# We install the ggmap package

# This only needs to be done ONE TIME.

# You will not need to do this again.

install.packages("ggmap")

# We load the ggmap.

# This needs to be done every time

# that you want to make a map.

library(ggmap)

# Now we load the information from the AirBnB data

# for the city of Los Angeles.

myDF <- read.csv("/class/datamine/data/airbnb/united-kingdom/england/london/2019-07-10/data")

# Here are the first 6 lines of this file:

head(myDF)

# and the dimensions of the file:

dim(myDF)

# These are the longitudes and latitudes:

myDF$longitude

myDF$latitude

# Now we build a new data.frame containing

# only the longitudes and latitudes.

mypoints <- data.frame(lon=myDF$longitude,lat=myDF$latitude)

# We use Dr Ward's Google API key,

# so that we are able to load maps in Google.

register\_google(key = "AIzaSyAEBYvAgNOBLHI0kCoJts-O2KXBfJ8NUlc ", write = TRUE)

# In preparation for making a map,

# we get the center of Los Angeles from Google:

la\_center = as.numeric(geocode("London"))

# Then we build a map of Los Angeles

LAmap <- ggmap(get\_googlemap(center=la\_center,zoom=10))

# and we display it.

LAmap

# Finally, we add the points to the map

LAmap <- LAmap + geom\_point(data=mypoints, size=0.1)

# and we display the map again.

LAmap

# One final remark:

# 3 locations are far enough away from the center

# of Los Angeles that they do not show up.