Peer-graded Assignment 1: R Markdown and Leaflet

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## [1] "Thu Jun 03 21:29:34 2021"
```

Objective Create a web page using R Markdown that features a map created with Leaflet.

We obtained a dataset about all Hospitals in Australia from SpringerNature, and aimed at display them on an interactive map, which was created by library(Leaflet).

This dataset consisted of names of hospitals in Australia, their geographic coordinates (Longitude and Latitude).

1. Load the data, library and perform some basic exploratory data analyses.

```
library(dplyr); library(leaflet)
# Load data
url <-"https://springernature.figshare.com/ndownloader/files/15591434"
hospital_df = read.csv(url, na.strings=c("NA","#DIV/0!",""))

# Inspect data
str(hospital_df)
```

```
## 'data.frame':    1011 obs. of  15 variables:
##  $ Hospital.name                    : chr  "Abbotsford Private Hospital" "Adelaide Clinic" "Adelaide Day Surgery Pty Ltd" "Adelaide Eye
##  $ Phone.number                     : chr  "08 9200 6282" "08 8269 8100" "08 8239 4900" "08 8274 7000" ...
##  $ Street.address                   : chr  "61 Cambridge Street" "33 Park Terrace" "18 North Terrace" "215 Greenhill Road" ...
##  $ Suburb                           : chr  "West Leederville" "Gilberton" "Adelaide" "Eastwood" ...
##  $ Postcode                         : int  6007 5081 5000 5063 5067 2217 6330 3004 2640 3690 ...
##  $ State                            : chr  "WA" "SA" "SA" "SA" ...
##  $ Local.Hospital.Network..LHN.     : chr  NA NA NA NA ...
##  $ Primary.Health.Network.area..PHN.: chr  NA NA NA NA ...
##  $ Website                          : chr  "www.abbotsfordhospital.com.au" "www.adelaideclinic.com.au/" "http://www.curagroup.com.au/ad
##  $ Description                      : chr  NA NA NA NA ...
##  $ Sector                           : chr  "Private" "Private" "Private" "Private" ...
##  $ Beds                             : chr  "<50" "50-99" "<50" NA ...
##  $ Latitude                         : num  -31.9 -34.9 -34.9 -34.9 -34.9 ...
##  $ Longitude                        : num  116 139 139 139 139 ...
##  $ Hospital_ID                      : int  1 2 3 4 5 6 7 8 9 10 ...
```

```r
# Select only necessary variables
hospital_df <- hospital_df %>%
    select(Latitude, Longitude, Hospital.name, Phone.number, Street.address, Postcode) %>%
    rename(lat=Latitude, lng=Longitude)
```

2. Create Hospital Map

```r
# Import hospital icon
hospitalIcon <- makeIcon(
  iconUrl = "./hospital.png",
  iconWidth = 31*215/230, iconHeight = 31,
  iconAnchorX = 31*215/230/2, iconAnchorY = 16
)


# Function to create contents for popup
content <- function(name, phone, adr, code) {
    paste(sep = "<br/>",
          "<b>", name,"</b>",
          phone,
          adr, code)
}


# Create the Map
set.seed(Sys.Date())
hospital_df %>%
    leaflet() %>%
    addTiles() %>%
    addMarkers(popup=content(hospital_df$Hospital.name,
                             hospital_df$Phone.number,
                             hospital_df$Street.address,
                             hospital_df$Postcode),
               clusterOptions = markerClusterOptions())
```