

Mapping the Boroughs

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The first map shows all crashes in NYC.

```
library(ggmap)
library(lubridate)
library(dplyr)
library(geosphere) #calculating distances over lat. and long.

#Read in data and make the map
accident = read.csv("accident2015.csv", header=TRUE)
#slice up data by borough
accident_Bronx = subset(accident, BOROUGH == "BRONX")
accident_Brooklyn = subset(accident, BOROUGH == "BROOKLYN")
accident_Manhattan = subset(accident, BOROUGH == "MANHATTAN")
accident_Queens = subset(accident, BOROUGH == "QUEENS")
accident_StatenIsland = subset(accident, BOROUGH == "STATEN ISLAND")
accident_noborough = subset(accident, BOROUGH == "")

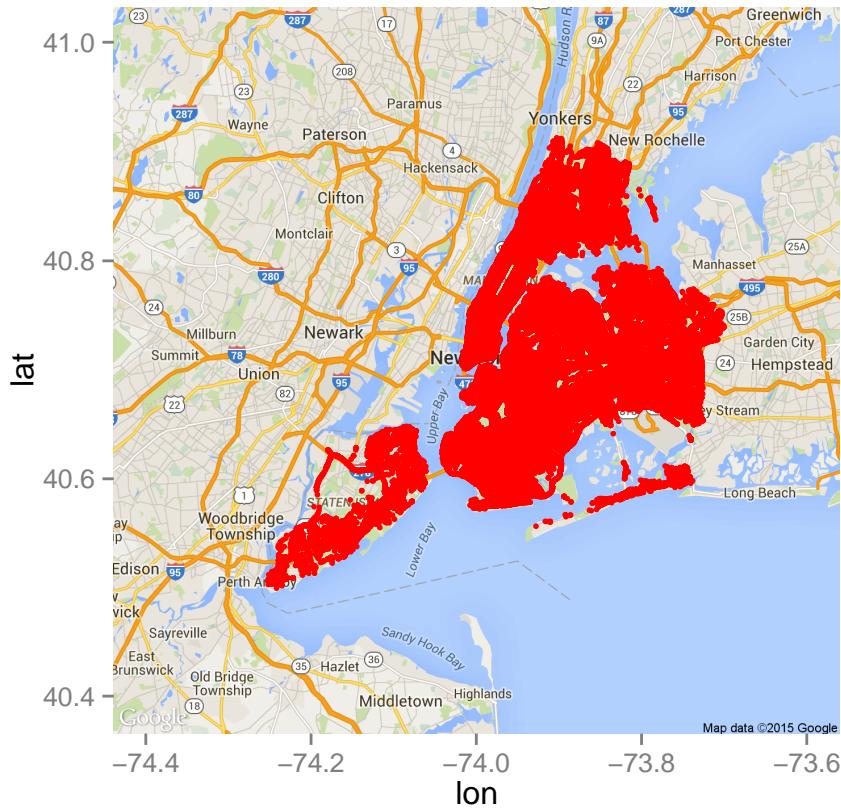
al1 = get_map(location = c(lon = -74., lat = 40.7), zoom = 10, maptype = 'roadmap')

## Map from URL : http://maps.googleapis.com/maps/api/staticmap?center=40.7,-74&zoom=10&size=640x640&sc

al1MAP = ggmap(al1)

#All crashes
al1MAP + geom_point(data = accident, aes(x = LONGITUDE, y = LATITUDE), colour = "red", size = 1)

## Warning: Removed 20097 rows containing missing values (geom_point).
```



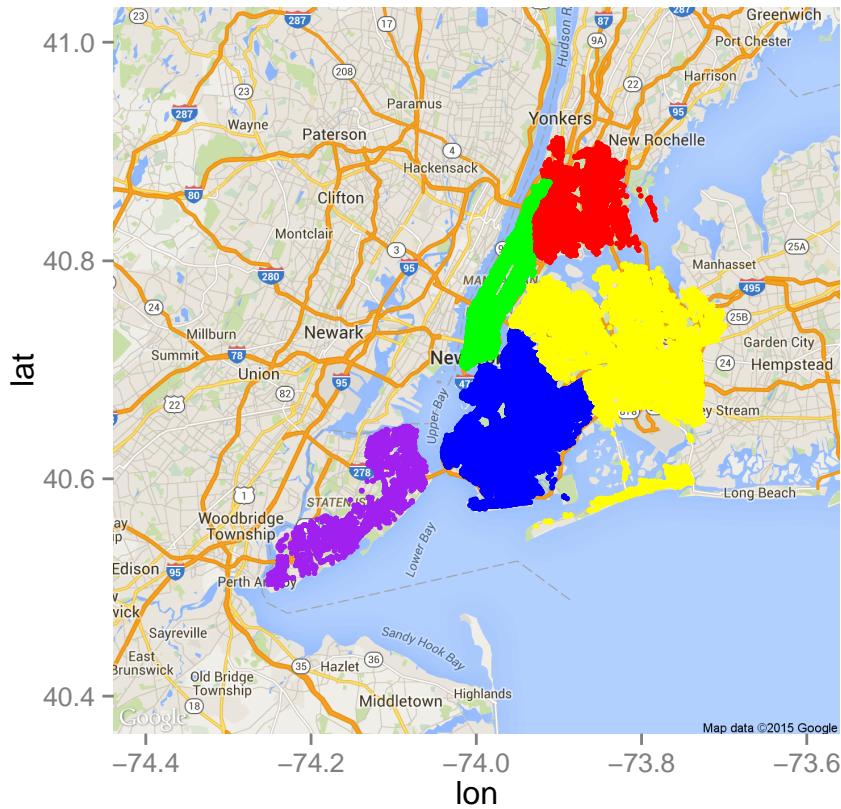
The map below shows all crashes in NYC by borough, where Bronx = red, Brooklyn = blue, Manhattan = green, Queens = yellow, Staten Island = purple.

```

allMAP + geom_point(data = accident_Bronx, aes(x = LONGITUDE, y = LATITUDE), colour = "red", size = 1) +
  geom_point(data = accident_Brooklyn, aes(x = LONGITUDE, y = LATITUDE), colour = "blue", size = 1) +
  geom_point(data = accident_Manhattan, aes(x = LONGITUDE, y = LATITUDE), colour = "green", size = 1) +
  geom_point(data = accident_Queens, aes(x = LONGITUDE, y = LATITUDE), colour = "yellow", size = 1) +
  geom_point(data = accident_StatenIsland, aes(x = LONGITUDE, y = LATITUDE), colour = "purple", size = 1)

## Warning: Removed 1 rows containing missing values (geom_point).

```



The map below shows the points with no borough specified in black.

```
#Crashes with no borough in black
all1MAP + geom_point(data = accident_Bronx, aes(x = LONGITUDE, y = LATITUDE), colour = "red", size = 1) +
  geom_point(data = accident_Brooklyn, aes(x = LONGITUDE, y = LATITUDE), colour = "blue", size = 1) +
  geom_point(data = accident_Manhattan, aes(x = LONGITUDE, y = LATITUDE), colour = "green", size = 1) +
  geom_point(data = accident_Queens, aes(x = LONGITUDE, y = LATITUDE), colour = "yellow", size = 1) +
  geom_point(data = accident_StatenIsland, aes(x = LONGITUDE, y = LATITUDE), colour = "purple", size = 1) +
  geom_point(data = accident_noborough, aes(x = LONGITUDE, y = LATITUDE), colour = "black", size = 1)

## Warning: Removed 1 rows containing missing values (geom_point).

## Warning: Removed 20096 rows containing missing values (geom_point).
```

