03751 40.66412				
6	241524	1225 98890	1926	41 40.6	59544 -	73.9832	POINT (-7	3.98322537	56043 40.69543	88081238)			
7	241038	3267 101303	2366	57 40.8	31621	-73.896	POINT (-7	3.89600119	32583 40.81620	58439227)			
8	240817	7075 99874	1812	35 40.6	6412 -	73.9478	POINT (-7	3.94776484	03751 40.66412	1282631)			
9	241455	5354 99949	1903	00 4	0.689	-73.945	POINT (-7	3.94502653	28727 40.68900	139556)			
10	242619	9627 100924	3 2437	08 40.8	33556 -	73.9097	POINT (-7	3.909677 40	0.835563)				
11	242064							3.881509 40					
12	242479			57 40.8					-	E0420227\			
									32583 40.81620				
13	243994								55961 40.67449	56865259)			
14	244102			77 40.6					40.65295215)				
15	244769	9471 99793	1891	48 40.6	- 8584	73.9507	POINT (-7	3.950663 40	0.685835)				
16	245645	876 101916	2101	69 40.7	74348	-73.874	POINT (-7	3.87400353	73971 40.74348	12638841)			
17	245666	6690 102860	7 1879	30 40	.6824 -	73.8401	POINT (-7	3.84007215	77516 40.68239	8279333)			
18		1601 101742							10.84023133)				
19		5453 102648					•		77564 40.88731	36344706)			
20		1681 101277						3.896929 40		233.17001			
							•			000160041			
21		3306 100824							52048 40.67113	00010904)			
22	248439							4.007582 40					
23	248272	2104 100653	2445	11 40.8	33777 -	73.9195	POINT (-7	3.919455 40	0.837774)				
	248355	101303	2366	57 40.8	31621	-73.896	POINT (-7	3.89600119	32583 40.81620	58439227)			
24	250791	103662	2049	48 40.7	72906	-73.811	POINT (-7	3.811018 40	)./29059)				
24 25	250791 250655						•	3.811018 40 3.979416 40					
24 25 26 27		98995	55 2016	42 40.7	72014 -	73.9794	POINT (-7	3.979416 40		15739)			

239648389 1025401 202586 40.72264 -73.8515 POINT (-73.8515418216779 40.7226409964758)

241800232 990796 149587 40.57726 -73.9764 POINT (-73.976436 40.577258)

28

### **R Programming:**

• Splitting the dataset in three parts

```
df<-read.csv("C:\\Users\\diya\\OneDrive\\Desktop\\NYPD_Arrest_Data__Year_to_Date_.csv")
       library(dplyr)
       #SPLITTING
      data1=select(df,ARREST_KEY,X_COORD_CD,Y_COORD_CD,Latitude,Longitude)
      data2=select(df,ARREST_KEY,PD_DESC,KY_CD,OFNS_DESC)
       data2
  10 data3=select(df,ARREST_KEY,AGE_GROUP,PERP_SEX,PERP_RACE)
  11 data3
Outputs:
> #SPLITTING
> data1=select(df,ARREST_KEY,X_COORD_CD,Y_COORD_CD,Latitude,Longitude)
     ARREST_KEY X_COORD_CD Y_COORD_CD Latitude Longitude
                       962808
      239371742
                                    174275 40.64500 -74.07726
2
      242964092
                       946185
                                    170151 40.63362 -74.13714
3
      244100828
                       947212
                                    169726 40.63246 -74.13344
                       962873
                                    174172 40.64472 -74.07703
4
      240471785
5
      242917665
                       938434
                                    171107 40.63621 -74.16507
                                    166373 40.62324 -74.14922
6
      239942163
                       942827
      241452983
                       962808
                                    174275 40.64500 -74.07726
8
                                    132126 40.52914 -74.21047
      238702912
                       925740
      241584989
                       941602
                                    138732 40.54736 -74.15345
9
                                    148519 40.57429 -74.10591
10
                       954827
      245532330
11
      238709830
                       954827
                                    148519 40.57429 -74.10591
17 2472855481 getoption( max.pr int )64700 40 63443 -74 13077 bata_set2=select(df,ARREST_KEY,PD_DESC,KY_CD,OFNS_DESC)
  data2=select(df,ARREST_KEY,PD_DESC,KY_CD,OFNS_DESC)
  data2
    ARREST_KEY
                                                                              OFNS_DESC
                                             PD_DESC_KY_CD
                        ROBBERY, OPEN AREA UNCLASSIFIED
    239371742
                                                      105
                                                                               ROBBERY
     242964092
                           INTOXICATED DRIVING, ALCOHOL
                                                          INTOXICATED & IMPAIRED DRIVING
     244100828
                        LARCENY, PETIT FROM OPEN AREAS,
                                                       341
                                                                          PETIT LARCENY
                             ASSAULT 2,1,UNCLASSIFIED WEAPONS POSSESSION 3
     240471785
                                                      106
                                                                         FELONY ASSAULT
     242917665
                                                                      DANGEROUS WEAPONS
                                                      118
     239942163
                                  OBSTR BREATH/CIRCUL
                                                            ASSAULT 3 & RELATED OFFENSES
                                                       344
     241452983
                              RECKLESS ENDANGERMENT 1
                                                      126
                                                                MISCELLANEOUS PENAL LAW
                                           ASSAULT 3
                                                       344
                                                            ASSAULT 3 & RELATED OFFENSES
     238702912
     241584989
                                 TRESPASS 3, CRIMINAL
                                                       352
                                                                      CRIMINAL TRESPASS
                                                      348 VEHICLE AND TRAFFIC LAWS
110 GRAND LARCENY OF MOTOR VEHICLE
                        TRAFFIC, UNCLASSIFIED MISDEMEAN
10
    245532330
     238709830
                                LARCENY, GRAND OF AUTO
                        LARCENY, PETIT FROM OPEN AREAS,
                                                      341
  data3=select(df,ARREST_KEY,AGE_GROUP,PERP_SEX,PERP_RACE)
  data3
     ARREST_KEY AGE_GROUP PERP_SEX
                                                                  PERP_RACE
      239371742
1
                        <18
                                      F
                                                                       BLACK
2
      242964092
                       25-44
                                                            WHITE HISPANIC
3
      244100828
                       25-44
                                      F
                                                                       WHITE
4
      240471785
                       25-44
                                      F
                                                                       BLACK
      242917665
                       25-44
5
                                      Μ
                                                                       BLACK
6
      239942163
                       45-64
                                      F
                                                                       BLACK
                                      F
      241452983
                       18-24
                                                            WHITE HISPANIC
8
                       25-44
      238702912
                                      Μ
                                                                       WHITE
Q
      241584989
                       45-64
                                      Μ
                                                                       WHITE
10
      245532330
                       25 - 44
                                       F
                                                                       BLACK
      238709830
                       18-24
                                       Μ
11
                                                                       BLACK
12
      242855481
                       25-44
                                       Μ
                                                            WHITE HISPANIC
      244759892
                       25-44
13
                                       Μ
                                                                       BLACK
```

#### Merging the datasets

```
13 data_frame=merge(data1,data2,by="ARREST_KEY")
14 df2=merge(data3,data_frame,by="ARREST_KEY")
15 print(df2)
```

**Output:** 

```
PD_DESC KY_CD
CRIMINAL MISCHIEF 4TH, GRAFFIT 351
CRIMINAL MISCHIEF 4TH, GRAFFIT 351
ASSAULT POLICE/PEACE OFFICER 106
        ARREST_KEY AGE_GROUP PERP_SEX
         238492434
238492441
                 25-44
25-44
                   45-64
25-44
18-24
25-44
         238492810
         238492849
                                                                                         CRIMINAL POSSESSION WEAPON
                                                                                     CRIMINAL MISCHIEF 4TH, GRAFFIT
ASSAULT 3
         238492853
238492861
                                                                                    ASSAUL 1 3

OBSTR BREATH/CIRCUL
CRIMINAL MISCHIEF, UNCLASSIFIED 4

MURDER, UNCLASSIFIED
CRIMINAL POSSESSION WEAPON
ASSAULT 3
        238492861
238492862
238492868
238493024
238493025
238493029
238493030
                   45-64
45-64
45-64
18-24
18-24
25-44
25-44
                                                                                     MISCHIEF, CRIMINAL,
17
13
     #the date was not consistent some was 6/26/22 and 9-34-22
     #so i formatted the date
14
      df$ARREST_DATE<-as.Date(df$ARREST_DATE,format="%d-%m-%Y")
15
16
     class(df$ARREST_DATE)
17
     head(df)
18
19
     format(df$ARREST_DATE,"%d-%m-%Y")
 20
 21
      #removing all the NA values from the dataset
      df <- df[complete.cases(df), ]</pre>
 22
 23 df
25 #the borough column was having values B,M,Q,K i needed the names of it
   #so i modifed the boro Arrees_Boro column
28
    bronx<-subset(df,df$ARREST_BORO=='B')</pre>
29
    bronx
    bronx$ARREST_BORO='Bronx'
30
31
32
33
    man<-subset(df,df$ARREST_BORO=='M')
34
35
    man$ARREST_BORO='Manhattan'
36
37
    q<-subset(df,df$ARREST_BORO=='Q')</pre>
38
39
    q$ARREST_BORO='Queens'
40
    k<-subset(df,df$ARREST_BORO=='K')
41
42
    k$ARREST_BORO='Brooklyn'
43
44
    s<-subset(df,df$ARREST_BORO=='S')</pre>
45
46
47
    s$ARREST_BORO='Staten Island'
48
49
    df2<-do.call("rbind", list(s,k, q, man,bronx))</pre>
50
51
    head(df2)
    52
         #adding a day column with the help of date coulmn
    53
         head(df2)
    55
         df2$day=weekdays(df2$ARREST_DATE)
        head(df2)
    56
    57
    E 0
     #pushing all the changes to the file
59
    write.csv(df2,"C:\\Users\\diya\\OneDrive\\Desktop\\NYPD_Arrest_Data__Year_to_Date_.csv")
60
  62
  63
         #queries from the data
  64
        #list to 5 ofences based on their occurence
         install.packages('plyr')
  65
  66
         library(plyr)
         ans=count(df2$0FNS_DESC)
  67
  68
         ans=ans[order(-ans$freq),]
  69
         head(ans)
   70
```

```
Output:
```

```
> ans=count(df2$0FNS_DESC)
> ans=ans[order(-ans$freq),]
> head(ans)
                                x freq
     ASSAULT 3 & RELATED OFFENSES 23188
 54
                    PETIT LARCENY 15288
 20
                   FELONY ASSAULT 14190
 37
          MISCELLANEOUS PENAL LAW
                                   9327
 12 CRIMINAL MISCHIEF & RELATED OF
                                   7717
                  DANGEROUS DRUGS 7686
14
> |
      IICau(ans)
   70
   71 #list top 2 perp race based on their freq occurence
      race=count(df2$PERP_RACE)
      race=race[order(-race$freq),]
   73
   74
      race
   75
      race[0:2,]
   76
Output:
                   הטוומרויסס הויסמס ו מסט
> race=count(df2$PERP_RACE)
> race=race[order(-race$freq),]
> race
                                x freq
3
                            BLACK 69504
                   WHITE HISPANIC 34960
7
6
                            WHITE 14574
4
                   BLACK HISPANIC 12735
        ASIAN / PACIFIC ISLANDER 7550
5
                                    487
                          UNKNOWN
1 AMERICAN INDIAN/ALASKAN NATIVE
                                    375
> race[0:2,]
                x freq
            BLACK 69504
3
7 WHITE HISPANIC 34960
    /5 race[0:2,]
    76
       #the % of male and female perp
    77
    78 gender=count(df2$PERP_SEX)
    79 summ=sum(gender$freq)
    80 gender$freq=gender$freq*100/summ
       gender
    81
    22
Output:
> gender=count(df2$PERP_SEX)
> summ=sum(gender$freq)
> gender$freq=gender$freq*100/summ
> gender
        freq
 Х
1 F 17.50116
2 M 82.49884
```

```
88
  89 #the sum of number of arrests based upon the weekday
  90 week=count(df2$day)
  91 week$freq=week$freq/summ
  92 week=week[order(-week$freq),]
  93 week
  94
2 meen
                 freq
7 Wednesday 0.1688768
5 Thursday 0.1660235
    Tuesday 0.1563577
6
     Friday 0.1354353
1
3 Saturday 0.1293862
2 Monday 0.1239719
4
     Sunday 0.1199486
> |
   96 #the top 2 type of crimes
   97 crime=count(df2$LAW_CAT_CD)
   98 crime$freq=crime$freq/summ
   99 crime=crime[order(-crime$freq),]
  100 crime[0:2,]
101
> crime[0:2,]
  Х
4 M 0.5341584
2 F 0.4509184
```

## **Dataset After the changes:**

4	Α	В	С	<b>6</b> · · · ·	D	E	F	G	Н	I J	K	L	M	N	0	Р	Q	R	S	Т	U
1	1	ARREST_KEY	ARREST_DATE		PD_CD	PD_DESC	KY_CD	OFNS_DES	LAW_COD L	.AW_CAT_ARREST_I	B ARREST_P	JURISDICT A	AGE_GROUPE	ERP_SEX PI	ERP_RAC	X_COORD_Y	_COORD	Latitude	Longitude	New.Ge	oreference_
2	1	238942621		01-10-2022	10	1 ASSAULT	344	ASSAULT 3	PL 120000 N	Manhatta	ar 9	0 :	18-24 M	l W	/HITE	987058	203626	40.72558	-73.9899	POINT (	73.989869
3	2	238980679		01-11-2022	24	4 BURGLAR	107	BURGLARY	PL 140200 F	Queens	101	0	25-44 M	l W	/HITE	1052353	159425	40.604	-73.7547	POINT (	73.754742
4	3	239553009		23-01-2022	46	4 JOSTLING	230	JOSTLING	PL 165250 M	M Queens	110	1	25-44 M	В	LACK	1027679	214505	40.75534	-73.8432	POINT (	73.843245
5	4	239651234		25-01-2022	15	3 RAPE 3	104	RAPE	PL 130250 F	Brooklyn	71	0 2	25-44 M	В	LACK	998742	181235	40.66412	-73.9478	POINT (	73.947764
6	5	241524225		03-03-2022	15	7 RAPE 1	104	RAPE	PL 130350 F	Brooklyn	84	0 :	18-24 M	В	LACK	988902	192641	40.69544	-73.9832	POINT (	73.983225
7	6	241038267		22-02-2022	15	7 RAPE 1	104	RAPE	PL 130350 F	Bronx	41	0 4	15-64 M	В	LACK	1013037	236657	40.81621	-73.896	POINT (	73.896001
8	7	240817075		17-02-2022	17	'5 SEXUAL A	233	SEX CRIME	PL 13052A N	M Brooklyn	71	0 •	<18 M	В	LACK	998742	181235	40.66412	-73.9478	POINT (	73.947764
9	9	241455354		03-02-2022	10	5 STRANGU	l 106	FELONY AS	PL 121120 F	Brooklyn	79	0 4	15-64 M	В	LACK	999496	190300	40.689	-73.945	POINT (	73.945026
10	10	242619627		25-03-2022	24	4 BURGLAR	107	BURGLARY	PL 140200 F	Bronx	44	0 2	25-44 M	В	LACK	1009243	243708	40.83556	-73.9097	POINT (	73.909677
11	11	242064330		14-03-2022	10	1 ASSAULT	3 344	ASSAULT 3	PL 120000 N	M Brooklyn	75	0 2	25-44 M	В	LACK	1017119	183909	40.6714	-73.8815	POINT (	73.881509
12	12	242479143		22-03-2022	15	7 RAPE 1	104	RAPE	PL 130350 F	Bronx	41	0 4	15-64 M	В	LACK	1013037	236657	40.81621	-73.896	POINT (	73.896001
13	13	243994388		21-04-2022	15	7 RAPE 1	104	RAPE	PL 130350 F	Brooklyn	77	0 2	25-44 M	В	LACK	1003509	185018	40.6745	-73.9306	POINT (	73.930571
14	14	244102403		24-04-2022	79	3 WEAPONS	118	DANGERO	PL 265020 F	Brooklyn	67	0 2	25-44 M	В	LACK	1008941	177177	40.65295	-73.911	POINT (	73.911015
15	15	244769471		05-08-2022	26	3 ARSON 2,3	3 114	ARSON	PL 150150 F	Brooklyn	79	71 :	18-24 F	В	LACK	997933	189148	40.68584	-73.9507	POINT (	73.950663
16	17	245645876		25-05-2022	16	8 SODOMY	1 116	SEX CRIME	PL 130500 F	Queens	110	0 •	<18 M	l W	HITE HIS	1019164	210169	40.74348	-73.874	POINT (	73.874003
17	18	245666690		26-05-2022	15	7 RAPE 1	104	RAPE	PL 130350 F	Queens	106	0 4	15-64 M	В	LACK	1028607	187930	40.6824	-73.8401	POINT (	73.840072
18	19	246374601		06-09-2022	39	7 ROBBERY,	105	ROBBERY	PL 160050 F	Bronx	48	0 2	25-44 F	В	LACK	1017426	245419	40.84023	-73.8801	POINT (	73.880100
19	20	246856453		19-06-2022	15	7 RAPE 1	104	RAPE	PL 130350 F	Bronx	47	0 2	25-44 M	В	LACK	1026480	262584	40.88731	-73.8473	POINT (	73.847271
20	22	246834681		18-06-2022	10	1 ASSAULT	3 344	ASSAULT 3	PL 120000 N	M Bronx	41	0 2	25-44 F	В	LACK	1012779	236448	40.81563	-73.8969	POINT (	73.896929
21	23	247908306		07-12-2022	10	5 STRANGU	l 106	FELONY AS	PL 121120 F	Brooklyn	73	0 :	18-24 M	В	LACK	1008245	183796	40.67113	-73.9135	POINT (	-73.913502
22	24	248439863		23-07-2022	24	4 BURGLAR	107	BURGLARY	PL 140200 F	Manhatta	ar 1	0 2	25-44 M	W.	/HITE	982148	201784	40.72053	-74.0076	POINT (	74.007582
23	25	248272104		20-07-2022	10	1 ASSAULT	3 344	ASSAULT 3	PL 120000 N	M Bronx	44	0 :	18-24 M	В	LACK	1006537	244511	40.83777	-73.9195	POINT (	73.919455
24	26	248355121		20-07-2022	15	5 RAPE 2			PL 130300 F		41	0 :	18-24 M		LACK	1013037	236657	40.81621	-73.896	POINT (	-73.896001
25	27	250791589		09-08-2022	10	1 ASSAULT	3 344	ASSAULT 3	PL 120000 N	VI Queens	107	0 2	25-44 M	W.	/HITE	1036628	204948	40.72906	-73.811	POINT (	73.811018
26	28	250655271		09-06-2022	78	2 WEAPONS	236	DANGERO	PL 265010 N	Manhatta	er 9	0 2	25-44 M	В	LACK	989955	201642	40.72014	-73.9794	POINT (	73.979416
27	32	251397200		21-09-2022	17	5 SEXUAL A	233	SEX CRIME	PL 13052A N	VI Queens	102	0 :	18-24 M	В	LACK	1030953	194101	40.69932	-73.8316	POINT (	73.831570
28	34	239648389		25-01-2022	15	7 RAPE 1	104	RAPE	PL 130350 F	Queens	112	0 2	25-44 M	В	LACK	1025401	202586	40.72264	-73.8515	POINT (	73.851541
29	35	241800232		03-08-2022	26	3 ARSON 2.3	114	ARSON	PL 150150 F	Brooklyn	60		25-44 F	W	/HITE	990796	149587	40.57726	-73.9764	POINT (	73.976436
4	) I	NYPD_Arrest_D	Data_Year_to_Dat	te_ +								1									<b>)</b>

#### Dashboard:











