R Code:

#Loading Required Libraries

library(ggmap)

library(ggplot2)

library(maps)

library(rmaps)

#Reading the New York Accident data

setwd("C:/Users/Kshitij/Downloads")

a <- read.csv("New York Accident Data1.csv")

a

#To see which variables are in the data

names(a)

#To check any na values in the dataset

is.na(a)

# Combining the latitude and longitude variables of data set

a[5]

a[6]

c<-cbind(a[5],a[6])

c

# Checking and removing the na values from c

is.na(c)

table(is.na(c))

c[!complete.cases(c),]

d<-na.omit(c)

d

#New York Accident google map plot

setwd("C:/Users/Kshitij/Downloads")

a <- read.csv("New York Accident Data.csv")

names(a)

a$lat <- a$LATITUDE

a$lon <- a$LONGITUDE

map <- get\_map(location='new york, ny', zoom=13, maptype='roadmap')

ggmap(map) +

geom\_point(data = a, aes(x = lon, y = lat, fill = "blue", alpha = 0.5, size=(Day.Of.Week)), size = 1, shape = 20) +

ggtitle("New York Accident Plot on Google Map") +

guides(fill=FALSE, alpha=FALSE, size=FALSE)

#density map plot of New York Accident Hotspots

ggmap(map) + stat\_density2d(

aes(x = lon, y = lat, fill = ..level.., alpha = 0.5),

size = 3, bins = 8, data = a, geom = "polygon") +

ggtitle("Density plot of NY Accidents") +

scale\_fill\_gradient(low = "black", high = "blue")

#Performing Logistic Regression

View(a)

names(a)

logistic <- glm(Injured.or.Died ~ Total.People.Injured + Total.People.Died, data=a,

family = binomial(link = "logit"))

summary(logistic)

coef(logistic)

#Graph plot of Main Contributing Factor for Accidents

plot(a$CONTRIBUTING.FACTOR.VEHICLE.1, a$Injured.or.Died, xlab = "Main Contributing Factor")

#Graph Plot of Total people died and total people Injured

plot(a$Total.People.Injured,a$Total.People.Died, xlab = "Total People Injured", ylab = "Total People Died")

#Reading the Boston Crash data

crash <- read.csv("Crash.csv")

#Reading the New York data which contains variables similar to the Boston data

a <- read.csv("ny.csv")

View(crash)

#Combining both the data sets of New York and Boston

full <- rbind(crash, a)

names(full)

full

# writing the file full

write.csv(file = "full.csv", x = full)

View(full)

library(ggmap)

#Defining from and to and using it in route function

from <- c("Saint Peters University, Jersey City , USA")

to <- c("Liberty Mutual Tower, Boston, USA")

mapdist(from, to)

route\_df <- route(

from,

to,

structure = 'route',

mode = 'driving',+alternatives = TRUE

)

#Using the route\_df defined above to plot alternative routes in R

qmap('New York, USA', zoom = 8) +

geom\_path(

aes(x = lon, y = lat),

colour = 'blue',

size = 1.6,

data = route\_df,

lineend = 'round'

)