NYPD Shooting Data

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1. Introduction

This report will be submitted as a peer review assignment at the end of the third week of the Data Science as a Field Course. The NYPD Shooting Incident Data is downloaded from the City of New York website. The data set contains records of shooting incidents that happened between 2006 and 2020. I will do an analysis of the area, age group, sex and race.

2. Data Wrangling

```r
library(tidyverse)
library(lubridate)
library(prettydoc)
```

2.1 Loading Libraries

2.2 Data Import I am importing the csv file that I downloaded and placed inside the data directory. The link to the data set is https://data.cityofnewyork.us/Public-Safety/NYPD-Shooting-Incident-Data-Historic-/833y-fsy8. The webpage also provide information for the different columns.

```r
shooting_data <- read_csv("data/NYPD_Shooting_Incident_Data__Historic_.csv")
```

```
## Rows: 25596 Columns: 19
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr  (10): OCCUR_DATE, BORO, LOCATION_DESC, PERP_AGE_GROUP, PERP_SEX, PERP_R...
## dbl   (7): INCIDENT_KEY, PRECINCT, JURISDICTION_CODE, X_COORD_CD, Y_COORD_CD...
## lgl   (1): STATISTICAL_MURDER_FLAG
## time  (1): OCCUR_TIME
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

The dataset contains 25596 Rows and 19 Columns.

The column name, Description and Data Type of each Columns as indicated on the City of New York website is listed below in table format.

Column Name	Description	Type
INCIDENT_KEY	Randomly generated persistent ID for each arrest	Plain Text
OCCUR_DATE	Exact date of the shooting incident	Date & Time
OCCUR_TIME	Exact time of the shooting incident	Plain Text
BORO	Borough where the shooting incident occurred	Plain Text
PRECINCT	Precinct where the shooting incident occurred	Number
JURISDICTION_CODE	Jurisdiction where the shooting incident occurred. Jurisdiction codes 0(Patrol), 1(Transit) and 2(Housing) represent NYPD whilst codes 3 and more represent non NYPD jurisdictions	Number
LOCATION_DESC	Location of the shooting incident	Plain Text
STATISTICAL_MURDER_FLAG	Shooting resulted in the victim's death which would be counted as a murder	Checkbox
PERP_AGE_GROUP	Perpetrator's age within a category	Plain Text
PERP_SEX	Perpetrator's sex description	Plain Text
PERP_RACE	Perpetrator's race description	Plain Text
VIC_AGE_GROUP	Victim's age within a category	Plain Text
VIC_SEX	Victim's sex description	Plain Text
VIC_RACE	Victim's race description	Plain Text
X_COORD_CD	Midblock X-coordinate for New York State Plane Coordinate System, Long Island Zone, NAD 83, units feet (FIPS 3104)	Plain Text
Y_COORD_CD	Midblock Y-coordinate for New York State Plane Coordinate System, Long Island Zone, NAD 83, units feet (FIPS 3104)	Plain Text
Latitude	Latitude coordinate for Global Coordinate System, WGS 1984, decimal degrees (EPSG 4326)	Number
Longitude	Longitude coordinate for Global Coordinate System, WGS 1984, decimal degrees (EPSG 4326)	Number
Lon_Lat	Longitude and Latitude Coordinates for mapping	Point

2.3 Tidy Data I will not be doing any spatial analysis and therefore I won't need the spatial fields. I will also remove the Incident Key, Precinct and Jurisdiction.

```
shooting_data <- shooting_data %>%
  select(-INCIDENT_KEY, -PRECINCT, -JURISDICTION_CODE,
         -X_COORD_CD, -Y_COORD_CD, -Latitude, -Longitude, -Lon_Lat)
```

After looking at the first 10 rows, we can see that the data is in a tidy format. I used the lubridate package to change the OCCUR_DATE field to a date object and the OCCUR_TIME field to a time object. I also changed all categorical data to factors and changed the STATISTICAL_MURDER_FLAG from True and False to Yes and No.

When looking at the summary of the data, we can see that the fields related to the Perpetrator contains a lot of missing values. My assumption is that these are cases where the perpetrator has not been apprehended yet. I might want to see the ratio of closed cases to total cases, and therefore I will not remove these missing values. The LOCATION_DESC field also contain a lot of missing values and I decided to remove that column as a whole.

```
head(shooting_data)
```

```
## # A tibble: 6 x 11
##   OCCUR_~1 OCCUR~2 BORO  LOCAT~3 STATI~4 PERP_~5 PERP_~6 PERP_~7 VIC_A~8 VIC_SEX
##   <chr>    <time>  <chr> <chr>   <lgl>   <chr>   <chr>   <chr>   <chr>   <chr>
## 1 11/11/2~ 15:04   BROO~ <NA>    FALSE   <NA>    <NA>    <NA>    18-24   M
## 2 07/16/2~ 22:05   BROO~ <NA>    FALSE   45-64   M       ASIAN ~ 25-44   M
## 3 07/11/2~ 01:09   BROO~ <NA>    FALSE   <18     M       BLACK   25-44   M
## 4 12/11/2~ 13:42   BROO~ <NA>    FALSE   <NA>    <NA>    <NA>    25-44   M
## 5 02/16/2~ 20:00   QUEE~ <NA>    FALSE   <NA>    <NA>    <NA>    25-44   M
## 6 05/15/2~ 04:13   QUEE~ <NA>    TRUE    <NA>    <NA>    <NA>    25-44   M
## # ... with 1 more variable: VIC_RACE <chr>, and abbreviated variable names
## #   1: OCCUR_DATE, 2: OCCUR_TIME, 3: LOCATION_DESC, 4: STATISTICAL_MURDER_FLAG,
## #   5: PERP_AGE_GROUP, 6: PERP_SEX, 7: PERP_RACE, 8: VIC_AGE_GROUP
```

```
shooting_data <- shooting_data %>%
  mutate(OCCUR_DATE = mdy(OCCUR_DATE),
         OCCUR_TIME = hms(OCCUR_TIME))

shooting_data$BORO <- as.factor(shooting_data$BORO)

shooting_data$STATISTICAL_MURDER_FLAG <- as.factor(shooting_data$STATISTICAL_MURDER_FLAG)
levels(shooting_data$STATISTICAL_MURDER_FLAG)[1] <- "No"
levels(shooting_data$STATISTICAL_MURDER_FLAG)[2] <- "Yes"
shooting_data$STATISTICAL_MURDER_FLAG <- factor(shooting_data$STATISTICAL_MURDER_FLAG, levels = c("Yes"

shooting_data$PERP_AGE_GROUP <- as.factor(shooting_data$PERP_AGE_GROUP)
shooting_data$PERP_SEX <- as.factor(shooting_data$PERP_SEX)
shooting_data$PERP_RACE <- as.factor(shooting_data$PERP_RACE)
shooting_data$VIC_AGE_GROUP <- as.factor(shooting_data$VIC_AGE_GROUP)
shooting_data$VIC_SEX <- as.factor(shooting_data$VIC_SEX)
shooting_data$VIC_RACE <- as.factor(shooting_data$VIC_RACE)

head(shooting_data)
```

```
## # A tibble: 6 x 11
##   OCCUR_DATE OCCUR_TIME BORO     LOCAT~1 STATI~2 PERP_~3 PERP_~4 PERP_~5 VIC_A~6
##   <date>     <Period>   <fct>    <chr>   <fct>   <fct>   <fct>   <fct>   <fct>
## 1 2021-11-11 15H 4M 0S  BROOKLYN <NA>    No      <NA>    <NA>    <NA>    18-24
## 2 2021-07-16 22H 5M 0S  BROOKLYN <NA>    No      45-64   M       ASIAN ~ 25-44
## 3 2021-07-11 1H 9M 0S   BROOKLYN <NA>    No      <18     M       BLACK   25-44
## 4 2021-12-11 13H 42M 0S BROOKLYN <NA>    No      <NA>    <NA>    <NA>    25-44
## 5 2021-02-16 20H 0M 0S  QUEENS   <NA>    No      <NA>    <NA>    <NA>    25-44
## 6 2021-05-15 4H 13M 0S  QUEENS   <NA>    Yes     <NA>    <NA>    <NA>    25-44
## # ... with 2 more variables: VIC_SEX <fct>, VIC_RACE <fct>, and abbreviated
## #   variable names 1: LOCATION_DESC, 2: STATISTICAL_MURDER_FLAG,
## #   3: PERP_AGE_GROUP, 4: PERP_SEX, 5: PERP_RACE, 6: VIC_AGE_GROUP
```

```r
summary(shooting_data)
```

```
##    OCCUR_DATE           OCCUR_TIME                                  BORO
##  Min.   :2006-01-01   Min.   :0S                         BRONX        : 7402
##  1st Qu.:2009-05-10   1st Qu.:3H 23M 0S                  BROOKLYN     :10365
##  Median :2012-08-26   Median :15H 10M 0S                 MANHATTAN    : 3265
##  Mean   :2013-06-13   Mean   :12H 39M 17.9910923581774S   QUEENS       : 3828
##  3rd Qu.:2017-07-01   3rd Qu.:20H 45M 0S                 STATEN ISLAND:  736
##  Max.   :2021-12-31   Max.   :23H 59M 0S
##
##  LOCATION_DESC      STATISTICAL_MURDER_FLAG PERP_AGE_GROUP PERP_SEX
##  Length:25596       Yes: 4928               18-24  :5844   F   :  371
##  Class :character   No :20668               25-44  :5202   M   :14416
##  Mode  :character                           UNKNOWN:3148   U   : 1499
##                                             <18    :1463   NA's: 9310
##                                             45-64  : 535
##                                             (Other):  60
##                                             NA's   :9344
##           PERP_RACE     VIC_AGE_GROUP   VIC_SEX
##  BLACK         :10668   <18    : 2681   F: 2403
##  WHITE HISPANIC: 2164   18-24  : 9604   M:23182
##  UNKNOWN       : 1836   25-44  :11386   U:   11
##  BLACK HISPANIC: 1203   45-64  : 1698
##  WHITE         :  272   65+    :  167
##  (Other)       :  143   UNKNOWN:   60
##  NA's          : 9310
##                            VIC_RACE
##  AMERICAN INDIAN/ALASKAN NATIVE:    9
##  ASIAN / PACIFIC ISLANDER      :  354
##  BLACK                         :18281
##  BLACK HISPANIC                : 2485
##  UNKNOWN                       :   65
##  WHITE                         :  660
##  WHITE HISPANIC                : 3742
```

```r
shooting_data <- shooting_data %>%
  select(-LOCATION_DESC)
```

3. Data Exploration

3.1 Transformation I would like to see the number of shootings per year as well as the percentage of the total. I start by adding a field for the year, grouping by year and calculating the percentages.

```r
shooting_data_per_year <- shooting_data %>%
  mutate(year = format(as.Date(OCCUR_DATE), format = "%Y")) %>%
  group_by(year) %>%
  count() %>%
  mutate(per_year = (n/nrow(shooting_data)*100))

shooting_data_per_year
```

```
## # A tibble: 16 x 3
```

```
## # Groups:   year [16]
##    year      n per_year
##    <chr> <int>    <dbl>
##  1 2006   2055     8.03
##  2 2007   1887     7.37
##  3 2008   1959     7.65
##  4 2009   1828     7.14
##  5 2010   1912     7.47
##  6 2011   1939     7.58
##  7 2012   1717     6.71
##  8 2013   1339     5.23
##  9 2014   1464     5.72
## 10 2015   1434     5.60
## 11 2016   1208     4.72
## 12 2017    970     3.79
## 13 2018    958     3.74
## 14 2019    967     3.78
## 15 2020   1948     7.61
## 16 2021   2011     7.86
```

I would also like to see the percentages for the other categorical data.

```
shooting_data_boro <- shooting_data %>%
  group_by(BORO) %>%
  count() %>%
  mutate(per_boro = n/nrow(shooting_data)*100)

shooting_data_boro
```

```
## # A tibble: 5 x 3
## # Groups:   BORO [5]
##   BORO              n per_boro
##   <fct>         <int>    <dbl>
## 1 BRONX          7402    28.9
## 2 BROOKLYN      10365    40.5
## 3 MANHATTAN      3265    12.8
## 4 QUEENS         3828    15.0
## 5 STATEN ISLAND   736     2.88
```

```
shooting_data_murder <- shooting_data %>%
  group_by(STATISTICAL_MURDER_FLAG) %>%
  count() %>%
  mutate(per_murder = n/nrow(shooting_data)*100)

shooting_data_murder
```

```
## # A tibble: 2 x 3
## # Groups:   STATISTICAL_MURDER_FLAG [2]
##   STATISTICAL_MURDER_FLAG     n per_murder
##   <fct>                   <int>      <dbl>
## 1 Yes                      4928       19.3
## 2 No                      20668       80.7
```

There are three levels with only one value in them that I excluded from the perpetrator age table. The levels are “1020”, “224” and “940”. I also excluded the unknown level.

```
shooting_data_perp_age_group <- shooting_data %>%
  filter(PERP_AGE_GROUP != "1020" & PERP_AGE_GROUP != "224" & PERP_AGE_GROUP != "940" & PERP_AGE_GROUP

shooting_data_perp_age_group_total <- nrow(shooting_data_perp_age_group)

shooting_data_perp_age_group <- shooting_data_perp_age_group %>%
  group_by(PERP_AGE_GROUP) %>%
  count() %>%
  mutate(per_perp_age_group = (n/shooting_data_perp_age_group_total) * 100)

shooting_data_perp_age_group
```

```
## # A tibble: 5 x 3
## # Groups:   PERP_AGE_GROUP [5]
##   PERP_AGE_GROUP     n per_perp_age_group
##   <fct>          <int>              <dbl>
## 1 <18             1463             11.2
## 2 18-24           5844             44.6
## 3 25-44           5202             39.7
## 4 45-64            535              4.08
## 5 65+               57              0.435
```

I removed the Unknown and NA levels from the perpetrator sex table.

```
shooting_data_perp_sex <- shooting_data %>%
  filter(PERP_SEX != "U" & PERP_SEX != "NA")

shooting_data_perp_sex_total <- nrow(shooting_data_perp_sex)

shooting_data_perp_sex <- shooting_data_perp_sex %>%
  group_by(PERP_SEX) %>%
  count() %>%
  mutate(per_perp_sex = (n/shooting_data_perp_sex_total) * 100)

shooting_data_perp_sex
```

```
## # A tibble: 2 x 3
## # Groups:   PERP_SEX [2]
##   PERP_SEX     n per_perp_sex
##   <fct>    <int>        <dbl>
## 1 F          371         2.51
## 2 M        14416        97.5
```

I removed the Unknown level from the perpetrator race table.

```
shooting_data_perp_race <- shooting_data %>%
  filter(PERP_RACE != "UNKNOWN")

shooting_data_perp_race_total <- nrow(shooting_data_perp_race)
```

```r
shooting_data_perp_race <- shooting_data_perp_race %>%
  group_by(PERP_RACE) %>%
  count() %>%
  mutate(per_perp_race = (n/shooting_data_perp_race_total) * 100)

shooting_data_perp_race
```

```
## # A tibble: 6 x 3
## # Groups:   PERP_RACE [6]
##   PERP_RACE                          n per_perp_race
##   <fct>                          <int>         <dbl>
## 1 AMERICAN INDIAN/ALASKAN NATIVE     2        0.0138
## 2 ASIAN / PACIFIC ISLANDER         141        0.976
## 3 BLACK                          10668       73.8
## 4 BLACK HISPANIC                  1203        8.33
## 5 WHITE                            272        1.88
## 6 WHITE HISPANIC                  2164       15.0
```

```r
shooting_data_vic_age_group <- shooting_data %>%
  group_by(VIC_AGE_GROUP) %>%
  count() %>%
  mutate(per_vic_age_group = n/nrow(shooting_data) * 100)

shooting_data_vic_age_group
```

```
## # A tibble: 6 x 3
## # Groups:   VIC_AGE_GROUP [6]
##   VIC_AGE_GROUP     n per_vic_age_group
##   <fct>         <int>             <dbl>
## 1 <18            2681            10.5
## 2 18-24          9604            37.5
## 3 25-44         11386            44.5
## 4 45-64          1698             6.63
## 5 65+             167             0.652
## 6 UNKNOWN          60             0.234
```

```r
shooting_data_vic_sex <- shooting_data %>%
  group_by(VIC_SEX) %>%
  count() %>%
  mutate(per_vic_sex = n/nrow(shooting_data) * 100)

shooting_data_vic_sex
```

```
## # A tibble: 3 x 3
## # Groups:   VIC_SEX [3]
##   VIC_SEX     n per_vic_sex
##   <fct>   <int>       <dbl>
## 1 F        2403      9.39
## 2 M       23182     90.6
## 3 U          11      0.0430
```

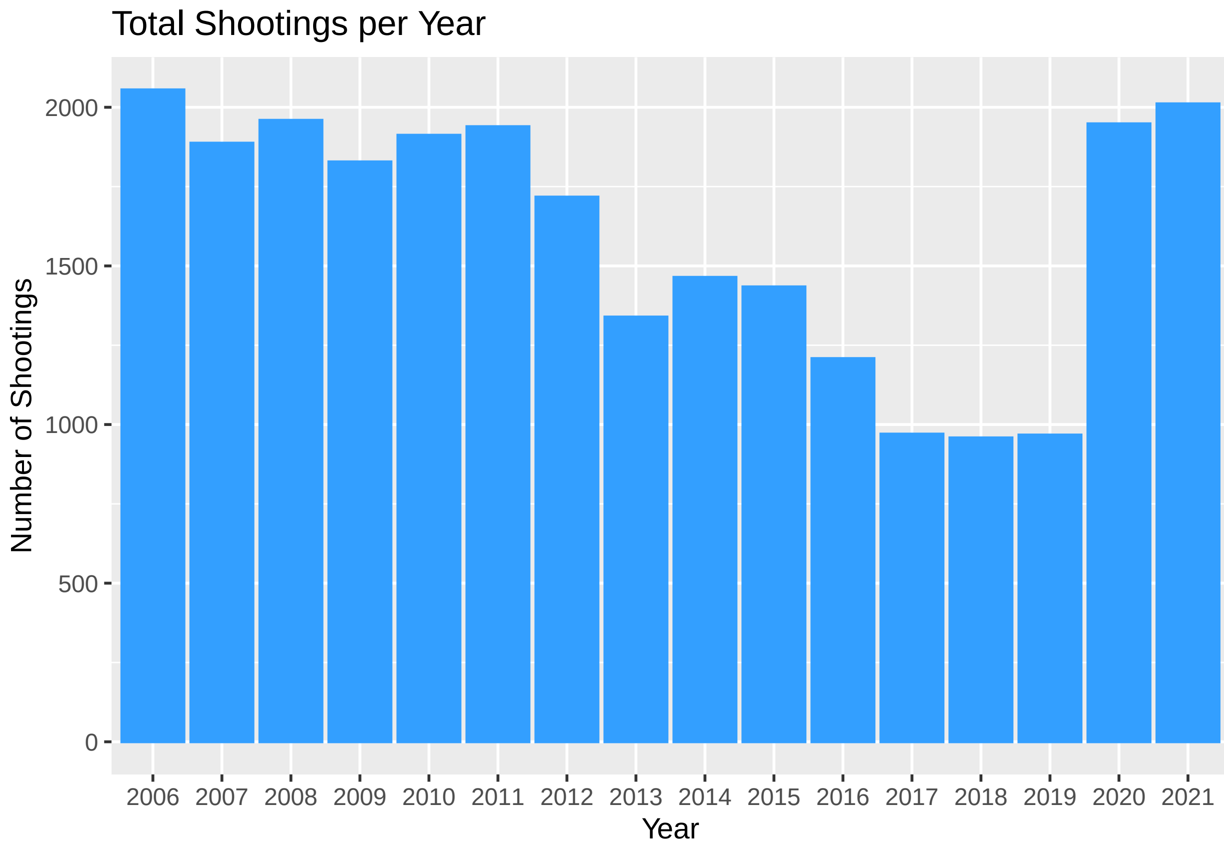
```r
shooting_data_vic_race <- shooting_data %>%
  group_by(VIC_RACE) %>%
  count() %>%
  mutate(per_vic_race = n/nrow(shooting_data) * 100)

shooting_data_vic_race
```

```
## # A tibble: 7 x 3
## # Groups:   VIC_RACE [7]
##   VIC_RACE                           n per_vic_race
##   <fct>                          <int>        <dbl>
## 1 AMERICAN INDIAN/ALASKAN NATIVE     9       0.0352
## 2 ASIAN / PACIFIC ISLANDER         354       1.38
## 3 BLACK                          18281      71.4
## 4 BLACK HISPANIC                  2485       9.71
## 5 UNKNOWN                           65       0.254
## 6 WHITE                            660       2.58
## 7 WHITE HISPANIC                  3742      14.6
```

3.2 Visualisation I will start of by creating bar graphs for all of the categorical data. This will help to get a better understanding of the data and might lead to more questions.

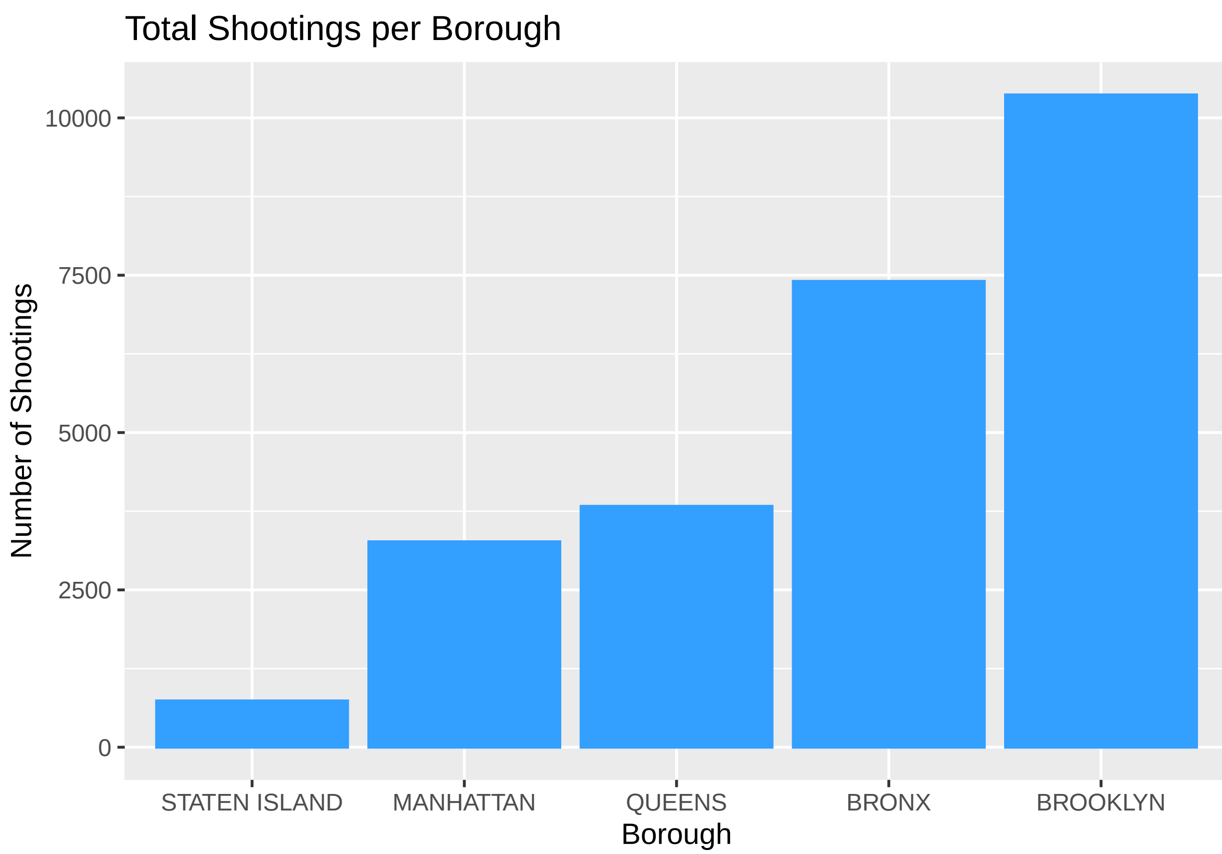
The first plot shows the number of shootings per year. We can see a decline from 2012 to 2019 and then a huge increase between 2020/21.

```r
year_plot <- ggplot(data=shooting_data_per_year, aes(x=year, y=n)) +
  geom_bar(stat='identity', color = "#339FFF", fill = "#339FFF") +
  ggtitle("Total Shootings per Year") + xlab("Year") + ylab("Number of Shootings")

year_plot
```



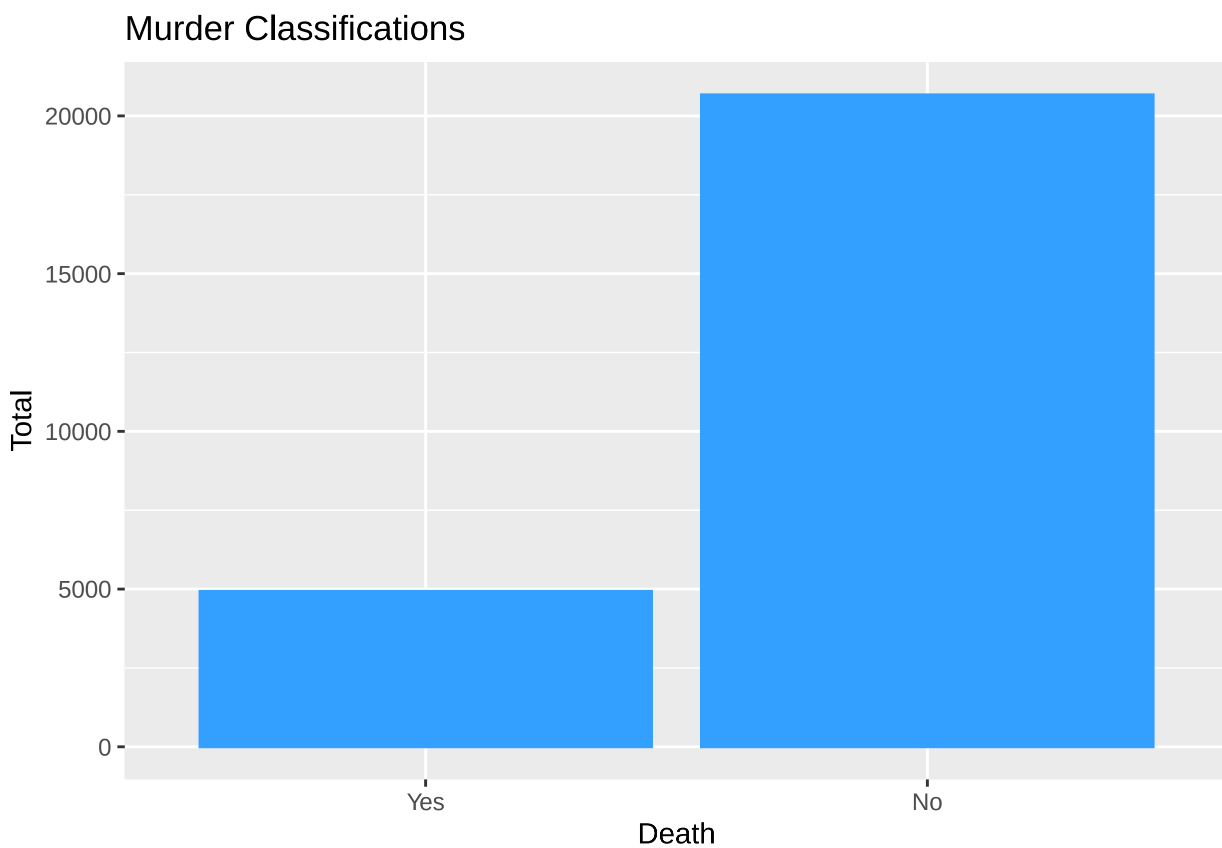
The next graph show the number of shootings per Borough for the complete data set (2006 - 2021). BROOKLYN has the most shootings at a Total of 10365 shootings and STATEN ISLAND the least with 736 shootings. I am not familiar with the occupancy of these Boroughs and will need some further research to understand if the numbers are related to occupancy.

```
boro_plot <- ggplot(data=shooting_data_boro, aes(x=reorder(BORO,(n)), y=n)) +
  geom_bar(stat='identity', color = "#339FFF", fill = "#339FFF") +
  ggtitle("Total Shootings per Borough") + xlab("Borough") + ylab("Number of Shootings")

boro_plot
```



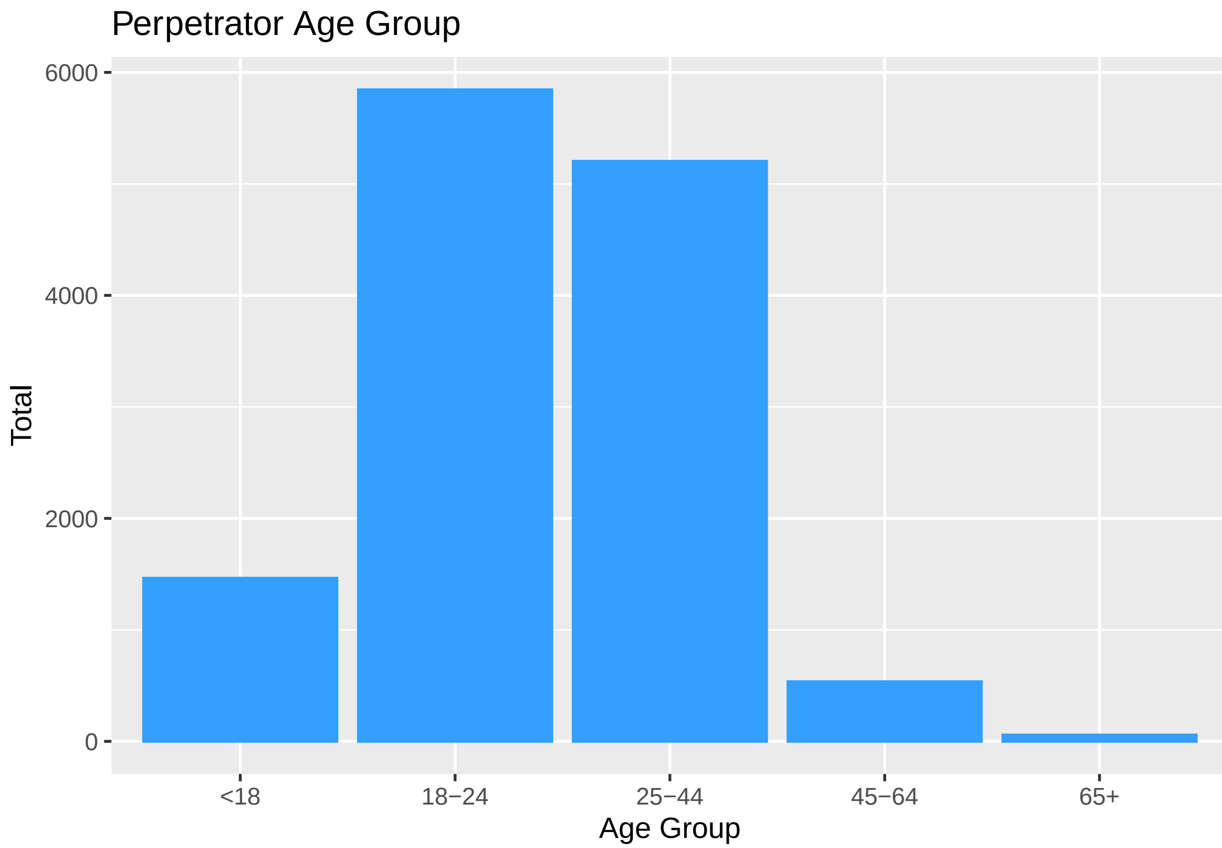
When the victim died as a result of the shooting it is classified as a murder. There are 4928 Deaths which translates to 4928 Murders. The remaining 20668 victims survived the shooting.

```
murder_plot <- ggplot(data=shooting_data_murder, aes(x=reorder(STATISTICAL_MURDER_FLAG,(n)), y=n)) +
  geom_bar(stat='identity', color = "#339FFF", fill = "#339FFF") +
  ggtitle("Murder Classifications") + xlab("Death") + ylab("Total")

murder_plot
```



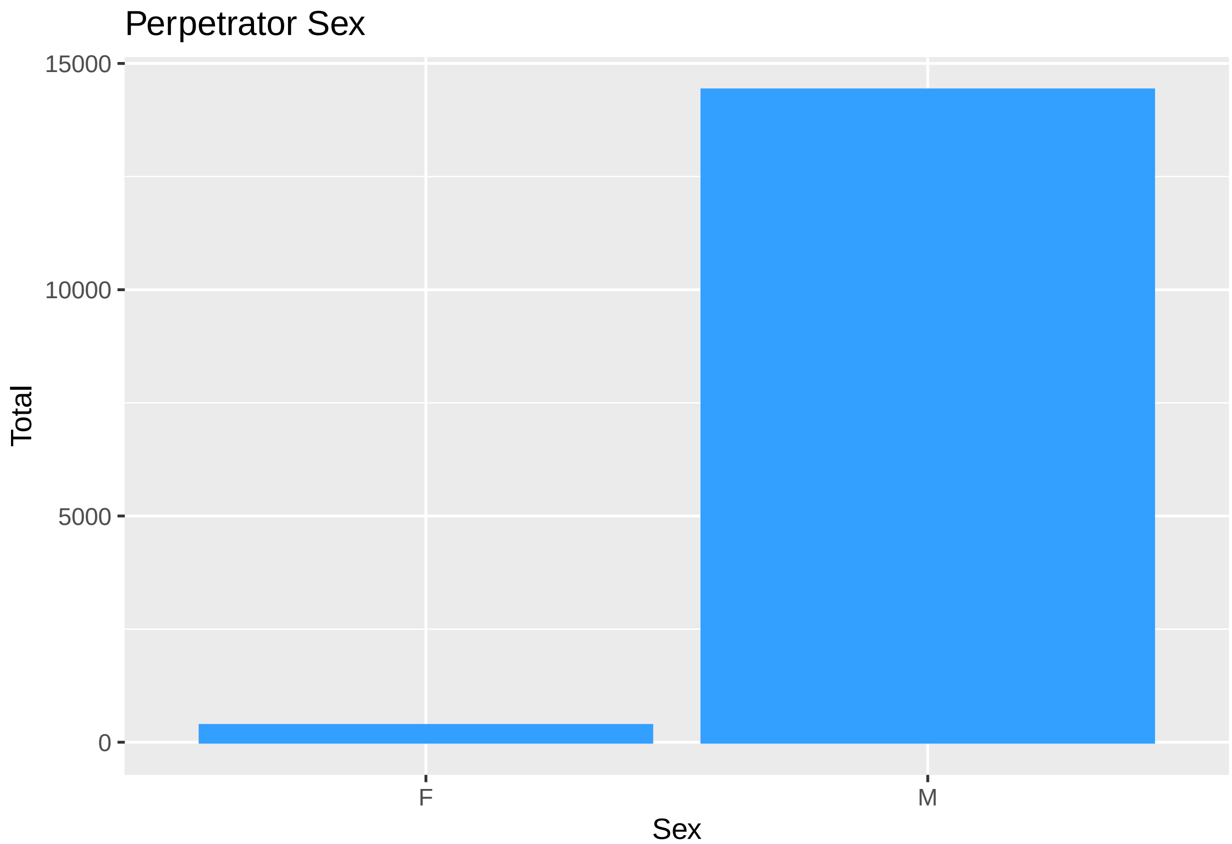
I created a bar plot to determine the Age Groups of most perpetrators. From the graph it can be seen that the majority of perpetrators are between 18 and 24 years old.

```
perp_age_group_plot <- ggplot(data=shooting_data_perp_age_group, aes(x=PERP_AGE_GROUP, y=n)) +
  geom_bar(stat='identity', color = "#339FFF", fill = "#339FFF") +
  ggtitle("Perpetrator Age Group") + xlab("Age Group") + ylab("Total")

perp_age_group_plot
```



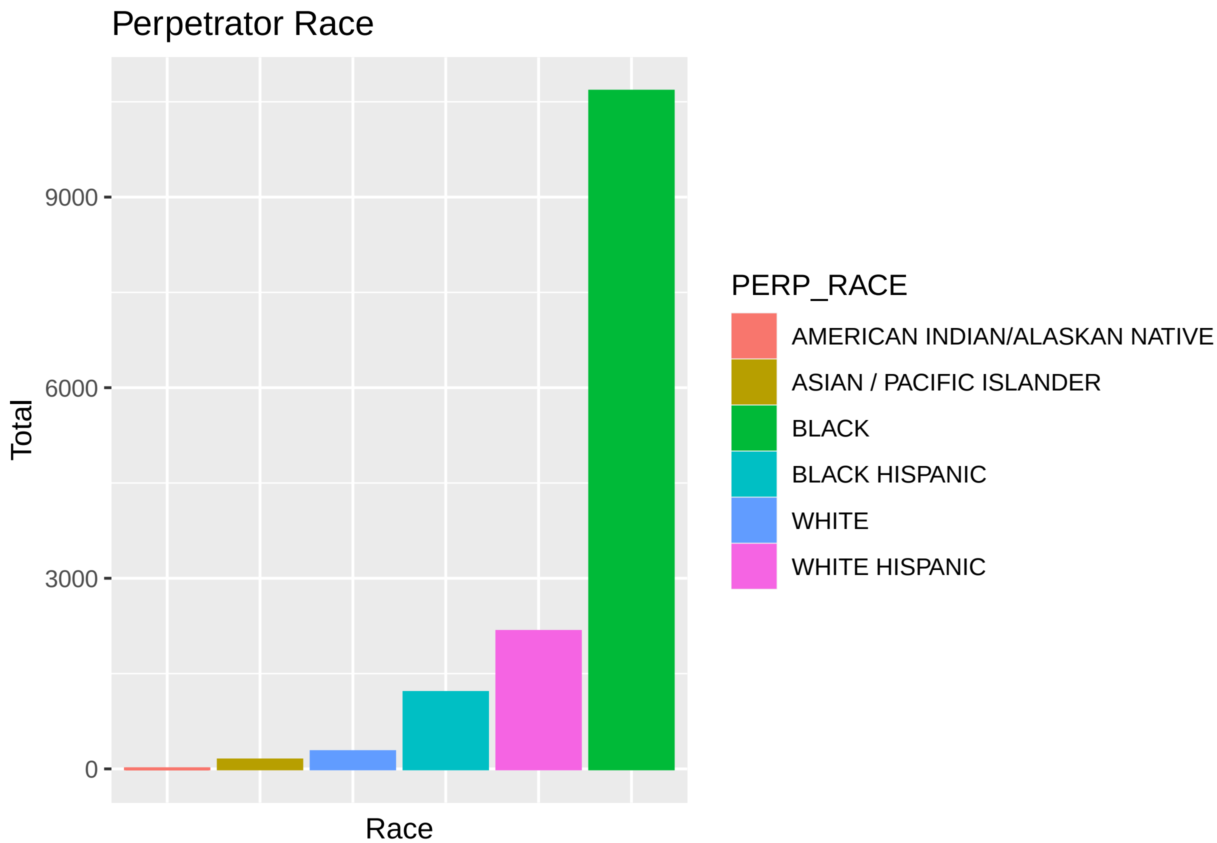
The sex of perpetrators was another category that I wanted to analyse. When looking at the bar graph it is evident that the majority of perpetrators are Male, the are very few Female perpetrators.

```
perp_sex_plot <- ggplot(data=shooting_data_perp_sex, aes(x=PERP_SEX, y=n)) +
  geom_bar(stat='identity', color = "#339FFF", fill = "#339FFF") +
  ggtitle("Perpetrator Sex") + xlab("Sex") + ylab("Total")

perp_sex_plot
```



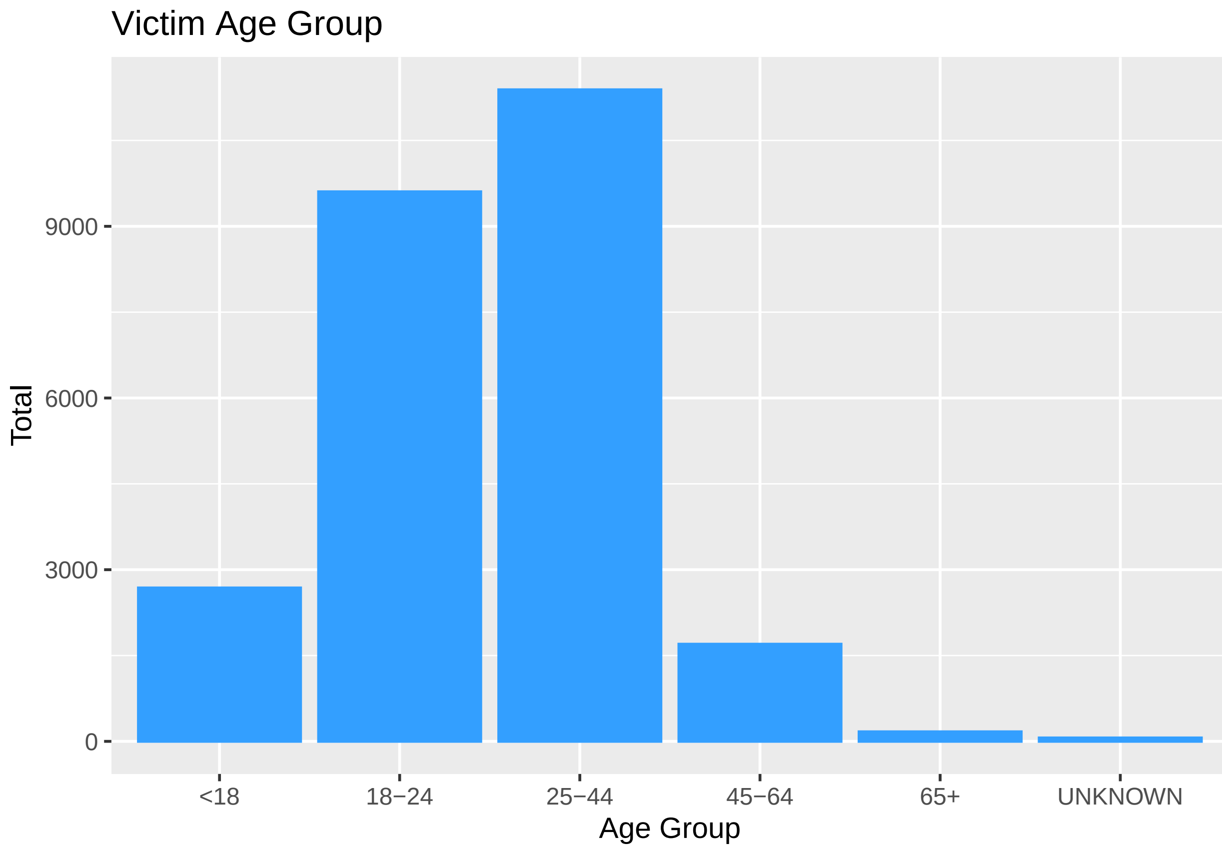
The last category of perpetrators that I wanted to look at, was race. We can see that most perpetrators are black. However, without knowing the overall population distribution it is difficult to draw any conclusions. It might be possible that the majority of the population is black people.

```
perp_race_plot <- ggplot(data=shooting_data_perp_race, aes(x=reorder(PERP_RACE,(n)), y=n, color = PERP_I
  geom_bar(stat='identity') +
  theme(axis.text.x=element_blank(), axis.ticks.x=element_blank()) +
  ggtitle("Perpetrator Race") + xlab("Race") + ylab("Total")

perp_race_plot
```



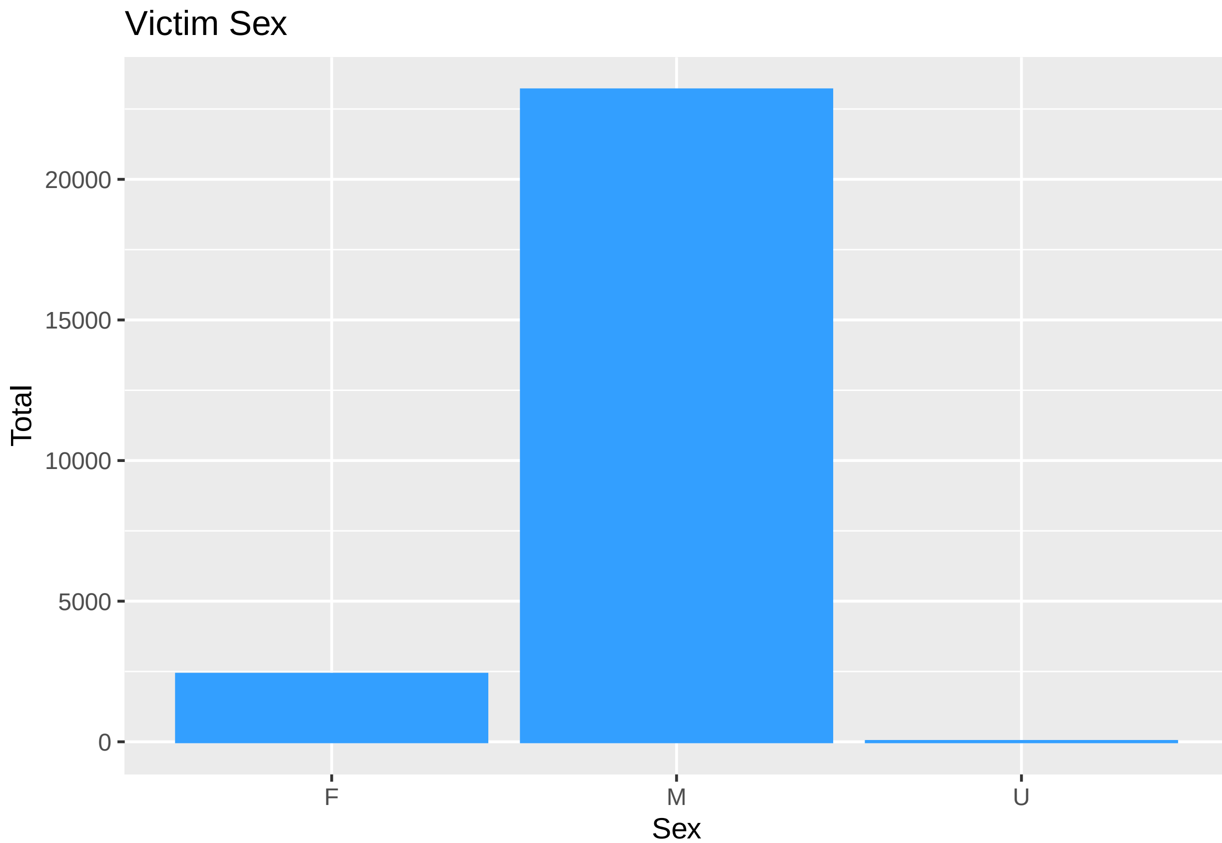
When looking at the Age Groups of most victims it can be seen that the majority of victims are between 25 and 44 years old.

```
vic_age_group_plot <- ggplot(data=shooting_data_vic_age_group, aes(x=VIC_AGE_GROUP, y=n)) +
  geom_bar(stat='identity', color = "#339FFF", fill = "#339FFF") +
  ggtitle("Victim Age Group") + xlab("Age Group") + ylab("Total")

vic_age_group_plot
```



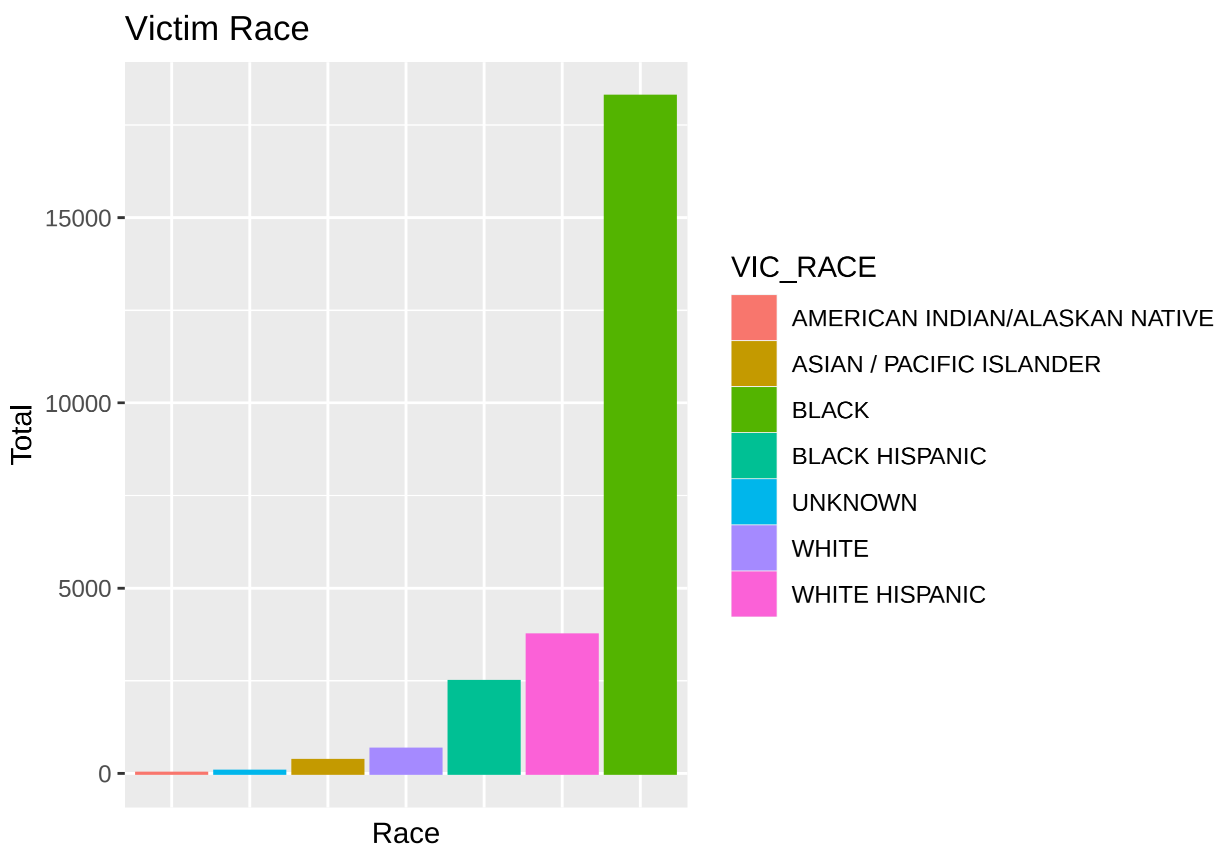
As in the case of perpetrators the majority of victims are male, there are much less female victims.

```
vic_sex_plot <- ggplot(data=shooting_data_vic_sex, aes(x=VIC_SEX, y=n)) +
  geom_bar(stat='identity', color = "#339FFF", fill = "#339FFF") +
  ggtitle("Victim Sex") + xlab("Sex") + ylab("Total")

vic_sex_plot
```



The last category of victims that I wanted to look at, was race. We can again see that most victims are black. However, without knowing the overall population distribution it is difficult to draw any conclusions. It might be possible that the majority of the population is black people.

```
vic_race_plot <- ggplot(data=shooting_data_vic_race, aes(x=reorder(VIC_RACE,(n)), y=n, color = VIC_RACE
  geom_bar(stat='identity') +
  theme(axis.text.x=element_blank(), axis.ticks.x=element_blank()) +
  ggtitle("Victim Race") + xlab("Race") + ylab("Total")

vic_race_plot
```



4. Bias Identification

Without extra data about the population distribution it is very easy to draw conclusions and introduce a bias towards a borough, a specific age group or a race. I am not familiar with the demographics of these areas and therefore, I must be extra careful of introducing a bias towards a specific area of the analysis.

5. Conclusion

From the analysis we can see that Brooklyn is the Borough with the most shootings, (10365 shootings or 40.5%) in total and Staten Island the least with 736 shootings or 2.9%. Out of a Total of 25,596 shootings between 2006 and 2021, 4928 people died (19.3%) and 20668 survived the shooting (80.7%). There are some missing values from the shooter's information, and I assume that it is because they were not apprehended yet. It is interesting to see that the number of shooters between 18 and 24 as well as 25 and 44 are very close to each other. There are 5844 shooters between 18 and 24 (35.9%) and 5202 shooters between 25 and 44 (31.9%). The most victims are between 25 and 44, 11386 to be exact or (44.5%) and 9604 between 18 and 24 (37.5%). Most shootings happen between males, 14416 shooters (97.5%) and 23182 victims (90.6%). The last comparison between shooters and victims are based on race. It looks like black-on-black violence is a big problem with black shooters representing 10668 of the incidents (73.8%) and black victims representing 18281 of the incidents (71.4%). It might also be possible that black people represent a much larger proportion of the overall population. I do not have population data and could not investigate this further. The most shootings happened at night around midnight.

Session Info

```
## R version 4.1.3 (2022-03-10)
## Platform: x86_64-w64-mingw32/x64 (64-bit)
## Running under: Windows 10 x64 (build 22621)
##
## Matrix products: default
##
## locale:
## [1] LC_COLLATE=English_South Africa.1252  LC_CTYPE=English_South Africa.1252
## [3] LC_MONETARY=English_South Africa.1252 LC_NUMERIC=C
## [5] LC_TIME=English_South Africa.1252
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] prettydoc_0.4.1  lubridate_1.9.0  timechange_0.1.1 forcats_0.5.2
##  [5] stringr_1.4.1    dplyr_1.0.10     purrr_0.3.5      readr_2.1.3
##  [9] tidyr_1.2.1      tibble_3.1.8     ggplot2_3.4.0    tidyverse_1.3.2
##
## loaded via a namespace (and not attached):
##  [1] assertthat_0.2.1    digest_0.6.30       utf8_1.2.2
##  [4] R6_2.5.1            cellranger_1.1.0    backports_1.4.1
##  [7] reprex_2.0.2        evaluate_0.18       highr_0.9
## [10] httr_1.4.4          pillar_1.8.1        rlang_1.0.6
## [13] googlesheets4_1.0.1 readxl_1.4.1        rstudioapi_0.14
## [16] rmarkdown_2.18      labeling_0.4.2      googledrive_2.0.0
## [19] bit_4.0.5           munsell_0.5.0       broom_1.0.1
## [22] compiler_4.1.3      modelr_0.1.10       xfun_0.35
## [25] pkgconfig_2.0.3     htmltools_0.5.3     tidyselect_1.2.0
## [28] fansi_1.0.3         crayon_1.5.2        tzdb_0.3.0
## [31] dbplyr_2.2.1        withr_2.5.0         grid_4.1.3
## [34] jsonlite_1.8.3      gtable_0.3.1        lifecycle_1.0.3
## [37] DBI_1.1.3           magrittr_2.0.3      scales_1.2.1
## [40] cli_3.3.0           stringi_1.7.6       vroom_1.6.0
## [43] farver_2.1.1        fs_1.5.2            xml2_1.3.3
## [46] ellipsis_0.3.2      generics_0.1.3      vctrs_0.5.1
## [49] tools_4.1.3         bit64_4.0.5         glue_1.6.2
## [52] hms_1.1.2           parallel_4.1.3      fastmap_1.1.0
## [55] yaml_2.3.6          colorspace_2.0-3    gargle_1.2.1
## [58] rvest_1.0.3         knitr_1.41          haven_2.5.1
```