assessment 2

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Introduction

This project is analyzing how intension meteologicos tormetas and other phenomena that ocurriendos from 1950 to November 2011.

We will use information from the database:U.S. National Oceanic and Atmospheric Administration's (NOAA) storm.

We will try to explain the events occurred in the last years, taking as sample the information from 2006 at 2011

To demonstrate these events, we will make graphics the following factors: A) economic damage B) number of injures C) amount of fatalities

With all this we can see the damage and economic losses over time in the United States.

methodology

1) Get the information about this site: https://d396qusza40orc.cloudfront.net/repdata% 2Fdata% 2FStormData.csv.bz2
2) Load libraries
3) Get the information of the time range in the sample
4) The variable called "EVYTE" there are different types of events, we must concentrate, therefore several values that are represented in one and thus achieve categorize.
5) Create a new column where the event type is related to the new category and thus a grouping for that category Id.
6) finally analyze the indicators mentioned above mind that graphed to observe the damage, an important factor and is complex to analyze because exiten economic amounts in millions of dollars that MUST be processed but will talk about that later.
7) We made the graphics
8) We analyze the information
9) We issued the findings

Code and analysis

Load libraries

```
library("ggplot2")
```

```
## Warning: package 'ggplot2' was built under R version 3.0.3
```

```
library("knitr")
```

```
## Warning: package 'knitr' was built under R version 3.0.3
```

Load datas and get the data between 2006 and 2011

```
File<-"repdata_data_StormData.csv"
datas <- read.csv(File)

# get data between 2006 and 2011
extract <- grepl("20[0-1][6-9]", datas[, 2])
data_final <- datas[extract, ]
```

data grouping variable "EVYTE" in new categories

Be careful not to forget some kind of variable and categorize

```
cold_ice_value = toupper(c("avalanche", "avalance", "blizzard", "chill",
"cold",      "cool", "glaze", "hypothermia", "hyperthermia", "ice",
"icy", "freez", "frost",      "low temp", "sleet", "snow", "wint"))

disaster_value <- c("COLD/ICE", "HEAT", "FOG", "WATER", "WIND/STORM",
"LIGHTENING","VOLCANO/TSUNAMI", "DUST")

dust_value = toupper("dust")

fog_value = toupper(c("fog", "vog"))

heat_value = toupper(c("below normal precip", "dry", "drie", "drought",
"fire",      "heat", "high temp", "hot", "warm"))

lightening_value = toupper(c("lightning", "ligntning", "lighting"))

volcano_Tsunami_value = toupper(c("tsunami", "volcan"))

water_affect_value = toupper(c("coast", "cstl", "current", "dam fail",
"dam break",      "drizzle", "drown", "erosion", "erosin", "flood",
"floood", "fld", "heavy shower",      "high water", "high waves", "lake",
"landslump", "marine", "precip", "rain",      "rising water", "river",
"rogue wave", "slide", "stream", "sea", "seiche",      "surf", "swell",
"tide", "tidal", "torrent", "wet"))
```

```
wind_storm_value = toupper(c("burst", "cloud", "depression", "floyd",
"funnel",      "gust", "hail", "hurricane", "landspout", "storm",
"southeast", "thunderstorm",      "thundertsorm", "thundestorm",
"tornado", "torndao", "tstm", "turbulence",      "typhoon", "wall",
"waterspout", "water spout", "wayterspout", "wind", "wnd"))
```

Now with the new categories must relate and create a new variables

```
disasterIDs <- rep(0, nrow(data_final))
# Place a new column in the data frame that contains an ID of which
disaster
# belongs to which catagory
for (i in 1:nrow(data_final))
  {
    # Grab the disaster
    disaster <- data_final[i, "EVTYPE"]
    # Split string into spaces if applicable
    spt <- strsplit(as.character(disaster), " ")
    # For each space that we have, append a |
    spt <- spt[[1]]
    disasterString = c()
    for (j in 1:length(spt) - 1)
      {
        disaster_value = c(spt[j], "|")
      }
    disasterString <- c(disaster_value, spt[length(spt)])
    disaster <- paste(disaster_value, collapse = "")
    # Check to see which one this belongs to
    if (any(grepl(disaster, cold_ice_value), na.rm = TRUE))
      {
        disasterIDs[i] <- 1
      }
    else
      if (any(grepl(disaster, heat_value), na.rm = TRUE))
        {
          disasterIDs[i] <- 2
        }
      else
        if (any(grepl(disaster, fog_value), na.rm = TRUE))
          {
            disasterIDs[i] <- 3
          }
        else
          if (any(grepl(disaster, water_value), na.rm = TRUE))
            {
              disasterIDs[i] <- 4
            }
          else
```

```
            if (any(grepl(disaster, wind_storm_value), na.rm = TRUE))
              {
                disasterIDs[i] <- 5
              }
            else
              if (any(grepl(disaster, lightening_value), na.rm = TRUE))
                {
                  disasterIDs[i] <- 6
                }
              else
                if (any(grepl(disaster, volcano_tsunami_value), na.rm =
TRUE))
                  {
                    disasterIDs[i] <- 7
                  }
                else
                  if (any(grepl(disaster, dust_value), na.rm = TRUE))
                    {
                      disasterIDs[i] <- 8
                    }
  }
```