Peer-graded Assignment: R Markdown and Leaflet

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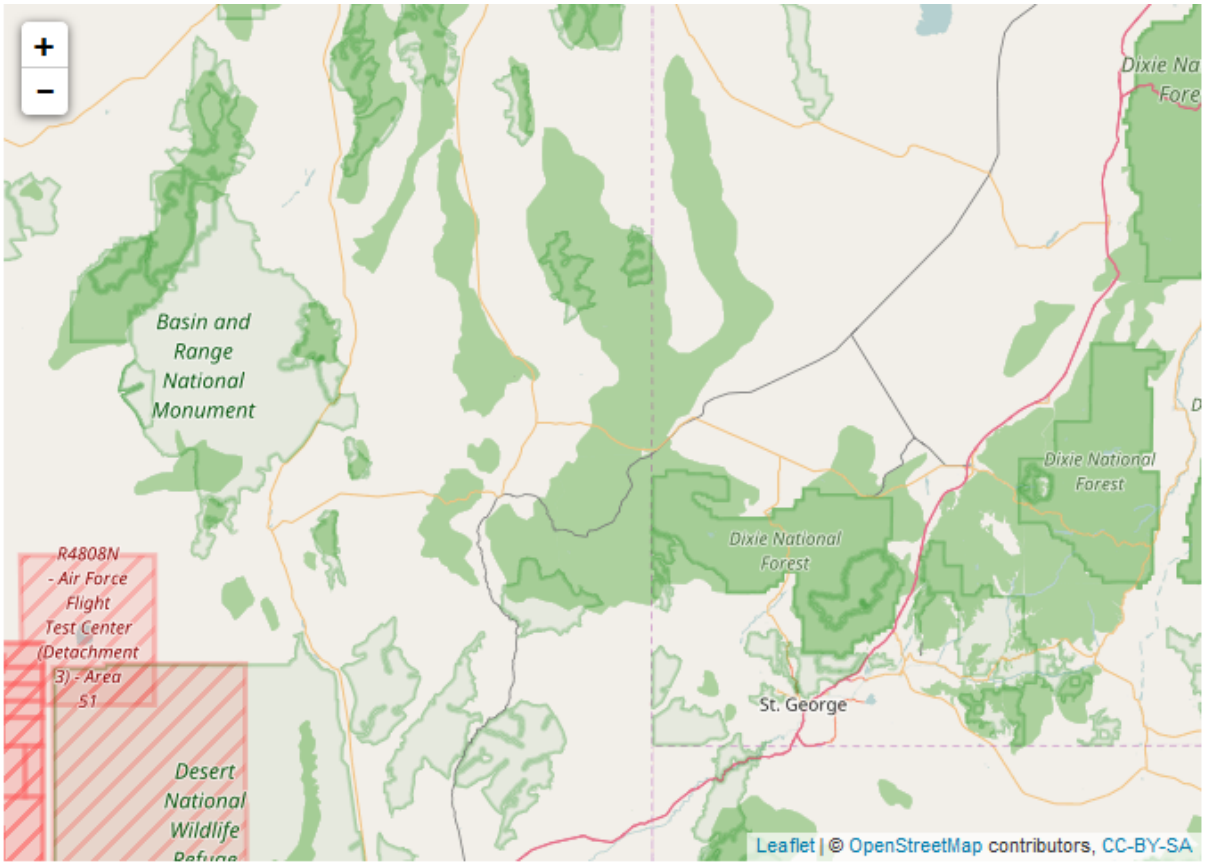
Assignment

The assignment is to display information on a leaflet graph. For my assignment, I am plotting the location of all the in-service wind farms within the state of California. The data was download from the Open Energy Information web site (see code in appendix A for the full URL for the data)

Click on the icon to display the facility name and generating capacity.

The code for consuming the data set and generating the leaflet plot can be found in Appendix A.



Appendix A

```
#data for the leaflet graph
dataUrl <- "http://en.openei.org/wiki/Special:Ask/-5B-5BCategory:Energy-
20Generation-20Facilities-5D-5D-5B-5BSector::Wind-20energy-5D-5D/-
3F%3DFacility-20Name-23/-3FFacility/-3FFacilityType/-3FOwner/-3FDeveloper/-
3FEnergyPurchaser/-3FPlace/-3FGeneratingCapacity/-3FNumberOfUnits/-
3FCommercialOnlineDate/-3FWindTurbineManufacturer/-3FFacilityStatus/-
3FCoordinates/format%3Dcsv/limit%3D2500/mainlabel%3DFacility-
20Name/offset%3D0"

# custom icon
iconFile <- "./data/Windmill-02.png"
windMillIcon <- makeIcon(iconFile)

# if the file does not exist download it
windFarmDataFile <- "./data/windFarmData.csv"
if (!file.exists("./data")) {
  dir.create("./data")
}

if (!file.exists(windFarmDataFile)) {
  download.file(dataUrl, destfile=windFarmDataFile)
}

#read the data from the file
windFarmDataSet <- read.csv(windFarmDataFile, header=TRUE, as.is = TRUE,
stringsAsFactors = FALSE, sep=',', na.strings=c('NA','','#DIV/0!'))

# Only show the farms that are in service
windFarmDataSet <- windFarmDataSet[windFarmDataSet$FacilityStatus == "In
Service",]

# Only show the wind farms in Calafornia
windFarmDataSet <- windFarmDataSet[grepl("CA", windFarmDataSet$Place),]

#Split the coordinates into longitude and lattitude
windFarmDataSet <- extract(data=windFarmDataSet, col=Coordinates,
into=c("lat", "lng"), regex="(.*),(.*)")

windFarmDataSet$Info <- paste(windFarmDataSet$Facility.Name, ... =
windFarmDataSet$GeneratingCapacity, sep="<br> ")

# Remove units from the longitude and lattitude
windFarmDataSet$lat <- str_replace(windFarmDataSet$lat, "Â°", "")
windFarmDataSet$lng <- str_replace(windFarmDataSet$lng, "Â°", "")

# make the longitude and lattitude numeric
windFarmDataSet$lat <- as.numeric(windFarmDataSet$lat)
windFarmDataSet$lng <- as.numeric(windFarmDataSet$lng)

#plot the graph
windFarmDataSet %>%
    leaflet() %>%
    addTiles() %>%
    addMarkers(lng=~lng, lat=~lat, clusterOptions = markerClusterOptions(),
icon=windMillIcon, popup=~Info)
```